

**IAPB**

**EIGHTH GENERAL ASSEMBLY**

Please Note Change in Dates & Venue

*Revised Dates:*  
**15<sup>th</sup> SEPTEMBER TO 20<sup>th</sup> SEPTEMBER 2008**

*New Venue:*  
**Los Salones Gran Panamericano  
 Buenos Aires, ARGENTINA**

*Theme:*  
**EXCELLENCE AND EQUITY IN EYE CARE**

Please make plans to attend the Assembly, and circulate this information to your partners and colleagues. Any inconvenience caused by the change in dates & venue is regretted.

Details will be sent in due course

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**Editorial**  
 Uncorrected Refractive Error: The Major Cause of Global Visual Impairment  
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Key findings include: 42% of unemployed interviewees of working age had not worked for more than 10 years. A further 24% of the total working age population said that they had not worked for between five and 10 years. 84% of those living with someone said they needed help with basic daily tasks.

In the Vatican City, Cardinal Javier Lozano Barragán, president of the Pontifical Council for Health Care Workers, spelt out the need to redouble efforts to address the alarming number of people who suffer from eye diseases. The cardinal quoted WHO figures to note the developments so far, and the fact that some of the major causes of blindness are a result of extended life span and lifestyle related issues.

#### South East Asia

The Indian government chose to focus on Diabetic Retinopathy, this World Sight Day. Among the many activities taken up to popularise the issue, the government also issued a nationwide advertisement in all the leading newspapers in the country.

Vision Foundation of India (VFI) in Association with International Lions Clubs, Dist 323 A1 and Shreeji jyot marked WSD06 by organising a public rally, displaying eye disease awareness posters, banners and placards in Maharashtra. Free eye camps were conducted in local villages, where more than 80 cataract patients were screened. The Globe Eye Foundation - Bollineni Eye Hospital and Research Centre, Nellore commemorated 'World Sight Day' at Nellore, Andhra Pradesh in association with Lions Club of Nellore, the District Blindness Control Society, and Cipla Foresight. Some of the events organised included a poster painting competition for children and an eye screening camp. The Tamil Nadu Government Ophthalmic Assistants Association and Madurai District Blindness Control Society jointly organised drawing and quiz competitions on eye care awareness for school students.

The Child Sight Foundation made the WSD a major advocacy event in Bangladesh. CSF organised Dristi Jatra (Journey for Sight) and Dristi Mela (Sight Fair), a road trip across Bangladesh covering all the six divisions during its 15-day journey. The car was marked with VISION

2020, CSF, ORBIS and CSN logos; and decorated with blindness related messages, pictures and graphics and had a public address and digital projector system.

#### North America

On World Sight Day, "Sign up for Sight" was promoted by the American Academy of Ophthalmology (AAO) through its various newsletters. EyeCare America distributed a press release to the consumer health press on World Sight Day to encourage US senior citizens to contact the Seniors EyeCare Project as they may be eligible to obtain free eye care services. The AAO office in Washington, DC encouraged members of Congress and the Senate to issue World Sight Day proclamations.

#### Latin America

The Walk for Vision 2006 on Sunday 8<sup>th</sup> October, was led by from Queen's Park Savannah, Port of Spain, Trinidad & Tobago by the Minister of Health, the Honourable John Rahael, and the Ministers of Social Development and Education. There were approximately 150 participants and received significant media coverage and was also included on the Ministry of Health website. A month-long series of 2-minute radio features sponsored by the Ministry of Health, entitled "Keeping an eye on your sight" was aired twice daily at 7:50 am and 7:50 pm, between 21st September and 13th October, exclusively on WMJX 100.5FM. The global World Sight Day promotional video was shown on two local television stations and was shown on multiple occasions throughout the week.

#### Eastern Mediterranean Region

Afghanistan kicked off its World Sight Day celebrations with the slogan "Helping people see better!" The Ministry of Health in Kabul coordinated the events. The Ministry of Public Health Auditorium hosted a meeting that was attended by the Ministers of Public Health, Education, Higher Education, Martyrs and Disabilities and other government functionaries. Representatives from the WHO and other important aid organizations like WFP, UNDP, UNICEF, UNFPA, Red Crescent directorate, Afghan Association of Blind were also

present. The local media covered the event extensively.

World Sight Day 2006 in Somalia saw a marathon for both blind and sighted people, free eye screening at Al-Nur Eye Hospital, World Sight Day ceremony at Ida theatre in Mogadishu and a media campaign to underline the rights of the blind child by the Unicef and MOH.

World Sight Day saw one of VISION 2020's vibrant members, Nadi Al Bassar, coordinate numerous events all over Tunisia. More than 200 free cataract surgeries were performed in some of the governorates and Tunis, the capital. Many more benefited from the refraction services that were also provided. A Workshop on voluntarism and international collaboration was conducted and Nadi Al Bassar's experiences were discussed. The workshop was arranged by the Tunisian Agency for Technical Cooperation (under the Ministry of Foreign Affairs). These events were covered by the television broadcasting of Tunisia.

#### Western Pacific Region

In a cricket match organised by Vision 2020 Australia, celebrities came together to face off against players from the Australian Blind Cricket team in a special demonstration match to mark World Sight Day in Australia. World Sight Day attracted loads of national media attention – over 50 interviews with Vision 2020 Australia representatives were published and aired across Australia. A World Sight Day Information Line to take enquiries from the public also ran as part of the event.

On the eve of World Sight Day, the Centre for Eye Research Australia (CERA) hosted a Public Lecture in collaboration with Vision 2020 Australia and the Low Vision Service providers of Victoria. This lecture featured presentations by Dr Serge Resnikoff from World Health Organisation Geneva, Dr Gullapalli N Rao from the IAPB and Associate Professor Jill Keefe from CERA.

World Sight Day celebrations in Philippines were coordinated by the Department of Ophthalmology, of the Philippines Medical City. A "Sign up for Sight" booth at the open lobby of The Medical City was set up to collect signatures from the general public and hospital staff. 1,420 signatures were collected.

## Editorial

### Uncorrected Refractive Error: The Major Cause of Global Visual Impairment

*Brien Holden*

On World Sight Day 2006, the World Health Organization (WHO) released the first global estimates of the burden of blindness and vision loss caused by uncorrected refractive error (1).

It was revealed that 153 million people around the world have significant (distance) visual impairment (<6/18 in the better eye), including 5 million with blindness (<3/60 in the better eye) due to uncorrected refractive errors i.e. myopia (near-sightedness), hyperopia (far-sightedness) and astigmatism.

When added to the 37 million blind and 124 million with impaired vision due to eye disease that is either permanent or requires surgery (such as cataract), this brings the global total with significant (distance) vision loss to 314 million people.

In addition, the WHO figures don't include people who are visually impaired at near distances due to presbyopia – people over 40 to 45 years of age who do not have access to eye care and the glasses they need to be able to read to work or carry out the myriad close tasks needed for everyday life. ICEE estimates that uncorrected

Brien Holden  
Co-Chair WHO Refractive Error Working Group,  
CEO, International Centre for Eyecare Education;  
Scientia Professor, University of New South Wales

presbyopia affects at least 150 million people (2).

The realisation of the importance of uncorrected refractive error has its genesis in the seminal research from the LV Prasad Eye Institute (LVPEI) (3) and the Centre for Eye Research Australia (4) that defined that over 55% of visual impairment, whether it be in rural India or the suburbs of Melbourne, was due to uncorrected or under corrected refractive error.

The real tragedy is that uncorrected refractive error can be easily fixed.

As the WHO press release states, "Without appropriate optical correction, millions of children are losing educational opportunities and adults are excluded from productive working lives, with severe economic and social consequences. Individuals and families are frequently pushed into a cycle of deepening poverty because of their inability to see well. At least 13 million children (age 5 to 15) and 45 million working-age adults (age 16 to 49) are affected globally."

Perhaps the saddest example of the uncorrected refractive error problem is the hundreds of thousands of children in Africa alone, and over a million globally, who are currently being treated in programmes for the blind, simply because there are no skilled local eye care practitioners available to do the complicated refraction needed nor or the resources necessary for high

powered prescription spectacles (5,6).

So what are we doing to solve the problem?

What is needed firstly is global awareness - realisation that refractive error is an important problem. As Dr Catherine Le Galès-Camus, WHO Assistant Director-General, Noncommunicable Diseases and Mental Health, said, "This common form of visual impairment can no longer be ignored as a target for urgent action."

In fact it is a major part of the problem that correcting refractive error is so simple. For this reason alone it has received little Government or NGO attention, a fact highlighted by the studies of Zhao et al (7) where 85% of the 43% of the Chinese children aged 15 with significant visual impairment due to uncorrected refractive error, had no glasses.

Secondly, to ensure effective vision care delivery for all communities in need, education and training is needed to produce the necessary eyecare personnel (ECP). Various called mid-level personnel or ECP at various 'stages' of development of a fully skilled optometrist, they are the key to eliminating uncorrected refractive error. In their development, it is essential that we keep in mind that (a) these ECP will need to have careers that enable them to increase their skills to include detecting and

As we approach the end of another year of blindness prevention efforts, we are also reminded that we are one year closer to the VISION 2020 goal post. The past year has seen considerable gains in terms of advocacy, resource mobilisation and infrastructure development, and these will over time translate into gains in disease control. But as these small gains are achieved, we also are confronted by continuing challenges, some thrown into relief by our progress and others that emerge as a result of changing lifestyles and demographics and a changed environment. Refractive error and low vision are among these challenges. As the editorial by Prof Brien Holden notes, the new figures from WHO relating to refractive error and low vision underscore the importance of paying attention to this problem that can be tackled relatively easily, by means well within our capabilities, with currently available technologies. The key lies in mobilising sufficient human resources, people who can perform simple refraction and know enough to prescribe the proper correction, and to point people toward solutions for low vision. Recognising that different kinds of expertise are needed for different problems, and that this expertise needs to be given its due place in the larger blindness prevention movement, is another important issue. The articles in this issue offer different perspectives on the nature of the challenges and how the IAPB/VISION 2020 partnership can address them. And as always, we welcome feedback that will take this dialogue further!

### International News

Two new publications were made available in preparation for the September Council of Members meeting in Geneva, Switzerland and were distributed to delegates and officers:

- *Blindness, Poverty and Development: The Impact of VISION 2020 on the UN Millennium Development Goals* is a new full-colour booklet, devised with reference to the 2003 Frick and Foster paper on the economic implications of visual impairment, and more recent Sightsavers International research, by Marijs Carrin and Dick Porter. The booklet points up the links between prevention of blindness and poverty reduction. The publication has been extremely well received by member organisations, and can now be requested from IAPB Registered or Central Office, or downloaded in pdf and Word formats from the 'Publications' page of the [www.v2020.org](http://www.v2020.org) website.
- The IAPB *Annual Review* for 2005 was also published in time for the Board of Trustees and Council of Members meetings. Compiled and published in the Hyderabad Central Office, this full-colour, glossy book can be requested from either IAPB office, or downloaded from the Publications page of the [www.v2020.org](http://www.v2020.org) website.

Preparations for World Sight Day 2006 (WSD06) naturally dominated the months up to October for the communications teams in both offices. A range of promotional materials was produced and distributed to all IAPB member organisations by the first week of October, as well as to many interested organisations including local government offices and institutions, as well as over 150 ministries of health and WHO representative offices worldwide.

World Sight Day itself enjoyed extensive participation around the world, with high-level exposure in over 30 countries, leading to international coverage in media such as CNN television, BBC World Service radio and the Financial Times. In addition, World Sight Day reached new territories in 2006, including formal celebrations in Turkey, Armenia and Burkina Faso. The global WSD06 report will be made available next month with the publication of the December VISION 2020 electronic newsletter. Check the website during December, or sign up for the newsletter in the 'My VISION 2020' section: <http://www.v2020.org/register.asp>.

November's Annual Meeting of the American Academy of Ophthalmology saw attendance figures climb to 27,249 including more than 18,000 ophthalmologists and other health professionals. Inspiring presentations by Dr. Larry Brilliant and Prof. Hugh Taylor at the opening sessions spurred high levels of interest in VISION 2020, as evidenced by hundreds of visitors to the exhibit, who 'snapped up' copies of the *Blindness, Poverty and Development* booklet, the IAPB *Annual Review*, and more than 500 introductory leaflets in English, French, Chinese and Arabic. The exhibit was staffed by Abi Smith representing IAPB, and Global VISION 2020 Coordinator Dr. Ivo Kocur from WHO.

For more information please visit [www.v2020.org](http://www.v2020.org) or e-mail [communications@v2020.org](mailto:communications@v2020.org)

**W**orld Sight Day 2006 saw great success in advocating blindness prevention issues, both by greater coverage in international media and by initiating celebrations across the world. The global theme for 2006 was "Low Vision and Refractive Error". This report is a selection of activities from around the world; a longer report is available on the VISION 2020 website: [www.v2020.org](http://www.v2020.org).

#### Africa

In Ghana, a two-hour live radio discussion programme was aired prime-time on a popular radio station. The programme, on 'Platform Africa', featured a Ghanaian government representative speaking live from Accra, along with Dr. Ivo Kocur, VISION 2020 Global Coordinator at WHO headquarters in Geneva, who spoke from a studio in London, England. The programme goes out to an estimated 7 million listeners in West Africa, and also via the internet ([www.gfmradio.com](http://www.gfmradio.com)) in Europe.

In Zambia the World Sight Week launch, on both national Radio and Television was conducted by the Minister of Health (this was the first time that a live launch on national media was conducted in Zambia). The celebrations here featured a march-past, speeches, theatre and sports competitions along with eye screening, refraction, dispensation or prescription of spectacles and surgeries for children and adults, which were conducted by the UTH eye care unit team supported by the Lions and Standard Chartered Bank staff. One of the key events of the World Sight Day was the donation by Standard Chartered bank of K15,000,000.00 for eye care activities during the week. The Minister of Health, Hon. Angela Cifire signed the VISION 2020 global declaration of support.

#### Europe

On World Sight Day the Low Vision Clinic, located in the Kanaker-Zeytoun Medical Center, Yerevan, Armenia, was launched as a major

collaborative effort among the Armenian Eye Care Project (AECF), the Armenian Ministry of Health, the United States Agency for International Development (USAID) and the Kanaker-Zeytoun Medical Center. A unique facility not only in Armenia, but in the entire Caucasus region, the Low Vision Clinic is equipped to provide children and adults afflicted with low vision with an opportunity to learn life skills and to receive vital treatment.

VISION 2020 UK coordinated a gathering including guests of 11 leading visual impairment charities, a government minister and representatives of various local authorities and social services bodies, at specialist restaurant *Dans le Noir* where guests were invited to experience a variety of sight conditions, before being served lunch in total darkness, simulating blindness. The publication of a report into the experiences and lifestyles of visually impaired people in the UK was launched on the occasion.

## Profile

## Practising the Art and Science of Eye Care

Efforts towards containing and eliminating 'needless' blindness in Africa capture the zeitgeist of a whole generation of ophthalmologists who now lead VISION 2020: The Right to Sight. Armed with experience in disease control and in training new cadres of ophthalmic 'soldiers' over three decades, they now play a vital role in defining policies and implementing strategies that are critical to the success of VISION 2020.

Allen Foster, a seasoned ophthalmologist and by all accounts an inspiring teacher, has played a critical role in the development of the VISION 2020 Initiative and in defining the direction of VISION 2020. He is President of CBM and Director of International Centre for Eye Health at the London School of Hygiene and Tropical Medicine (LSHTM).

"My wife and I were only 25 when we went to Mvumi with our one-year-old son", recalls Foster. He began working as a general doctor



**Name**  
Prof. Allen Foster  
**Born in**  
17 August, 1950 in Ormskirk, England  
**Current Positions**  
- President, Christoffel Blindenmission (CBM)  
- Director, International Centre for Eye Health (ICEH)  
**Previously-held positions**  
- Senior Vice President, International Agency for the Prevention of Blindness (IAPB)  
- Medical Director, Christoffel Blindenmission (CBM)

including eye work at Mvumi Hospital in Tanzania in 1975 – a hospital with 250 beds and 3

B.V. Tejah, Communications Coordinator  
IAPB Hyderabad

doctors! Water scarcity and famine were routine in this trachoma-endemic region, but he remembers that "the people were very friendly and positive despite all their hardship". After 10 years in Tanzania in 1985, with support from CBM and Professor Barrie Jones (Founder Director, International Centre for Eye Health), he joined ICEH while continuing to work as CBM's Medical Director. He became the Director of ICEH in 2002, and in January 2006 he became the President of CBM, being based in Bensheim, Germany.

"My work in Mvumi hospital led me to focus on Teaching" says Foster. He marks a plane crash in Tanzania that made him contemplate his life and work. The plane crash was "a moment of realisation that the most important thing I could do is teaching" says Foster. In research, he has made important contributions to understanding childhood blindness, Vitamin A deficiency, measles, trachoma and trichiasis surgery. At the ICEH, he has also worked on cataract and onchocerciasis. As CBM's Medical Director, Foster was instrumental in linking up with Merck to get Mectizan® for CBM's work in onchocerciasis and also chaired the NGDO Coordination Group for Onchocerciasis Control. "The Magnitude and Cost of Global Blindness", a paper Foster authored with Kevin Frick, demonstrated the economic importance of blindness and the urgent need for VISION 2020. It envisages that the cost of unmitigated blindness will rise to USD 80 billion with an estimated 75 million blind people by 2020 – with a successful VISION 2020 programme resulting in savings of more than USD 100 billion and over 100 million people being saved from blindness over the 20 year period. This remains crucial to the VISION 2020 initiative's case for support, resulting in significant further research in this area.

"In 1996, a colleague suggested that CBM should focus on cataract surgery up to the year 2020," says Foster – the idea of restoring 20/20 vision by the year 2020 was born. Between 1996 and 1998 CBM consulted with the W.H.O., SightSavers, other NGOs and IAPB, leading to the launch of VISION 2020: The Right to Sight in 1999. Allen Foster had by then become deeply involved with IAPB and became its Senior Vice-President during IAPB's 6<sup>th</sup> General Assembly. He played a crucial role in preparing the curriculum and in organizing V2020 Workshops around the world. These workshops help create/promote awareness among VISION 2020's stake-holders, enabling them to work towards achieving various milestones that are important for achieving VISION 2020's goals. In 2005, 35 workshops were conducted in every region of the world, with more than 1000 persons being trained annually. "The future direction of these workshops needs to be defined by the people from the countries," Foster believes. Indeed, this would ensure that the workshops are "targeted to the next need".

Allen Foster divides his time between Bensheim, Germany (the CBM German office) and London, (ICEH). His wife, Penny, is a community Paediatrician working with children with disability. The Fosters have three grown-up children and two grandchildren.

Foster earmarks implementation of eye care services for children and eye care training for people in Africa as the two immediate strategic concerns for VISION 2020. These concerns weigh heavily in planning public health strategies that address blindness prevention. VISION 2020's focus, its crosscutting partnerships and leadership will go a long way towards meeting its objectives, he believes. The opportunity to teach and "the interactions with people who inspire me are the deeply enriching aspects of my work".

diagnosing sight-threatening conditions and treating minor disease conditions and (b) these ECP will need to serve over 50% of the population that need correction for refractive error and therefore be situated out in the communities they serve. It makes no sense in the long term for more than half the population to have to visit a hospital for refractive care and a pair of glasses. This is particularly true in regions where ophthalmologists are still in very short supply, and where their services are needed more urgently to treat conditions that require surgical attention and more advanced medical care.

Finally, systems need to be established for both the delivery of effective and affordable community eyecare and for the supply of affordable spectacles and low vision devices.

One of the most important achievements of the LVPEI is its development of models of delivering eyecare for the developing world. In a pyramidal structure the model provides rudimentary eyecare 'screening' at the village level (5000 people), through to community level Vision Centres (VCs) for primary eyecare (50,000) to the Tertiary Centre (500,000) to the Centre of Excellence level for advanced tertiary care, education, research and programme development (50 million).

The Vision Centre Model has been highly successful. Models such as this are the way forward for comprehensive and effective eyecare for many communities in need, provided that (a) the concept is used in the broadest and most

flexible way including with regard to the development and placement of VCs (hospital or not); (b) excellent, affordable eye care and quality spectacles are mandatory and (c) a sustainable business model is used.

The future of quality refractive, vision and primary eyecare is obvious from many developed countries' models. It is inevitable that the supply of refractive care evolves into a professional service and business. The problem has been the lack of development of a very low cost business model for both community optometry and laboratory supplies.

The exciting developments that are occurring are that firstly, the elimination of uncorrected refractive error and incorporation and upgrading of low vision services has, with the WHO announcement, been confirmed as mainstream blindness prevention. Secondly, that this push has now enrolled and is being driven by optometrists and other committed eye care professionals from around the world, such as those contributing to this edition of the IAPB newsletter.

The IAPB Human Resources Working Group writes about their approach in Africa in building human resources for refractive error and low vision; Jill Keeffe writes on challenges in tackling low vision, Paul Courtright reports on a low vision workshop held at KCCO, while Karin Van Kijk writes about refractive error among school children in South East Asia.

Many of these topics will form the core of the First World Congress on Refractive Error and Service Development (WCRE) to be held in Durban in March 2007.

This Inaugural Congress brings together leading experts to discuss the key scientific and public health challenges in refractive error. The Congress will involve eyecare professionals, researchers, administrators, government and NGO planners, professional associations and industry personnel and solutions to technological, human resource and service delivery questions will be discussed. One of the outcomes of this Congress will be the Durban Accord, which will identify the priorities and strategies for meeting the global refractive error and presbyopia burden. Strategies that are a critically important and cost-effective way to improve not just vision, but global health and well-being.

## References

1. <http://www.who.int/mediacentre/news/releases/2006/pr55/en/index.html>
2. ICEE estimates of the prevalence of uncorrected presbyopia, Sydney, 2006 (in preparation)
3. Dandona L, et al. Blindness in the Indian State of Andhra Pradesh. Investigative Ophthalmology and Visual Science. 2001; 42(5):908-916.
4. Taylor HR. Eye Care for Community. Center for Eye Research, Australia (CERA). 2000.
5. Sight Savers and ICEE Malawi. 'Giving Sight to Blind Children'. Pilot study.
6. Gilbert CE, Wood M, Waddel K, Foster A. Causes of childhood blindness in east Africa: results in 491 pupils attending 17 schools for the blind in Malawi, Kenya and Uganda. Ophthalmic Epidemiol. 1995 Jun;2(2):77-84.
7. Zhao J, et al. Refractive Error Study in children: Results from Shunyi District, China. American Journal of Ophthalmology. 2000; 129:436 - 444.

The American Public Health Association (APHA - 2005) has recently published "**Fighting Global Blindness: Improving World Vision through Cataract Elimination**", by Sanduk Ruit, MD; Geoffrey C. Tabin, MA, MD; Charles C. Wykoff, MD, DPhil. The book illustrates how low-cost and efficiently run programmes can restore sight to some of the world's neediest and includes information and forms to use in setting up a cataract surgical programme. A special section on other ophthalmic diseases as public health problems covers trachoma and onchocerciasis, vitamin A deficiency, pediatric cataract treatment in the developing world and neonatal conjunctivitis.

Order Information: ISBN: 0-87553-067-2, 186 pages, cost \$60 (\$42 for APHA members), plus shipping and handling. To order, call toll free (888) 320-APHA; fax (888) 361-APHA; e-mail [apha@pbd.com](mailto:apha@pbd.com) or visit APHA's Web site: [www.aphabookstore.org](http://www.aphabookstore.org).

**Blindness, Poverty and Development**  
**The Impact of VISION 2020 on the U.N. Millennium Development Goals**



These photographs are by Elizabeth Gilbert, taken in the trachoma-endemic region of Ethiopia. www.trachoma.org (International Trachoma Initiative © 2003)

**Guidelines to authors**

**General guidelines**

The IAPB News welcomes unsolicited manuscripts relating to community eye health/public health and also institutional profiles. All submissions must be double-spaced, title and authors (with affiliations) clearly indicated, with complete references in standard format. Authors may submit good photographs related to the subject for possible inclusion on the cover page.

Articles are reviewed internally by the editorial board and accepted articles are included in the order received, except in cases where timeliness or topicality becomes important. Authors may be required to revise articles based on the review of the editorial board.

Each issue will include no more than one article from the same organisation or institution. This is to ensure that all organisations involved in blindness prevention have a fair chance of being represented.

The deadline for receipt at the IAPB Hyderabad Office, for each issue is as follows:

- March 10 for the March issue
- July 10 for the July issue
- November 10 for the November issue

To ensure proper editorial review and processing, early submission is encouraged.

**Guidelines for specific sections**

1. Articles on community eye health/public health should be no more than 1200 words. Articles may describe a project that is in progress or one that has been completed, an on-going community health initiative or a learning experience, or review efforts in specific areas of disease control and treatment. The author's name and affiliation must be clearly provided. Articles may be written in a fairly unstructured format, but they must include a clear introduction and statement of the paper's scope, description and discussion of the results. Authors may include tables and/or figures but photographs cannot be used in the body of the article (however, good photographs may be used on the cover page). All tables and figures should follow a standard format, with title and legends clearly indicated. Figures should be provided on glossy paper, drawn in India ink or computer generated. References (8 maximum) should follow a standard style (U.S. National Library of Medicine style).
2. Institutional/organisational profiles of around 500 - 750 words. From time to time, IAPB News will carry profiles of organisations engaged in blindness prevention and community eye health activities around the world. These profiles will include a brief history of the organisation, scope of activity, and achievements.
3. News: Every quarter, each region reports on progress in VISION 2020 activities and related programmes in blindness prevention. Information to be included in this section should be sent through the Regional Chair.
4. Short announcements may be provided as box items, of no more than 300 words, describing new training programmes, introducing new appointments within the VISION 2020 effort, or recognizing sponsorship, or other special items of information that do not fit within one of the categories described above.

training in maintenance) to carry out the tasks they were trained to do.

**Operational research to support HRD & research capacity building**

The evidence necessary to help drive planning and modeling of use of human resources for VISION 2020 remains weak. Existing research needs to be disseminated much more widely rather than just through the scientific literature.

Furthermore, research centers need to be encouraged to undertake operational research that will benefit our understanding of strategies that will improve the ability of eye health personnel to reach VISION 2020 targets. Eye care research databases are being created for a number of countries in eastern Africa — these need to be expanded. NGOs are strongly encouraged to dedicate some of

their programme budgets to operational research; many are starting to do so and this is to be encouraged.

*This report is from the 19 September 2006 meeting in Geneva organized by the VISION 2020 Human Resources Working Group & IAPB Africa. Please contact Dr. Daniel Etyaale (etyaaled@who.int) with comments and suggestions.*

**Proposed Action Plan**

Topic	Plan of action	Responsible groups
5 year HRD Action Plan	Action plan to be drafted	WHO/AFRO & IAPB/Africa with consultation group
	Selected countries to conduct HRD workshops	To be determined
Clinical training priority projects	Priority (short-term) training activities to be identified for funding	IAPB co-chairs
	Information on list of training centres to be expanded to identify areas of strength and weakness	AFRO/KCCO
Non-clinical training priority projects	Priority (short-term) training activities to be identified for funding	IAPB co-chairs
	List of existing "responsive" centres created (including capacity for growth)	AFRO/KCCO
Coordination of HRD, advocacy and policy realignment	"White paper" on HRD policy in Africa drafted to help guide discussion	WHO
Technological support	List of minimum equipment for each cadre to be updated and expanded to be included in a training package	IAPB Technology Group
Operational research	Proposal to assess factors contributing to high/low productivity of newly graduating ophthalmologists	AFRO/KCCO
	Improve capacity of VISION 2020 resource centres for knowledge transfer	AFRO

**The Associates for World Action in Rehabilitation and Education (AWARE)** was founded to promote self-help vision rehabilitation hints and adaptive techniques, and disseminate information on services and independent living resources to individuals with vision loss, their family members, and those who work with them.

AWARE has developed an extensive range of self-help information for adults who are recently blinded or have low vision. AWARE's new website, [www.visionaware.org](http://www.visionaware.org), provides a broad range of self-help resources for those with low vision.

## Special Report

### Human Resources for Eye Care in Africa: Report and Action Plan

HR Working Group

Human Resource Development (HRD) is one of the three pillars of VISION 2020. The crisis in human resources in Africa has been recognised and achieving VISION 2020 on the continent will require a more aggressive HRD strategy and investment in human resource development. Nevertheless, some progress has been made and this needs to be strengthened and nurtured. Key to developing human resources in Africa requires consideration of productivity, retention, equipment, training facilities and coordination.

The productivity of existing eye health staff and existing training institutions is inadequate. Assessments have demonstrated some of the potential strategies for improving productivity of existing personnel. Most existing training centres are performing below capacity and gaps in training skills and infrastructure need to be identified and addressed.

In many settings the training of eye care personnel has not been linked to the provision of equipment to perform the tasks they were trained to do. This has led to the failure of many trained personnel to fulfill their roles in Africa.

There has been inadequate attention paid to community eye health and practical management courses in existing training facilities and in particular, ophthalmology residency programmes. Additionally, there has been little effort at providing a bridge between training and implementation. This has been compounded by a failure to ensure that eye care teams are in place and that teams receive the mentoring and nurturing required to achieve VISION 2020.

The lack of adequate coordination of Africa-wide and sub-regional HRD development has led to some duplication of effort by NGOs, governments, and donors. There is a lack of evidence, through

operational research, to guide the advocacy for HRD realignment. Government HRD policies vary throughout Africa but, need a general revision to make them responsive to the needs of VISION 2020.

To address these priority areas, the participants at the Human Resources for Eye Care in Africa meeting proposed the following priorities and action plan.

#### Establish a 5-year HRD Action Plan for Africa.

The "HRD Action Plan for Africa" is a comprehensive action plan including targets, activities to reach the targets, monitoring, and resource allocation. It necessitates the creation of a coordinating body. The framework would be Africa-wide but with targets set sub-region by sub-region.

A top priority would be to look at existing personnel and to improve productivity. Consultation with all stakeholders would be paramount in order to ensure that ownership extends to the countries as well as to the partners. Identification of existing and new "response centres" that can provide the necessary VISION 2020 specific training is also a priority.

#### Priority projects in clinical training in Africa

There is a need to establish or strengthen specialist, mid-level, and primary clinical training centres in all of the sub-regions in Africa. The recently identified Carl Zeiss - IAPB Training Centres can assist with some of the training activities, however all potential clinical training centres need to be identified. Although the "HRD Action Plan for Africa" will facilitate a comprehensive approach to identifying clinical training needs, each sub-region has one or two specific clinical training projects that could be resourced immediately. These generally fall under specific topic

areas such as improved cataract surgical training, low vision training, and refractionist training.

#### Priority projects in non-clinical VISION 2020 training in Africa

The HRD Action Plan for Africa will include non-clinical skills development as well as clinical skills development. It has been recognized that non-clinical skills development, while often starting with specific short courses, often requires an investment in more long term mentoring. The priority areas for most sub-regions are in the fields of management and in equipment maintenance. It is essential that non-clinical skills development be addressed as part of the overall team approach to VISION 2020 in Africa and that links be developed or strengthened between non-clinical and clinical training facilities.

#### Coordination of HRD, advocacy, and policy realignment

National policies on human resources vary considerably throughout Africa and it is not practical to develop an Africa-wide or even sub-regional approach to realigning HRD policies at the national level. However, there are opportunities through AFRO and national prevention of blindness committees to initiate discussion at the national (and even supra-national) level on human resource needs for VISION 2020 in Africa. These discussions should focus on training and retraining (selection and placement), retention and remuneration, and performance and incentives and on the inclusion of eye care programme managers and other cadre within government schemes of service.

#### Technological support during and after training

A major factor associated with low productivity is the lack of technological support during and after training. Many graduates of clinical training programmes are provided little or no equipment (or

## Low Vision

### Low Vision Services — A Continuing Challenge

Jill Keefe

Of the 161 million people with vision loss or blindness, it is estimated that about 68 million have low vision that cannot be restored to normal. There are no accurate global figures on the proportion of those with low vision who have access to low vision care but it is estimated at less than 10%.

Many of the barriers identified at the Asia Pacific Regional Low Vision Workshop held in 2001 still exist in many countries. The major barriers to initiation and development of low vision services as an integral part of National VISION 2020 programmes have included the lack of suitably trained personnel, availability and affordability of low vision devices and equipment, and awareness of the need for service within the community and among eye and health professionals.

Following the workshop, the World Health Organization (WHO) formed a Low Vision Working Group (LVWG). The LVWG developed a work plan in the areas of human resource development, low vision resources and equipment, advocacy, global mapping of programmes and research. The members of the LVWG will write a programme manual to guide those initiating or developing low vision services.

The priority for human resource development was to develop the curriculum and conduct courses for National Focal Persons (NFP). The roles of the NFP are to provide leadership in developing and implementing low vision services, instituting appropriate training programmes, assess infrastructure and equipment needs, advocacy, coordination and networking with government departments, international and national NGOs, monitoring and evaluation. The aim of the courses is to equip NFP with sufficient knowledge and skills to plan for and implement the low vision component of a VISION 2020 country plan.

Jill Keefe  
Centre for Eye Research Australia  
Co-chair, IAPB Low Vision Working Group

Specifically the outcomes of the courses for the NFP are to:

- gain an overview of different components of a comprehensive low vision programme;
- plan training courses by enhancing communication skills, training course logistics and other administrative matters;
- plan for a low vision programme as part of a comprehensive eye care, education or rehabilitation programme;
- establish or strengthen a low vision clinic as a part of comprehensive eye care;
- develop understanding and awareness of skills for the provision of low vision care to assess vision, prescribe devices, assess needs for rehabilitation, and conduct functional assessment for early intervention for children;
- enhance eye care and education networks for the identification and referral of children and adults with low vision.

Courses have been conducted in the Asia, Pacific and African regions with courses planned for China and the Eastern Mediterranean region early in 2007 and possibly one in Latin America later in the year.

The aim also is for eye care practitioners (ophthalmologists, optometrists and refractionists) to have low vision integrated into their training. Work is progressing in the design of curriculum with evaluation of the outcomes of the training planned. A course for eye care, rehabilitation or educators working at primary or community level has been completed. It can be accessed on the internet at [www.lowvisiononline.org](http://www.lowvisiononline.org) or CDs available from the Centre for Eye Research Australia or the International Centre for Eye Health Resource Centre.

Another priority area was the availability of high quality yet affordable low vision devices and equipment to assess low vision. A Low Vision Resource Centre has been established at the Hong Kong Society for the Blind. The Centre now has an inventory of over

120 low vision devices and equipment. The devices are distributed to all regions through orders placed through the website [www.hksb.org.hk](http://www.hksb.org.hk) under the section on 'Projects'. Most devices for near tasks are in the range of \$2 to \$7 with telescopes for distance tasks ranging from \$12 to \$15.

The quality of these low vision devices has been tested against the commonly prescribed devices. These low cost devices perform on par with the commonly used devices and are equally preferred by the participants who trialled both sets of devices.

In 2006, VISION 2020 designated the theme for World Sight Day to be low vision and refractive error. IAPB, WHO and the World Blind Union continue advocacy activities to raise awareness on low vision.

Research using functional vision checklists and quality of life questionnaires has provided a good understanding of the consequences of low vision. The research that is now needed is to evaluate outcomes of low vision services, the results of which can be used to provide evidence-based guidelines for optimum models of care.

To assess the current global situation in the provision of low vision care, a mapping project has commenced. It will obtain information on human resources, training courses, availability of resources and infrastructure, barriers and coverage of services. The outcome of the survey should be the identification of existing models of low vision services and priorities for the next VISION 2020 5-year plan.

The data published recently by the WHO showed the changes over the previous decade in causes of impaired vision (1). Diabetic retinopathy, glaucoma and age-related macular degeneration are now important causes of low vision and blindness and predicted to result in increasing numbers of people needing low vision care.

#### References

1. Resnikoff S, Pascolini D, Etaya'ale D et al. Global data on visual impairment in the year 2002. Bulletin of the World Health Organization 2004;82:844-851.

## Clinical Low Vision Training of Optometrists

Karin van Dijk and Elizabeth Kishiki

A three-year pilot project for developing low vision services for selected districts in northern Tanzania was started by KCCO (Kilimanjaro Centre for Community Ophthalmology) in 2006 with funding from Dark & Light Blind Care. The emphasis is on including low vision in the existing regional and district eye care services. Children form the main focus of the work; therefore education services are also targeted in training and provision of services. National Mini-stries of Health and of Education are informed of each step of the programme, while the regional and district eye care and education authorities are also being actively involved.

### Training of eye care and education staff

Seven optometrists, one from each region, and one from KCMC Hospital (the tertiary referral hospital for Northern Tanzania, with a low vision clinic), were trained in basic clinical low vision for five days in October 2006. The training was organized by Ms. Karin van Dijk of the London School of Hygiene and Tropical Medicine together with KCCO and facilitated by staff from ICEE and KCMC. Regional Eye Coordinators had already been trained by KCCO and KCMC in June on clinical follow up of children receiving cataract surgery and on the need for starting low vision services.

Children in resource centres attached to mainstream schools (Annexes) or schools for the blind are the first priority as they are already in schools and can be reached easily. In addition, surveys have shown that many of these children have low vision and are not blind. Many either have had no eye

examination or the interventions advised, such as surgery or glasses, have not been implemented.

The training took off from the existing skills of the optometrists. Work with low vision clients at KCMC showed that refraction needed to be emphasised as the first intervention for children with low vision, after surgery. Therefore, during the training, skills in retinoscopy and subjective refraction were therefore revised and practiced on children with low vision.

The benefit of non-optical measures, such as use of a closer working distance, and of window light was taught subsequently. Lastly, magnification, i.e., use of microscopic glasses (up to 20.0 Dioptres) and low to medium power non-illuminated hand magnifiers was added. This simple selection was made to ensure that the staff trained can start to not only prescribe basic magnification correctly, but also organise access to the devices prescribed. Prescription of high power illuminated devices and telescopes was not taught as costs, skills needed, accessibility and availability are concerns at this time. Alternative strategies to ensure a child learns what is written on the blackboard or has access to texts to read were taught instead.

### Eye Care Professionals play an important role in initiating Low Vision Assessment of Children and in taking responsibility for organising glasses, devices and follow-up.

In each region spherical corrections up to 5 to 6 Dioptres are locally available. For children needing different prescriptions and/or microscopic glasses > 6 Dioptres, orders can be made (as a short term

measure through KCCO) in a manner that ensures short waiting periods and affordable costs.

Eye care in each of these regions also has some kind of subsidy system for poor patients. All low vision interventions will be open to these subsidies.

During the training the importance of ensuring that children actually get their prescriptions was emphasised, as experience has taught that obtaining corrections and / or low vision interventions can be a bigger problem than organising the clinical low vision assessment itself!

A one-day training of teachers from selected annexes and itinerant teaching programme is underway. The emphasis here is on ensuring that children get their distance glasses, obtain and use the optical and non-optical devices advised by the eye care providers, and on teaching print.

The role of eye care professionals in initiating low vision assessment of children and in taking major responsibility for organising glasses, devices and follow-up, was emphasised. Currently, schools are either not aware of the need for an eye check and low vision care or are hesitant to cooperate as they sometimes fear children will leave the school after their vision has improved to enable print use. As an ongoing measure, education staff and family members will be taught the importance of vision / print use and follow-up to eye care.

Strategies are being developed to ensure that most children with low vision in the future can go to their local schools and this will be implemented for children newly entering education. It is hoped that the lessons learned from this pilot project will assist the adoption or expansion of low vision services elsewhere in eastern Africa.

## Refractive Errors

### Refractive Errors among Children Attending Low Vision Programmes in India, Nepal and Indonesia

Karin van Dijk and Clare Gilbert

It is well recognised that accurate correction of refractive errors is a critical component of clinical low vision care, but little information is available on the refractive needs of children with low vision in developing countries. A study is currently being undertaken to explore the effectiveness of different models of delivering low vision services to children in Asia. The models vary with respect to where the service is provided, the extent to which children are given additional support and rates of follow up. The findings of the retrospective component of this study with relation to the causes of low vision and refractive errors are reported in this paper.

### Methods

The WHO working definition of low vision (best corrected visual acuity < 6/18 to light perception) was used in this study. Data were extracted from the standardised clinical records of children aged below 16 years attending six LV programmes in India, Indonesia and Nepal between 2002 and 2003. The information extracted included socio-demographic details; diagnosis; presenting and best corrected Visual Acuities (VA) for near and distance; and the glasses and optical LV devices prescribed.

### Results

Complete data were available for 1,823 children aged less than 16 years. 42.2% attended hospital LV clinics and 57.8% were assessed at independent LV centres. More boys attended than girls (58.2% vs. 41.8%). The majority (64.4%) had no additional support at home and/or school after the clinical assessment, and only 42.9% came back for follow-up.

### Main causes of low vision:

The main causes of LV were aphakia or other disorders of the lens (30.7%) and retinal lesions (16.7%). In 26.4% the cause was reported as 'globe appears normal' which encompasses refractive errors, amblyopia and cortical visual impairment (Table 1).

In children where the globe appeared normal 72% had refractive

Karin van Dijk, Christoffel Blindenmission  
Clare Gilbert, London School of Hygiene and Tropical Medicine

errors and/or amblyopia (19% of the study population). In a further 236 children (13%) refractive errors and or amblyopia were recorded as contributing to visual loss. The main causes of amblyopia were aphakia and uncorrected refractive errors (in 88%).

### Distance visual acuity

Among those children who could be tested (1457), 42% had a presenting distance visual acuity in the better eye of <6/60, which improved to 29% after refraction.

At their first attendance at the LV service almost two-thirds of the children did not have glasses, and only 21% had glasses which improved their distance visual acuity. After refraction, 58% of the study population were prescribed new glasses: over two-thirds of those who did not have or use their glasses were prescribed new glasses; almost half (45%) of the children who already had glasses needed a new pair.

### Near visual acuity

58.7 % of children had a near VA of  $\geq 1.25$  M, which improved to 73.8 % after refraction and/or magnification. Magnification was prescribed for 303 (22%), of the children who could be tested and 83% of this need was met by locally produced devices, i.e., microscopic glasses and hand magnifiers.

### Discussion

Assuming girls and boys are equally affected by conditions which can lead to low vision, access to low vision care for girls was lower than for boys. This gender imbalance,

which occurred in all models of care, has also been found in studies of other facility-based studies of ocular conditions in children in developing countries.<sup>1,2</sup>

Many children had not been (adequately) refracted prior to attending the low vision services. The improvement in both distance and near vision following refraction shows the great importance of first correcting refractive errors, before considering magnification. 75% of the children had near vision at normal levels and an additional 18% had the potential to access large print after low vision care. Thus the majority of children in this study with low vision could access print.

Differences between children receiving only clinical low vision assessment and those receiving additional support afterwards at home and/or schools are being analysed. A prospective study is currently under way which will compare the (cost-) effectiveness of different models of service provision, including the nature, frequency and intensity of additional support.

### References

- Lewallen, S. and P. Courtright, Gender and use of cataract surgical services in developing countries. Bulletin of the World Health Organization, 2002; 80(4): p. 300-303.
- Mwende JB, A.; Mosha, M.; Bowman, R.; Courtright, P. Delay in presentation to hospital for surgery for congenital and developmental cataract in Tanzania. British Journal of Ophthalmology. 2005;89(11):1478-82.

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We are grateful for the continuing financial support of Christoffel-Blindenmission.

Table 1. Cause of low vision in 1,834 Asian children attending low vision services

Main cause of low vision, using site of abnormality of visual loss	Number	%
Whole globe	148	8,1
Cornea	87	4,8
Lens	559	30,7
Uvea	51	2,8
Retina	304	16,7
Optic nerve	125	6,8
Globe appears normal (refractive errors, amblyopia)	481	26,4
Other	14	0,8
Not recorded/possible	54	2,9
<b>TOTAL</b>	<b>1,823</b>	<b>100</b>