



why The case for delivering quality, advanced and
equitable eye health and vision care for patients.

OPTOMETRY?

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1

Executive Summary

Why Optometry? has been produced by the World Council of Optometry (WCO) in response to the World Health Organisation's *Global Action Plan for the Prevention of Avoidable Blindness and Visual Impairment 2014-2019*. It provides the case for delivering high quality, advanced and equitable eye health and vision care for patients worldwide.

The World Health Organisation (WHO) estimates that 285 million people suffer from moderate to severe vision loss with 39 million considered blind. Of these, 123 million (43%) have uncorrected distance refractive errors. In addition, there are 517 million people with near vision impairment due to uncorrected presbyopia. Uncorrected refractive error is the leading cause of visual impairment globally which places a financial burden on the economy, is a significant contributing factor to poverty and is avoidable

There are significant challenges for eye health with the increasing avoidable blindness and visual impairment. These include insufficient competent healthcare professionals, uneven distribution of resources and the inability to afford treatment. In order to meet the aims of the Global Action Plan, there must be a focus on the development of human resources, including optometrists, and models of sustainable service delivery.

Optometry answers these challenges by providing a range of diagnostic, technical and direct patient care and support services required by patients and other health care professions. It has increasingly focussed on universal health coverage; providing accessible, equitable and affordable eye health services to all and shifting from a

predominantly private sector orientation to a public sector one as well. Optometry functions in a primary care capacity in many developed countries and in developing countries at a secondary level as part of a multidisciplinary team including doctors and ophthalmologists.

To support the development of optometric education, the WCO has developed a *Global Competency-Based Model of Scope of Practice in Optometry* that provides a vertical career ladder for individuals seeking to expand their scope of clinical responsibility. This will also help regulatory bodies guarantee practitioners' competence to protect the public and act as a stimulus for creating greater uniformity of optometric practice worldwide by being applied to teaching curriculums.

Optometric education and the practice of optometry have developed differently and at different rates around the world. Optometric education is provided in major research universities, as well as in independent schools and colleges of optometry. WCO encourages and helps to develop optometric education and facilitates the reviews of education providers by external agencies.

To meet present and future challenges, a paradigm shift is needed in the way optometry approaches the delivery of eye care services delivery. WCO believes that an optometrist should possess the skills and competencies to perform eye examinations, prescribe spectacles, diagnose and treat common eye problems, and refer more serious conditions. WCO believes that optometrists should be integrated within the eye care, and wider health care team.



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Introduction

Our vision is of a world where optometry makes high quality eye health and vision care accessible to all people.

In order to achieve this vision, this mission is to facilitate the development of optometry around the world and support optometrists in promoting eye health and vision care as a human right through advocacy, education, policy development and humanitarian outreach.

Our objective is the worldwide improvement and conservation of human vision through:

- The enhancement and development of primary eye and vision care by optometrists.
- The promotion of high standards of education and practice by optometrists including by the promotion of international co-ordination of optometrists.
- The provision of support to aid programmes directed at the provision of eye and vision care to societies in need.
- The promotion of the advancement of the science of optometry.

The World Health Organisation's Global Action Plan for the Prevention of Avoidable Blindness and Visual Impairment 2014-2019 - Towards Universal Eye Health - defines universal eye health as "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 people



do not suffer financial hardship when paying for these services." This means that all people should enjoy access to the best quality eye health care without risk of impoverishment¹ The Global Plan also recognises the important role of optometry in achieving its target of 25% reduction in avoidable blindness and visual impairment by 2019.

The World Council of Optometry (WCO) has produced this document with the aim of providing health professionals, government agencies and the general public with an overview of the practice activities of the optometrist and how they relate to the global needs of the public.

WCO represents optometry internationally and through its six regions: Africa, Asia

¹ <http://www.iapb.org/advocacy/who-action-plan/UEH> and http://www.who.int/health_financing/universal_coverage_definition/en/



Pacific, Eastern Mediterranean, Europe, Latin America and North America. National, state, provincial and local professional organisations also exist and promote visual health and eye care. Through strategic alliances with other health care practitioners, professional and nongovernmental organisations, optometry can maximise its role in responding to significant unmet vision and eye care needs worldwide.

This document describes the global public health challenges of eye care and the role of optometry as a primary care profession, its educational requirements and standards as well as legislative and regulatory frameworks.

Optometry is a healthcare profession that is autonomous, educated, and regulated (licensed/registered), and optometrists are the primary healthcare practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system.²

The profession of optometry has evolved since the late 19th Century as the primary eye care health profession responding to the universal need for quality, accessible, cost-effective eye and vision care.

Optometrists are widely distributed in communities around the world; they provide economic value for the services they offer; they detect sight and life threatening conditions such as glaucoma, diabetes and hypertension at a savings to the health care system; they provide entry into the health

care system for many patients who would otherwise not seek care they prepare our children for the competitive marketplace by assuring their visual health and preparedness for learning and achievement; they maximise employment productivity and benefit economic stability; and they promote quality of life and individual independence and reduce costly institutionalised and supported care.

Over 200,000 optometrists and their professional associations worldwide have dedicated themselves to preserving eye health and enhancing vision as the essence of this mission. Notwithstanding the variations in the scope of optometric services that are defined legally by governmental entities, the profession of optometry shares a common concept that unifies and harmonises its purpose worldwide.

The profession of optometry is therefore well placed to deliver Universal Eye Health as defined in the Global Action Plan. Optometry is an integral part of the eye care team and critical to the successful systems approach to the delivery of eye care services.

“ Our vision is of a world where optometry makes high quality eye health and vision care accessible to all people. ”

² www.worldoptometry.org/en/about-wco/who-is-an-optometrist/index.cfm



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The Changing Needs and Demands of Effective Eye Health and its Integration into Public Health Systems Frameworks

Health - the external context

In recent times, health has become a priority factor in ensuring sustainable development as it has a significant impact on economic growth and broader human development. Three out of the eight United Nations' Millennium Development Goals (MDGs) are related to health³. Similarly, one of the goals and related targets of the post-2015 Sustainable Development Goals refer to health and disability.

Average life expectancy has been an indicator for influencing health trends. Infant mortality has reduced considerably over the last 50 years, whilst life expectancy figures have increased. According to recent Help Age data, by 2030 there will be more people over 60 than under 10 years of age. There are already more adults over 60 than children under 5 years of age⁴. This is all due to improved outcomes resulting from medical advances, continuing innovations and developments in technology.

Over the last century, there has been a shift in the burden of disease both in developed and developing countries from the infectious diseases of the 19th and early 20th centuries to chronic diseases in the 20th century and today. Much progress has been made in

forging closer links between health and other related sectors, particularly through national and international inter-sectoral health and development plans and through increased use of planning tools such as health impact assessment procedures, integrated monitoring and improved health information systems.

The current eye health context

In 2010, the World Health Organisation (WHO) estimated that 285 million people suffer from moderate to severe vision loss (VA<6/18 to ≥3/60) with 39 million considered blind (VA<3/60).⁵ Of these, 123 million (43%) have uncorrected distance refractive errors. In addition, there are 517 million people with near vision impairment due to uncorrected presbyopia.⁶

Globally, the leading causes of blindness are cataract, macular degeneration, glaucoma, corneal opacity and uncorrected refractive error, while the leading causes of vision impairment are uncorrected refractive errors and cataract (Figure 1).⁷ These two alone account for 76% of the global causes of visual impairment. Both conditions can be remedied simply and at low cost and are therefore avoidable.

3 <http://www.un.org/millenniumgoals/>

4 <http://www.helpage.org/global-agewatch/data/global-agewatch-data/?keywords=life+expectancy&gclid=CK6Wm9SSzr4CFSGWtAodbSwAsg>

5 Naidoo KS, Gichuhi S, Basáñez M-G, Flaxman SR, Jonas JB, Keeffe J, Leasher JL, Pesudovs K, Price H, Smith JL, Turner HC, White RA, Wong TY, Resnikoff S, Taylor HR, Bourne RRA on behalf of the Vision Loss Expert Group of the Global Burden of Disease Study. Prevalence and causes of vision loss in sub-Saharan Africa: 1990–2010. *British Journal of Ophthalmology*. Published Online First: doi:10.1136/bjophthalmol-2013-304081.

6 Holden B, Fricke T, Ho S, Wong R, Schlenker G, Cronje S, et al. Global vision impairment due to uncorrected presbyopia. *Arch Ophthalmol*. 2008;126(12):1731-9. Brien Holden Vision Institute. Myopia Control. [cited 2013]; Available from: <http://brienholdenvision.org/research/biological-sciences/projects/myopia-control.html>.

7 Bourne, R.A., Stevens, G.A., White, R.A., Smith, J.L., Flaxman, S.R., Price, H., Jost, J.B., Keeffe, J. et al. Causes of vision loss worldwide, 1990-2010: a systematic analysis. *Lancet Global Health*. 2013 1(6): e339 - e349



Global causes of visual impairment

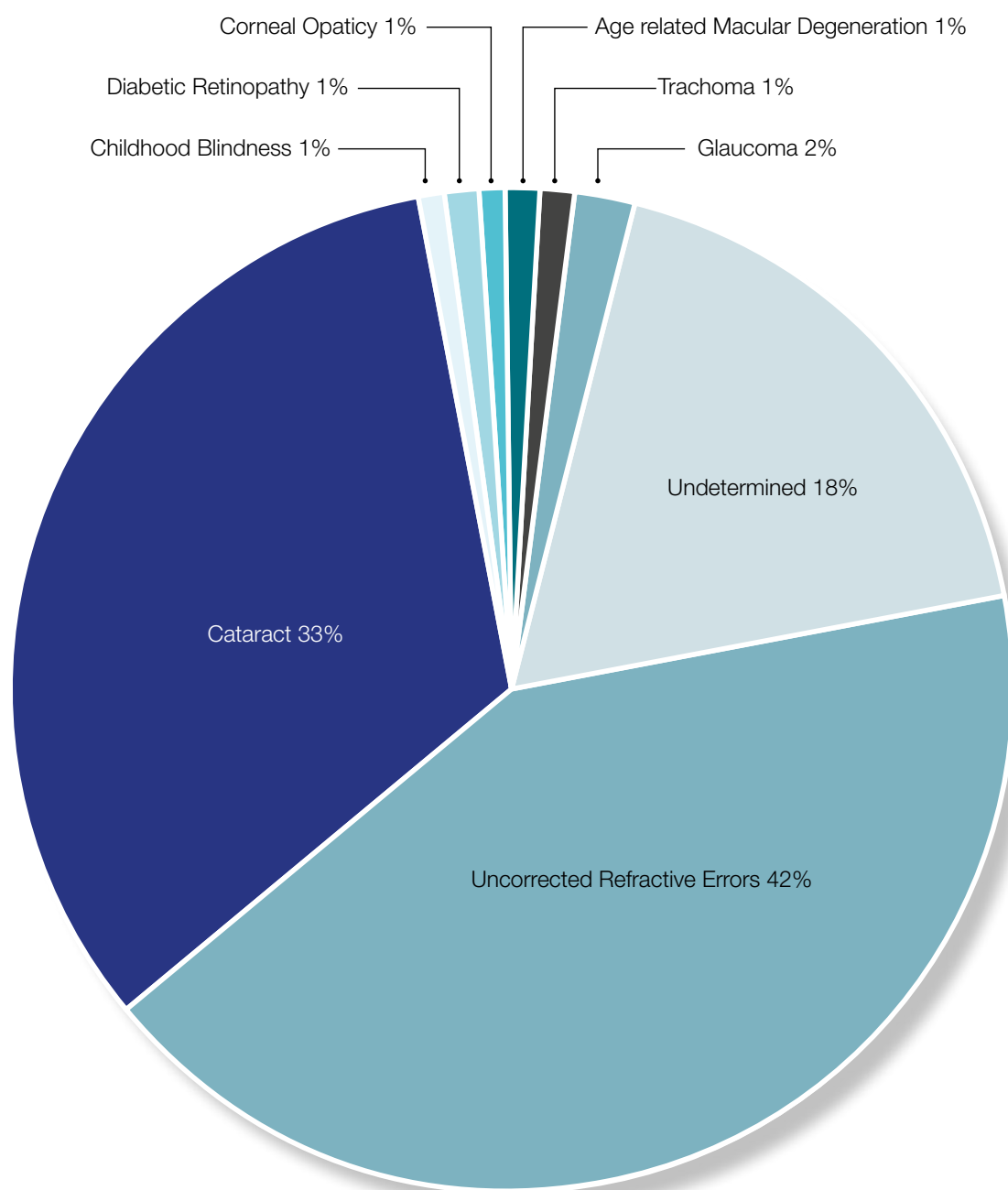


Figure 1: Global causes of visual impairment



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The Changing Needs and Demands of Effective Eye Health and its Integration into Public Health Systems Frameworks *(continued)*

The prevalence of refractive errors, such as myopia, is rapidly increasing, particularly in the Asia Pacific region. For example, in China, around 50% of population has myopia which translates into more than 600 million people⁸.

The financial burden on the economy due to uncorrected distance and near refractive error is at least US\$227.36 billion⁹. Yet alleviation and elimination of visual impairment and blindness is one of the most cost-effective of all health interventions with the estimated cost of correction of distance vision between US\$20 billion and US\$28 billion¹⁰. The WHO has recently released the *Global Burden of Disease* data and for the first time has recognised vision impairment due to uncorrected refractive errors as a cause of disability. Research has shown that vision impairment contributes to 2.7% of the global years lived with disability. This indicates the need for a significant eye health response. Despite current efforts in blindness prevention, the problem of avoidable blindness continues to rise. While the prevalence according to recent estimates seems to have decreased from 1.9% in 1990 to 1.3% in 2010 for blindness and 5.3% in 1990 to 4.0% in 2010 for moderate to severe visual impairment: the absolute number of people with blindness and visual impairment has increased.¹²

Poor eye health and poverty

Some of the most significant contributing factors to poverty are visual impairment and blindness. Equally, poor eye health can lead to or deepen poverty. It is estimated that 80% of visual impairment is preventable or treatable, and 90% of those with visual impairment reside in low or middle income countries. People in the lower and extreme lower socio-economic status of society face a greater risk of becoming blind. Poor eye health causing vision disability affects people's income and livelihoods, access to basic services, nutrition and generates social exclusion¹³. Estimates suggest that almost 3.1 billion people (55% of the total world population) are in rural areas¹⁴ and at least 70 per cent of the world's very poor people are rural. Additionally, it is estimated that almost two thirds of blind people are women¹⁵. Considering the existing gender barriers that prevent women accessing health services, it is possible to infer that if visual impairment and blindness are not addressed then poverty and inequality will be perpetuated.

This situation affects some regions more than others. Africa for instance, has approximately 10 per cent of the world's population, 19 per cent of the world's blindness and 51 per cent of the world's poor. The state of eye care in Africa stands in alarming contrast to that in the rest of the world. Poor practitioner-to-

8 Brien Holden Vision Institute. Myopia Control. [cited 2013]; Available from: <http://brienholdenvision.org/research/biological-sciences/projects/myopia-control.html>.

9 Fricke T, Holden BA, Wilson DA, Schlenker G, Naidoo KS, Resnikoff S, et al. Estimated Global Cost of Correcting Uncorrected Refractive Error. WHO Bulletin. 2012(Online First). Frick K, Joy S, Naidoo K, Wilson D, Holden B. The global burden of potential productivity loss from presbyopia. Submitted. 2013.

10 Smith T, Frick K, Holden B, Fricke T, Naidoo K. Potential lost productivity resulting from the global burden of uncorrected refractive error. Bulletin of the World Health Organization [Internet]. 2009 9 April 2009; 87. Available from: <http://www.who.int/bulletin/volumes/87/08-055673.pdf>.

11 Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, Shibuya K, Salomon JA, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. The Lancet. 2012 380:2163–2196.

12 Naidoo, K.S. Gichuhi, S. Basáñez, M.G., Flaxman, S.R., Jonas, J.B., Keeffe, J., Leasher, J.L., Pesudovs, K. et al. Prevalence and causes of vision loss in Sub-Saharan Africa: 1990–2010. British Journal of Ophthalmology. 2013:

13 Jaggernath, J., Overland, L., Ramson, P., Kovai, V., Fai Chan, V., Naidoo, K. Poverty and Eye Health, SciRes, 2014

14 <http://ifad.org/rpr2011/report/e/rpr2011.pdf>

15 <http://www.iapb.org/sites/iapb.org/files/SEVA004-Gender-Blindness-Report-5%20x8%205.pdf>



patient ratios, absence of eye-care personnel, inadequate facilities, poor state funding and very limited educational programmes are the hallmarks of eye care in Africa, with preventable and treatable conditions being the leading cause of blindness¹⁶.

The challenges in the developing world can be linked to problems with the availability of trained human resources, equipment, consumables, access to care, and affordability of these services which affect their supply. In addition, there is a lack of awareness and/or a negative attitude towards examination and treatments, which affects their demand.

These factors explain why uncorrected refractive error and cataract remain the leading causes of visually impairment and blindness in these countries. These conditions can be treated by cost-effective proven treatments: surgery for cataract and spectacles for refractive error.

The developed world context

In the developed world, cataract and uncorrected refractive error have been largely addressed by the presence of adequate health infrastructure and public awareness of these conditions and their treatment. Neglected

tropical diseases are virtually non-existent, with a few exceptions.

However, age-related macular degeneration (AMD) is a significant cause of blindness in developed countries. It is the third leading cause of blindness globally accounting for 8.7% of blindness, and is the leading cause in developed countries accounting for over 50% of blindness. Despite the effectiveness of new treatments for AMD, including the anti-VEGF therapies for the wet form of the disease, the dry form continues to affect millions of people. It is projected that by 2020, 196 million people will have macular degeneration, rising to 288 million in 2040. Glaucoma is the second most common cause of blindness, responsible for 10 - 15% of global blindness (6-7 million people)³. Non-communicable diseases such as diabetes cause a significant burden of visual impairment, with 40% of patients with diabetes affected by diabetic retinopathy (DR) with 8.2% having a severe vision threatening form¹⁷.

As in developing countries, vulnerable and low income groups are more likely to be affected by these conditions and to face difficulties accessing eye care services. Optometrists are trained and ideally positioned to detect these and other sight and health related problems at an early stage in their development.

¹⁶ Naidoo K. Poverty and blindness in Africa. International Centre for Eye Care Education (ICEE), African Vision Research Institute, University of KwaZulu-Natal, South Africa. 2007
¹⁷ USA NioH. National Eye Institute - Facts about Diabetic retinopathy. [Online]; 2012.18 <http://wco.pellesweb.no>



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The Changing Needs and Demands of Effective Eye Health and its Integration into Public Health Systems Frameworks *(continued)*

The challenges faced by eye health

The alarming situation of increasing avoidable blindness is caused by multiple factors. In many cases, the number of competent health care professionals is insufficient, productivity is low, there is an uneven distribution of resources or in some cases people lack medical insurance or the ability to afford treatment. In general, the poorest and most remote areas have the least access to eye care. Conditions like cataract, refractive error, diabetic retinopathy and glaucoma have a gradual onset. Due to a lack of access to primary eye care, people try to self-medicate or use coping strategies. These lead to complications or even complete vision loss. Key issues to address this include human resource development and distribution

The target of the WHO Global Action Plan to reduce avoidable blindness and visual impairment by 25% by 2019 cannot be achieved without ensuring that the millions of people unnecessarily blind due to uncorrected refractive errors and those with vision impairment can access qualified eye care professionals. That is why it is important to focus on the development of human resources, including optometrists, and models of service delivery that have the capacity to deal with the unnecessary burden of vision impairment and blindness.

Early detection and treatment of common causes of blindness through primary health care initiatives within the health system can have a tremendous impact on eye health care and prevention of blindness. Although eye health should be an integral part of the health care system, it has not always been sufficiently

integrated at all levels of health care delivery, especially in primary health care and health financing.

Current population trends, with increases in aging populations and non-communicative disease, such as diabetes, in both developed and developing countries will demand different responses from the eye health community. In developed countries the elderly (over 65 years old) are already the fastest growing segment of the population, and will continue to grow. They have increased prevalence of blindness and visual impairment due to cataract, macular degeneration, glaucoma, and diabetic retinopathy. People over the age of 50 account for two thirds of the visual impairment and 85% of blindness. With the increased prevalence of these conditions, the demand for eye care will increase, creating an additional burden on the existing services. The effect in developing countries will still be significant, but to a lesser degree given the low average age of the populations.

Additionally, there is an increase in obesity and diabetes due to lifestyle changes. Diabetic retinopathy is a leading cause of visual impairment. This trend is significant in developed countries, as shown by the changes in the prevalence of obesity and diabetes from the US (figure 2) but also emerging in developing countries with an increased prevalence of diabetes and related complications due to changes in diet. Due to the lack of health service infrastructure and community awareness around the prevention, detection, and treatment of diabetes and the related complications, the disease will have a more debilitating impact on individuals and communities in these resource poor settings.



Age-adjusted prevalence of obesity and diagnosed diabetes among US adults

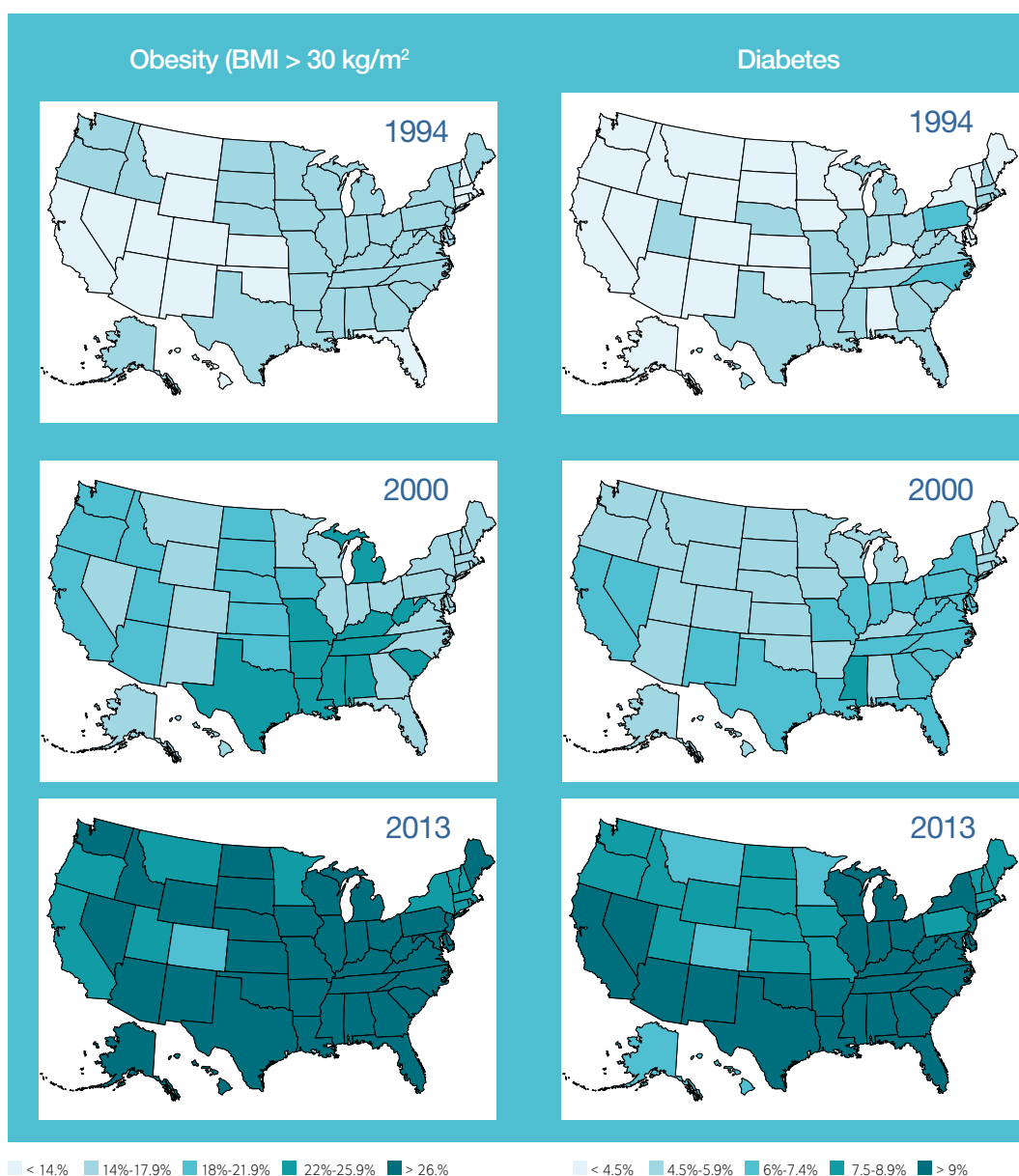


Figure 2: Increasing prevalence of obesity and diabetes from 1994 to 2013; source: www.cdc.gov/diabetes/statistics



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The Changing Needs and Demands of Effective Eye Health and its Integration into Public Health Systems Frameworks *(continued)*

Developed countries face challenges with drastic increases in health care costs (figure 3) and waiting times to see ophthalmologists (figure 4)

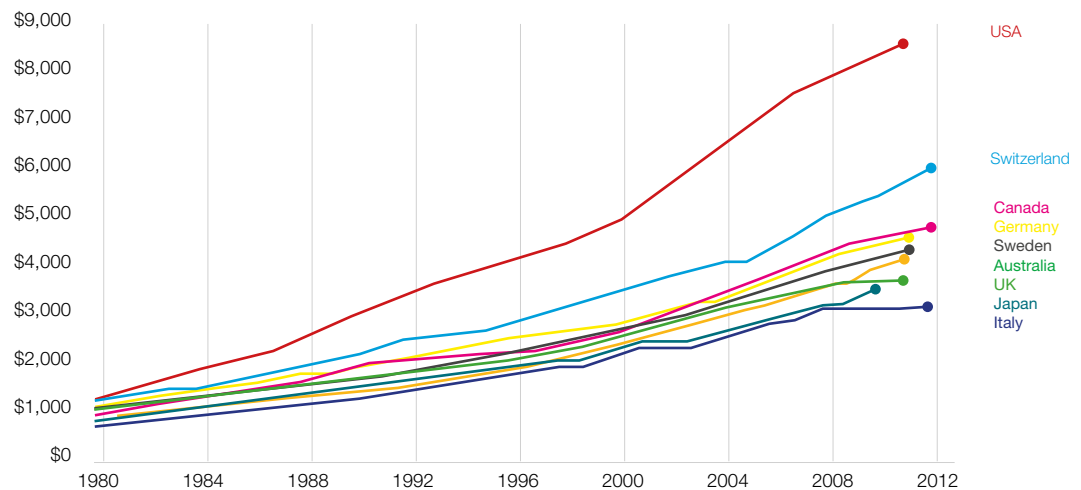


Figure 3: Increased health expenditure per capita in developed countries; source: OECD health data 2013

Median waiting times for elective surgery, by specialty of surgeon, 2011-12

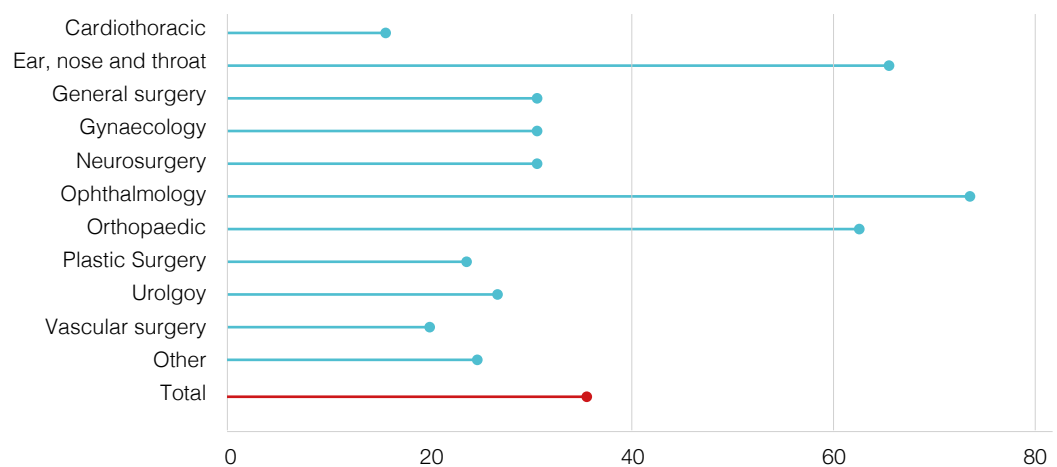


Figure 4: Median waiting times for elective surgery, by specialty of surgeon, 2011-2012, Australian Government Institute of Health and Welfare; source: <http://www.aihw.gov.au>



Eye care within universal health coverage and access

There has been a significant shift in the way in which eye care is provided in the 21st century. Eye care has traditionally been positioned within the private sector, with the sale of spectacles and contact lenses as the primary reason to visit an optometrist. However, the limitations and barriers in reaching the poorest of the poor around the world have shifted the provision of eye care to a public health position. The fundamentals of public health (epidemiology, biostatistics, human resources, legislative issues, etc.) have highlighted the disparities that exist in eye care between the developed and developing world.

Eye care is now fashioned against a backdrop of universal health coverage and access and the role of non-medical health care professionals such as optometrists is rapidly changing and increasing. By applying the fundamentals of public health, eye health programmes can be equitable, efficient and effective. Epidemiological research has enabled the implementation of eye health programmes to be more focussed, as they are evidence based. This evidence has also served as the template upon which the eye health workforce has been derived. Developing an adequate eye health workforce has been a challenge in many contexts, however, a systems approach has allowed the development of various cadres of eye health professionals, each serving discrete, yet integrated services. While providing services to the poorest of the poor, it is evident that innovative solutions also need to be developed to ensure sustainable service delivery together with the role that optometry is currently playing and future challenges.



4

The Scope of Optometric Practice

Optometry as defined by WCO is a healthcare profession that is autonomous, educated, and regulated (licensed/registered). Optometrists are the primary healthcare practitioners of the eye and visual system, providing comprehensive eye and vision care, which includes refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system. However, it is acknowledged that optometry functions both independently and in collaboration with the broader eye care and health team.

Optometry answers the challenges of eye health care by providing a range of diagnostic, technical and direct patient care and support services required by patients and other health care professions. It has increasingly focussed on universal health coverage; providing accessible, equitable and affordable eye health services to all and shifting from a predominantly private sector orientation to a public sector one as well.

Optometric scope of practice includes:

- Refraction
- Dispensing
 - Spectacles and contact lenses are medical devices
- Detection/diagnosis and management of visual problems
 - Examination of the eye and visual system
 - Assessment of binocular vision
 - Ocular and systemic pathology with ocular manifestations such as
 - Glaucoma
 - Diabetic Retinopathy
 - Hypertension
 - Cataract
- The use of diagnostic and therapeutic drugs
- Contact lens fitting
- Low vision rehabilitation
- Referral to ophthalmology and other professionals.

Optometric primary care responsibilities

Optometrists have responsibilities in the following areas of public health primary care:

- Prevention
- Health education
- Health promotion
- Health maintenance
- Diagnosis
- Treatment and rehabilitation
- Counselling
- Consultation



*The WCO Scope of Practice Survey*¹⁸ clearly shows that there are regional variations in the scope of optometric practice which, in many countries, restrict how optometry can respond to the challenges of vision loss. Optometry functions in a primary eye care capacity in many developed countries and in many developing countries at a secondary level supporting primary eye care nurses and also co-manages diseases with ophthalmologists.

As an integral part of the health care team, optometrists have a wide range of responsibilities, including ensuring provision of high quality and affordable eye health services. Those in an academic environment need to orientate their teaching towards making students more aware of the public health challenges to eye health. Those in research need to provide the evidence for the clinicians and their health profession colleagues and legislators to ensure that service provision is focussed on the needs of the public. Health promotion advocacy, although historically neglected, is very important and needs to be made widely available.

The disability agenda has gained much traction in recent years. Visual impairment is a disability that has a significant impact on an individual's educational and economic development, limiting opportunities and impacting on the quality of life. However, in this debate optometry is conspicuous by its absence. A multi-sectoral approach and

collaboration with eye care, rehabilitation and social services needs to be developed. It is very important to find a better balance between public, private and non-governmental organisation (NGO) sectors so that those in need are well supported.

The initial steps

Optometry has been an established profession in many parts of the world for over 100 years^{19/20}. As a profession, optometry grew from education in technical optics and refraction to include visual optics, anatomy and physiology of the eye and the recognition and treatment of ocular disease and abnormalities. As a consequence of this evolution, optometry gained more recognition, became regulated - not only by governments, but also by professional councils - and integrated into formal health structures in the public and private sectors in many parts of the world.

A key event in advancing the role of optometry globally has been the recognition of WCO by WHO and the development of working relations between the two bodies. Optometry has also been recognised as an independent eye care profession in the joint World Health Organisation and International Agency for the Prevention of Blindness VISION 2020: Right to Sight campaign. The identification of refractive error as one of the priorities of the campaign alongside cataract and other ocular pathologies cemented optometry's contribution to this effort.

¹⁸ <http://wco.pellesweb.no>

¹⁹ https://www.optical.org/en/news_publications/Publications/50th-anniversary-publication.cfm

²⁰ The development of optometry in the U.S. is outlined in a paper by Dr Shilpa Register in the Journal of Optometric Education http://journal.opted.org/articles/Volume_36_Number_2_Article3.pdf



4

The Scope of Optometric Practice *(continued)*

The current status of optometry

Depending on the health system in individual countries, optometrists are regarded as either primary or secondary health care providers. This influences the cadres of healthcare professionals and related health personnel who make up the eye care team. Eye care professionals include ophthalmologists, optometrists, orthoptists, dispensing opticians and nurses. The impact of optometry's contribution varies from country to country due to the limited recognition of optometry and the uneven distribution of optometrists.

There are huge disparities in the scope of practice of optometrists in both developed and developing countries. Whilst refraction and the dispensing of spectacles was optometry's primary service, the scope of practice has expanded to the provision of primary eye care either directly or in partnership with nurses in much of the developing world. As the first point of contact for the public in many countries, optometrists are ideally situated to provide comprehensive eye examinations including early recognition, diagnosis and, where appropriate treatment of eye conditions. This has been enhanced by the introduction of diagnostic and therapeutic services and the development of new diagnostic technologies.

In addition, eye health care technological advances in spectacle lens materials and designs have given optometrists and dispensing opticians the opportunity to provide spectacles to meet the demands of 21st century living and working. On the other hand, sub-speciality areas in optometry



such as paediatrics, therapeutics contact lenses, low vision and binocular vision allow optometrists to provide focussed services to those with particular needs.

In the developing world, where there is limited access to even basic optometric services, optometric practitioners often fill a secondary care role. Ophthalmic nurses, technicians and trained lay people provide primary care, referring patients to optometrists. A sub-speciality area like low vision should be well structured and delivered within a



multi-disciplinary health service framework in developed countries. However, in developing countries, the lack of availability of affordable low vision devices and appropriately trained personnel makes the service inaccessible and inadequate to meet the needs of the population.

Optometry, its future as a public health profession

The substantial changes taking place in the optical industry have provided optometry with advanced screening and diagnostic instrumentation which facilitates both refraction and the recognition and diagnosis of ocular diseases. This has enabled optometry to undertake co-management of ocular disease alongside ophthalmologists and medical practitioners. Current and ongoing advances to simplify the screening and diagnosis of patients with potentially blinding conditions such as diabetic retinopathy, macular degeneration and glaucoma have the potential to revolutionise access to and early detection of these problems in the primary care setting.

Despite the significant improvements in technology, the access to this technology is inequitable. Technology available in the developed world is often unaffordable for the poor within developing countries, highlighting the need for the optical industry to design affordable instrumentation in order to serve the needs of the poor.

Currently clinical diagnostic and screening equipment, especially for ocular disease identification, is unaffordable for use in

the public sector or in rural communities particularly in developing countries. The development of mobile applications can revolutionise the screening of ocular pathology, especially in underserved populations. Critically, the paucity of optometry schools in the developing world needs to be addressed. Unless this is done the objective of eliminating vision impairment and blindness due to avoidable causes such as uncorrected refractive error will remain elusive.

The academic community in optometry should be called upon to advance the profession through research and development. Today, with the majority of the world seeking health care in the public sector, it is important that verified clinical and screening protocols are implemented to ensure comprehensiveness and quality of services provided. These can only be identified through rigorous clinical trials. Research into development of technology to provide cost effective or affordable screening instruments is critical to the provision of successful and comprehensive eye health. In a world where costs to society are scrutinised intensely, more focus has to be put on generating the evidence of the economic impact of vision impairment and blindness.

It is essential that eye care delivery is based on team work and interdisciplinary co-operation to optimise the contribution of each team member to reach more people in need. This means taking a proportionate view of the skills required at the primary, secondary and tertiary levels of eye health care delivery.



5

Optometric Competency Standards

In 2011, WCO adopted the broad competencies of dispensing, refracting, prescribing and the detection of disease/abnormality as being the minimum required for individuals to be called optometrists

The right competencies to provide the best services

Competency is the ability to perform the activities within an occupation to the standard expected in employment. Competencies are the skills, attitudes and knowledge needed to be able to practise.

Kiely, in her 2008 article on the Australian Competency Standards for Optometry²¹ defines competency standards as:

“Listing the skill, knowledge and attributes that a person needs to be able to perform the activities associated with a particular trade or occupation to a standard associated with the workplace. The term ‘attributes’ is used to indicate the personal qualities that underpin performance and, hence, competence. Attributes include capacities, skills, abilities and traits. Inevitably, to some extent such listings are open ended as identifying and describing human attributes is not an exact science.

“A ‘competent’ professional has the capacity to perform the range of professional roles and activities at the required standard of practice. The term ‘competence’ is a blanket term used to describe overall professional ability and links (or integrates) three key ideas: a practitioner’s ‘capacity’, ‘performance’, and the standards of the performance. These three notions are represented centrally

in professional competency standards, where the term ‘standards’ is a convenient name for the overall structure that taken together comprises a detailed description of professional practice.”

The WCO Global Competency-Based Model of the Scope of Practice in Optometry

To support the development of optometric education, the WCO has developed a *Global Competency-Based Model of Scope of Practice in Optometry* that provides a vertical career ladder for individuals seeking to expand their scope of clinical responsibility.

The WCO Global Competency Based Model²², first published in 2005 and revised in 2015, recognises the historical development of optometry and the cultural and legislative differences in the optometric scope of practice around the world. Moreover, it reflects optometrists’ commitment to achieve appropriate patient care outcomes aimed at maintaining and improving their patients’ quality of life.

The model was built largely based on the competency statements and model developed by the Optometrists Association Australia (OAA). These competency statements have the added strength of having been developed through support received from, and then recognised by, the Australian government. The categorical structure of the model parallels the structure developed for the European Diploma in Optometry by the European Council of Optometry and Optics (ECOO) in the mid-1990s.

²¹ Clinical and Experimental Optometry Volume 92, Issue 4, pages 362–386, July 2009

²² The Global Model can be found at: http://www.worldoptometry.org/filemanager/root/site_assets/governance_documents/global_competencies_model.pdf



It will also help regulatory bodies guarantee practitioners' competence as part of their responsibility to protect the public when faced with future migration of optometrists across jurisdictional borders. It will also act as a stimulus for creating greater uniformity in optometric practice worldwide by being applied to teaching curriculums and statutory definitions of scope of practice.

In October 2011, the WCO Governing Board adopted the broad competencies of dispensing, refracting, prescribing and the detection of disease/abnormality as being the minimum required for individuals to call themselves optometrists. This is in addition to and does not conflict with the Concept of Optometry which remains unaltered and in many countries is still an aspiration. The restructured competency model will reflect this decision and clearly identify the categories required for an optometrist.

“ WCO believes that an optometrist should possess the skills and competencies to perform eye examinations, prescribe spectacles, diagnose and treat common eye problems, and refer more serious conditions. WCO believes that optometrists should be integrated within the eye care, and wider health care team. ”



6

Optometric Education



Over the past century, optometry has developed from a profession mainly providing refractive services and spectacles to a primary health care profession providing diagnosis and treatment for a wide range of vision and related general health conditions. Optometric education has progressed from one and two year post-secondary education to a minimum of four years of college/university education in many countries.

Optometric education and the practice of optometry have developed differently and at different rates around the world. Optometric education is provided in major research universities as well as in independent schools and colleges of optometry²³. The education requirements follow national cultures and are, for instance, greater in the U.S.A. and Canada, for example, than in many countries requiring a four-year undergraduate degree prior to entering a four year professional

optometric degree programme similar to the requirements for dental and medical education in the U.S.A.¹⁷ In other parts of the world, students go directly into the professional optometric programmes with higher level qualifications gained at school. This is generally the same as medical and dental education in these countries.

The range of services provided by optometrists varies considerably from country to country. In countries such as the U.S.A., Canada, Australia and UK, optometrists not only provide refractive, low vision, contact lenses, binocular vision and optical services, but also diagnose and treat many ocular conditions such as conjunctivitis, glaucoma, ocular allergy, and dry eye among other ocular diseases. They monitor diabetic retinopathy, provide pre- and post-operative care and often work in hospitals, eye referral centres and in practices with ophthalmologists. In

²³ <http://www.worldoptometry.org/en/schools-of-optometry/index.cfm>



7

Accreditation

other countries, due to legislative restrictions, optometrists are limited in their scope of practice, in some cases mainly to refractive services. In those countries the increase of the scope of practice will require the consequent expansion of the optometric education provided. In countries where there is a lack of practitioners, more optometric educational institutions need to be established to educate a sufficient number of optometrists.

Independent of their structure, optometry educational departments share faculty with other health-related departments, including medicine. They also collaborate in research and translational activities such as patient care and communication. This multidisciplinary approach ensures both the competency of optometrists and confidence between optometry and the medical and related professions.

WCO encourages and helps to develop optometric education and in-depth programme reviews of the institutions by external agencies. Technology now offers options to provide distance continuing education to practitioners, especially in remote locations or in countries with limited resources. WCO is exploring a pilot on-line scheme to provide this at little or no cost to those optometric associations wanting to upgrade the skills of their members.

WCO's Education Committee has produced a guide to help schools, colleges and universities intending to start or upgrade an optometry programme with a basis for designing their curriculum.²⁴

The level of oversight and evaluation of optometric education institutions varies around the world. There are accreditation agencies in some countries such as the Accreditation Council on Optometric Education (ACOE) for the U.S. and Canada²⁵, Optometry Council of Australia and New Zealand (OCANZ)²⁶, the UK General Optical Council (GOC)²⁷ and The European Council of Optometry and Optics (ECOO)²⁸. These organisations have very similar procedures and processes for the evaluation of optometric educational programmes. In other instances, individual institutions have procedures for external review of their programmes to assure a quality education.

As with any health care profession, optometry relies upon a process of accreditation of education, audit and assessment of competencies to provide reassurance to the public and related professions.

The purposes of accreditation in the international optometry context are:

- Assisting the development of new schools
- Improving standards in established schools
- Supporting the growth of the profession in developing areas
- Benchmarking competencies to assist with the global movement of optometrists

²⁴ www.worldoptometry.org/en/publications/curricular-support-elements-for-an-optometry-programme.cfm

²⁵ <http://www.aoa.org/optometrists/for-educators/accreditation-council-on-optometric-education>

²⁶ <http://www.ocanz.org/>

²⁷ <http://www.optical.org/>

²⁸ <http://www.ecoo.info/european-diploma/>



8

Legislation and Regulation

Professional regulation²⁹

A profession is an occupation in which an individual uses an intellectual skill, based on an established body of knowledge and practice, to provide a specialised service in a defined area, exercising independent judgement in accordance with a code of ethics and in the public interest. Some areas of work are reserved by statute to members of a profession for the protection of the public, on the basis that the profession's governing body will ensure that those licensed to practice are properly qualified and conduct themselves in a professional manner.

In the UK, a governing body may be established by statute, by Royal Charter or incorporated as a company limited by guarantee. In other countries, they are established by law. Governing bodies are accountable to the public they serve and should be independent of all other interests. Governing bodies are required to support a fair and competitive market in which the public can make informed choices between the providers of professional services in each area, as well as between the qualified and unqualified.

Principles of regulation

The purpose of professional regulation is to assure the quality of professional services in the public interest. The regulation of a profession involves the setting of standards of professional qualifications and practice; the keeping of a register of qualified persons and the award of titles; determining the conduct of registrants, the investigation of complaints and disciplinary sanctions for professional

misconduct. All procedures for regulation should be open, transparent and auditable. Lay persons should be involved, where appropriate.

Governing bodies should keep the standards of education, training and practice required to enter the profession under regular review and relevant to the needs of those who require professional services. The competence of those seeking professional qualifications should be determined by peer review. Areas of work involving health, safety and professional competence should be subject to periodic assessment and re-certification or re-validation.

Governing bodies should require registrants to undertake personal responsibility for monitoring their own performance, to undertake such further learning and training necessary to maintain their competence, and to maintain their commitment to a high standard of professional conduct.

Governing bodies should provide a clear and accessible complaints procedure which distinguishes between the investigation and the disciplinary process. Disciplinary procedures should follow the requirements of natural justice and include an appeal procedure to an independent forum. The outcome of any disciplinary hearing should be published.

The form which regulation can take a variety of forms depending on national law and culture and, in the case of optometry, will depend on the level of recognition of the profession and its scope of practice by governments.

²⁹ UK Inter Professional Group, 2002, www.ukipg.org.uk



Voluntary professional self-regulation

Where there is no statutory regulation of the profession an association may decide to establish its own standards of education and ethical guidelines as a requirement for membership. This gives assurance to the public that association members practise to an appropriate standard.

Statutory self-regulation

Governments may legislate for the regulation of a profession such as optometry but then delegate the implementation of the legislation in respect of educational standards, scope of practice and registration to a professional association. This model is becoming less common in the current political climate of deregulation as it is seen as a risk to the creation and maintenance of monopolies.

Statutory regulation

Legislation is enacted to establish a council or board with powers to regulate standards of education, entry standards and continuing professional development and to maintain a register of suitably qualified practitioners often together with disciplinary procedures to protect the public against unethical behaviour and to remove unsuitable practitioners from the register. In some countries the council will include lay and medical members.

Licensure

Licensure is a method of regulation where a licence to practice is issued by a regulating authority which may be a government ministry or state board. The licence is issued based on educational qualifications and may be lifelong or time limited and subject to periodic review.

Protection of title

In some countries, there is limited regulation of professional activities but the law protects the title of optometrist. This means that whilst non-qualified persons can refract and fit contact lenses, they cannot call themselves optometrists. The reassurance to the public is that if they choose to go to an optometrist they know that person is properly qualified.

Whilst the nature and scope of regulation varies from country to country, WCO recommends that optometry should be regulated in a similar way to other independent health care professions in each country



9

Workforce Planning

Optometrists currently work in many contexts and sectors eg private, public, industry and academic. Workforce planning should be based on the various roles that optometrists can play as well as evidence of the numbers needed, mix and distribution worldwide. Optometrists should be appropriately trained and optimally placed to provide the eye care required by society.

The global health workforce crisis is estimated to have the most significant impact in 56 countries, 36 of which are in Africa³⁰. The shortage optometrists and other eye health professionals in Africa is of particularly concern. Very often, the limited and misdistribution of the human resources for eye health can be attributed to limited advocacy and mobilisation of resources to ensure an equitable distribution of optometrists to serve the interests of the public, especially in the public sector.

Governments need to acknowledge the existence of the optometrists in the eye health work force. Many countries still do not comply and hence optometric services are sparse in those countries as posts are not created.

There are various issues that WCO advocates for with governments, for example, the recognition of optometry as a profession and the significant impact the profession can have on health expenditure. WCO can also advocate for the creation of posts for optometrists in the public sector, and emphasise the importance of a fair distribution of optometrists in rural and urban settings.

The success of the profession in the private sector needs to be galvanised to support expansion of services in the public sector. The heavily resourced private sector can stimulate the development of programmes in the public sector.

WCO is at the forefront of ensuring that the quality of optometric services is benchmarked against the existing competency framework. It is imperative that by reaching adequate numbers, the quality of service is not compromised. A clear policy to develop the optometric workforce is needed by which WCO acknowledges that in some developing countries, and particularly in rural areas, there are insufficient clinicians to carry out refractions as part of a complete (or comprehensive) eye examination which includes detecting the early signs of disease and abnormality. However, in view of this reality, WCO believes strongly that 'stand-alone' refraction³¹ without an eye health examination is a serious public health issue and that a team approach with other eye and health cadres needs to be developed to address this deficit for the benefit of the population.

30 WHO, OECD; International Migration of Health Workers. February 2010; www.who.int/hrh/resources/oecd-who_policy_brief_en.pdf

31 <http://www.worldoptometry.org/en/what-we-do/position-papers.cfm>



Optometry in an integrated eye health care team

To meet present and future challenges, a paradigm shift is needed in the way optometry approaches the delivery of eye care services. An approach that strengthens the health system needs to be supported with each of the building blocks supported in integration with the others.

The WHO defines the purpose of a health system as improved health for the beneficiaries, which is equitable and responsive to their needs. The health system is composed of service delivery, health workforce, health information, medical products and technology,

financing, and governance, as illustrated in figure 5.

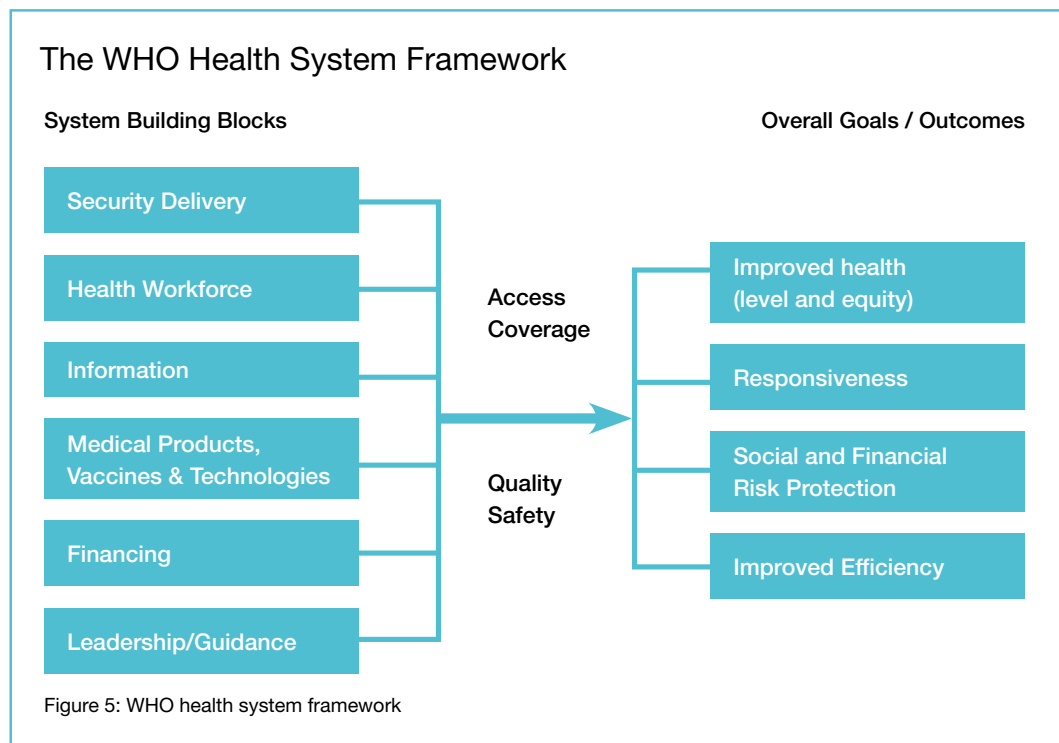
An integral component of a health system is human resources and, as discussed before, it is very important to ensure that there is the right number, the right quality, and the right distribution of trained health providers to meet the needs of the community.

WCO believes that an optometrist should possess the skills and competencies to perform eye examinations, prescribe spectacles, diagnose and treat common eye problems, and refer more serious conditions. WCO believes that optometrists should be integrated within the eye care, and wider health care team.



9

Workforce Planning *(continued)*



Academic institutions need to incorporate public health into their curriculums³² and ensure that graduating optometrists have adequate skills and knowledge to address the public health challenges that exist in eye care. Importantly, young graduates need to be encouraged to work in the public sector and in rural and underserved areas. In order for this to be successful, health ministries need to offer appropriate incentives.

It has been fifteen years since the VISION 2020 Right to Sight campaign was launched. While significant efforts have been made across the world to eliminate avoidable blindness, there is still a lot more

to do to reach its goals. The adoption of refractive error as one of the priorities created an opportunity for the recognition of optometry as a key player in the eye health equation. In addition, the recent focus on non-communicable diseases such as diabetic retinopathy has also created another opportunity for optometry to embrace its co-management role and support millions of patients with diabetes around the world. The achievement of the 25% target established by the WHO Action plan for 2014-2019 presents some challenges to the profession but it should also catalyse its efforts and motivate the profession to make a tangible impact

32 AVRI, BHVI, WCO Public health survey. Public health education in optometric institutions, 2014



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Resources

www.worldoptometry.org

- Vision Mission and Objects
- About WCO
- An introduction to WCO
- Definition of Optometry and Optometrists
- Regional Structure
- Position papers
- Scope of Practice Questionnaire
- Membership
- Regional News
- Education and Resources
- Optometry Schools
- World Optometry Foundation
- e learning platform
- Education curriculum toolkit
- Global Competency Model

www.givingsight.org

- Optometry Giving Sight

www.ecoo.info

- European Diploma in Optometry and Accreditation Scheme

www.iapb.org

- International Agency for the Prevention of Blindness World Sight Day

www.who.int

- Universal Eye Health: a global action plan 2014-2019 www.who.int/blindness/actionplan/en/



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