World Health Organization

REGIONAL OFFICE FOR Africa

Core Competencies for the Eye Health Workforce in the WHO African Region

CORE COMPETENCIES FOR THE Eye Health Workforce IN THE WHO African Region

World Health Organization
REGIONAL OFFICE FOR Africa

Core competencies for the eye health workforce in the WHO African Region

ISBN: 978-929023418-0

Suggested citation. Core competencies for the eye health workforce in the WHO African Region. Brazzaville: WHO Regional Office for Africa; 2019. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.
Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders.
To submit requests for commercial use and queries on rights and licensing,
see http://www.who.int/about/licensing.

Design and layout by Rail Graphic Design & Print, Republic of South Africa

Contents

Acknowledgements

The Core Competencies for the Eye Health Workforce in the African Region have been developed in collaboration with a network of national, regional and international experts who provided guidance throughout the development process participating in the review of drafts at every stage of its preparation and development. The participation included the two rounds of the modified Delphi for consensus on the competencies (the list of individual contributors is in Annex VII) which involved a wider participation in addition to the face building or attending the two expert meetings held in Nairobi (September 2017 and February 2018).

WHO secretariat therefore would like give special thanks to the following experts: James Amoo Addy (Head of Eye Unit, National Coordinator, Prevention of Blindness, MoH Ghana); Mouctar D Badiane (Coordinator of the national Eye Health Promotion Program, Senegal); Komi Matiklu Balo (Professor of Ophthalmology, University of Lomé); Grace Chipalo-Mutati (Senior Medical Superintendent, University Teaching Eye Hospital Zambia); Ellen A. Clegg (Former Principal, Ophthalmic Nursing School, Korle Bu); André Omgbwa Eballe (Deputy Coordinator, Prevention of Blindness Programme, Cameroon); Richard Ganga-Limando (WHO Collaborating Centre for Postgraduate Nursing & Midwifery Distance Education, University of South Africa); Dunera Ilako (Consultant Ophthalmologist, University of Nairobi); Godfrey Kaggwa (SiB Project Coordinator, Brien Holden Vision Institute, Uganda); Jefitha Karimurio (Chair, Department of Ophthalmology, University of Nairobi); Abigail Kazembe (Associate Professor & Deputy Dean, Kamuzu College of Nursing, Malawi University); Annette Kobusingye (Program Manager, the Fred Hollows Foundation, African Region, Uganda); Aaron T. Magava (Chair, IAPB Africa, Zimbabwe); Fikile Ntombi Mtshali (WHO Collaborating Centre - School of Nursing & Public Health, University of Kwazulu-Natal, South Africa); Peter Mwangi Kirigwi (Optometry Technologist Trainer, Kenya Medical Training College); Kolawole Ogundimu (Senior Global Technical Lead, Eye Health, Sightsavers, Nigeria); Mollent Okech (Senior Technical Advisor for HRH, Management Sciences for Health, Kenya); Joseph Enyegue Oye (Country Director, Sightsavers, Cameroon); Senanu K Quacoe-Wossinu (Francophone & Lusophone West Africa, Co-Chair, IAPB-Africa); Zahra Rashid (Optometrist, Kenya); Bernadetha Robert Shilio (National Eye Care Program Manager, Ministry of Health, Tanzania); Kassa Tsehaynesh Tiruneh (acting National Eye Health Coordinator FMoH, Ethiopia); Linda Visser (Academy Head, Dep. of Ophthalmology,Vice-President OSSA, President, College of Ophthalmology, South Africa).

WHO would like to acknowledge the IAPB HReH task development teams who did preliminary groundwork.

This Regional policy document has been drafted by the consultant services of Dr Michael Gichangi (Head of Ophthalmic Services Unit – MoH Kenya) at the various stages. Simona Minchiotti, Renee du Toit and Mwansa Nkowane contributed to the technical content of the document and provided technical feedback to the consultant.

The steering group for the overall process was led by WHO and the International Agency for the Prevention of Blindness for Africa (IAPB) with Adam Ahmat, Simona Minchiotti, Jennifer Nyoni and Mwansa Nkowane (World Health Organization), in collaboration with Simon Day, Renee du Toit and Ronnie Graham (The International Agency for the Prevention of Blindness – IAPB) and Luigi Bilotto (Brien Holden Vision Institute).

The contribution of Dr Adrian Hopkins (Facilitator, Adrian Hopkins Consulting) who facilitated at both experts' consultation and the validation meeting as well as providing the technical proof reading is acknowledged.

Within WHO we wish to thank Hillary Kipruto and Silvio Paolo Mariotti for their contributions.
WHO also wishes to express sincere gratitude to the Organisation pour la Prévention de la Cécité (OPC, Paris, France) for translating the working draft version of the core competencies document into French to facilitate the validation process of the experts.

Graphic design and layout was done by Rail Graphic Design CC (Durban, South Africa).

WHO acknowledges the financial contribution of IAPB and Sightsavers to the overall process of developing this document.

Foreword

The majority of countries in sub-Saharan Africa are facing a severe crisis of skilled health workforce shortages that could impede the realization of Universal Health Coverage, especially in specialized fields such as eye health. This policy document is a step towards improvement of the quality of eye health care. It describes the development of core competencies for the cadres that constitute the professional eye health team.

In sub-Saharan Africa, an estimated 3.6 million persons are blind, 17.4 million have moderate and severe visual impairment, and 100 million have near vision impairment. Visual impairment does not only impact negatively a person's quality of life but also the national and regional economy. The majority of people who are visually impaired are over 50 years old and many live in rural areas. This places a huge burden on the WHO African Region that already has a myriad of challenges compounding this shortage of skilled eye health providers. What is worse, the distribution of available eye health providers is skewed, with most of them deployed in the urban areas.

Given the shortage of human resources for eye health, and in line with the WHO approach to task shifting or sharing, this policy document is a unique contribution to detailing the competencies required of a range of eye health professionals. Countries can select and tailor these core competencies to meet their specific country needs. The corps of eye health professionals may share some competencies, but others are unique to some cadres. The selected competencies can then be included in educational curricula, enhancing a transformation of task shifting or sharing from often informal delegation and unstructured training to the production of competent eye health professionals who perform tasks that are within their role and allowed under country and professional regulatory frameworks. Team-based education is also in line with the WHO approach to inter-professional education and collaborative practice.

WHO continues to call for high-quality eye health services that focus on integrated, people-centred services. Integrated services ensure that there is a continuum of care that includes both promotive, preventive, palliative and rehabilitative eye care, and diagnosis and management of eye disorders – all coordinated among the different disciplines and providers. Person-centred eye care, for its part, means that the person's needs and preferences are taken into consideration and that the person is an active participant in the provision of care. To this end, WHO urges that traditional teaching and learning methods be transformed into competency-based education. It also calls for traditional methods of education to shift towards an interdependence that harmonizes education with health systems and supports networking and collaborative practice.

WHO and the International Agency for the Prevention of Blindness (IAPB) are working towards the harmonization of tasks and roles in human resources for health (HRH) within a global framework, and have worked closely together to develop the tasks and roles of the eye health team of professionals in line with global standards. A rigorous process of engaging eye health experts and training institutions in the WHO African Region followed, with the aim of developing core competencies for the team, reaching consensus on them, and ensuring their ownership. The result of all these efforts was the validation of the present core competencies for the eye health professional team for the African Region.

This policy document is a first step in the development of competency-based education for eye health professionals that meets the needs of the African Region and its unique challenges. It is largely a reference document that can be used when reviewing or developing curricula for eye health professionals. Further, it can also be used in workforce planning, management, regulation, etc.

We envisage that use of the document will contribute to a higher quality of care that is harmonized across the Region. Its use will also spur development of the capacities of training institutions, strengthen health systems, and support eye health professional teams to apply the competencies acquired to the provision of quality eye health care as a step towards Universal Health Coverage.

DR MATSHIDISO MOETI
WHO Regional Director for Africa

Abbreviations and acronyms

AFCO	African Council of Optometry
AOP	Allied Ophthalmic Personnel
AFRO	WHO Regional Office for Africa
IAPB-Africa	International Agency for the Prevention of Blindness - Africa Region
HReH	Human Resources for eye Health
ICO	International Council of Ophthalmology
ISCO	International Standard Classification of Occupations
OCO	Ophthalmic Clinical Officers
SDGs	Sustainable Development Goals
SSA	Sub-Sahara Africa
SAG	Standing Advisory Group
UHC	Universal Health Coverage
WCO	World Council of Optometry
WHO	World Health Organization

Working definitions

Behaviour	A way of conducting oneself in a specific environment.
Competency	Sufficient knowledge and psychomotor, communication and decision-making skills and attitudes to enable the performance of actions and specific tasks to a defined level of proficiency.
Competency statement	Description of outcomes expected from the performance of professionally-related functions.
Competent	Ability to perform specific tasks to a defined level of proficiency using acquired knowledge, skills, and professional behaviour.
Core competency	Aspects of a discipline that are common to all students, and that should be mastered in order to graduate and enable professional practice.
Competency domain	Umbrella term covering areas of learning.
Competency-based approach	A disciplined approach that specifies the health problems to be addressed; identifies the requisite competencies required of graduates for health system performance; tailors the curriculum to achieve competencies; and assesses achievements and shortfalls. It embraces a highly individualized learning process rather than the traditional one-size-fits-all curriculum.
Eye health team	In the context of this document, the focus is on the three skilled eye health professional groups (ophthalmologists, optometrists and allied ophthalmic personnel). The eye health team is generally larger than this.
Health behaviour	Any activity undertaken by an individual, regardless of actual or perceived health status, for the purpose of promoting, protecting or maintaining health, whether or not such behaviour is objectively effective towards that end.
Health promotion	The process of enabling people to increase control over, and to improve their health.
Health-seeking behavior	Personal actions to promote optimal wellness, recovery, and rehabilitation (NOC 1603).
Integrated health services	The management and delivery of health services such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services through the different levels, specialities and sites of care within the health system, and according to their needs throughout the life course.
Knowledge	Understanding of a subject and ability to apply skills.
People-centred	An approach to care that is consciously organized around and responds to the health needs, expectations, and preferences of the people or beneficiaries in a holistic manner.
Skill	Ability to perform specific tasks to a specified level of measurable performance.
Universal Health Coverage	Ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.
Validation	Ascertain and confirm through a process that the competencies are suitable.
Vision rehabilitation	A continuum of activities from assessment of visual functions through to provision of appropriate assistive devices and technologies, and social inclusion, all geared to optimizing visual functioning and a sense of well-being. (https://www.aoa.org/optometrists/membership/aoa-sections/vision-rehabilitation-section/membership-benefits/definition-of-vision-rehabilitation
Vision therapy	Also known as vision training, is defined as using a series of procedures carried out in home, school and office settings, sometimes with optical or non-optical devices, to improve residual vision and vision skills such as eye movement control and coordination. It is usually under professional supervision.

CHAPTER **1**

Introduction

1.1 Introduction

Worldwide, 285 million persons are visually impaired. Among these, 39 million are blind and 246 million suffer from low vision. Visual impairment increases with age (13). Sixty-five percent (65%) of the visually impaired and 82% of the blind are above 50 years of age (11). In Africa, there are 4.8 million blind persons and 16.6 million visually impaired; yet, even with the huge burden of eye disorders in Africa, less than 1% of the global number of ophthalmologists practise in Africa. Only 13 countries in Africa meet the minimum requirement of one eye health professional to 55,000 people (14). Most ophthalmologists and optometrists practise in urban areas while allied ophthalmic personnel (AOP) tend to move out of the capital cities to smaller towns.

While the rate of growth among the cohort of people aged over 60 years is 2.9% worldwide, the rate of growth of ophthalmologists is 1.2% (less than half) (15, 16). The shortage of human resources for eye health (HReH) has further been compounded by the limited capacity of the eye health training institutions in the African Region (Table 1). The eye health workforce crisis thus has an even greater impact in the African Region. To make a significant impact on the cataract surgical rate and coverage and correct refractive error, thus reducing vision impairment and blindness globally, sufficient skilled human resources for eye health are required (17, 18). The quality, quantity and distribution of health workers correlates with positive health outcomes (8). Health worker density is used as one of the indicators of service capacity and access used to monitor progress towards Universal Health Coverage (UHC) (2).

Table 1: Needs analysis and capacity of eye health training institutions in the WHO African Region

Category	Needs assessment				Capacity of eye health training institutions in the WHO African Region		
	Recommended ratios	Number required	Total existing	Existing gap	Total number of institutions	Annual intake	Number of years to reach targets**
Ophthalmologists	1/250,000	4,000	2,075	1,925 (48%)	51	250	8
Optometrists[1]	1/250,000	4,000	8,900	90%*	27	500	7
Allied ophthalmic professionals	1/100,000	10,000	6,390	3,610(36%)	30	763	6
				AOP (clinicians)	24	277	
				AOP (nurses)	6	486	

Source: IAPB Vision Atlas and Training Institutions Database
** Estimates; ** figures not adjusted for attrition*

1.2 The global call to action

The Lancet commission on education of health professionals for the 21st century, among many other recommendations, proposes the

> *Adoption of competency-based curricula that are responsive to rapidly changing needs rather than being dominated by static coursework. Competencies should be adapted to local contexts and be determined by national stakeholders, while harnessing global knowledge and experiences. Simultaneously, the present gaps should be filled in the range of competencies that are required to deal with 21st century challenges common to all countries… (1).*

Efforts have also been made to emphasize patient- and population-centredness; inter-professional team-based education; IT-empowered learning; policy, management and leadership skills as the foundations for the future. This transformative change in teaching and learning methods in order to develop person-centred competent service providers is hereby proposed (20). In response to the needs of the WHO African Region, in 2011 the WHO Regional Office for Africa developed a roadmap

**±10,000 optometrists are in Nigeria and South Africa, and few other countries with a few hundred, 78% countries have less than 50, while some have 0 like Namibia. Jennifer J Palmer FC, Alice Gilbert, Devan Pillay, Samantha Fox, Jyoti Jaggernath, Kovin Naidoo, Ronnie Graham, Daksha Patel and Karl Blanchet.* Trends and implications for achieving Vision 2020: human resources for eye health targets in 16 countries of sub-Saharan Africa by the year 2020. Human Resources for Health. 2014.*

(2012–2025) for scaling up the health workforce for improved access to services (9). The proposed roadmap addresses all categories of the health workforce and analyses the challenges facing the Region. Recognizing the importance of eye health, WHO issued a global call for achieving high quality care that focuses on two particular dimensions: people-centeredness and integration (19). The WHO global action plan for 2014–2019 (Towards Universal Eye Health) aims to reduce by 25% by 2019 the burden of visual impairment from the 2010 baseline. It recommends strengthening eye care services through integration into the health system, rather than following the vertical programmes approach. The starting point for scaling up the quality, quantity and relevance of the eye health workforce is to strengthen training institutions to produce more of the skilled professionals based on appropriate standards, and ensure their integration into the health system. The development of eye health competencies is a step in that direction.

1.3 The development process

Development of the core competencies for the eye health workforce will be the first course of training in the competency-based approach (1). Competency-based training is a more responsive and transformative method of education centred more on patient needs rather than the traditional way of training. IAPB and WHO engaged in a collaborative and extensive consultative process to develop the core competencies for the eye health team (Annex I). Eye health experts, trainers, policy makers and service providers have been actively involved in the process since 2013. A sequence of activities took place between that date and 2018. These are described below.

(a) ***Desk review:*** A broad range of reference documents were used including, the International standard classifications of occupations (ISCO-08) (for identified occupational roles) and CanMEDS (an existing competency framework for medical education).
(b) ***Expert consultations:*** Experts from English-, French- and Portuguese-speaking countries in sub-Saharan Africa were engaged with the aim of building consensus and validating the competencies. Two nominal meetings (Annexes II and III), and several e-meetings and consultations took place.
(c) ***Delphi survey:*** Two rounds of Delphi surveys were conducted and findings therefrom used to improve draft versions of the document.
(d) ***Validation:*** A validation workshop was held in Nairobi, Kenya, from 27 February to 01 March 2018 involving a wider group of experts and representatives of African Member States. The purpose of the workshop was to analyse in detail, evaluate, and review both the whole process and the document in order to definitively validate core competencies for the eye health workforce in the WHO African Region.

The primary beneficiaries of these competencies are:

- Ophthalmologists
- Optometrists
- Allied ophthalmic personnel (AOP).

These core competencies can be used as a starting point in developing competency-based specific training curricula for different cadres of the eye health team in the Region. This could help in harmonizing eye health programmes, thus improving the standard of care in the Region. In addition, the competencies will have several other uses. They can be used as a guide for self-directed learning, as an advocacy tool, and for assessments. There will also be a broad range of users of the competencies. They include:

(a) Educational institutions
(b) Learners of eye health
(c) Professional associations
(d) Licensing and regulatory bodies
(e) Policy makers, e.g., ministries for health and education.

Annex IV provides detailed options for their use.

1.4 The competence framework

The ultimate purpose of these competencies is to improve the quality and relevance of the care provided by the professional eye care health workforce. The allocation of specific competencies to a specific cadre of eye health personnel is the remit of training institutions and regulatory bodies. The document outlines a comprehensive set of core (minimum) competencies for the eye health workforce as a step towards development of competency-based training. The framework is divided into 10 domains comprising 4 clinical and 6 non-clinical domains. Each competence is further broken down into associated relevant knowledge, skills, attitudes and behaviours.

CHAPTER **2**

Classification of the Eye Health Workforce

2.1 Introduction

The Ouagadougou Declaration on primary health care and health systems influenced the choice of CanMEDS – an existing competency framework for medical education and practice – as the appropriate organizing framework. It was adapted and 10 domains created to organize the competencies. The competencies associated with the domains, which are either unique or shared between the three professional workforce groups, are outlined in Section 3.

The International standard classification of occupations (ISCO-08) is a detailed four-level hierarchically structured classification system for occupations. It allows production of relatively detailed and internationally comparable data. Globally, it is endorsed by labour organizations and is used by WHO and the governments of many countries in Africa. ISCO-08 classifies, codes, and broadly outlines the services that health care personnel provide, along with their levels of autonomy and supervision (21).

2.2 Classification system

Whilst the categorization and definition of ophthalmologists and optometrists is, to a large extent, uncomplicated and uncontroversial, it is not so with the mid-level eye care workforce, as there is a wide range of nomenclatures, education and roles associated with these persons. Allied ophthalmic personnel (an alternative used in the literature to avoid the term 'mid-level personnel'), are a heterogeneous group of staff with specialist ophthalmic training. In contrast to ophthalmologists and optometrists, AOPs often serve in rural areas (17). They work in interdisciplinary teams to receive patients with eye disorders. The patients are sent to them directly or referred from primary and community health workers.

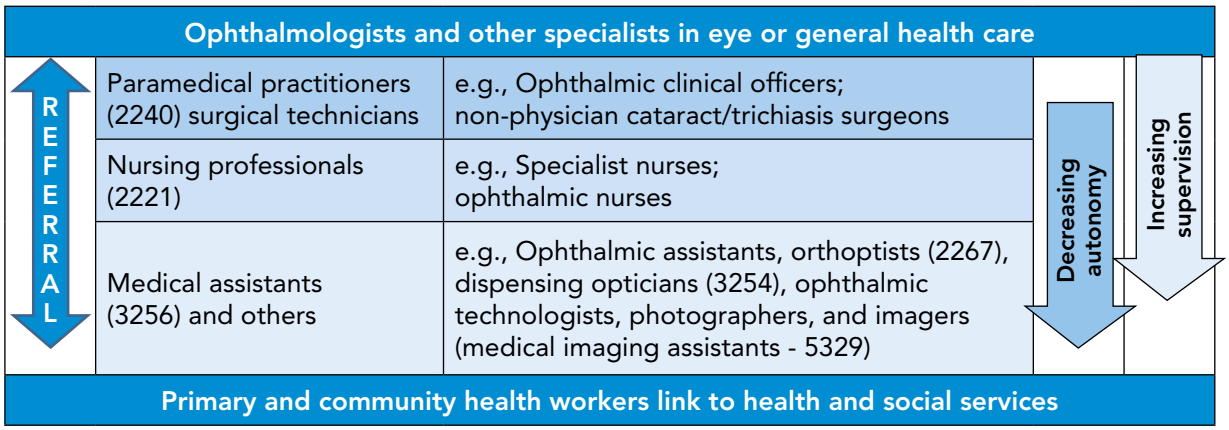
AOPs diagnose and treat eye illnesses and refer patients with conditions beyond their scope of practice, thereby providing a bridge between ophthalmologists and primary and community-level workers. They also provide links to health and social services in the community and elsewhere that include education, rehabilitation and low vision services (as illustrated in Figure 1 below) – all contributing to UHC.

The term 'allied ophthalmic personnel' is widely used for this group as a whole and can be used instead of the term 'mid-level'. Neither mid-level personnel in general nor AOPs specifically exist as occupational groups in ISCO-08. Apart from ophthalmologists and optometrists, dedicated specialist eye care cadres may be included in the ISCO-08 categories of paramedical practitioners, nursing professionals, and medical assistants and technologists (Figure 1). The latter group, who have on-the-job or short-term training to 'perform basic clinical and administrative tasks to support patient care under direct supervision', is not very prevalent in sub-Saharan Africa, neither are optical dispensers (3254) or orthoptists (2267). These groups have, therefore, not been included in this process.

The definition of competencies in this document thus pertains to the three main eye health professional groups: ophthalmologists, optometrists and allied ophthalmic personnel (nursing professionals and paramedical practitioners). The rationale for considering the nursing and paramedical practitioners as a single group within AOPs is that allied ophthalmic personnel play varying roles in different countries. Some of the competencies expected of these personnel can be identified as clinical or nursing competencies. In countries without paramedical cadres, in particular, nurses perform many of the tasks traditionally considered to be in the province of paramedics or ophthalmologists.

Countries can, therefore, define which cadres perform these roles and select competencies appropriate to their human resource requirements and structures.

Figure 1: ***AOPs are a bridge between the community and the ophthalmologist***



(Figure by Renée du Toit on behalf of the IAPB Human resources for eye health AOP working group)

Thereafter, ISCO-08 referencing and coding for the major categories of eye health professionals was used to assist with further categorization to ensure that these would be globally acceptable (Table 2).

Table 2: ***International standard classification of eye health professionals***

Cadre	General reference	ISCO - 08 code	Description
Ophthalmologists	Specialist medical practitioners	2212	An ophthalmologist is a medical practitioner who has had specialized post-graduate training in Ophthalmology. Ophthalmologists may further train in subspecialties (not included in this document). They are expected to diagnose, treat (medically and surgically), and prevent eye diseases, ailments and injury, using specialized procedures and techniques, applying principles of modern medicine to deliver comprehensive eye care. They may also diagnose general diseases of the body and treat ocular manifestations of systemic diseases (21-23)
Optometrists	Other health professionals	2267	Optometrists and ophthalmic opticians provide diagnosis, management and treatment services for disorders of the eye and visual system. They counsel on eye care and prescribe optical aids or other therapies for visual disturbance.[2]
Allied ophthalmic personnel	Paramedical practitioners Nursing professionals	2240 2221	

(Source: ILO (2008) International Standard Classification of Occupations (21))

[2] *The World Council of Optometry defines optometry as a '…health care profession that is autonomous, educated, and regulated (licensed or registered), and optometrists are the primary health care practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection or diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system.*

An optometrist has as a minimum successfully completed a bachelor's degree or equivalent education from a tertiary level educational institution and is categorized minimally in the category of the Global competency-based model of scope of practice in Optometry which includes optical technology services, visual function services and investigation, examination and evaluation of the eye and adnexa, and associated systemic factors, to detect, diagnose and manage disease. All other formal or informal cadres that fall below this level (e.g., optometric technicians, optometric assistants, opticians, refractionists) are not entitled to call themselves optometrists'.*
https://worldcouncilofoptometry.info/wp-content/uploads/2017/03/wco_global_competency_model_2015.pdf

2.3 Organization of the eye health team

The eye health team works in an interdependent manner, with each member strategically assigned specific roles as illustrated in Figure 2. The three eye health professional groups considered in this document: ophthalmologists, optometrists and allied ophthalmic personnel (nursing professionals and paramedical practitioners) practice with a high level of autonomy, as designated by the International Standard Classification of Occupations (ISCO-08) (21). Generalist health care providers at the primary and community level are also a valuable addition to the eye team but are not included here.

Figure 2: ***Organization of the eye health team; categories and codes from the International Standard Classification of Occupations (ISCO-08). Shaded blocks indicate the eye health professionals to whom this document pertains.***

<table>
<tr><th colspan="7">Eye health team (ISCO-08 Classification)</th></tr>
<tr><td colspan="2">Generalist health care providers (eye health competencies included in general training)</td><td colspan="5">Specialist eye health personnel
(special or advanced eye health training)</td></tr>
<tr><td>Community based</td><td>Facility based</td><td colspan="5">Facility based
Allied ophthalmic personnel</td></tr>
<tr><td>Community health workers (3253)</td><td>Front line health workers & primary health care providers</td><td>(Ophthalmic) Assistants (Medical assistants 3256)</td><td>(Ophthalmic) Nurses (Nurse professionals 2221)</td><td>(Ophthalmic) Clinical officers, etc. (Paramedical practitioners 2240)</td><td>Optometrists (2267)</td><td>Ophthalmologist (Specialist medical practitioners 2212)</td></tr>
</table>

(Figure by Renée du Toit on behalf of the IAPB Human resources for eye health working group)

CHAPTER **3**

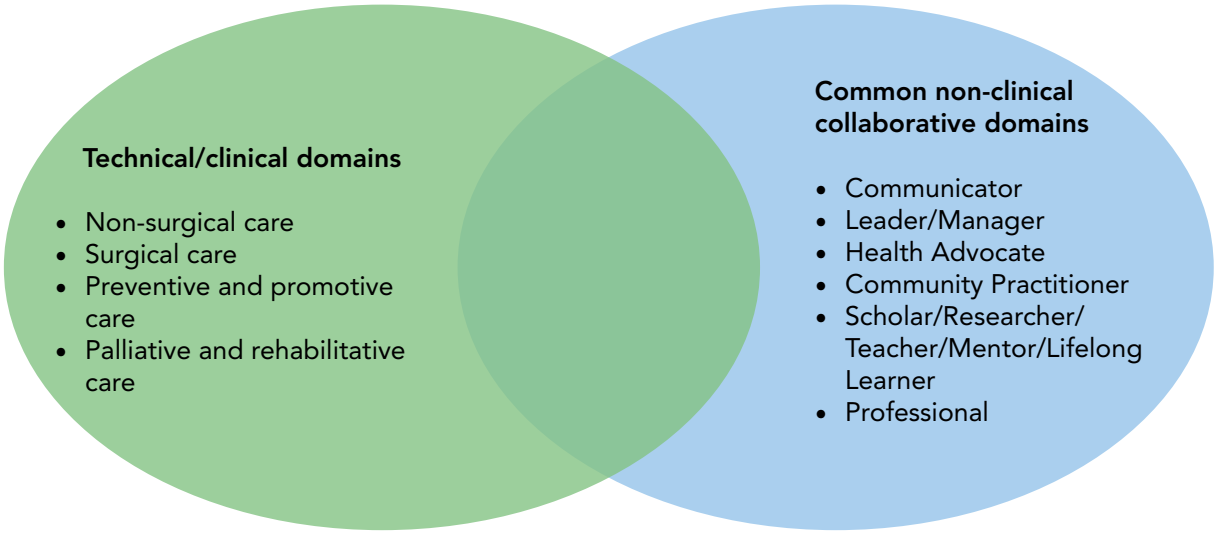
Roles of the Eye Health Workforce

3.1 Introduction

The IAPB human resources for eye health working groups identified CanMEDS, a medical education and practice framework, as suitable for adaptation to produce the domains for organizing the eye health competencies. By the end of the process, the 7 CanMEDS roles had been expanded to 10 domains.

The roles of the three eye health professional groups in the eye health team[3] have been broadly divided into (a) technical or clinical domains and (b) non-clinical domains. Normally, the different cadres share the non-clinical domains (also called collaborative domains) (Figure 3). The overlap indicates those aspects of the roles that are shared. For example, many of the aspects of 'communicator' are relevant to both non-clinical and clinical roles (e.g., using clear, simple non-technical language to explain treatment options to a patient (clinical) or when doing advocacy (non-clinical). Competent eye health care providers integrate the competencies of all the roles into their practice (25).

Figure 3: ***Domains of the eye health team: clinical and common or shared non-clinical domains***



3.2 Common vs unique technical or clinical competencies

The eye health team can also share some clinical or technical competencies (common technical or clinical competencies); however, the competencies may be unique to a group, thus differentiating the work of one group from the work of the other (Figure 4).

3.2.1 'Common' technical or clinical competencies

'Common' or shared technical or clinical competencies are those expected of all eye health professionals in the eye team, e.g., taking a history. These can also be seen as competencies that are common or overlapping more than one eye health profession but not necessarily all eye health professions.

In the United Kingdom, overlaps in competencies have been used as a strategy to make the most effective use of professional (but non-medical) members of the eye health team such as optometrists, orthoptists, and ophthalmic nurses. Shared or common competencies of the non-medical eye team are listed at three levels of autonomy:

- Ability to perform clinical work that assists medical decision-making
- Ability to follow a protocol with clearly defined delegated decision-making
- Ability to make decisions independently with appropriate support and back up.

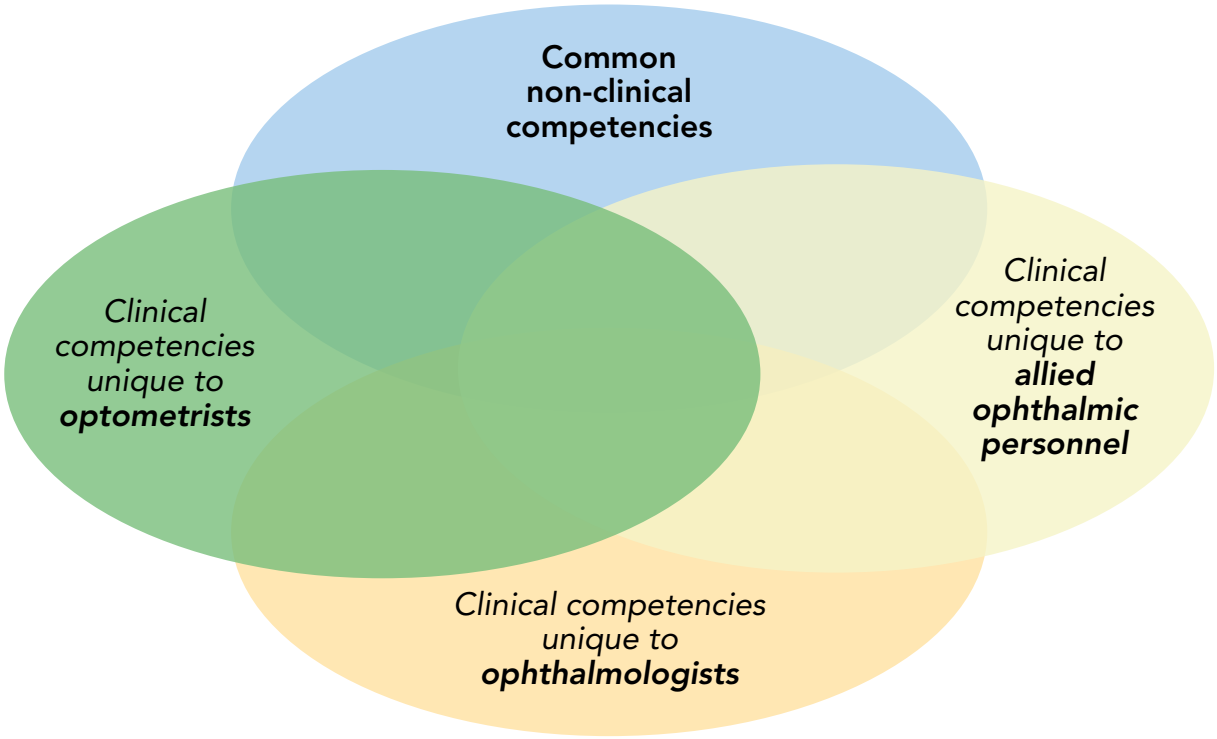
This enables non-medical members of the eye care team, based on their level of competence, to take on expanded roles to help manage demand and to provide safe and efficient care for patients. This is the rationale for task shifting or sharing (26, 27).

[3] *In the development of roles and competencies, this document focuses on the largest three eye health professional groups in the eye health team and whose work is largely autonomous: ophthalmologists, optometrists and AOP - the ISCO-08 categories of paramedical practitioners and professional nurses.*

3.3.2 Unique, 'complementary' and technical or clinical competencies

Unique, 'complementary' and clinical competencies distinguish one profession from another and complement the competencies of other professions. These individual professional competencies are based on the unique aspects of a professional's practice, and the profession's unique body of knowledge, skills, attitudes, and judgments. Ophthalmologists and optometrists, for example, have unique expertise in surgical and refractive care competencies respectively. Likewise, the advanced surgical skills of ophthalmologists enable them to manage complex cases and complement the basic surgical skills of a cataract surgeon. These unique clinical competencies differentiate one profession from the other.

Figure 4: ***Common non-clinical competencies and clinical competencies that are either common or unique to eye health professional groups***



3.3 Technical or clinical domains

The technical or clinical role of the eye health team is to provide comprehensive eye health care that encompasses curative care (assessment and treatment), rehabilitative and palliative care, preventive care, health promotion that is continuous, and high-quality, safe and person-centred care.

3.3.1. Non-surgical care

As curative care providers, the eye health team elicit a history, perform an examination, select appropriate investigations, synthesize and interpret results to inform diagnosis; then, advise on management in collaboration with patients and their families as well as with other health providers, depending on the context.

3.3.2 Surgical care

The eye team works to provide information and counselling about eye surgery and assists patients to access screening, high-quality and safe surgery, and follow-up care. The team obtains consent for invasive procedures, ensures appropriate care and takes measures for infection control in the pre-, peri-, and post-operative phases.

3.3.3 Preventive and promotive care

The eye team counsels patients and their families and provides information to support people to contribute and adhere to management plans, promote eye health, utilize health and social services, support healthy behaviours, and prevent or reduce damage from eye disorders.

3.3.4 Palliative and rehabilitative care

The eye health team helps to provide links to an inclusive, supportive environment. It also facilitates access to rehabilitation and low vision care, including optical and non-optical assistive products to optimize use of the remaining vision. Finally, the eye health team helps provide links to services for those who are irreversibly visually impaired. In addition to this, it provides an inter-professional and multidisciplinary approach to resolving the problems of persons with life-limiting illnesses in order to improve quality of life for both the patient and their family.

3.4 Other common non-clinical collaborative domains

The common or collaborative domains of the eye care team are those that are shared by all the three groups and support teamwork, implementation of technical or clinical roles, and inter-professional or collaborative practice. These include the roles played in Sections 3.4.1 to 3.4.6.

3.4.1 Communicator

The eye health team member uses the most effective communication methods to obtain, discuss and share information with patients, their families and everyone involved in the patient's care. This enables individuals, families and communities to make healthy decisions and become partners in their own health. The aim is also to understand the patients' situation and expectations, meet their eye health needs, and share with them information for decision-making and goal-setting.

3.4.2 Leader and manager

The team members work effectively with others, including patients and everyone involved in their management such as health care workers, other service providers, community partners, and others in the health system. The aim is to develop relationships based on trust, respect and shared decision-making among and within multidisciplinary teams, and thus, provide broader leadership in the context of health and social development. As a manager, the team member guides the work of colleagues working with him and assists and motivates them to create a healthy and professional work environment. The absolute goal of management is the achievement of high performance by all members of the team. Moreover, the team member plans and works efficiently to deliver eye health using available human and financial resources.

3.4.3 Health advocate

The eye health team members are expected to advocate, in partnership with the community, for increased resources, including workforce allocation for eye health at different levels.

3.4.4 Community practitioner

Members of the eye health team are expected to work with the community to ascertain and understand the determinants of health in the physical and social environment, the needs of the community and the potential mechanisms needed to address these. The aim here is to foster good health practices, discourage harmful practices and empower members to harness their own resources and access other available resources.

3.4.5 Scholar-researcher-teacher-mentor-lifelong-learner

A team member is expected to demonstrate a lifelong commitment to excellence in practice by gathering information, evaluating and using evidence, continually evaluating the processes and outcomes of his or her own work and that of the teams in which he or she works, sharing and comparing his or her work with that of others, and actively seeking feedback. There is also the expectation that the team member will help patients and families to self-manage their health by providing training and supportive supervision to other health workers. To improve performance, the team member will be expected to engage in continuing personal development. The overall aim here is to use multiple ways of continuous learning to continuously improve the quality of service, increase responsiveness to patient needs, and ultimately achieve universal access to health.

3.4.6 Professional

The eye health team member is expected to demonstrate accountability to individual patients and society, to the profession and to self through ethical practice, respect for others' rights, and high personal standards of behaviour. All this indicates the need for dedication to the profession, commitment to the public good, adherence to ethical standards and values such as integrity, honesty, altruism, respect for diversity, and transparency with respect to potential conflicts of interest. The aim is the improved health and well-being of individuals and patient populations.

CHAPTER **4**

Competencies for Ophthalmologists

Table 3: **Core competencies for an ophthalmologist**

CORE COMPETENCIES FOR AN OPHTHALMOLOGIST			
Domain	**Competency statement**	**Competency**	
Non-surgical care	Conducts patient evaluations	1.	Obtains patient history accurately
		2.	Conducts comprehensive patient evaluations
	Synthesizes the information to determine the diagnosis	3.	Makes a clinical diagnosis based on the information gathered from the patient
	Formulates and implements appropriate management plans	4.	Plans management together with patient or guardian and other health professionals with the available information
		5.	Identifies and manages ophthalmic emergencies and trauma
		6.	Refers patients as appropriate
		7.	Manages health information accurately and safely
Surgical care	Performs safe surgery	8.	Performs safe and high-quality surgery
		9.	Maintains proficiency in standard surgical procedures (Refer to Annex VI(a))
Preventive and promotive care	Provides health promotion to preserve and optimize eye health	10.	Counsels patients & families on aspects of their eye health
		11.	Educates patients and the public on good health practices
		12.	Provides advice & educates employers and employees on eye health and protective measures at work and in different social environments
Palliative and rehabilitative care	Facilitates access to comprehensive care and social inclusion	13.	Facilitates access to vision rehabilitation, rehabilitation of the blind, social and educational resources, and periodic re-evaluations
		14.	Facilitates access to palliative care following a multidisciplinary team approach

Table 4: **Components of the competencies for an ophthalmologist and related knowledge, skills and behaviours**

DOMAIN 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Competency	**Knowledge, skills and behaviours**
Obtains patient history accurately	***Knowledge:*** General information, including clinical manifestations and epidemiology of all eye diseases, and ocular manifestations of other systemic diseases; basic concepts and communication skills ***Skills:*** Obtains relevant information to identify the patient's clinical problem ***Behaviours:*** Effective communication with patients, guardians, family members and other health care providers
Conducts comprehensive patient evaluations	***Knowledge:*** General anatomical and physiological functioning of the ocular system; clinical presentation of common eye and systemic disorders, and use of suitable diagnostic procedures ***Skills:*** Evaluates systemic, ocular and visual systems ***Behaviours:*** Uses appropriate diagnostic tools proficiently to do comprehensive evaluations
Makes clinical diagnoses based on the information gathered from the patient	***Knowledge:*** General ophthalmic clinical sciences, including gross ocular anatomy; histology, embryology, physiology, microbiology, pharmacology, biochemistry, refraction and genetics; clinical ophthalmology: principles, practice and clinical presentations ***Skills:*** Makes diagnoses using gathered history, examination findings; thinks critically based on gathered information ***Behaviours:*** Demonstrates ability to synthesize all data and information from history, examination, and investigation; uses findings to systematically make clinical diagnoses
Plans management together with the patient or guardian and other health professionals using available information	***Knowledge:*** Determines the different options available for interventions (medical, surgical or optical, etc.) to resolve an identified problem and follow up outcomes ***Skills:*** Identifies the most appropriate intervention or treatment plan for the patient ***Behaviours:*** Communicates treatment options to enable the patient to make an informed decision
Identifies and manages ophthalmic emergencies and trauma	***Knowledge:*** Possesses a good background in general medical emergencies, and in ophthalmic emergencies, Ocular Trauma ***Skills:*** Identifies general and ophthalmic emergencies; manages ophthalmic emergencies (medical & surgical); refers patients or involves other specialists ***Behaviours:*** Uses clinical judgment and critical appraisal decision-making; Identifies and manages with a sense of urgency; Ensures services are always available to manage emergencies

DOMAIN 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Refers patients as appropriate	***Knowledge:*** Is familiar with the overall scope of ophthalmology, and with the limitations and roles of other health personnel ***Skills:*** Identifies patients requiring further assessment or management ***Behaviours:*** Demonstrates ability to collaborate with other health professionals and clinical experts, and people from different health and non-health sectors; is a team player
Manages health information accurately and safely	***Knowledge:*** Meets ethical and legislative requirements for obtaining, recording, storing, retaining and destroying patient records and other office documentation; has knowledge of the information system and how to analyse information ***Skills:*** Records patient information and data in a legible, secure, accessible, permanent and unambiguous manner; uses electronic records ***Behaviours:*** Maintains confidentiality of patient records

DOMAIN 2. SURGICAL CARE: *Performs safe surgery*	
Performs safe and high-quality surgery	***Knowledge:*** The different surgical options for general or common eye conditions (Annex VI(a)), including emergencies; indications for certain procedures (surgical operations) and alternatives; description of a procedure in a systematic manner (including giving step-by-step explanations); knowledge of different approaches and of post-surgical management, including any anticipated complications; proficiency in follow-up, including referral if needed ***Skills:*** Prepares patients clinically and psychologically for specific procedures; performs standard surgical procedures (Annex VI(a)) ***Behaviours:*** Participates in patient assessments; observes and assists senior colleagues in carrying out procedures; accepts to be supervised by senior colleagues; counsels patients on procedures; is proficient in all standard surgical procedures; collects and records data; is proficient in the use of available equipment and instruments; displays the standard procedures and protocols to be used in theatre appropriately for quick reference
Maintains proficiency in all surgical procedures	***Knowledge:*** Is proficient in all surgical procedures; knows the role of clinical audits ***Skills:*** Develops and maintains proficiency in all surgical skills; submits to updating personal skills through self-improvement in new procedures (CPD); performs all surgical procedures within scope (Refer Annex VI(a)) ***Behaviours:*** Can perform self-audits; can participate in structured wet lab activities and training; can use simulators and the wet (skills) lab.

DOMAIN 3. PREVENTIVE AND PROMOTIVE CARE: *Provide health promotion to preserve and optimize eye health*	
Counsels patients and families on aspects of their eye health	***Knowledge:*** Is proficient in epidemiology and the natural history of common eye diseases in the Region, including outcomes after seeking early treatment; identifies cultural beliefs and practices around eye health issues ***Skills:*** Breaks communication barriers; effectively communicates to communities and patients to encourage positive health-seeking behaviours and adherence to treatment ***Behaviours:*** Displays a non-judgmental, friendly, attitude, recognizing socio-cultural and patient differences
Educates patients and the public on good eye health practices	***Knowledge:*** Proficient in the basic principles of education and promotive health practices, e.g., hygiene, immunization, and nutrition ***Skills:*** Effectively communicates the benefits of good health practices, avoiding harmful traditional practices ***Behaviour:*** Displays good health habits
Provides advice and educates employers and employees on eye health and protective measures in the workplace and other social environments	***Knowledge:*** Has a mastery of occupational and environmental health; of eye protection, vision and ergonomics ***Skills:*** Improves the workplace environment and cares for protective eye equipment and eye wear ***Behaviours:*** Is supportive, respectful and proactive in preventing eye injuries in the workplace and in different social environments

Domain 4. PALLIATIVE AND REHABILITATIVE CARE: *Facilitate access to comprehensive care and social inclusion*	
Facilitates access to vision rehabilitation; rehabilitation of the blind; social and educational resources; and undertakes periodic re-evaluations	***Knowledge:*** Mastery of the principles of low vision; and of rehabilitation of visually impaired and blind persons ***Skills:*** Identifies patients who need low vision and rehabilitation services ***Behaviours:*** Supports solutions to improve the quality of life in low vision patients in different circumstances; refers patients to appropriate services and re-evaluates them periodically
Facilitates access to palliative care through a multidisciplinary team approach	***Knowledge:*** Is proficient in medicine, ophthalmology and oncology ***Skills:*** Works in a team and communicates effectively ***Behaviours:*** Shows empathy

CHAPTER **5**

Competencies for Optometrists

Table 5: ***Core competencies for an optometrist***

CORE COMPETENCIES FOR AN OPTOMETRIST		
Domain	**Competency statement**	**Competency**
Non-surgical care	Obtains the relevant patient history	Makes general observations of patients
		Obtains case histories
	Conducts comprehensive patient evaluations	Formulates examination plans
		Implements examination plans
		Assesses the ocular adnexa and the eye
		Assesses central and peripheral sensory visual function and the integrity of visual pathways
		Assesses refractive status
		Assesses oculomotor and binocular function
		Assesses visual information processing
		Assesses the significance of signs and symptoms found incidental to ocular examinations in relation to the patient's eye or general health
	Synthesizes information to determine diagnoses	Interprets and analyses findings to establish diagnoses
	Formulates appropriate management plans	Designs management plans for individual patients and implements the plans agreed to with the patients
		Prescribes spectacles
		Prescribes contact lenses
		Manages patients requiring vision therapy
		Treats ocular disorders and injuries using appropriate pharmacological treatment regimens within the permissible scope or refers patients appropriately
		Dispenses optical prescriptions accurately
		Ensures emergency optometric care is available
		Manages health information accurately and safely
Surgical care	Supports ophthalmologists in pre- and post-operative patient management	Identifies patients that require surgical management and refers them appropriately
		Conducts pre- and post-surgical examinations and observations in collaboration with a surgeon
		Conducts in-theatre objective refraction
Preventive and promotive care	Provides health promotion to preserve and optimize eye health	Utilizes available resources to enhance patient outcomes
		Provides advice on vision and eye health and takes protective measures in the workplace and in the social environment
Palliative and rehabilitative care	Facilitates access to low vision services, rehabilitation, and social inclusion	Provides for the care of patients with special needs
		Prescribes low vision devices and non-optical interventions

Table 6: ***Components of competencies for an optometrist***

Domain 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Competency	**Knowledge, skills and behaviours**
Makes general observations of patients	***Knowledge:*** Proficiency in the fundamentals of general and gross anatomy of the human body; in normal aspects of gait and posture. ***Skills:*** Observes, recognizes and explores relevant physical and behavioural characteristics of patients ***Behaviours:*** Is observant, perceptive, and investigative
Obtains case histories	***Knowledge:*** In-depth knowledge of the biomedical, visual, and clinical sciences; of clinical optometry, relevant clinical ophthalmology, common problems encountered in health care with emphasis on ocular manifestations ***Skills:*** Breaks communication barriers; elicits relevant history from patients ***Behaviours:*** Has inter-personal rapports and understanding; is an active listener and shows empathy
Formulates examination plans	***Knowledge:*** In-depth knowledge of the biomedical, visual & clinical sciences; of clinical optometry and relevant clinical ophthalmology; of structured clinical optometric evaluations and procedures ***Skills:*** Organizes and interprets information; conducts selective or oriented assessments and diagnostic tests ***Behaviours:*** Is an analytical and critical thinker; is flexible
Implements examination plans	***Knowledge:*** Has a general understanding of eye health systems; clinical optometry; relevant clinical ophthalmology; structured clinical optometric evaluations and procedures ***Skills:*** Conducts clinical ophthalmic or optometric tests and procedures; is conversant with standard precautions ***Behaviours:*** Is proficient, confident and secure in using available tools to perform tests
Assesses the ocular adnexa and the eye	***Knowledge:*** Has in-depth knowledge of gross human and ocular anatomy and physiology; of the function of the ocular adnexa, and of relevant ocular pharmacology ***Skills:*** Can evaluate the external anatomical structure of the eye and how it functions ***Behaviours:*** Is observant, demonstrates a clear understanding of normal from abnormal structures; is culturally sensitive
Assesses central and peripheral sensory visual function and the integrity of visual pathways	***Knowledge:*** Has in-depth knowledge of the biomedical and (neuro) visual sciences; has a general understanding of eye health systems, clinical optometry, relevant clinical ophthalmology, and clinical optometric procedures ***Skills:*** Can test for comprehensive visual functions ***Behaviours:*** Can conduct various optometric assessments with confidence; is analytical in interpretation of test outcomes

Domain 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Competency	**Knowledge, skills and behaviours**
Assesses refractive status	***Knowledge:*** Has in-depth knowledge of the biomedical and (neuro) visual sciences; has a general understanding of eye health systems; of clinical optometry; relevant clinical ophthalmology; clinical optometric procedures; ocular and diagnostic pharmacology ***Skills:*** Can determine the refractive status of the eye (subjectively and objectively); can use relevant pharmacological agents to establish refractive status ***Behaviours:*** Has proficiency in using tools for and conducting refractive testing, e.g., the use of retinoscopes, ophthalmoscopes, refraction bars, autorefractors
Assesses oculomotor and binocular function	***Knowledge:*** Has in-depth knowledge of the biomedical, visual, and clinical sciences; has a general understanding of eye health systems; clinical optometry, relevant clinical ophthalmology, clinical optometric procedures ***Skills:*** Can identify abnormal oculomotor functions and conduct orthoptic assessments; can test binocular vision ***Behaviours:*** Is analytical in interpretations of test outcomes; is proficient, confident, adaptable, and culturally sensitive
Assesses visual information processing	***Knowledge:*** Has in-depth knowledge of the biomedical and (neuro) visual sciences; has a general overview of eye health systems, clinical optometry, relevant clinical ophthalmology, clinical optometric procedures, visual information processing, development milestones, and learning problems; is conversant with image fusion, binocular single vision, and stereopsis ***Skills:*** Can use visual processing assessment tools ***Behaviours:*** Is proficient in using different tools; is observant and analytical
Assesses the significance of signs and symptoms found incidental to ocular examinations in relation to the patients' eye or general health *	***Knowledge:*** Has in-depth knowledge of the biomedical, visual and clinical sciences; has a general overview of eye health systems, clinical optometry, relevant clinical ophthalmology, clinical optometric procedures, and common systemic diseases ***Skills:*** Can recognize and act on incidental clinical findings ***Behaviours:*** Is an analytical and critical thinker; is proactive with referrals
Interprets and analyses findings to establish diagnoses	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has a general overview of eye health systems, clinical optometry, relevant clinical ophthalmology, ocular pharmacology, and clinical optometric procedures ***Skills:*** Can analyse, synthesize and correlate clinical findings ***Behaviours:*** Can analyse, reflect on and use all clinical and diagnostic findings

Domain 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Competency	**Knowledge, skills and behaviours**
Designs management plans for individual patients and implements the plans agreed to with the patients	***Knowledge:*** Knows available clinical interventions and management options; is conversant with the course and prognosis of conditions; follows best practice ***Skills:*** Can formulate appropriate patient-centred management plans ***Behaviours:*** Reasons deductively; is problem-oriented; has clinical judgment; communicates well with patients and their families
Prescribes spectacles	***Knowledge:*** Has in-depth knowledge of refraction and the visual sciences; is conversant with refractive correction modalities, binocular status, prescribing indications and philosophies, appliance and lens modalities and adjustments ***Skills:*** Can determine optical prescriptions based on individual patient needs ***Behaviours:*** Is understanding, empathic, supportive, flexible, culturally sensitive, and respectful; assists patients in the use of spectacles
Prescribes contact lenses *	***Knowledge:*** Has in-depth knowledge of refraction, binocular status, prescribing indications and philosophies, biomedical, visual and clinical optometry sciences, contact lens modalities, contact lens indications, contra-indications, maintenance, and complications ***Skills:*** Can accurately determine contact lens fit and modality based on individual patient status and visual requirements ***Behaviours:*** Is understanding, empathic, and supportive; can confidently assist patients who use contact lenses
Manages patients requiring vision therapy *	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has an overview of eye health systems, clinical optometry, relevant clinical ophthalmology, clinical optometric procedures, and oculomotor and binocular vision; is conversant with the different approaches to vision therapy ***Skills:*** Can manage binocular vision anomalies using vision therapy ***Behaviours:*** Can critically appraise and analyse situations; can reason deductively and make clinical judgments; can support patients optimize residual vision; can offer vision therapy
Treats ocular disorders, diseases and injuries using appropriate pharmacological treatment within the permissible scope or refers patients appropriately regimens.	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has an overview of eye health, clinical optometry, relevant clinical ophthalmology, pharmacology, therapeutic pharmacology, basic anatomy and the physiology of the eye ***Skills:*** Can select appropriate pharmacological agents for the treatment of patient disorders within the scope of practice (Annex VI(b)) ***Behaviours:*** Can critically appraise and analyse situations; reasons deductively; exercises clinical judgment; manages creatively and is always ready to refer; can self-evaluate; is confident and recognizes personal and legal limitations

Domain 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis and treatment*	
Competency	**Knowledge, skills and behaviours**
Dispenses optical prescriptions accurately	***Knowledge:*** Has in-depth knowledge of the principles of vision and refractive status, ophthalmic optics, characteristics of spectacles, and the anatomy of the head and neck; is conversant with basic visual ergonomics ***Skills:*** Can interpret spectacle prescriptions according to patient needs; can fit spectacles ***Behaviours:*** Is understanding, empathic, supportive, and confident when communicating
Ensures emergency optometric care is available	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has a general overview of eye health systems, clinical optometry, relevant clinical ophthalmology, and clinical optometric procedures; can manage emergencies in optometry ***Skills:*** Can plan or organize for emergency optometric services; can identify optometric and other medical emergencies ***Behaviours:*** Shows empathy with patients in distress; allows needed use of time; employs a flexible management approach; reports optometric emergencies; refers other medical emergencies; is understanding, supportive, flexible, and culturally sensitive
Manages health information accurately and safely	***Knowledge:*** Has deep knowledge of the ethical and legislative requirements for obtaining, recording, storing, retaining and destroying patient records and other office documentation; is knowledgeable about information systems ***Skills:*** Can record patient information and data in a legible, secure, accessible, permanent, and unambiguous manner, including in electronic format ***Behaviours:*** Can maintain confidentiality of patient records

DOMAIN 2. SURGICAL CARE: *Support of ophthalmologists in pre- and post-operative management of patients*	
Competency	**Knowledge, skills and behaviours**
Identifies patients that require surgical management and refers them appropriately	***Knowledge:*** Has in-depth knowledge of the biomedical, visual and clinical sciences; of general eye health and referral systems; of clinical optometry, relevant clinical ophthalmology, clinical optometric procedures, and of available surgical options ***Skills:*** Can identify and refer patients who need surgery ***Behaviours:*** Can make critical appraisals and analyses; exudes confidence and is adaptable; can take decisions; recognizes personal and legal limitations; is a team player
Conducts pre- and post-surgical examinations and observations in collaboration with a surgeon	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has a general overview of eye health systems, clinical optometry, relevant clinical ophthalmology, clinical optometric procedures, available surgical options; can determine pre-operative indications and requirements, and manage post-operative outcomes ***Skills:*** Can evaluate selected patients before and after surgical procedures; can take standard precautions ***Behaviours:*** Is proficient, confident, flexible and ethical; can maintain inter-professional rapport

DOMAIN 2. SURGICAL CARE: *Support of ophthalmologists in pre- and post-operative management of patients*	
Competency	**Knowledge, skills and behaviours**
Conducts in-theatre objective refractions	***Knowledge:*** Has in-depth knowledge of refraction and the visual sciences; has knowledge of refractive assessments and correction modalities; and of prescribing indications and philosophies ***Skills:*** Performs objective refraction to determine patient refractive status and manage accordingly ***Behaviours:*** Shows proficiency and confidence in both objective and subjective refraction
DOMAIN 3. PREVENTATIVE AND PROMOTIVE CARE: ***Provide health promotion to preserve and optimize eye health***	
Competency	**Knowledge, skills and behaviours**
Utilizes available resources to enhance patient outcomes	***Knowledge:*** Knows the functions of and resources available from optometric and other organizations; the roles of organizations and government bodies such as health ministries, registration authorities, and professional associations ***Skills:*** Understands and can use available resources; can appraise information; understands local health and eye health systems ***Behaviours:*** Is understanding, supportive and resourceful; can collaborate with other team members and cross-sectoral services
Provides advice on vision and eye health and takes protective measures in the workplace and the social environment	***Knowledge:*** Has in-depth knowledge of refraction, the visual sciences, refractive correction modalities, binocular status, occupational and environmental optometry, eye protection and visual ergonomics, vision standards, disability-friendly environments ***Skills:*** Improves home and institutional environments to maximize vision and comfort ***Behaviours:*** Is understanding, empathic, supportive, confident, flexible, culturally sensitive, and respectful; is proactive in preventing eye injuries at the workplace or in different social environments

DOMAIN 4. PALLIATIVE AND REHABILITATIVE CARE: *Contribute to and facilitate access to low vision services, rehabilitation and social inclusion*	
Competency	**Knowledge, skills and behaviours**
Provides for the care of patients with special needs	***Knowledge:*** Has in-depth knowledge of the biomedical and visual sciences; has a general overview of eye health systems, clinical optometry, basic ophthalmology, and clinical optometric procedures; is conversant with inclusive eye care. ***Skills:*** Can identify patients with special needs ***Behaviours:*** Is understanding, empathic, supportive, confident, flexible, culturally sensitive, and respectful

DOMAIN 4. PALLIATIVE AND REHABILITATIVE CARE: *Contribute to and facilitate access to low vision services, rehabilitation and social inclusion*	
Competency	**Knowledge, skills and behaviours**
Prescribes low vision devices and non-optical interventions	***Knowledge:*** Has in-depth knowledge of refraction, the visual sciences, the classification of visual impairment and low vision, low vision management options, and indications for rehabilitation services ***Skills:*** Conducts patient-centered low vision assessments; communicates low vision needs of patients; can collaborate with other players ***Behaviours:*** Is understanding, empathic, supportive, confident, flexible, culturally sensitive, respectful, and patient; assists patients with low vision devices

(Refer to Annex VI(b)) *

CHAPTER **6**

Core Competencies for Allied Ophthalmic Personnel

Allied ophthalmic personnel play varying roles in different countries. Some of the competencies expected of these staff can be identified as clinical or nursing competencies, or both. Countries can define which cadres perform these roles and select competencies appropriate to their human resource requirements and structures.

Table 7: Core competencies for allied ophthalmic personnel

CORE COMPETENCIES FOR ALLIED OPHTHALMIC PERSONNEL			
Domain	**Competency statement**		**Competency**
Non-surgical care	Conducts patient evaluations	1.	Creates a welcoming and patient-friendly environment
		2.	Obtains relevant patient history
		3.	Conducts basic patient clinical examinations and investigations
	Synthesizes the information to determine a diagnosis	4.	Makes diagnoses based on information gathered from the patient and knowledge in the ophthalmic clinical sciences
	Formulates and implements management plans	5.	Plans treatment together with the patients or their guardians and other health professionals using the available information
		6.	Develops appropriate management and care plans for ophthalmic medical patients
		7.	Administers medications relevant to eye care
		8.	Recognizes and refers patients as required
		9.	Manages health information accurately and safely
Surgical care	Works with ophthalmologists in the provision of safe surgery	10.	Identifies and assesses patients for surgery
		11.	Obtains consent for treatments and surgery
		12.	Prepares patients for surgical procedures and treatment
		13.	Ensures infection prevention; ensures that aseptic techniques are observed
		14.	Assists in providing safe surgery by facilitating implementation of standards and safety measures
		15.	Administers local anaesthesia for cataract, glaucoma and other intraocular procedures
		16.	Performs minor surgery (**Annex VI(a))
		17.	Performs cataract surgery according to skill level (**Annex VI(a))
		18.	Manages ophthalmic wounds
		19.	Develops management plans for the care of ophthalmic surgical patients
		20.	Assesses and manages pain
		21.	Manages and refers post-operative complications as appropriate
Preventive and promotive care	Provides health promotion to preserve and optimize eye health	22.	Counsels patients and their families on aspects of their eye health
		23.	Educates patients on good health practices
		24.	Plans and participates in community health promotion and education activities

CORE COMPETENCIES FOR ALLIED OPHTHALMIC PERSONNEL			
Domain	**Competency statement**		**Competency**
Palliative and rehabilitative care	Facilitates access to comprehensive care and social inclusion	25.	Conducts basic low vision assessments and assist in the use of assistive products
		26.	Facilitates and follows up access to rehabilitation and social inclusion
		27.	Refers patients appropriately

Table 8: Components of the competencies for allied ophthalmic personnel

DOMAIN 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis, treatment and care*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Creates a welcoming and patient friendly environment	***Knowledge***: Basics of the cultural context; management of common eye diseases; technical procedures carried out at different levels of care and expected outcomes ***Skills***: Effective use of relevant information to identify patient clinical problems ***Behaviours*:** Effective communication
Obtains relevant patient history	***Knowledge:*** Basic information in epidemiology and clinical presentation of common eye diseases ***Skills:*** Effective use of relevant information to identify the patient clinical problems ***Behaviours*:** Interpersonal and communication skills**;** readiness to discuss with patients and guardians; interaction with eye care team; ability to read communications or talk to other professionals to improve skills
Conducts basic patient clinical examinations and investigations	***Knowledge*:** Knowledge of gross anatomical and physiological functioning of the ocular system ***Skills:*** Use of appropriate tools and equipment (including laboratory tools and equipment) to examine the anatomical and physiological functioning of the ocular and visual systems ***Behaviours:*** Appraisal and utilization of appropriate tools and laboratory services
Makes diagnoses based on information gathered from the patient and knowledge in the ophthalmic clinical sciences	***Knowledge*:** Basic ophthalmic clinical sciences, including ocular anatomy, embryology, physiology, microbiology, pharmacology, biochemistry, and refraction ***Skills*:** Ability to point to a provisional diagnosis using data gathered from evaluation and knowledge of ophthalmic clinical sciences ***Behaviours*:** Use of clinical, laboratory and other data to make diagnoses
Plans treatments together with the patients or their guardians and other health professionals using available information	***Knowledge*:** Available options for interventions (medical, surgical, optical, etc.) where they can be sourced; outcomes of the identified problems or diagnoses ***Skills*:** Identify and administer the best treatment option for the patient ***Behaviours*:** Analyze previous treatment options and outcomes where available

DOMAIN 1. NON-SURGICAL CARE: *Clinical evaluation, diagnosis, treatment and care*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Develops appropriate management and care plans for ophthalmic medical patients	***Knowledge***: Basic anatomy, physiology and pathology of eye diseases; clinical presentations and treatment (medical or surgical) of common eye diseases ***Skills*:** Develop and execute nursing treatment and care plans for patients who have undergone medical and surgical eye care ***Behaviours*:** Share care plans with the eye care team; ensure seamless patient flow
Administers medications relevant to eye care	***Knowledge***: Basic ocular system: anatomy, physiology, microbiology and pharmacology; basic essential medicine principles; practical considerations in the administration of oral, parenteral, eye drops and ointments, including undesirable effects and possible allergic reactions; proper storage of medications ***Skills*:** Correct drug administration techniques ***Behaviours*:** Demonstrate safe and professional management of drugs and other medical products; educate patients on their drug therapy, including patient self-administration of eye preparations and their storage
Recognizes and refers patients as required	***Knowledge*:** Scope of practice of AOP; their limitations; role of other health personnel; knowledge of the referral pathways in the country ***Skills*:** Identify when treatment options do not give optimal outcomes due to limited scope (personnel skills or facilities); triage ***Behaviours*:** Willingness to collaborate with other higher-level health professionals (members of the team) or clinical experts; team players in ophthalmology, including social services and education
Manages health information accurately and safely	***Knowledge*:** Ethical and legislative requirements in obtaining, recording, storing, retaining and destroying patient records and other office documentation ***Skills*:** Record patient information and data in a legible, secure, accessible, permanent and unambiguous manner, including in electronic records ***Behaviours:*** Maintain confidentiality of patient records

DOMAIN 2. SURGICAL CARE: *Work with ophthalmologists in the provision of safe surgery*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Identifies and assesses patients for surgery	***Knowledge*:** The different surgical options for common eye conditions in the Region; pre-operative requirements and criteria for the different surgical procedures ***Skills*:** Perform standard pre-op assessments for general and common surgical procedures; use diagnostic equipment and tools for assessment; counsel patients on the details of surgical procedures ***Behaviours*:** Demonstrate confidence in clinical assessments and communication; ensure that all equipment needed for assessments are in good working order

DOMAIN 2. SURGICAL CARE: *Work with ophthalmologists in the provision of safe surgery*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Obtains informed consent for treatments or surgery	***Knowledge***: Knowledge of procedures, processes, and outcomes of all ophthalmic surgical and medical treatments; and of ethical principles ***Skills*:** Counsel patients for different ophthalmic procedures; explain to patients the processes and outcomes of treatments ***Behaviour:*** Demonstrate good communication skills; assist patients to freely make informed decisions and give informed consent
Prepares patients for surgical procedures or treatment	***Knowledge***: Basic anatomy, physiology and pathology of eye diseases; clinical manifestations and treatment (medical or surgical) of common eye diseases; principles and practices of ophthalmic surgery; practical aspects of pre- operative preparation in ophthalmic surgery, including basic visual assessment ***Skills*:** Prepare the patients for different surgical procedures or treatments ***Behaviours*:** Assist and participate in all surgical and medical ophthalmic procedures
Ensures infection prevention and ensures that aseptic techniques are observed	***Knowledge***: Basic ocular anatomy, physiology, microbiology, pharmacology; principles and practice of aseptic techniques, including hand hygiene; standard infection prevention; safety strategies, including the different processes of disposal, decontamination, disinfection and sterilization ***Skills;*** Provide sterile and safe working environments for the eye care team; development of surgical safety checklists ***Behaviours*:** Practice of aseptic techniques; safe waste disposal; conduct of continuous safety checks before, during, and after surgery; report unexpected outcomes
Assists in providing safe surgery by facilitating implementation of standards and safety measures	***Knowledge*:** Basic anatomy, embryology and physiology of the eye; different surgical options for general or common eye disorders; theoretical and practical (descriptions) steps in the different surgical procedures; instruments and machines used for different procedures ***Skills*:** Assess capacity and readiness for specific surgical procedures ***Behaviours*:** Display appropriately for quick reference standard procedures and protocols to be used in the theatre; report unexpected outcomes
Administers local anesthesia for cataract, glaucoma and other intraocular surgical procedures	***Knowledge*:** Detailed anatomy of the eye orbit and its contents; pharmacology of available local anesthetics; critical risks and events ***Skills*:** Infiltrate local anesthetic solutions or instill topical anesthesia appropriately and safely; monitor patients during and after administration of local anaesthesia ***Behaviours*:** Confident while administering local anesthesia

DOMAIN 2. SURGICAL CARE: *Work with ophthalmologists in the provision of safe surgery*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Performs minor surgery (Refer to Annex VI(a))	***Knowledge*:** Detailed anatomy, embryology, physiology and pathology of the ocular adnexa ***Skills*:** Perform minor extra-ocular surgical procedures **Behaviour:** Demonstrate proficiency in the extra-ocular procedures
Performs cataract surgery according to skill level (Refer to Annex VI(a))	***Knowledge*:** Detailed anatomy, embryology and physiology of the eyeball and orbit (including the lens); ageing; complications of cataract surgery, including posterior capsule opacification; the physics and functioning of lasers ***Skills*:** Perform cataract surgery and manage complications ***Behaviours*:** Use of wet-lab facilities to maintain and improve on skills; demonstration of proficiency in cataract surgery
Manages ophthalmic wounds	***Knowledge***: Basic ocular anatomy, physiology, microbiology, and pharmacology; infection prevention; practical aspects of wound asepsis and healing ***Skills*:** Ability to dress, pad and bandage the eye ***Behaviours*:** Demonstrate sterile and adequate techniques during management of eye disorders
Develops appropriate management plans for care of ophthalmic surgical patients	***Knowledge***: Basic anatomy, physiology, and pathology of eye diseases; clinical manifestations and treatment (medical and surgical) of common eye diseases ***Skills:*** Develop and execute nursing treatments and care plans for patients who have undergone medical or surgical eye care ***Behaviours*:** Share care plans with the eye care team; ensure seamless patient flow
Assesses and manages pain	***Knowledge***: Causes of pain after different surgical procedures; principles of pain management in ophthalmology after surgery ***Skills*:** Administer and interpret pain scoring scales; manage pain ***Behaviours*:** Recognize, empathize, and manage patients in pain
Manages and refers post-operative complications as appropriate	***Knowledge*:** Possible complications of different surgical procedures; principles of minor complications in ophthalmology after surgery; knowledge of referral systems ***Skills*:** Manage minor complications as appropriate; refer patients ***Behaviour***s: Recognize and empathize with patients; willingness to collaborate with other higher-level health professionals

DOMAIN 3. PREVENTIVE AND PROMOTIVE CARE: *Provide health promotion to preserve and optimize eye health*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Counsels patients and their families on aspects of their eye health	***Knowledge*:** The natural history of common eye diseases, including outcomes after seeking early treatment; cultural beliefs and practices surrounding eye health issues ***Skills***: Effectively counsel patients and families to encourage, positive health- seeking behaviours and adherence to treatment; support patient self-management, especially for people at risk or requiring long or lifetime care ***Behaviours:*** Display a non-judgmental, friendly, attitude; recognize socio-cultural and patient factors
Educates patients on good health practices	***Knowledge**:* Basic principles of health education and promotive health practices, e.g., hygiene, immunization, and nutrition ***Skills***: Effectively communicate the benefits of good health practices; avoid harmful practices ***Behaviours*:** Acknowledge and display good health practices
Plans and participates in community health promotion and education activities	***Knowledge:*** Basic epidemiology of common eye diseases; principles of planning; diagnosis and dialogue within the community; community engagement and mobilization; theories, principles and concepts of communication ***Skills*:** Effectively communicate eye health issues to the communities ***Behaviours*:** Display interpersonal skills; participate in community eye health promotion and education activities in a spirit of collaboration with other professional communicators
DOMAIN 4. PALLIATIVE AND REHABILITATIVE CARE: ***Facilitate access to comprehensive care and social inclusion***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Conducts basic low vision assessments and assist in the use of assistive products	***Knowledge*:** Categories of visual impairment; definition of low vision; basic knowledge of refraction; optical and non-optical support for low vision; patients with different eye disorders ***Skills*:** Conduct basic (but not limited to) low vision assessments; identify and manage low vision and refer patients appropriately ***Behaviours*:** Support in providing basic solutions to improve quality of life in low vision patients under different circumstances; assist patients to use basic low vision assistive products appropriately
Facilitates and follows up access to rehabilitation and social inclusion	***Knowledge*:** Required rehabilitation services, where available; and integrated and special needs schools ***Skills*:** Identify needs and refer patients for rehabilitation or special placement ***Behaviours:*** Work with other non-technical members of the eye health team; communicate rehabilitation needs appropriately; advise, support and empower families to utilize services and engage in inclusive education

CHAPTER **7**

Common Non-Clinical Core Competencies for the Eye Health Workforce

Table 9: Common non-clinical core competencies for the eye health team

NON-CLINICAL CORE COMPETENCIES FOR THE EYE HEALTH WORKFORCE		
Domain	**Competency statement**	**Competency**
Communicator	Obtains, discusses, and shares information with patients, their families, and everyone involved in caring for the patient	Communicates effectively with the health care team, the patients, their families, the community, and other relevant stakeholders
		Uses relevant communication principles to improve patient eye care
Leader and manager	Provides leadership in the delivery of quality eye care	Provides guidance to promote teamwork and collaboration, good work-life balance, and a healthy workplace environment
		Promotes quality person-centred integrated eye care services
	Develops multidisciplinary relationships and partnerships to promote quality, people-centred, and integrated eye care services	Facilitates opportunities for community eye health services in all sectors
		Participates in inter-professional health care activities at all levels
	Manages available resources for the effective delivery of quality eye care	Manages available resources in a way that facilitates the work of the eye health team in the delivery of services
Health advocate	Promotes change at the policy and community level	Advocates for relevant policy changes
		Uses available policies for district planning and implementation of eye care plans
Community practitioner	Participates in community development programmes	Conducts and appropriately presents community needs assessments
Scholar, researcher, teacher, mentor, and lifelong learner	Maintains and enhances knowledge and skills through lifelong learning; adopt best practices and standards through the evidence-based approach	Performs comprehensive clinical interventions, audits, and reviews
		Engages in research
		Promotes, plans and facilitates lifelong learning, including continuing professional development
Professional	Acts in accordance with the legal framework and professional standards of public good ethical behaviour and practice, commitment and accountability	Practices within the existing national legal framework governing general and eye care practice
		Practices in accordance with professional ethics and code of conduct
		Adheres to human rights tenets and maintains human dignity
		Maintains a good work-life balance

Table 10: Components of the common non-clinical competencies for the eye health team

DOMAIN 5. COMMUNICATOR: ***Obtain, discuss and share information with patients, their families and everyone involved in caring for the patient***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Communicates effectively with the health care team, patient, family, community and other relevant stakeholders	***Knowledge*:** Theories, principles, concepts, and methods of effective communication and conflict resolution ***Skills*:** Communicates clearly using language appropriate to the person(s) with whom he or she is communicating; uses effective written, verbal and non-verbal communication; has active listening skills ***Behaviours:*** Displays mediation and interpersonal skills; provides feedback; is friendly, empathetic and respectful; collaborates with other professions
Uses relevant communication principles to improve patients eye care	***Knowledge****:* Theory and principles of social and behavioural change communication (SBCC) (Ref. Annex SBCC) ***Skills****:* Applies the components of SBCC; is conversant with communication techniques; follows appropriate channels ***Behaviours***: Communicates and collaborates with other professionals

DOMAIN 6. LEADER AND MANAGER: ***Provide leadership, develop multidisciplinary relationships and partnerships, manage available resources to deliver quality people-centred and integrated eye care services***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Provides guidance to promote teamwork and collaboration, good work-life balance, and a healthy workplace environment	***Knowledge***: Principles, concepts, and practices in leadership and organizational management; concept of work-life balance, and of healthy workplace environments; time management strategies ***Skills***: Has communication and interpersonal skills; knows how to demonstrate support for eye care team; has time management skills ***Behaviours***: Guides, supports, delegates, motivates, and inspires the eye health team to work together effectively and within a healthy work environment; maintains adequate work-life balance
Promotes quality person-centred integrated eye care services	***Knowledge***: Health systems concepts and approaches; integrated patient- centred health care concepts; continuous quality improvement strategies ***Skills***: Prioritizes, and plans to continually improve quality care and maintain the continuum of care ***Behaviours*:** Sets priorities; participates with and supports other team members; is a facilitator
Facilitates opportunities for community eye health services in all sectors	***Knowledge*:** Role of government ministries and other partners in health at all levels; national and local planning cycles and timing; principles of good partnerships and relevant stakeholder engagements ***Skills*:** Identifies opportunities for partnerships; can mobilize resources; can write proposals ***Behaviours*:** Participates in joint fora; initiates partnerships for eye health

DOMAIN 6. LEADER AND MANAGER: ***Provide leadership, develop multidisciplinary relationships and partnerships, manage available resources to deliver quality people-centred and integrated eye care services***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Participates in inter-professional health care at all levels	***Knowledge*:** Understands the role of other health care providers in eye health ***Skills***: Communicates effectively for inter-disciplinary eye care case management ***Behaviours*:** Promotes cross-sectoral cooperation; participates in joint patient care
Manages available resources in a way that facilitates the work of the eye health team in the delivery of services	***Knowledge*:** Management principles for financial and human resources, including management of infrastructure (buildings and equipment) and logistics; interpersonal skills ***Skills:*** Can plan and monitor budgets; delegates appropriately; practises preventive maintenance of equipment ***Behaviours*:** Works effectively with the management team

DOMAIN 7. HEALTH ADVOCATE: ***Promote change at the policy and community level***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Advocates for relevant policy changes	***Knowledge*:** Knowledge of sources of information relevant to UHC; national, international, and global health and eye health policies; monitoring and evaluation of eye health programmes; epidemiological and communication needs assessment data; their importance for future planning; principles governing the integration of eye health in the health system ***Skills***: Strategic communication; other advocacy skills with health and other political administrative leaders; ability to do advocacy planning; interpersonal skills ***Behaviours*:** Is sensitive, assertive, objective and a good listener when advocating for eye health
Uses available policies for district planning and implementation of eye care plans	***Knowledge***: Sources of relevant information; national, international, and global health and eye health policies; monitoring and evaluation of eye health programmes; epidemiological and communication needs assessment data; principles governing the integration of eye health in the health system ***Skills***: Gathers, analyses and uses evidence to develop eye care plans at national, district and community levels ***Behaviours:*** Contributes and collaborates

DOMAIN 8. COMMUNTY PRATICTIONER: *Participate in community development*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Conducts and appropriately presents community needs assessments	***Knowledge***: Basic tenets of participatory community practice; quantitative and qualitative methods of data collection (e.g., for action research) ***Skills***: Conducts community needs assessments; disseminates findings to stakeholders; uses findings to inform planning of community programmes, or for formulating advocacy strategies ***Behaviours***: Supports community members to identify needs and solutions in a respectful and culturally sensitive manner

DOMAIN 9. SCHOLAR, RESEARCHER, TEACHER, MENTOR AND LIFELONG LEARNER: *Maintain and enhance knowledge and skills through lifelong learning and adopt best practice standards through the evidence-based approach*	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Performs comprehensive interventions, audits, and reviews	***Knowledge***: Clinical audit processes and cycles; information gathering methods; change management; concepts of reflection and self-regulation; the 'no blame' culture ***Skills***: Ability to conduct audits and to use gathered information for continued improvement ***Behaviours:*** Performs audits, examines outcomes, and facilitates constructive quality improvement processes; embraces change processes
Engages in research	***Knowledge***: Basic principles of research, research methods, biostatistics, epidemiology, participatory research, general public health; concepts and approaches; evidence-based practice; principles of ethical research ***Skills***: Ability to establish research concepts and protocols; adherence to ethical principles; ability to implement research protocols; interpretation and utilization of research results; results dissemination skills ***Behaviours:*** Can initiate or participate in research; complies with ethics in research; respects contributors; disseminates and uses research findings
Promotes, plans or facilitates lifelong learning, including continuing professional development	***Knowledge***: Adult learning theories; principles and processes of continuing professional development (CPD), including mentoring; current developments and advances in eye health; different learning modes, including e-learning ***Skills***: Aptitude in teaching, mentoring and learning; ability to use different teaching and learning platforms; ability to maintain personal professional development ***Behaviours:*** Facilitates an environment conducive to adult learning; demonstrates patience and flexibility with diverse groups; is a mentor and provides supportive supervision and feedback

DOMAIN 10. PROFESSIONAL: ***Acts in accordance with professional standards; stays within the legal framework; follows good ethical behaviour and practice; is sworn to commitment and accountability***	
Competency statement	**Knowledge, attitudes and skills required to demonstrate core competencies**
Practises within the existing national legal framework for general and eye care practice	***Knowledge***: Laws and regulations in general and eye care practice, including organ donation and data protection and sharing ***Skills*:** Ability to interpret and apply laws and regulations; ability to adhere to existing rules and regulations ***Behaviours*:** Conforms to regulations and legal processes; acts with integrity and transparency; maintains high professional standards
Practises in accordance with professional ethics and code of conduct	***Knowledge***: Understanding of relevant professional ethics and code of conduct ***Skills***: Ability to act according to an ethical and professional code of conduct ***Behaviours***: Observes professional ethics and complies with the code of conduct; acts with integrity; recognizes the limits of his or her own competence
Adheres to human rights tenets and maintains human dignity	***Knowledge:*** Basic human rights tenets: gender equity, child protection, social inclusiveness, diversity, cultural sensitivity ***Skills*:** Ability to apply human rights tenets in practice ***Behaviours:*** Observes human rights in professional behaviour, including tolerance, respect, social inclusion, and cultural sensitivity; preserves patient dignity
Maintains a work-life balance	***Knowledge***: Concepts of socialization, including work-life balance and healthy workplace environment; understands time management strategies ***Skills*:** Ability to plan, prioritize and apply work-life balance and self-care skills ***Behaviours***: Displays a healthy and balanced life

CHAPTER **8**
Implementation

The eye health competency framework provides a standard base from which WHO and its partners can engage a regional response to improve eye health services in countries over time. The implementation of eye health competencies embraces the principles of (a) partnership: working collaboratively with relevant partners to enhance eye health in the Region; (b) relevance: promoting the adoption or adaptation of the competencies in a way that responds to the context of the African Region; (c) ownership: engaging relevant partners as they implement, monitor, and evaluate them; (d) people-centeredness: taking into account the needs of the population and responding in an equitable and fair manner, while showing respect for gender and human rights.

Collaboration

Joint efforts in scaling up education and training for the health workforce is one of the six strategic areas in the African roadmap in this area. At the same time, promoting and sharing education and training capacities in the Region (9) is critical. Proposed interventions include promoting and facilitating the harmonization of curricula, educational standards, accreditations, and professional regulations. The interventions will fully support the realization of the Global Strategy on Human Resources for Health: Workforce 2030 since it is a core mandate of WHO to facilitate and share best practices, provide technical support to the health workforce and broaden the scope of different cadres (24).

Supporting documents

Adaptation and assessment tools are some of the other supporting documents that are envisaged. These tools will be crucial for generating and documenting best practices and lessons learnt. Countries are encouraged to take the present eye health competencies into account when developing their respective guides for training, policy, advocacy, etc. For its part, the WHO Regional Office for Africa will strive to:

- Provide technical assistance for capacity building
- Mobilize partners to provide support to improve eye health training
- Generate and document lessons learnt, in collaboration with partners.

References

1. Frenk J, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. The Lancet. 2010; 376(9756): 1923–1958.
2. WHO. Fact Sheets. 2016; http://www.who.int/mediacentre/factsheets/fs395/en.
3. National Ageing Research Institute. What is person-centered health care? 2006.
4. WHO. Health promotion glossary 1998; WHO/HPR/HEP/98.1. Epub 1998.
5. Zalika Klemenc-Ketis, JK. Health-seeking behaviour in the general population with psychological symptoms. Psychiatria Danubina, 2014; 2014; Vol. 26 (No. 2,): pp. 181–6.
6. Moorhead S, Johnson, M, Maas, M. Nursing outcomes classification. (NOC) Labels Definitions. 3rd Edition. 2004.
7. Palmer, Jennifer J et al. Mapping human resources for eye health in 21 countries of sub-Saharan Africa: current progress towards Vision 2020. Human Resources for Health, 2014.
8. WHO. Working together: World Health Report 2006. 2006.
9. WHO. Roadmap for scaling up the human resources for health for improved health service in the African Region 2012–2025. Brazzaville, 2013.
10. WHO. Global strategy on human resources for health: Workforce 2030. Geneva, 2016.
11. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. The British Journal of Ophthalmology. May 2012; 96 (5): 614–8. PubMed PMID: 22133988.
12. Bourne, Rupert RA et al. Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis, 2017.
13. Naidoo, Kovin et al. Prevalence and causes of vision loss in sub-Saharan Africa: 1990–2010. Global issues/bjophthalmology 2013. 2014.
14. IAPB. IAPB Position Paper. 2014. Epub 2014.
15. Resnikoff S, et al. The number of ophthalmologists in practice and training worldwide: a growing gap despite more than 200,000 practitioners. The British Journal of Ophthalmology. June 2012; 96 (6):783–7. PubMed PMID: 22452836.
16. Palmer, Jennifer J et al. Trends and implications for achieving Vision 2020: human resources for eye health targets in 16 countries of sub-Saharan Africa by the year 2020. Human Resources for Health. 2014.
17. Palmer, Jennifer J et al. Mapping human resources for eye health in 21 countries of sub-Saharan Africa: current progress towards Vision 2020. Human Resources for Health 2014. (http://www.human-resources-health.com/content/12/1/44).
18. IAPB. The crisis in the eye health workforce in Africa. November 2014.
19. WHO. WHO strategy on people-centred and integrated health services. 2014.
20. WHO. Transforming and scaling up health professionals' education and training: World Health Organization Guidelines 2013. Geneva, 2013.
21. ILO. International Standard Classification of Occupations. 2008;1.
22. Medicine Io. Crossing the quality chasm: a new health system for the 21st century, 2001. Washington DC: National Academy Press, 2001.
23. ICO. International Council of Ophthalmology. 2017;http://www.icoph.org/about/what_are_ophthalmologists.html. Epub 2017.
24. WCO. A global competency-based model of scope of practice in optometry. April 2005.
25. Royal College of Physicians and Surgeons et al. CanMEDS 2015. Physician competency framework. 2015. Epub 2015.
26. RCOph. The common clinical competency framework for non-medical ophthalmic healthcare professionals in secondary care 2016. Epub, November 2016.
27. WHO. Task shifting: global recommendations and guidelines. Policy Guide, 2008.
28. WHO. Midwifery educator core competencies 2014. Epub 2014.

Annexes

Annex I: PROCESS FOR DEVELOPING CORE COMPETENCIES FOR THE EYE HEALTH WORKORCE

A standard process for developing core competencies for the eye health workforce was followed (Figure 5).

Overall aim

The overall aim was to produce core competencies for an eye health workforce (ophthalmologists, optometrists, and allied ophthalmic personnel) for the WHO African Region.

Method

A collaborative and consultative method was followed. The product from the extensive consultations between 2013 and 2016 that were held among IAPB human resources for eye health (HReH) groups, national eye care coordinators, subject experts from training institutions, professional and regulatory bodies, among others, was used to start the work by WHO. The rest of the WHO-led expert consultations comprised a series of meetings and workshops, Delphi surveys, separate subject-expert meetings of stakeholders between 2017 and 2018. Although the focus was Africa, experts from other continents were also engaged.

The initial Process

IAPB laid the appropriate groundwork for the process by initiating identification of the various workforce groups in the eye health team. IAPB specified not only the relationship between these workforce groups and ISCO-08 but also how tasks and roles should conform with international classifications. The format and flow of the CanMEDS framework (Royal College of Physicians of Canada) made it the most appropriate model to be selected for the process. This was followed by development of the first model draft of the tasks and activities of the corps of ophthalmic clinical officers (OCOs). The other cadres were to use a similar framework based on the nine priority areas of the Ouagadougou Declaration on primary health care and health systems. Tasks related to priority areas for eye health, (curative, preventive, promotive and rehabilitative, throughout the life course), were included.

WHO formal technical process

A formal collaborative arrangement between WHO Regional Office for Africa (AFRO) and IAPB-Africa was formalized through a concept note to WHO in 2014. It was recommended that only eye health professional groups be included in this process at this stage.

Draft and documentation

The consultant who was recruited produced the first draft using the content of the initial work developed by the IAPB -HReH task groups and the updates information coming from the scientific literature review. This draft was then developed using WHO framework of domains and eye health tasks. The tasks so developed were shared among the rapporteurs in each of the IAPB-HReH task groups for feedback.

Literature search

Sources of information from which to draw the competencies were identified and included. These comprised existing curricula from training institutions, documents from professional bodies in Africa and outside the continent, and national and global policy documents and publications, including the International Standard Classification of Occupations and relevant Regional Office documentation.

Consensus building and consultations

The WHO recruited consultant with the financial support of IAPB to draft the document by literature search, reviewing the concept note and competencies, developing tools and conducting Delphi surveys in the WHO African Region to build expert consensus (Annex V). A modified Delphi process was used to reach consensus on the essential core competencies required of the eye health workforce. Delphi participants were selected from the IAPB database of training institutions in Africa, virtual colleges, COECSA, RCOphth, ICO, NGOs in eye health, policy makers, national eye care coordinators, and professional and regulatory bodies. The process followed a snowball approach.

Consultations with experts

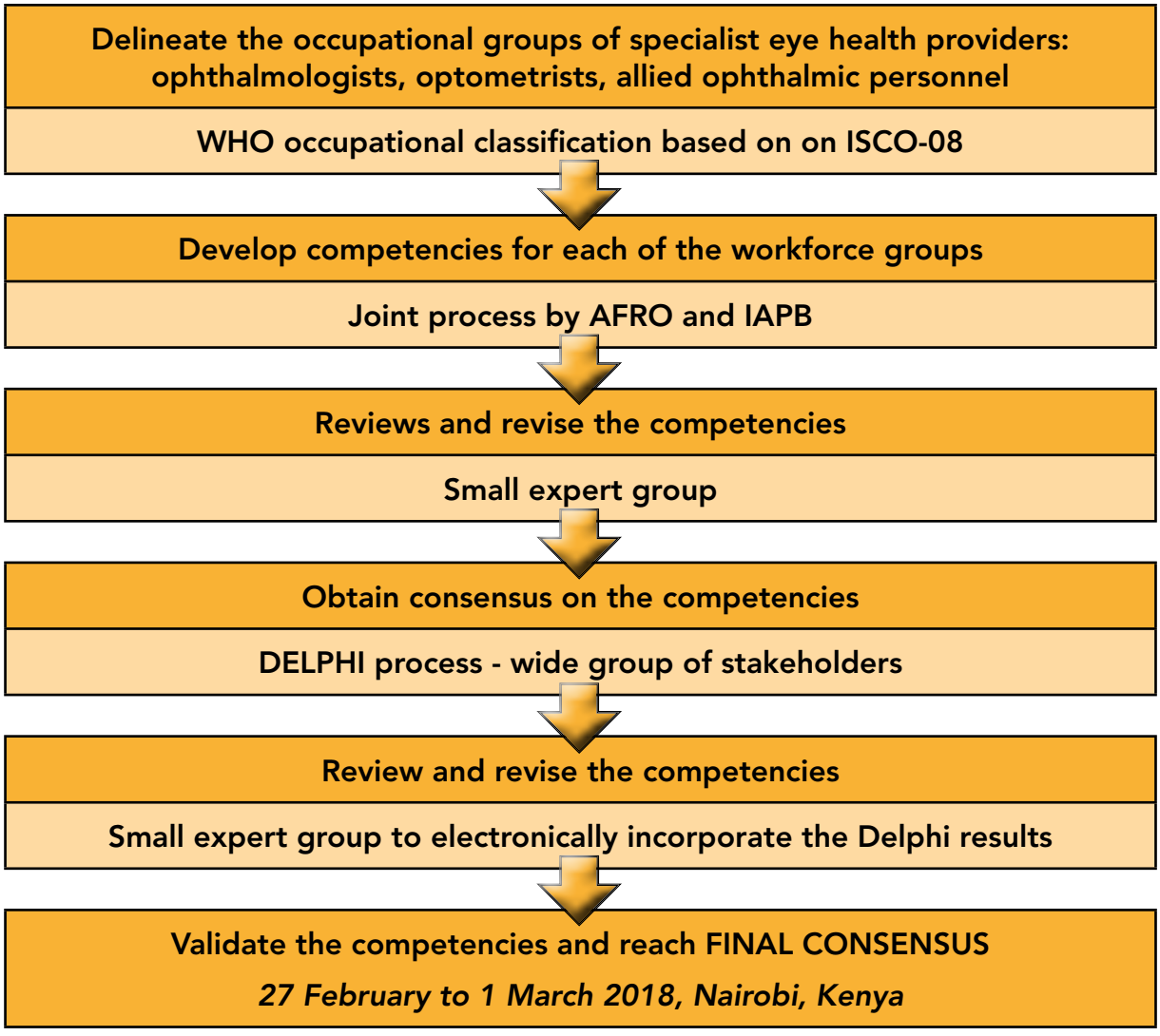
A selected group meeting of experts in the various subject areas was convened (Nairobi, 18 to 22 September 2017) to review the draft competencies based on Delphi Round 1 survey responses and to decide on the way forward. The group of experts reviewed the competencies for all the groups and made revisions by consensus. The resulting draft was now ready for Delphi Round 2 for consensus building as recommended.

E-meetings and a series of teleconferences of the Standing Advisory Group (SAG) and experts in the subject area agreed with the results of Delphi Round 2, and proposed a second face-to-face meeting of an enlarged group of experts (Nairobi, 27 February to 1 March 2018). This expert group which constituted most of the experts from the first and additional ones from the Ministries of Health undertook a detailed and reflective structured analysis and review of the whole process and validated both the core competencies and the whole process as one document.

The editorial team and final documentation

The consultant whose role was to gather all the material from the processes and document both the process and the main product, drafted the final draft document with additional support from some selected experts' format of this process. The material was further enriched by the recently-developed WHO nursing and midwifery educator core competencies (28). The validated document was also technically proof read for accuracy after the validation by experts before the official editing as part of the normal WHO process for publication.

Figure 5: Process for developing, documenting and validating core competencies for the eye health workforce



Annex II: PARTICIPANTS AT THE REGIONAL EXPERTS CONSULTATION WORKSHOP ON EYE HEALTH CORE COMPETENCIES (19–22 September 2017, Nairobi, Kenya)

Name	Function	Country
Prof Komi Matiklu Balo	Professor of Ophthalmology, University of Lome	Togo
Dr Luigi Bilotto	Director of Education, Brien Holden Vision Institute	Canada
Mrs Ellen Anyeley Clegg	Former Principal, Ophthalmic Nursing School, Korle Bu	Ghana
Dr Renee du Toit	Technical Advisor, IAPB Africa	South Africa
Prof. Richard Ganga-Limando	WHO Collab. Centre for Postgrad. N&M Distance Ed., Res. U of S. Afr.	South Africa
Dr Adrian Hopkins	Facilitator, Adrian Hopkins Consulting	UK
Prof Dunera Ilako	Consultant Ophthalmologist, University of Nairobi	Kenya
Mr Godfrey Kaggwa	SiB Project Coordinator, Brien Holden Vision Institute	Uganda
Prof Jefitha Karimurio	Chair, Department of Ophthalmology, University of Nairobi	Kenya
Dr Abigail Kazembe	Assoc. Professor & Deputy Dean, Kamuzu College of Nursing, Malawi	Malawi
Dr Grace Chipalo Mutati	Senior Medical Superintendent, University Teaching Eye Hospital	Zambia
Prof Fikile Ntombi Mtshali	Sch. of Nursing & Publ. H., University of Kwazulu-Natal (WHO Collab. Centre)	South Africa
Mr Peter Mwangi Kirigwi	Optometry Technologist Trainer, Kenay Medical Training College	Kenya
Prof Kolawole Ogundimu	Senior Global Technical Lead, Eye Health, Sightsavers	Nigeria
Dr Mollent Okech	Senior Technical Advisor for HRH, Management Sciences for Health	Kenya
Dr Joseph Enyegue Oye	Central Africa Co-Chair, IAPB-Africa, Country Director, Sightsavers	Cameroon
Mr Senanu K Quacoe-Wossinu	Francophone & Lusophone West Africa, Co-Chair, IAPB-Africa	Togo
Ms Zahra Rashid	Optometrist, Private Practice	Kenya
Prof Jefitha Karimurio	Chair Department of Ophthalmology, University of Nairobi	Kenya
Dr Abigail Kazembe	Assoc. Prof-Deputy Dean, Kamuzu Coll. of Nursing, Malawi University	Malawi
Prof Fikile Ntombi Mtshali	Sch. of Nursing & Pub. Health, University of Kwazulu-Natal (WHO Collab. Centre)	South Africa
	SECRETARIAT	
Dr Adam Ahmat	Technical Officer, HRH & Planning, WHO Regional Office for Africa	Congo
Mr Simon Day	Regional Coordinator, IAPB-Africa	South Africa
Dr Michael Gichangi	NECC, Kenya, Ministry of Health	Kenya
Dr Hillary Kipruto	Adviser, HSS, WCO, Kenya	Kenya
Mrs Anabay Mamo	WCO, Kenya	Kenya
Ms Jennifer Nyoni	Technical Officer, HRH Management, WHO Regional Office for Africa	Congo

AFRO-IAPB EXPERTS MEETING
(Nairobi, 19–22 September 2017)

Meeting Summary

In September of 2017, AFRO and IAPB held a consultation workshop in Nairobi, Kenya. The workshop was attended by eye health experts with the overall objective of reviewing draft core competencies for the three groups of specialist eye health professionals in sub-Saharan Africa: ophthalmologists, optometrists, and allied ophthalmic personnel before finalization and validation by eye health and related experts.

Development of competency frameworks for the different levels of the eye health workforce is a critical component of the IAPB-Africa strategy on human resources for health. The workshop was a major milestone in this regard. The ultimate purpose of the competencies was to improve the quality and relevance of the care provided by the professional eye health workforce. Such improvement would contribute to the attainment of Universal Health Care.

The event was organized jointly by AFRO and IAPB-Africa and funded entirely by IAPB-Africa, with support from the International Centre for Eye Health Vision 2020 Workshop Fund. Throughout the event, the proceedings were facilitated by Dr Adrian Hopkins. Also in attendance was Dr Michael Gichangi, the consultant hired by AFRO to drive this process. Invited experts were made up of representatives of each of the cadres and were drawn from the different linguistic groups and sub-regions of the continent. During the workshop, their role was to critically review a set of draft core competencies in terms of their content, terminology and layout. Time was then allowed for discussion until consensus was reached on each component.

There were rich and lively debates during the review and in plenary sessions which examined in detail the differences among the three cadres as well as the key content of the competencies and their domains. The outcome of the workshop was a revised set of core competencies which were approved by all participants. The next step was submission of the competencies to a Round 2 of the Delphi process. The outcome of Delphi Round 2 would be submitted for final review and approval during a second meeting of experts and country representatives scheduled for the first quarter of 2018.

Annex III: PARTICIPANTS AT THE VALIDATION CONSULTATION (Nairobi, Kenya, 27 February to 1 March 2018)

NAME	FUNCTION & ORGANIZATION	COUNTRY
Dr James Amoo Addy	Head of Eye Unit, National Coordinator, Prevention of Blindness	Ghana
Dr Mouctar D Badiane	Coordinator of the national eye health Promotion Program	Senegal
Dr Luigi Bilotto	Director of Education, Brien Holden Vision Institute	Canada
Dr Grace Chipalo Mutati	Sr Medical Superintendent, University Teaching Eye Hospital	Zambia
Mrs Ellen Clegg Anyeley	Past Principle, Ophthalmic Nursing School, Korle Bu	Ghana
Dr Renee du Toit	Technical Advisor, IAPB Africa	South Africa
Prof André Omgbwa Eballe	Deputy Coordinator, Prevention of Blindness Programme	Cameroon
Prof RM Ganga-Limando	WHO Collab. Centre for Postg. N&M Distance Ed., Res. Univ. of S. Africa	South Africa
Dr Adrian Dennis Hopkins	Facilitator, Adrian Hopkins Consulting	UK
Prof Dunera Ilako	Consultant Ophthalmologist, University of Nairobi	Kenya
Dr Michael Gichangi	Head of ophthalmic Services Unit- MOH	Kenya
Mr Godfrey Kaggwa	SiB Project Coordinator, Brien Holden Vision Institute	Uganda
Prof Jefitha Karimurio	Chair Department of Ophthalmology, University of Nairobi	Kenya
Mrs Annette Kobusingye	Program Manager, the Fred hollows Foundation, African Region	Uganda
Dr Aaron T. Magava	Chair, IAPB Africa	Zimbabwe
Dr Silvio Paolo Mariotti	Senior Medical Officer/WHO HQ	Switzerland
Dr Simona Minchiotti	Eye Health Consultant/WHO AFRO	Italy
Prof Ntombi Fikile G Mtshali	Sch. of Nursing & Pub. Health, Univ. Kwazulu-Natal (WHO Coll. Centre)	South Africa
Mr Peter Mwangi Kirigwi	Optometry Technologist Trainer, Kenay Medical Training College	Kenya
Mrs Annette Mw Nkowane	Independent consultant	Zambia
Dr Mollent Okech	Senior Technical Advisor for HRH, Management Sciences for Health	Kenya
Dr Joseph Enyegue Oye	Central Africa Co-chair IAPB Afr, Country Director Sightsavers	Cameroon
Mr Senanu Quacoe	Francophone & Lusophone West Africa Co-Chair IAPB	Togo
Ms Zahra Rashid	Optometrist, Consultant Low vision	Kenya
Dr Bernadetha Robert Shilio	National Eye Care Program Manager, Ministry of Health	Tanzania
Mrs Kassa Tsehaynesh Tiruneh	Direct T.A (acting as National Eye Health Coordinator) FMoH, Ethiopia	Ethiopia
Dr Linda Visser	Acad. Head, Dep. of Ophth.,Vice-Pres. OSSA, Pres., College of Ophth., S. Afr	South Africa
Dr Adam Ahmat	Technical Officer HRH and Planning, WHO Regional Office for Africa	Congo
Mr Simon Day	Regional Coordinator, IAPB Africa	South Africa
Dr Hillary Kipruto	Adviser, HSS, WCO, Kenya	Kenya
Mrs Anabay Mamo	WCO, Kenya	Kenya
Dr Conall Ó Deasmhúnaigh	WCO, Kenya	Kenya
Ms Jennifer Nyoni	Technical Officer, HRH Management, WHO Regional Office for Africa	Congo

REGIONAL EYE COMPETENCIES VALIDATION WORKSHOP

(Nairobi, Kenya, 27 February to 1 March 2018)

Workshop summary

The objective of the Nairobi workshop was to validate the core competencies required to inform training and the quality of care given by eye health personnel throughout the WHO African Region.

An opening statement from the WHO Country Representative, Dr Rudolf Eggers, was delivered by Dr Joyce Nato, focal point for Noncommunicable diseases at the WHO Country Office, Nairobi, Kenya. In those opening remarks, the audience was reminded of the challenges of eye health and the enormous human suffering that loss of sight causes to affected individuals and their families. Poor eye health also represented a public health and social and economic problem, especially for developing countries. Dr Nato said that approximately 180 million people worldwide were visually disabled. Of these, between 40 million and 45 million persons were blind and that around 60% of them resided in sub-Saharan Africa, China and India.

She said approximately 50% of the world's blind suffered from cataract, and about 80% of global blindness was avoidable. Despite half a century of efforts, commencing with organized trachoma control activities, the global burden of blindness was continuing to growing largely because of population growth and ageing. WHO and its partners had launched a common agenda for global action called 'Vision 2020 - the right to sight' which provided a platform to address blindness. The validation workshop in Nairobi was therefore timely. A framework that helped professionals effectively address eye health problems in the African Region was important as the Region was the hardest-hit with cases of avoidable blindness.

Dr Michael Gichangi, the consultant recruited to draft the competencies, also highlighted the crisis in human resources for health in the Region, underscoring the fact that of the close to 10,000 optometrists in Africa, most were in Nigeria and South Africa. The rest of the countries in the Region had very few. In fact, 78% of the countries in the Region had less than 50% of the optometrists. Even though Africa bore the heaviest burden of eye health disorders, the existing 200,000 ophthalmologists globally were concentrated in countries of the West and other regions. Based on the IAPB Vision Atlas and the training institutions database, current gaps in the Region were evaluated to be about:

- 2,000 ophthalmologists
- 3,600 optometrists
- 6,000 allied eye health professionals.

Ms Jennifer Nyoni, representing AFRO, provided the regional context and outlined the crisis in human resources for health (HRH) in the Region. The comprehensive response to the HRH crisis in the Region was based on World Health Assembly resolutions WHA 59.25 and 66.33 on scaling up the health workforce as well as on the subsequent guidelines on transforming health professional education as supported by the Lancet Commission report on transforming education (Frenk et al. 2010). Those documents provided a sound foundation for a comprehensive production of a health workforce that was relevant to the content, of good quality, and in appropriate numbers to address the needs of the peoples of the Region.

Ms Nyoni further outlined the process for the development of the eye health competencies, stating that development of the initial draft had utilized key reference documents that included global and regional competencies, e.g., the WHO midwifery core competencies, CanMEDS, various curricula from educational institutions, national health policies, ISCO-08, scientific publications, and World

Health Assembly resolutions and reports. Experts at the workshop were invited to participate fully and to focus their attention on the successful validation of the process that had led to the current draft of competencies for eye health professionals.

For the duration of the workshop, the experts held intensive discussions on the ten competency domains: (i) curative care; (ii) surgical care; (iii) preventive and promotive care; (iv) palliative and rehabilitative care; (v) communication; (vi) leadership and management; (vii) health advocacy; (viii) community practice, collaboration and team work; (ix) scholarship, research, teaching, mentoring, and lifelong learning; (x) professionalism. The domains embodied common non-clinical and clinical competencies. Feedback from group discussions was progressively integrated into the draft document over the three days of the workshop. Every evening, resource persons (comprising WHO, IABP and the consultant) reviewed the agenda and suggested ways of improving subsequent agendas as necessary.

The way forward

At the conclusion of the workshop, the agenda for immediate and long-term activities was discussed. Of special note was the interactive and very constructive character of the validation workshop. Many inputs were made by these senior-level participants both during group work and in plenary sessions. Since the lead facilitator was a professional in eye health, he played a key role in moderating the group to discuss and reach consensus on sometimes contentious aspects. WHO and IAPB reaffirmed their commitment to seeing through the process as set out above, with the support of the editorial team.

Annex IV: FUNCTION AND TARGET AUDIENCES FOR THE COMPETENCY FRAMEWORK

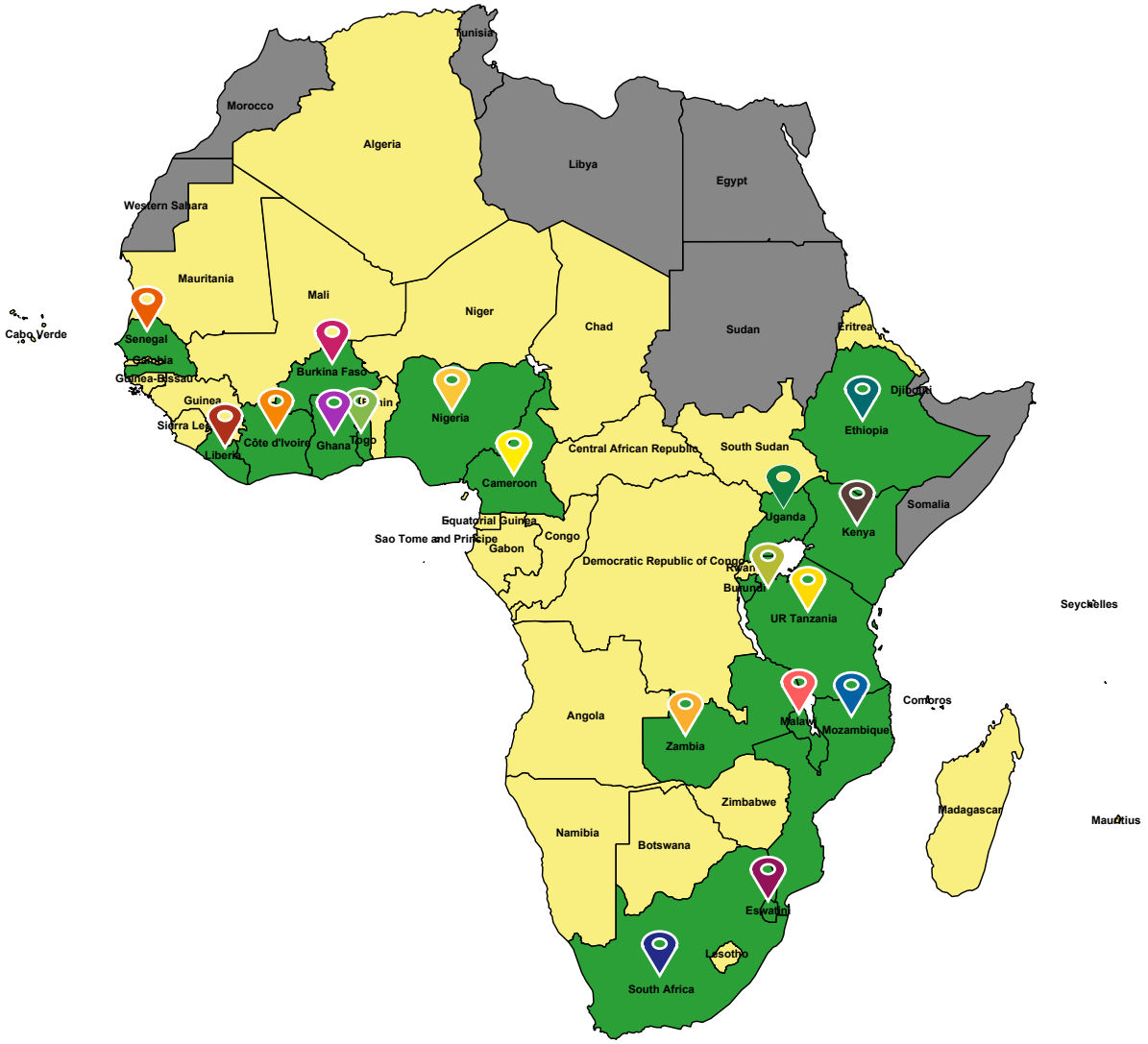
Function	Target audience
Development, review and implementation of curricula for initial and continuing competency-based education, e.g., for determining learning outcomes and for assessment of knowledge, skills, and attitudes that are relevant to the context and are socially suitable for inter-professional education	Educational institutions
Use of learning outcomes to help understand the expectations of training and as resource material for self-paced or directed learning	Learners
Guides for professional development requirements, and for peer appraisals	Professional associations
Assessments for qualification, licensure, institutional accreditation, and regulation	Licensing and regulatory authorities; Examining boards
Promotion and facilitation of networking and harmonized training to provide greater equivalence and mobility amongst the eye health workforce in sub-Saharan Africa	Decision makers, policy makers and planners; educational institutions, ministries for education or health
Guidance for policies on workforce planning and management, e.g., skills mix and task shifting or sharing, based on shared or common competencies, and differentiated by competencies unique to the group. The latter can be used to categorize the work of groups and subgroups; they help to clearly define roles and responsibilities in the eye health team as well as their tasks in job descriptions; this in turn also facilitates supervisory and mentoring activity, enhances professional recognition, career progression, and remuneration for existing or proposed cadres	Policy makers and planners; ministries for education or health; labour groups and employers
Strengthening the delivery of integrated and person-centred health services and care; Example, a decision on the competencies a team needs can lead to the appropriate allocation of these to team members, thereby facilitating or encouraging collaborative practice, work across health and non-health sectors and resulting in the provision of more holistic and integrated care	Civil society
Guidance for polices on health system strengthening and support can be provided in the form of supervision and equipment to enable the health workforce implement the competencies; doing so could help meet the needs of patients along with the expectations of both the population and the health system	Policy makers; ministries for education or health

Annex V: THE DELPHI SURVEY

		Delphi 1 Expert group 1		Delphi 2 Expert Group 2			
		Number of competencies	Number (%) reaching consensus*	Number of competencies	Number (%) reaching consensus*	Number of competencies validated	
Competencies	Ophthalmologists	12	10 (92%)	12	12 (100%)	14	
	AOP (clinicians)	14	12 (86%)	17	16 (94%)	16	Total AOP 25
	AOP (nurses)	9	9 (10%)	10	10 (100%)	11	
	Optometrists	22	19 (91%)	26	24 (92%)	26	
	Ophthalmic opticians	18	8 (44%)	Group omitted - lack of consensus; confusing terminology			
	Common non-technical competencies	17	17 (100%)	16	16 (100%)	18	
Response rateS	Number of surveys emailed	94		57			
	Number of responses	57 (61%)		39 (68%)			
	Percentage from Africa	91%		86%			
	% from Kenya	36%		46%			
	% from training institutions	63%		49%			
Qualification/ cadres	Ophthalmologists	62%		62%			
	AOP (clinicians)	12%		9%			
	AOP (nurses)	8%		6%			
	Optometrists	15%		14%			

A summary of the respondents and responses on the core competencies during the two rounds of Delphi, discussions, consensus, and validation of the competencies at two expert meetings.

Delphi respondents' local across Africa



Delphi respondent locations – Africa.csv

- Bukina Faso
- Burundi
- Cameroon
- Cote d'Ivoire
- Eswatini
- Ethiopia
- Ghana
- Kenya
- Liberia
- Malawi
- Mozambique
- Nigeria
- Senegal
- South Africa
- Togo
- Uganda
- United Republic of Tanzania
- Zambia

Annex VI (a):
OPHTHALMIC DIAGNOSTIC TESTS AND SURGICAL PROCEDURES

This Annex VI (a) gives general guidance for the purpose of harmonizing different clinical procedures within the scope of eye health service delivery. It also delineates the procedural scope of each provider. This is a core (minimum) list of basic procedures in Ophthalmology and should be viewed within the specific individual context of the country or institution. From this Annex, it is recommended that:

- All newly qualified ophthalmologists should be proficient in performing and interpreting diagnostic tests;
- All allied ophthalmic personnel should be proficient in performing and interpreting the above, except categories marked x** where additional competencies are required;
- Optometrists should be able to acquire competencies to perform all the diagnostic tests; they will need the relevant competencies to be able to interpret the findings of the tests;
- Optometrists with required competencies could perform limited surgical procedures; epilation, incision and drainage of chalazion and lid abscesses,*** removal of conjunctival and corneal foreign bodies, and participate in pre- and post-operative surgical care;
- ++ *Supervision is provided directly* when the ophthalmologist is actually present, observes, works with and directs the clinician or indirectly when the ophthalmologist works in the same facility or organization as the clinician but does not constantly observe his or her activities. The ophthalmologist must be available for reasonable access, i.e., must be available at all times.

Key to Annex VI (a)

Sign	Meaning
✓	Within the primary competency of the cadre
x	Not within the primary competency of the cadre
✓ **	Although within the primary competency of the cadre, a practitioner will seek persons with further competencies *in refractory* procedures
x**	Although the procedure may not be within the primary competency of the cadre, the person who has acquired relevant competencies is not limited and should seek to work within the country regulatory context.
x***	As above (x**) but will need close direction✓++ by an ophthalmologist, directly or indirectly.

PROCEDURE	Ophthalmologists	AOPs (clinicians)	AOPs (nurses)	Optometrists
OPHTHALMIC DIAGNOSTIC TEST				
Tonometry	✓	✓	✓	✓
Pachymetry	✓	✓	✓	✓
Gonioscopy	✓	x**	x**	✓
Retinal photographs	✓	✓	✓	✓
Fluorescein angiography	✓	x**	x**	x**
Visual field analysis	✓	✓	✓	✓
Ocular-computerized tomography (OCT)	✓	✓	✓	✓
Corneal topography	✓	✓	✓	✓
Ultra-sound-eye*	✓	x**	x**	x
Biometry	✓	✓	✓	✓
Retinoscopy	✓	✓	✓	✓
Endothelial cell count	✓	✓	✓	✓
Direct & indirect fundus assessment	✓	✓	✓	✓
Syringing and irrigation	✓	✓	✓	✓

PROCEDURE	Ophthalmologists	AOPs (clinicians)	AOPs (nurses)	Optometrists
SURGICAL PROCEDURE				
ORBIT, SOCKET, LACRYMAL AND LID				
Infiltrate local anesthesia	✓	✓	x***	x**
Dermoid excision simple	✓	✓	x	x
Dermoid excision complex	✓	x	x	x
Anterior orbitotomy	✓	x	x	x
Lateral orbitotomy	✓	x	x	x
Orbital wall repair	x**	x	x	x
Orbital wall decompression	x**	x	x	x
Mucoceale incision and drainage(I&D)	✓	x	x	x
Exenteration	✓	x	x	x
Evisceration	✓	✓	x	x
Evisceration and orbit implant	✓	x**	x	x
Enucleation	✓	x***	x	x
Enucleation and orbital implant	✓	x	x	x
Socket fornix reconstruction	x**	x	x	x
Punctoplasty	✓	x	x	x
Punctal occlusion (temporary)	✓	✓	x***	✓
Probing irrigation and syringing	✓	✓	x	x
Dacryo-cysto-rhinostomy(DCR)	✓ **	x	x	x
Trachomatous entropion repair	✓	✓	x **	x **
Other Non-trachomatous entropion repair	✓ **	x	x	x
Epiblephron repair	x**	x	x	x
Ptosis repair	✓	x	x	x
Blow out lift	x**	x	x	x
Lid – canaliculi laceration repair	✓	x	x	x
Lid - Tumour excision (reconstruction)	✓	x	x	x
Tarsorhaphy	✓	✓	x**	x
Upper lid blepharoplasty-	✓	x	x	x
Lower lid blepharoplasty-	✓	x	x	x
Lid abscess (incision and drainage)	✓	✓	x**	x**
Chalazion (incision and drainage)	✓	✓	x**	x**
Epilation-A (simple non trachomatous)	✓	✓	✓	✓
Lashes electrolysis-A	✓	✓	x**	x
ANTERIOR SEGMENT AND CORNEA				
Small incision cataract surgery + IOL	✓	x**	x	x
Small incision cataract surgery+IOL+TET	✓	x	x	x
Phaco-emulsification +IOL	✓	x**	x	x
Phaco-emulsification+IOL + Trabeculectomy	✓	x	x	x

PROCEDURE	Ophthalmologists	AOPs (clinicians)	AOPs (nurses)	Optometrists
Cataract surgery+IOL+Anterior vitrectomy	✓	x	x	x
Perforating eye injuries	✓	x**	x	x
Conjunctival Lesion excision	✓	✓	x	x
Conjunctival lesion excision+ a graft	✓	x	x	x
Corneal transplant (penetrating keratoplasty)	x**	x	x	x
Corneal transplant (Lamella keratoplasty)	x**	x	x	x
Triple-procedure: Corneal transplant, Cataract surgery + IOL implantation	x**	x	x	x
Removal of corneal sutures theatre slit lamp	✓	✓	x	x
Removal of corneal foreign body	✓	✓	✓	✓
Posterior capsulotomy	✓	x	x	x
Anterior chamber(A/C) Tap/injection	✓	x	x	x
Pre-/post- refractive surgery assessments	✓	x	x	✓
Sub-conjunctiva/tenons injections	✓	✓	x**	x
Refractive surgeries	x**	x	x	x
Surface ablation	x**	x	x	x
Phakic intraocular lens	✓	x	x	x
Photo keratectomy	x**	x	x	x
Removal of corneal scar	x**	x	x	x
GLAUCOMA				
Trabeculectomy	✓	x	x	x
Trabeculotomy	✓	x	x	x
Goniotomy	✓	x	x	x
Combined phaco/trabeculectomy	x**	x	x	x
Combined MICs and trabeculectomy	x**	x	x	x
Glaucoma-drainage implants (GDI)	x**	x	x	x
Combined GDI and phaco	x**	x	x	x
Surgical iridectomy	✓	x**	x	x
EUA for congenital glaucoma	✓	x	x	x
Retrobulbur alcohol/largactail	✓	✓	x	x
Laser: Trabeculoplasty, iridotomy, suturelysis	✓	x	x	x
Bleb revision	✓	✓	x	x
CycloCryotherapy-A/B	✓	✓	x	x
PAEDEATRIC OPHTHALMOLOGY				
Anterior chamber reformation	x**	x	x	x
Goniotomy	x**	x	x	x
Intra-ocular lens (IOL) exchange	x**	x	x	x
Lensectomy and IOL implant	x**	x	x	x

PROCEDURE	Ophthalmologists	AOPs (clinicians)	AOPs (nurses)	Optometrists
PAEDEATRIC OPHTHALMOLOGY continued				
Anterior chamber membrane removal	x**	x	x	x
Pupiloplasty	x**	x	x	x
Anterior chamber wash out	✓	x	x	x
Corneal repair	✓	x	x	x
Removal of corneal FB	✓	✓	x	✓
Examination under-anaesthesia (EUA) for Retinoscopy, Rb, FB	✓	✓	x	✓
Pars plana capsulotomy	✓	x	x	x
Iridectomy/Iridotomy	✓	x**	x	x
Optical iridectomy	✓	x**	x	x
STRABISMUS MANAGEMENT				
Surgical strabismus correction	x**	x	x	x
POSTERIOR SEGMENT AND RETINA				
Central laser	✓	x	x	x
Pan retinal photo coagulation (on slit lamp)	✓	x	x	x
Pan retinal photo coagulation (on indirect head lamp)	✓	x	x	x
Laser retinopexy	✓	x	x	x
CycloCryotherapy	✓	x**	x	x
Cyclophoto coagulation/therapy	✓	x	x	x
Intra-vitreal injections	✓	x**	x	x
Silicon oil removal	x**	x	x	x
Cataract surgery with silicon oil removal	x**	x	x	x
Posterior vitrectomy with dropped IOL or Vitreous foreign body removal	x**	x	x	x
Posterior vitrectomy and gas	x**	x	x	x
Posterior vitrectomy + oil	x**	x	x	x
Posterior vitrectomy and delamination and gas and oil	x**	x	x	x
Combined procedures (Posterior vitrectomy, cataract surgery and IOL implants)	x**	x	x	x
Combined procedures (posterior vitrectomy buckle or band+ cataract surgery and IOL implant)	x**	x	x	x
Posterior vitrectomy and macula hole surgery	x**	x	x	x
Scleral buckle and explants removal	✓	x	x	x

Annex VI (b): OPTOMETRIST'S USE OF PHARMACHOLOGICAL PRODUCTS AND TREATMENT

Category of ophthalmic medicine	Indication
Anti-infective agents	Bacterial conjunctivitis and blepharitis
Ocular (non-steroidal) allergy medicine	Ocular allergies and inflammation
Dry eye therapies and products	Ocular surface disease or dry eye
Dilation & cycloplegic agents	Ocular examination
Topical anesthetics	Ocular examination and FB removal
Topical dyes	Ocular examination
Contact lens solutions	Contact lens hygiene, lubrication and maintenance
Atropine	Myopia management or control

Note: NO STEROIDS

Annex VII: LIST OF PERSONS INVOLVED IN THE PROCESS

IAPB HReH task development teams
Renee du Toit (w AOP Chair + HReH Chair)
Ellen Clegg
Ciku Mathenge
Halli Manalakos
Lynn Anderson
Joseph Oye
Godfrey Kaggwa
Janvier Kilangalanga
Mary Wepo
Ken Kagame (Ophthalmology Chair)
Kunle Hassan
Patrice Komi Balo
Margarida Chagunda
Dunera Ilako
Yeshigeta Gelaw
Seth Lartey
Irmela Erdmann
Ahmad Gomaa
Henry Nkumbe
Hannah Faal (CHW Chair)
Uche Amazigo
Henrietta Monye
Amir Bedri
Ima Chima
E Appiah-Denkyra
Bo Wiafe (PEC Chair)
Maria Hagan
Dorcas Chelanga
Hannah Faal
Kesi Naidoo (Optometry Chair)
Imran Khan
Senanu Quacoe
Nigel Wilson
Anguyo Dralega
Vanessa Moodley
Angela Affran

Delphi Rounds 1 and 2 participants		
No	Name	Country
1	AdedayoAdio	Nigeria
2	Agnes Mualuko	Kenya
3	AlemayahuWoldeyesTefera	Ethiopia
4	Anne AmpaireMusika	Uganda
5	BoubacarSarr	Senegal
6	Catherine K. Gargu	Liberia
7	Claire Studley Scott	UK
8	Clare Gilbert	UK
9	Claudio Owino	Kenya
10	Dorothy Mutie	Kenya
11	Elijah Mutoloki Munachonga	Zambia
12	Ellen Anyeley Clegg	Ghana
13	Ernest Ollando	Kenya
14	George S. Odhiambo Ohito	Kenya
15	Grace Chipalo Mutati	Zambia
16	Imran Khan	UK
17	Irmela Erdmann	Togo
18	Jefitha Karimurio	Kenya
19	Jonathan Buturu	Kenya
20	Judith Mwende	Tanzania
21	Kahaki Kimani	Kenya
22	Karl Golnik	USA
23	Kesi Naido	South Africa
24	Margarida Chagunda	Mozambique
25	Milliam Kamau	Kenya
26	Millicent Muthoni	Kenya
27	Nicholas Olobio	Nigeria
28	Nick Astbury	UK
29	Nyawira Mwangi	Kenya
30	Okenwa-Vincent Emmanuel	Kenya
31	Rebecca Oenga	Kenya
32	Sheila Marco	Kenya
33	Stephen Gichuhi	Kenya
34	William Makupa	Tanzania
35	Zahra Rashid	Kenya

Participants in Delphi Round 1 only		
No	**Name**	**Country**
1	Dabilougou Adama Fulbert	Burkina Faso
2	Levi Kandeke	Burundi
3	Bella Assumpta Lucienne (2 rounds)	Cameroon
4	Kouakoua Marie Madeleine	Ivory Coast
5	Dennis Osiago (2 rounds)	Kenya
6	Ernest B. Wanyama	Kenya
7	Lucy Manyara	Kenya
8	Monicah Bitok (2 rounds)	Kenya
9	Petros Kanyange	Malawi
10	Mariamo S Abdala	Mozambique
11	Abubakar Jibril Rifun	Nigeria
12	C Cook	South Africa
13	France Nxumalo	South Africa
14	Kgao Edward Legodi	South Africa
15	Sharon Maseko	Swaziland
16	Peter M. Kirigwi	Kenya
17	Milka Mafwiri	Tanzania
18	Quacoe-Wossinu Senanu (2 rounds)	Togo
19	Babalanda Jean	Uganda
20	Kaggwa Godfrey	Uganda
21	Simon Arunga	Uganda
22	Jessie Mbachi Innocencia Nyalazi	Zambia

WHO-IAPB SUBJECT EXPERTS PANEL
Dr Grace Misumbi Chipalo-Mutati
Prof Komi Balo
Dr Joseph Oye
Prof Dunera Ilako
Prof Abigail Kazembe
Mrs Ellen Clegg
Mr Godfrey Kaggwa
Dr Renee Du Toit
Dr Kola Ogundipe
Prof JefithaKarimurio
Prof Fikile Ntombi Mtshali
Dr Luigi Bilotto
Mr Senanu Quacoe
Mr Peter Mwangi Kirigwi
Ms Zahra Rashid
Prof Richard Nganga Limando
Dr Mollent Okech
Dr Adrian Hopkins
Dr Michael Gichangi
Mr Adam Ahmat
Dr Simona Minchiotti
Ms Jennifer Nyoni
Mr Simon Day

Other technical support and back-up staff (who worked very hard or were constantly consulted behind-the-scene by the Consultant, Dr Michael Gichangi)

Prof Emilee Epée	Ophthalmologist (Proofreader)	Cameroon
Dr Augustine Mwangi	Educational Consultant, Lecturer, University of Nairobi	Kenya
John Maina Murage, BSc	IT and Data Manager	Kenya
Dr Anthony Gichangi	Statistician, JEPAIGO, Nairobi	Kenya
Mrs Catherine Mwaura	Ophthalmic Nurse-Trainer, Kenya Medical Training College	Kenya
Dr Eduardo Mayorga	Ophthalmologist, ICO Educator	Argentina
Dr Joyce W Kabiru	Ophthalmologist & Oculoplastic Surgeon	Kenya
Prof Dan Kiage	Ophthalmologist & Glaucoma Specialist	Kenya
Dr Stephen Gichuhi	Ophthalmologist & Epidemiologist, Senior Lecturer, University of Nairobi	Kenya

Members of the Standing Advisory Group that steered the core competencies process

Dr Adam Ahmat	WHO African Region, HSS Cluster
Dr Simona Minchiotti	WHO African Region, NCD Cluster
Mrs Mwansa Nkowane	HWF Department, WHO HQ
Ms Jennifer Nyoni	WHO African Region, HSS Cluster
Dr Michael Gichangi	Main Consultant
Mr Simon Day	IAPB
Dr Renee du Toit	IAPB Expert
Mr Ronnie Graham	IAPB
Mr Luigi Bilotto	Director of Education, BHVI

World Health Organization

REGIONAL OFFICE FOR Africa