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CLINICAL AND EXPERIMENTAL
OPTOMETRY

REVIEW

The challenge of uncorrected refractive error: driving the agenda of the Durban Declaration on refractive error and service development

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The purpose of this article is to highlight the challenge of uncorrected refractive error globally, as well as to discuss recent advocacy successes and innovative programs designed to address the need for broader refractive error service development, particularly in developing countries. The World Health Organization's VISION 2020: The Right to Sight program first posed the challenge to national governments to give priority to strategies and resources targeted towards avoidable causes of blindness and visual impairment, so that these unnecessary forms of blindness or visual impairment can be eliminated globally by the year 2020. The blindness prevention community is challenged to increase in scale its initiatives, which support the attainment of VISION 2020: The Right to Sight goals primarily and the United Nation's Millennium Development Goals indirectly. The Durban Declaration on Refractive Error and Service Development was the outcome of a meeting of eye-care professionals, researchers, governments, civil society and industry in March 2007 and still stands as a guiding document to the blindness prevention community for the elimination of avoidable blindness due to uncorrected refractive error.

Key words: Durban, uncorrected refractive error

GRC	Global Resource Centre
IAPB	International Agency for the Prevention of Blindness
ICEE	International Centre for Eyecare Education
IOTA	Institut d'Ophtalmologie Tropicale d'Afrique
MDG	Millennium Development Goals
NGO	Non-government organisations
RESC	Refractive error studies in children
REWG	Refractive Error Working Group
UN	United Nations
WCO	World Council of Optometry
WCRE	World Congress on Refractive Error
WHA	World Health Assembly
WHO	World Health Organization

In February 1999, the World Health Organization (WHO) initiated the 'VISION 2020: The Right to Sight' program to accelerate efforts towards eliminating global avoidable blindness and visual impairment by 2020.[1] This initiative, emphasising the fact that many causes of blindness and impaired vision are either avoidable or treatable, brought together international bodies, including non-government and professional organisations, educational institutions and interested individuals under the umbrella of the International Agency for the Prevention of Blindness (IAPB)-WHO partnership. As the global co-ordinating body, IAPB conducts advocacy and mobilises resources in support of national blindness prevention programs.

Initially, the priorities identified by the VISION 2020 program were cataract, trachoma, onchocerciasis, childhood blindness and low vision.[2] These received much of the resources and attention from stakeholders in the eye-care field. Later, refractive error programs gained momentum as

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research data, which showed that uncorrected refractive error was the major cause of vision impairment, emerged with subsequent advocacy efforts highlighting its significance.

According to the latest WHO estimates, about 314 million people worldwide live with visual impairment due to either eye disease or uncorrected refractive error, of whom 45 million are blind.[3] Seventy-five per cent of blindness is avoidable and results from conditions that could have been prevented or controlled through appropriate interventions.[4] Globally, 153 million people are either blind or visually impaired due to uncorrected distance refractive error.[5] Visual impairment due to uncorrected refractive error, easily correctable by a pair of spectacles, is potentially debilitating and limits the affected individuals' opportunities in education and employment.[6] In addition, studies[7–9] have shown that on average in developing countries, only 20 per cent of those requiring distance visual correction have access to spectacles. The Refractive Error Studies in Children (RESC)[7] and the formation of the Refractive Error Working Group (REWG) by the WHO (an expert technical committee to advise on policy, technical and strategy issues regarding uncorrected refractive error) gave further impetus to a global prioritisation of eradicating visual impairment due to uncorrected refractive error.

Furthermore, presbyopia, which necessitates spectacle correction for near vision, was long considered 'not as important' due to the assumption that reading spectacles were readily available and relatively inexpensive. Recent studies[10] have highlighted presbyopia as a significant refractive problem due to the following evidence:

- 1.04 billion people worldwide have presbyopia (2005)
- Of those, 517 million people (49 per cent) have either no or inadequate correction
- As a result, 410 million of these are prevented from performing near tasks.

Presbyopia has become a focus of international public health efforts and has been recognised by the WHO as a major health issue, with potential negative consequences for the productivity and quality of life of affected individuals, their families and communities.[11,12] Currently, most of the burden of uncorrected refractive error falls on developing countries, many of which continue to lack the basic infrastructure, equipment and personnel to provide refractive services as part of general health service provision.[12]

IMPETUS GENERATED BY THE DURBAN DECLARATION

The inaugural World Congress on Refractive Error (WCRE) was held in Durban, South Africa, in March 2007. The meeting, hosted by the International Centre for Eyecare Education (ICEE), was attended by officials of the WHO, the IAPB, the World Council of Optometry (WCO) and other stakeholders in blindness prevention. The aim of the congress was to advocate public health strategies to end avoidable blindness due to uncorrected refractive error. This historic gathering of more than 650 international delegates representing eye-care professionals, researchers, governments, civil society and industry, culminated in the signing of the Durban Declaration on Refractive Error and Service Development. The Congress highlighted uncorrected refractive error as a leading cause of avoidable blindness and visual impairment across the world and acknowledged the link between poverty and visual impairment, which places an economic burden on individuals, their families and the affected nations.

The Declaration (Appendix 1) resolved to prioritise solutions towards refractive service development by:

- Increasing awareness of the magnitude of the unmet need for refractive services globally
- Influencing the policies of national and world health bodies with regard to services and resources required to meet the refractive care needs
- Addressing the present paucity of services, personnel, training institutions and affordable spectacles in developing countries
- Addressing the barriers that prevent those in developing countries from accessing refractive error and low vision services
- Working towards collaborations between professions and the formation of partnerships to achieve the VISION 2020 goals
- Investing in training and the development of eye-care teams to meet the needs of underserved populations
- Supporting the establishment of global procurement and distribution systems to make optical appliances and devices available to communities in need
- Creating and disseminating evidence-based information on best practices in refractive service development and delivery.

The Declaration also called for the strengthening and optimal use of infrastructure and appropriate technology, both in relation to comprehensive eye-health services and community participation, which are key components of the success of any VISION 2020 endeavour. Such a comprehensive approach towards the reduction of visual impairment, with the inclusion of uncorrected refractive error, should be co-ordinated, appropriate to identified needs and sustainable, with relevant resource planning strategies to ensure effective implementation.

Population growth factors, as well as the maldistribution of available ophthalmic personnel in developing countries, make it difficult to keep pace with eye-care needs in much of the developing world. Many developing countries lack the basic resources such as trained personnel and appropriate or adequate infrastructure to deliver eye-care services to the populations they serve.[13] Furthermore, their eye-care services (in particular, refractive services) do not form part of the general public health system, resulting in potentially blinding conditions going undetected. National governments should identify priority actions necessary to reduce the burden of avoidable blindness on their society and ensure effective policy implementation.

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One of the objectives of the WCRE was to bring stakeholders together and draw attention to key challenges facing the blindness prevention community. National Ministries of Health are the primary health service providers and are responsible for allocating resources within their respective countries. Therefore, the Declaration called on governments to:

- Make refractive services a priority
- Support the development and employment of appropriate human resources and the acquisition of infrastructure and technology for the effective delivery of refractive services within the public sector
- Support organisations working towards the elimination of avoidable blindness due to uncorrected refractive error.

Meeting the VISION 2020 goals in the developing world requires effective policy development and implementation, as well as a co-ordinated national effort towards the development of resources needed for refractive service delivery. Aligning VISION 2020 plans with national health plans will ensure the availability of refractive service at the point of need.

OPPORTUNITIES FOR ADVOCACY

Since the inception of VISION 2020, two resolutions were passed by the World Health Assembly (WHA), which addresses the elimination of avoidable blindness (WHA56.26 in 2003 and WHA59.25 in 2006). In addition, the Prevention of Blindness Action Plan[3] was tabled by the WHO in an attempt to expand efforts by international partners in preventing blindness and visual impairment. The 62nd WHA of May 2009, in its resolutions on public health, approved a resolution endorsing an action plan by member states, partners and the WHO to expand efforts to eliminate avoidable blindness by strengthening national eye health programs.[14] The WHA also endorsed the inclusion of prevention of blindness, including visual impairment, in the strategic objectives (Objective 3, Non-Communicable Diseases) of the WHO Medium Term Strategic Plan 2008–2013.[15]

The impetus generated by the WHA resolutions and the Durban Declaration on Refractive Error and Service Development should encourage regional bodies to use these guiding documents as a basis to advocate a more comprehensive strategy towards attaining VISION 2020 goals. The Durban Declaration empowers eye-care advocates to convince governments that refractive error has been identified as a major international public health challenge. The United Nations (UN) developed an action plan termed the Millennium Development Goals (MDGs) to lift the world's population out of extreme poverty by 2015. Worldwide, governments of low- and middle-income countries are under considerable pressure to achieve the MDG, with seven of the eight MDGs being linked to the priorities and implementation of VISION 2020.[15] Particular reference to the impact of uncorrected refractive error on educational and employment opportunities needs to be highlighted to extend the scope of the advocacy efforts to appeal to a broader national development agenda in line with attaining the MDGs.[15]

The development of comprehensive eye health programs at national and subnational levels creates an opportunity to expand refractive services and incorporate an integrated refractive error strategy into the national activities of member countries. The integration of eye-care services (including refractive error services) in general health services will not only allow prevention, early detection and management of diseases but will contribute to the general strengthening of health systems. Its link to and collaboration with educational services on school health programs will contribute to achieving the second MDG, which is to achieve universal primary education.

CURRENT EFFORTS AND COLLABORATIVE APPROACHES

Multi-country training initiatives

Current human resources for refractive error are insufficient to meet the growing need and demand for refractive error services.[16] The Durban Declaration recognises that the greatest contribution to a severe shortage of these services in developing countries is the lack of appropriately trained personnel.

An approach to the training of mid-level and professional optometric personnel was proposed by Naidoo in 1998.[17] In this multiple entry/exit approach, students entering a four-year program have the option to exit after two years to work at primary health level in the public service and to return to complete an additional two years towards a Bachelor of Optometry degree at a later stage. Students participating in the two-year mid-level program complete a one-year foundation course in basic sciences and one year of optometric and dispensing training to provide strategies aimed at encouraging people to seek eye-care services, including health promotion tools such as posters, public service announcements and general eye health awareness campaigns at community level, as well as provide basic refraction and dispensing services. These graduates are able to screen and refer for any obvious ocular pathology. A select number of diploma graduates are allowed to continue towards the completion of a four-year bachelor's degree. Degree students will not be restricted to working in the public service. This approach, which is currently being implemented in Malawi and Mozambique through a consortium of partners, will have a strong public health focus, with graduates being absorbed into service within public health facilities.

Elsewhere in Africa, the Institut d'Ophtalmologie Tropicale d'Afrique (IOTA) in Mali has recently implemented a regional training program in optometry for French-speaking West Africa. Similarly, The Gambia has started a two-year optometric technician program within its Regional Ophthalmic Training program.

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New schools of optometry are being established in Asia to meet the higher needs and to train educators for the future, while established schools are paying greater attention to public health eye-care needs.

Infrastructure development

An increase in available human resources for optometric service provision alone will not reduce the prevalence of uncorrected refractive error. Establishing well-equipped eye-care service centres that are accessible to communities is linked to clinical service provision by trained graduates. This strategy could include service delivery models such as 'vision centres', which are an appropriate, flexible and sustainable way of delivering eye care and vision correction at the community level, providing basic eye examinations and spectacles, an essential element of which is the detection and referral of sight-threatening conditions. This 'vision centre' model was pioneered initially by the LV Prasad Eye Institute. 'Vision centres' are now being strategically placed in public hospitals and clinics, by non-government organisations (NGOs) or through private sector partnership initiatives, where they provide the necessary infrastructure for the delivery of refraction and spectacle service provision.

Strategies for eye care service provision in the developing world must address the following considerations in planning their outcomes:

- Integration of the service within existing eye and health care services
- Provision of quality service and products
- Ensure affordability of the service and service products
- Ensure sustainable services through cost-recovery measures
- Empower local people through job creation
- Promote community participation.

Establishing global distribution channels that ensure a supply of affordable optical products such as spectacles, lenses and equipment to these 'vision centres' is an important component of creating access to eye care for people in need. Cost recovery and sustainability of the service necessitate that these distribution channels reduce handling fees and third-party overheads as far as possible, without compromising equity, affordability or quality. The Global Resource Centre (GRC) is a collaborative effort of various eye-care NGOs aimed at creating direct access to optical products for non-profit organisations and governments. Initiatives such as the GRC, which make high quality, low cost spectacles and optical devices available to public sector programs, will ensure that cost is not an impediment to eye-care service expansion.

Research and model development

The Durban Declaration encourages research in refractive services as well as the application of research results to achieve the most effective solutions to service delivery using best practice models. Appropriate research should enable the identification of community needs based on epidemiological investigations and situational analyses. The findings of such research will aid in planning and implementing appropriate public health efforts.

Therefore, it is necessary to develop evidence-based models for cost-effective interventions in refractive service delivery and related technology, as well as to explore possible relationships with the private sector and other service providers to expand the availability and ensure the sustainability of refractive services to communities in need. It is the responsibility of all stakeholders to undertake and promote research in the field of uncorrected refractive error, to identify the barriers to its correction, the most appropriate service delivery models and to ensure co-ordinated efforts toward appropriate interventions with maximum benefit.

CONCLUSION

For the blindness prevention community, the next decade of VISION 2020: The Right to Sight represents an urgent call to establish eye-care programs that deliver tangible results in eye health promotion, ocular disease recognition and treatment, and service provision, as well as a co-ordinated approach to a broader development agenda. Significant escalation in the pace of delivery must take place, particularly to improve eye-care services in the developing world, if the goals of VISION 2020 are to be realised.

To address the identified needs, innovative and sustainable strategies to reduce widespread uncorrected refractive error must continue to be developed and implemented, with greater resources being allocated to train the personnel, who will provide eye-care services within the health system. Reducing the burden of avoidable blindness due to uncorrected refractive error will remove barriers to education and employment and thereby improve the quality of life for millions of disadvantaged people, ultimately contributing to attaining the United Nation's MDGs. Related research findings must be published to identify significant problems and provide evidence-based models.

The Durban Declaration urges public and private organisations involved in eye-care service development to co-ordinate their efforts towards greater impact and outcomes. The commitment and momentum initiated at the WCRE in Durban, in March 2007, needs to be maintained by the members of the international eye health community, if the challenges facing the sector are to be addressed. The goals of the Durban Declaration need to be adopted and implemented to effectively address the global refractive error challenge.

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REFERENCES

1. Pizzarello L, Abiose A, Ffytche T, Duerksen R, Thulasiraj R, Taylor H, Faal H et al. Vision 2020: The Right to Sight: A global initiative to eliminate avoidable blindness. *Arch Ophthalmol* 2004; 122: 615–620.
2. Kyari F. Vision 2020: The Right to Sight—the concept, the plan. *Ann African Med* 2003; 2: 39–46.

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3. World Health Organization. Prevention of avoidable blindness and visual impairment. 2009. Available from http://apps.who.int/gb/ebwha/pdf_files/A62/A62_7-en.pdf.
4. International Agency for the Prevention of Blindness. The Millennium Development Goals and Vision 2020: The Global Initiative for the Prevention of Avoidable Blindness [online]. Available from: http://www.Vision2020uk.org.uk/core_files/Int%20MDG-v2020%20fact%20sheet%2028.04.06.doc.
5. Holden B. Uncorrected refractive error: the major and most easily avoidable cause of vision loss. *Community Eye Health* 2007; 20: 37–39.
6. Vincent J, Mladenovich D. The rationale for shifting from a voluntary clinical approach to a public health approach in addressing refractive errors. *Clin Exp Optom* 2007; 90: 429–433.
7. Naidoo K, Raghunandan A, Mashige K, Govender P, Holden B, Pokharel G, Elwein LB. Refractive error and visual impairment in African children in South Africa. *Invest Ophthalmol Vis Sci* 2003; 44: 3764–3770.
8. Shah S, Jadoon M, Dineen B, Bourne R, Johnson G, Gilbert C, Khan MD. Refractive errors in the adult Pakistani population: The national blindness and visual impairment survey. *Ophthalmic Epidemiol* 2008; 15: 183–190.
9. Bourne R, Dineen B, Huq D, Ali S, Johnson G. Correction of refractive error in the adult population of Bangladesh: meeting the unmet need. *Invest Ophthalmol Vis Sci* 2004; 45: 410–417.
10. Holden B, Fricke T, Ho S, Wong R, Schlenther G, Cronje S, Burnett A et al. Global vision impairment due to presbyopia. *Arch Ophthalmol* 2008; 126: 1731–1739.
11. Resnikoff S, Pascolini D, Mariotti S, Pokharel G. Global magnitude of visual impairment caused by uncorrected refractive errors in 2004. *Bull World Health Organ* 2008; 86: 1–80.
12. Smith T, Frick K, Holden B, Fricke T, Naidoo K. Potential lost productivity from the global burden of uncorrected refractive error. *Bull World Health Organ* 2009; 87: 405–484.
13. Bourne R. Uncorrected refractive error and presbyopia: Accommodating the unmet need. *Br J Ophthalmol* 2007; 91: 848–850.
14. World Health Organization. World Health Assembly closes with resolutions on public health. 2009 [online]. Available from http://www.who.int/mediacentre/news/releases/2009/world_health_assembly_20090522/en/index.html.
15. Faal H, Gilbert C. Convincing governments to act: VISION 2020 and the Millennium Development Goals. *Community Eye Health* 2007; 20: 62–64.
16. Holden B, Rao G, Knox K, Sulaiman S. Visual impairment: a correctable global problem. *Med J Aust* 1997; 167: 351–352.
17. Naidoo K. Towards a new model in training and delivery of optometric education. *World Optometry (Bulletin of the World Council of Optometry)* 2000; 115: 8–11.

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APPENDIX

DURBAN DECLARATION ON REFRACTIVE ERROR & SERVICE DEVELOPMENT

Preamble

Over 650 delegates representing eye care professionals, researchers, governments, civil society and industry from all over the world gathered at the Durban International Convention Center, from March 14 -16 2007, to attend the first World Congress on Refractive Error and Service Development. The congress addressed a key public health challenge of our time, Uncorrected Refractive Error (the need for an eye examination and a pair of glasses), the leading cause of avoidable blindness and vision impairment across the world.

The meeting was hosted by the International Center for Eyecare Education (ICEE) with representation from the World Health Organisation (WHO), International Agency for the Prevention of Blindness (IAPB), the World Council of Optometry (WCO), the International Council of Ophthalmology (ICO), the major international eye care non governmental organizations, government, universities, institutions,eye care professionals and industry.

WE THE DELEGATES RECOGNISE THAT:

- 153 million people in the world have impaired distance vision because of Uncorrected Refractive Error;
- Many millions more people over the age of 45 years have impaired near vision (presbyopia) due to Uncorrected Refractive Error;
- Persons with blindness and vision impairment are entitled to the same basic human rights as are enshrined in all national and international standards, declarations and conventions;
- Uncorrected Refractive Error drives children and adults further into poverty by limiting their opportunities to education, employment, and seriously impacts their quality of life and productivity;
- The link between poverty and visual impairment due to Uncorrected Refractive Error places a heavy economic burden on individuals, their families and communities;
- The paucity of services, personnel, training institutions, affordable glasses especially in the developing countries are the main contributing factors to Uncorrected Refractive Error.

WE FURTHER ACKNOWLEDGE THAT:

- WHO/IAPB launched the global initiative VISION 2020: the *Right to Sight*, to eliminate avoidable blindness and vision impairment;
- Prioritisation of Uncorrected Refractive Error as the major cause of avoidable blindness and impaired vision has come about through broad consultation of national and international alliances;
- Member states of the World Health Assembly in 2003 and 2006 passed resolutions WHA56.26 and WHA59.25 making blindness prevention a priority.

WE DECLARE THAT:

- We fully support the Global Initiative for the Elimination of Avoidable Blindness and Vision Impairment, VISION 2020: *The Right to Sight.*
- We will work together in developing comprehensive eye and health care services for the correction of refractive errors and provision of high quality and affordable glasses.
- We will prioritize communities, countries and regions in greatest need and school age children and adults above 45years, especially women.

WE FURTHER COMMIT:

- To increase global awareness of the magnitude of the unmet need for refractive error services among the professions, the health, private and corporate sectors, and governments and communities;
- To work towards collaboration between all professions and formation of partnerships and alliances to achieve the goal of elimination of blindness and vision impairment due to Uncorrected Refractive Errors;
- To advocate for the policies, services and resources required to address the issue of Uncorrected Refractive Errors;
- To advocate for the inclusion of vision services within health insurance schemes;
- To invest in the training and equipping of the essential eye care teams and their development to meet the needs of the underserved population;
- To encourage research to generate the evidence base for decision making, monitoring indicators, evaluation and appropriate service delivery models;
- To support the establishment of global procurement and distribution systems for making high quality affordable glasses available to communities in need;
- To support major initiatives for raising funds for the development and provision of refractive error services;
- To fast track eye care delivery programmes through the use of national consultation groups or task forces;
- To disseminate information on best practice by many means including the holding of periodic world congresses.

WE CALL UPON

The governments, professional bodies, manufacturers and suppliers, international organizations and civil society to:

1. Make refractive services a priority.
2. Support the development and deployment of the appropriate human resources, infrastructure and technology for the effective delivery of refractive services within the public sector.
3. Rationalise the tariffs, duties and taxes imposed on spectacles, equipment for refraction and optical lab equipment.
4. Support and facilitate organizations working towards the elimination of avoidable blindness.

WE REAFFIRM OUR COMMITMENT TO:

1. Advocate about the burden of Uncorrected Refractive Error to key policy and decision makers in order to enhance the allocation of resources.
2. Improve the knowledge base and strengthen the organizational and institutional capacities of key stakeholders to implement initiatives aimed at promoting refractive error services.
3. Document and promote best practice in service delivery at local, national and international levels to key stakeholders.
4. Promote service delivery being in line with strategic needs, social norms and the economic system of the society.
5. Promote research in the prevalence of refractive error, the barriers to its correction and the most appropriate service delivery models.
6. Encourage closer co-ordination between government ministries, departments, civil society and consumer groups for purposes of undertaking campaigns to promote VISION 2020.
7. Undertake planning workshops on Refractive Error with key stakeholders.
8. Coordinate with eye care training institutions and programmes in Optometry, Ophthalmology and other relevant health personnel, to develop guidelines for socially and economically viable training programs and promote competency-based models.

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