Celebrating the 13th year of **Vision 2020: The Right to Sight** *in the Caribbean*

Preventing blindness and visual impairment while restoring sight and creating opportunities for persons whose sight cannot be restored

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2013 ANNUAL MEETING OF VISION 2020 COMMITTEES - REPRESENTATIVES FOR THE CARIBBEAN

AGENDA

Tuesday 3rd & Wednesday 4th Dec, 2013

CHAIR: Arvel Grant, CEO, CCB-Eye Care Caribbean

This meeting is being implemented with the technical and financial support of:

The European Union

AGENDA

2013 ANNUAL MEETING OF VISION 2020 COMMITTEES - REPRESENTATIVES FOR THE CARIBBEAN

Purpose of the meeting:

- This meeting will provide a platform for sharing, learning and networking and will strengthen links between V2020 Committees and persons involved in eye health.
- Participants will become familiar with perspectives from other areas and will be exposed to new thinking, technologies and opportunities that can be used to benefit eye health service delivery in their countries.
- The meeting will pay particular attention to Diabetic Retinopathy – one of the most prevalent causes of blindness in the Caribbean, and to discussing WHO's *Towards Universal Eye Health: a Global Action Plan 2014-2019*

DAY ONE: Tuesday 3rd December, 2013

START TIME: 8.15 am to 5.00 pm

OPENING SESSION		
8:15 - 8:30	**Getting seated and meeting your neighbors**	
8:30 – 8:40	**Call to order and welcome** **Moment of Meditation**	**Arvel Grant**, *CEO, CCB-Eye Care Caribbean* *Meeting Chair*
8:40 – 8:50	**Role call of delegates**	**Keva Richards**, *Vision 2020 Project Manager, CCB-Eye Care Caribbean* **Doc. 1:** List of Delegates; page 9
8:50 – 9:00	**House-keeping matters and questions for clarification**	**Conrad Harris**, *Director Of Programmes, Jamaica Society for the Blind*

SETTING THE CONTEXT		
9:00 – 9:15	**Address by the International Agency for the Prevention of Blindness** Dr Pizzarello will open the meeting and discuss IAPB's World Sight Day 2013 Report	**Dr Louis Pizzarello** (MD,MPH) *Chairman for the North American Region of the International Agency for the Prevention of Blindness (IAPB)* **Doc. 2:** Towards Universal Eye Health (WSD 2013 Report); page 11

9:15 – 9:30	**Towards Universal Eye Health: Global Action Plan 2014-2019** What is new, what is different and what the Global Action Plan aims to achieve - plus an overview of the plan's Vision, Goal, Purpose, Objectives and Actions. *(NOTE: More detailed sessions on the Global Action Plan and its implementation will be held on Day 2)*	**Dr Juan Carlos Silva** (MD, MPH) *Regional Advisor - Visual Health PAHO* **Doc. 3:** WHA66.4 - Endorsement of Global Action Plan 2014-19; page 31 **Doc. 4:** Towards Universal Eye Health: a Global Action Plan 2014-2019 (Draft); page 33
9:30 – 9:40	**Strategic Framework for V2020 - Caribbean Region (2010)** Recap on Indicators and Priorities of the current Framework for the Caribbean	**Dr Juan Carlos Silva** **Doc. 5:** Strategic Framework for V2020 (Caribbean Region); page 49
9:40 - 9:50	**Delivering V2020 in the Caribbean** *(EC Contract No. DCI-NSA PVD / 2009 / 222-937)* Progress to date and planned actions	**Philip Hand**, *Programme Manager (Caribbean), Sightsavers;* **Doc. 6:** Session Presentation; page 71
9:50 – 10:05	**Keynote Address**	**Hon. Dr. Fenton Ferguson CD DDS MP Minister of Health, Jamaica** **(or his representative)**
10:05 – 10:15	**Q & A on all Presentations**	**Facilitated by Arvel Grant**

10:15 – 10:45 **COFFEE BREAK**

STATUS OF V2020: THE RIGHT TO SIGHT

10:45 – 1:00 **(Session continues after lunch)**	**The Status of V2020: The Right to Sight in participating countries** Each national delegation is invited to present for up to 15 minutes: • Antigua & Barbuda • Barbados • Belize • Commonwealth of Dominica; • Grenada • Guyana (The Republic) • Haiti (The Republic) • Jamaica • St. Kitts & Nevis • St. Lucia	**Facilitated by Dr Juan Carlos Silva**

1:00 – 2:00	**LUNCH BREAK (Own Account)**	
2:00 – 2:45	• St. Vincent & The Grenadines • Suriname (The Republic) • Trinidad & Tobago (The Republic)	
2:45 – 2:55	**Regional Analysis**	**Keva Richards**
2:55 – 3:05	**Q & A**	**Arvel Grant**
3:05 – 3:35	**COFFEE BREAK**	

IMPLEMENTING V2020 PROGRAMMES – DISEASE CONTROL

3.35 – 4.00	**Diabetic Retinopathy** An overview of Diabetic Retinopathy including a presentation of findings and recommendations from the 2013 Diabetic Retinopathy Situation Analyses from Antigua, Belize and Jamaica	**Dr Michael Eckstein, MB BS MD DO FRCOphth** *Consultant Vitreoretinal Surgeon* *Clinical Lead Sussex Diabetic Retinopathy Screening Programme* *Brighton and Sussex University Hospital, UK* **Doc. 7:** Situation Analysis of Diabetic Retinopathy Services in Antigua; page 73 **Doc. 8:** Situation Analysis of Diabetic Retinopathy Services in Belize; page 96 **Doc. 9:** Situation Analysis of Diabetic Retinopathy Services in Jamaica; page 114
4:00 – 4:15	**The Queen Elizabeth Diamond Jubilee Trust** An introduction to The Queen Elizabeth Diamond Jubilee Trust and its work on avoidable blindness across the Commonwealth. Potential next steps for the Trust's involvement in a potential diabetic retinopathy programme in the Caribbean.	**Dr Andrew Cooper** *Director of Programmes* *The Queen Elizabeth Diamond Jubilee Trust* **Doc. 10:** About The Queen Elizabeth Diamond Jubilee Trust; page 135
4:15 – 4:35	**Caribbean Diabetic Retinopathy Programme Concept** Introduction of a Regional Diabetic Retinopathy Programme Concept Paper followed by a plenary discussion	**Arvel Grant** **Doc. 11:** Caribbean Diabetic Retinopathy Programme Concept Paper; page 139

4:35 – 4:45	**Group Work Objectives** Defining Groups	**Philip Hand**
4:45 – 5:45	**Group Work Activity 1** **Three groups will address one topic each:** **Group 1 Topic:** • ***Developing a Diabetic Retinopathy Programme*** – Who (key players) – How (process) – When (timelines) **Group 2 Topic**: • ***Learning from others*** – incorporating regional and global best practice and experience into programme design. **Group 3 Topic:** • ***Barriers and solutions*** – exploring challenges to introducing screening and treatment policy frameworks and to influencing behavior change.	**Group 1:** Facilitator: • *Joan McLeod-Omawale, PhD, MBA - Director LAC Program, ORBIS International* Resource Person: • *Dr Andrew Cooper* Rapporteurs: • *Philip Hand* **Doc. 12:** Group Work Activity 1 – Group 1; page 154 **Group 2:** Facilitator • *Dr Shailendra Sugrim* Resource Person: • *Dr Michael Eckstein* Rapporteurs: • *Charles Vandyke* **Doc. 13:** Group Work Activity 1 – Group 2; page 155 **Group 3:** Facilitator • *Dr Juan Carlos Silva* Resource Person: • *Charles O Pierce, MBBS MRCOphth Research Registrar, Ophthalmology, University of Southampton, UK* Rapporteurs: • *Keva Richards* **Doc. 14:** Group Work Activity 1 – Group 3; page 156
5:45 – 6:15	**Presentation of Group Work Activity 1**	**Facilitated by Arvel Grant**

DAY TWO: Wednesday 4th December, 2012
8.30 am to 4.30 pm

V2020 PLANNING

Purpose of this Session:

- Provide participants with an overview of the current strategies to prevent blindness in the world and in the Region.
- Assess strengths, weaknesses, opportunities and threats on the implementation of the *Prevention of Blindness and Visual Impairment Plan* approved by the PAHO governing bodies in 2009.
- Discuss national level implementation of WHO's *Towards Universal Eye Health: Global Action Plan 2014-2019*, approved by the World Health Assembly in 2013.

8:30 – 8:45	**PAHO Plan for the Prevention of Blindness approved by Ministers of Health in 2009.** Progress and Challenges	**Juan Carlos Silva** Regional Advisor Visual Health PAHO **Doc. 15:** PAHO action plan 2009; page 157
8:45 – 9:00	**WHO Action Plan on Avoidable Blindness 2014-2019** Overview	**Juan Carlos Silva** Regional Advisor Visual Health PAHO
9:00 – 9:10	**Group Work Objectives** Defining Groups	**Philip Hand**
9:10 – 10:15	**Group Work Activity 2** **Groups 1:** • SWOT analysis on the implementation of national eye health plans • How to improve implementation of national plans	**Group 1:** Facilitator: • *Joan McLeod-Omawale* Resource Person: • *To be determined* Rapporteurs: • *Keva Richards* **Doc. 16:** Group Work Activity 2 – Group 1; page 172
	Group 2: • SWOT analysis on National V2020 Committee function, stakeholder participation, leadership and communications. • How to improve effectiveness of V2020 Committees	**Group 2:** Facilitator • *Dr Shailendra Sugrim* Resource Person: • *Nurse Juliette Joseph Asst. Principal Nursing Officer, representing Ministry of Health, St Lucia.* Rapporteurs: • *Philip Hand* **Doc. 17:** Group Work Activity 2 – Group 2; page 173

10:15 – 10:45	Coffee break	
10:45 - 11:15	**Presentations and discussion of Group Work Activity 2**	Facilitated by Juan Carlos Silva
11:15 – 12:30	**Group Work Activity 3** **Group 1 Topics:** • How to include Retinopathy of Prematurity (ROP) in national Neonatal policies and plans • How to include Diabetic Retinopathy in national Non-Communicable Disease and Diabetes Policies and Plans • How to include Cataract Surgery in the national health information systems	**Group 1:** Facilitator: • *Joan McLeod-Omawale* Resource Person: • *To be determined* Rapporteurs: • *Philip Hand* **Doc. 18:** Group Work Activity 3 – Group 1; page 174
	Group 2 Topics: • How to include Refractive Error in school children in National Ministry of Education policies • How to include Primary Eye Care in Primary Health Care • How to resource and implement national eye health surveys	**Group 2:** Facilitator • *Dr Shailendra Sugrim* Resource Person: • *Nurse Juliette Joseph* Rapporteurs: • *Keva Richards* **Doc. 19:** Group Work Activity 3 – Group 2; page 175
12:30 – 1:00	**Presentations and discussion of Group Work Activity 3**	Facilitated by Juan Carlos Silva
1:00 – 2:00	**LUNCH (Own Account)**	
NOTE:	***Arvel Grant will resume as meeting chair for the afternoon sessions***	
2:00 – 2:20	**Developing the Guyana Eye Care Strategic Framework** Dr Shailendra Sugrim discussed the process of framework development in Guyana	**Dr Shailendra Sugrim** *Consultant Ophthalmologists, & Glaucoma Specialists, Georgetown Public Hospital, Guyana.* **Doc. 20:** Developing the Guyana Eye Care Strategic Framework; page 176 **Doc. 21:** Guyana Eye Care Strategic Framework; page 179

2:20 – 3.10	**Plenary Discussion:** **Engaging non-health sectors in developing and implementing eye health/prevention of visual impairment policies and plans** The *Universal Eye Health: Global Action Plan 2014-2019* proposes that Health Ministries identify and engage other sectors, such as those under Ministries of Education, Finance, Welfare and Development, when developing and implementing eye health policies and plans. This discussion will explore: • How this has or can happen • What are the common areas of interest • What are the potential benefits • What challenges may be expected	Chaired by Arvel Grant Rapporteur – Conrad Harris **Doc. 4:** Objective 3 of the Global Action Plan; page 43
3:10 – 3:30	**COFFEE BREAK**	

RESEARCH – GLAUCOMA & DIABETIC RETINOPATHY KAP STUDIES

3:30 – 4:00	**Glaucoma & Diabetic Retinopathy KAP studies** Update on studies to be undertaken in Barbados, Guyana, Jamaica and St Lucia	**Dr Dawn Grosvenor** *Consultant Ophthalmologist, & Glaucoma Specialists& Principal Investigator- Barbados* **Doc. 21:** Abstract for CCB Conference Presentation on Caribbean Glaucoma KAP Study; page 204 **Charles O Pierce MBBS MRCOphth** *Research Registrar, Ophthalmology, University of Southampton, UK* **Doc. 22:** Abstract summary of the (DRKAP) study; page 205
4:00- 4:20	**Patient led Glaucoma Action Group from the Mandeville area**	**Dr. Celeste Chambers**
4:20 – 4:30	**Closing Remarks** (end of Meeting)	**Arvel Grant**

LIST OF DELEGATES

NO.	TERRITORY	NAME OF ORGANIZATION	DELEGATES NAMES
1	Antigua & Barbuda	Chief Executive Officer, Caribbean Council for the Blind	Arvel Grant
2	Antigua & Barbuda	Operations & Lab Services Manager, Caribbean Council for the Blind	Carolyn Gopaul
3	Antigua & Barbuda	V2020 Project Manager, Caribbean Council for the Blind	Keva Richards
4	Antigua & Barbuda	Statistician, Ministry of Health	St. Clair Soleyn
5	Antigua & Barbuda	Permanent Secretary, Ministry of Health	Edson Joseph
6	Barbados	Consultant Ophthalmologist, Queen Elizabeth Hospital	Dr. Dawn Grosvenor-Blackman
7	Barbados	Vitreo Retinal Specialist	Dr. Charles Pierce
8	Barbados	Ministry of Health	Kevamae Belgrave
9	Barbados	Vitreo Retinal Specialist, Ministry of Health	Sherwin Gaskin
10	Belize	Programme Director, Belize Council for the Visually Impaired	Leolyn Garcia
11	Belize	Executive Director, Belize Council for the Visually Impaired	Joan Musa
12	Dominica	District Medical Officer, Ministry of Health	Dr. Charlotte Jeremy-Cuffy
13	Dominica	The Diabetic Retinopathy Screening Programme, The Commonwealth Of Dominica	Nanda Matthew
14	Grenada	Chief Medical Officer, Ministry of Health	Dr. George Mitchell
15	Guyana	Chairman (National V2020 Committee), Ministry of Health	Dr. Shailendra Sugrim
16	Guyana	National Programme Manager, CCB-Eye Care Guyana	Charles Vandyke
17	Haiti	Coordinator, CNPC-Haiti	Dr. Valery Blot
18	Haiti	Ophthalmologist, International Child Care	Dr. Mike Maingrette
19	Jamaica	Acting Regional Technical Director, Southern Regional Health Authority	Beverley Wright
20	Jamaica	Theatre Nurse, Mandeville Eye Clinic	Nurse Joyce Gooden

21	Jamaica	Ophthalmologist (Glaucoma Specialist), Mandeville Eye Clinic	Dr. Celeste Chambers
22	Jamaica	National V2020 Programme Manager, Jamaica Society for the Blind	Conrad Harris
23	Jamaica	Executive Director, Jamaica Society for the Blind	Lola Marson
24	Jamaica	Regional Maintenance Manager, Caribbean Council for the Blind	Henry Latty
22	St. Kitts & Nevis	Director Institutional Nursing Services, Ministry of Health	Mrs. Sonia Daly-Finley
22	St. Kitts & Nevis	Staff Nurse, Ministry of Health	Mrs. Loiuse Williams
23	St. Lucia	Assistant Principal Nursing Officer, Ministry of Health	Nurse Juliette Joseph
24	St. Lucia	Executive Director, St. Lucia Blind Welfare Association	Anthony Avril
25	St. Lucia	V2020 Programme Manager, Eye Care St. Lucia/SLBWA	Emma Bernard-Joseph
26	St. Vincent & The Grenadines	Senior Registrar, Ministry of Health, Wellness & Environment	Dr. Orly Adams
27	St. Vincent & The Grenadines	Registrar, Ministry of Health, Wellness & Environment	Dr. Rosmond Adams
28	Suriname	Eye Specialist, Eye Care Centre at Academic Hospital Paramaribo	Michael Rayanto Siban
29	Suriname	Director of National Foundation for Blind Care Suriname	Natasia Hanenberg-Agard
30	Trinidad & Tobago	Primary Care Officer 1, Ministry of Health	Dr. Sharon Lackan
31		Caribbean Programme Manager, Sightsavers	Philip Hand
32		Regional Advisor, Visual Health, Pan American Health Organisation (PAHO)	Dr. Juan Carlos Silva
33		Director LAC Program, ORBIS International, USA	Joan McLeod-Omawale
34		Chairman for the North American Region of the International Agency for the Prevention of Blindness	Dr. Louis Pizzarello
35		Eye and Ear Care Health Programme Coordinator, CBM	Marie Joseph
36		Clinical Lead Sussex Diabetic Retinopathy Screening Programme, Brighton & Sussex Univ. Hospital	Dr. Mike Eckstein
37		Director of Programmes, The Queen Elizabeth Diamond Jubilee Trust	Dr. Andrew Cooper
38		Regional Coordinator, Brien Holden Vision Institute	Vivien Ocampo

WSD 2013 REPORT

2013
WORLD SIGHT DAY
10/10/2013

TOWARDS UNIVERSAL EYE HEALTH

GET YOUR EYES TESTED

IAPB
VISION 2020
THE RIGHT TO SIGHT

2

WSD 2013 REPORT

About 285 million people around the world are visually impaired. Four out of five cases are avoidable[1].

IAPB and its members and partners recognise that governments are the key to ensuring access to quality eye-health services and eliminating avoidable blindness. It is therefore encouraging that the World Health Organization (WHO) and member states are strongly supporting 'universal health coverage' and concomitantly 'universal eye health'.

The WHO defines universal health coverage (UHC) 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[2]".

This means all people should enjoy access to the best quality health care without risk of impoverishment.

Health inequalities and UHC are closely linked; access for all will not be possible unless social determinants are addressed. In 2010, the World Health Report recognised the need to promote equity and acknowledged that some groups can slip through the gaps and that patterns of exclusion from services vary[3]. To achieve UHC, mainstream services must be designed to

All people must have access to care, without financial hardship.

overcome access barriers, and special measures, such as outreach programmes, must be taken to reach the poor and marginalised.

Health financing has a significant impact on access; social protection programmes, health insurance schemes and free point-of-care services are ways to reduce out-of-pocket health shocks.

In May 2013, 'Towards Universal Eye Health: A Global Action Plan 2014-2019[4]' was unanimously adopted by member states at the World Health Assembly in Geneva. By doing so, 194 countries have acknowledged the importance of universal eye health and have committed to reducing the prevalence of avoidable visual impairment and securing access to rehabilitation services for the visually impaired. While this is a remarkable development, formidable challenges remain. Advancing towards universal eye health will require political will and co-ordinated action by stakeholders.

This report sets out what universal eye health should mean in practice, taking into account key components of the Global Action Plan, and includes inputs from experts on the situation globally and regionally, with examples of countries striving towards universal eye health.

The Main Elements a Government Needs to Put in Place to Achieve Universal Eye Health

1. **Comprehensive eye care services: offering a breadth of services covering the range of causes of vision impairment, from promotion, prevention to rehabilitation and care**

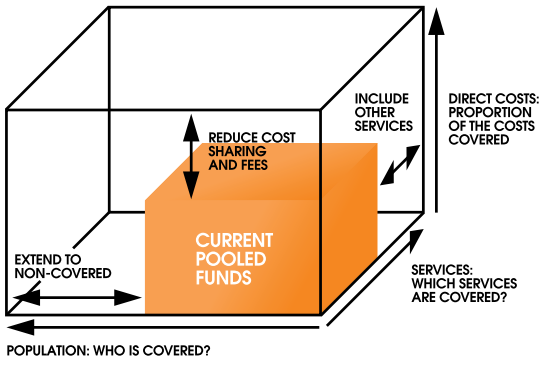
2. **Eye health integrated into health systems, attending to the six building blocks of a health system according to WHO: governance, health financing, service delivery, human resources, medicines and technologies, and information**

3. **Access for everyone, including the poor, minorities, the disabled including vision impaired and people in rural areas. This requires adequate health outreach and promotion including in appropriate technologies and formats, and ensuring main-stream and targeted programmes address barriers**

4. **Point-of-care payment should not prevent access: it should be free for the poorest**

Source: IAPB

Three dimensions to consider while moving towards universal coverage[5]



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Preventing blindness increases access to education, employment, and enables greater participation in civil, political and social life.

A Global Momentum

'Towards Universal Eye Health: A Global Action Plan 2014-2019' includes strategies and priorities related to promotion, prevention, treatment and rehabilitation. Its goal is to reduce avoidable visual impairment as a global public health problem and secure access to rehabilitation services for the visually impaired[6]. This should be achieved by improving access to comprehensive eye-care services that are integrated into health systems. Care should be on a continuum from health promotion and prevention to rehabilitation, avoiding vertical approaches and emphasising access. The Global Action Plan sets a specific target of a reduction in the prevalence of avoidable visual impairment by 25% by 2019 from the baseline of 2010.

Eye Health Global Overview: Progress and Challenges

About 285 million people (a quarter of all people with disabilities) are visually impaired – about 39 million of whom are blind. 80% of the total or around 228 million people are avoidably impaired. Women are more vulnerable; in some contexts they are less likely to access services, and they are at greater risk of some conditions such as trachoma.

In spite of high numbers overall, there have been many significant achievements over the past decades. More recently, there has been progress in the control of infectious diseases including trachoma and onchocerciasis (river blindness), and in community outreach in retinopathy of prematurity. Multisectoral partnerships in eye health have set standards for collaboration, such as the *VISION 2020: The Right to Sight* and the *Seeing is Believing* initiatives, and the pharmaceutical donations from Merck and Pfizer. In a sign of national policy commitment, more than 100 national

Image: Dean Saffron, Brian Holden Vision Institute

Image: Clare Gilbert

Image: Wanjiku Mathenge

blindness prevention plans have been developed by governments around the world. In many countries there have been gaps in design, and implementation has been piecemeal or failed to reach the poorest.

Reducing avoidable blindness and rehabilitating those who are irreversibly visually impaired have enormous implications for the individual, their families and their communities. Preventing blindness increases access to education, employment, and enables greater participation in civil, political and social life. The economic arguments for eye health are also well known. Research shows that globally, for every dollar spent on improving eye health services there is more than a two-fold return on investment, and in developing countries, the investment generates a four-fold return[7].

However, unacceptably high proportions of people cannot access eye-health services around the world. There are serious shortages in trained personnel, particularly in Africa. Low surgical rates and irregular outreach to the poorest and rural populations are big concerns. For many poor and marginalised people the cost of treatment can be prohibitive. Transport, lack of appropriate technologies and discrimination cause further difficulties in access to eye health for vulnerable groups of people such as the poor, minorities, the disabled (including the visually impaired) and women. These challenges are compounded by changing demographics and health challenges. As populations age there is greater risk of visual impairment and blindness. In 2010, 82% of those blind and 65% of those with moderate and severe blindness were older than 50 years of age[8]. The rapidly increasing prevalence of diabetes, projected to rise to 552 million in 2030[9], will mean greater incidence of diabetic retinopathy and additional strains on health systems and eye-health personnel.

Political leaders and donors need to increase their investments in eye health.

6

Regional Overview
Africa

The major causes of visual impairment in Africa are cataract, glaucoma, trachoma, childhood blindness, onchocerciasis and refractive error. In recent years there has been enormous progress with the coordinated control of onchocerciasis and trachoma through the African Programme for Onchocerchiasis Control and the Alliance for the Global Elimination of Trachoma by 2020 (GET 2020) programmes. Recently, efforts to eliminate trachoma have advanced with The Global Trachoma Mapping Project.

Many governments in the region are taking strident steps towards universal eye health. Ghana's National Health Insurance System now covers most ocular diseases, and almost every district has an ophthalmic nurse[10]. In several African countries, nurses and medical assistants have been trained to diagnose and to make referrals.

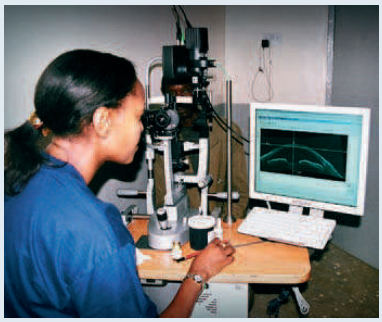
However, challenges remain; the shortage of health workers at all levels in Africa is alarming and without additional ophthalmologists, optometrists and nurses, the targets in the Global Action Plan will not be met[11]. Workforce problems are most pronounced in Francophone and Lusophone countries. Across the region, political leaders, donors and other decision-makers need to increase their investments in eye health.

Rwanda: Striding Towards Universal Eye Health

In 2012 Rwanda's Ministry of Health and its partners developed the Third Health Sector Strategic Plan. With the motto, *Universal Coverage*, the plan provides for greater integration and collaboration across the health system. Rwanda allocated 18.8% of its budget in 2011 to the health sector and community-based poverty programmes (including savings and credit) for the rural poor. An improving economy means more Rwandans are capable of contributing premiums to the community-based health insurance scheme, which allows individuals to access comprehensive, subsidised, preventive care. The Minimum Package of Activities (MPA) covers all services provided at the health centres and the Complementary Package of Activities (CPA) covers a limited number of services at the district hospitals, including cataract surgery and all diseases afflicting children under five.

Many development initiatives impact on eye health. Access to drinking water increased from 77% of the population in 2005 to 87% in 2011, and this has contributed to Rwanda being the only country in the region without trachoma. The incidence of childhood blindness has also fallen dramatically, with greater coverage of Vitamin A supplementation (92%) and measles vaccination (82%).

The review of healthcare 'packages' for different levels was a great milestone and saw the development of eye-care treatment protocols, adoption of eye indicators in the Health Management Information



All Images: Wanjiku Mathenge

The shortage of health workers at all levels in Africa is alarming.

System and more eye-health consumables added to the national procurement system. A central eye fund was established and workforce issues were also reviewed to support the health system.

The importance of free healthcare for the poorest

User fees in public health facilities are a barrier to access, and a major obstacle to achieving universal health coverage. Many countries, such as Burkina Faso, South Africa, Mali, Niger and Ghana have introduced exemption policies, targeting specific population groups (e.g. children under five years) or specialised services (e.g. caesareans). In Burkina Faso, 80% of poor households go into debt or sell assets to pay healthcare costs. The introduction of user fee exemption has had a very noticeable impact: the number of children under five consultations in health facilities increased six-fold. By increasing access and utilisation of health care, it is estimated that free healthcare can save the lives of around 20,000 children every year in Burkina Faso. In a recent national study, it was found that universal health coverage through free healthcare will cost only £3 per child per year[12].

8

Regional Overview
Eastern Mediterranean Region

The Eastern Mediterranean is a diverse region covering nations in the north of Africa as well as countries such as Pakistan, the United Arab Emirates, Palestine and Yemen. Cataract and glaucoma are two of the major causes of visual impairment and with diabetes prevalence rising across much of the region, diabetic retinopathy is an increasing threat. In response, Jordan and Saudi Arabia are replacing inflexible hospital-based programmes with comprehensive community-based screening initiatives. Trachoma is also prevalent in some areas; however, Morocco, Oman and Saudi Arabia are close to eliminating the disease. An EMR Trachoma Alliance Taskforce has been set up to map prevalence and support community-based interventions in countries where blinding trachoma remains a public health concern. Low vision is also a concern and recommendations have been made to expand access and improve low vision and rehabilitation services.

Image: IAPB EMR

Morocco, Oman and Saudi Arabia are close to eliminating trachoma.

Saudi Arabia: leading the way in eye care

The Kingdom of Saudi Arabia has made great strides in improving eye health domestically, and has galvanised political and economic support in the region and at a global level, culminating in the approved Global Action Plan[13]. Saudi Arabia is committed to evidence-based planning for eye care. The Ministry of Health (MOH), in collaboration with the National Prevention of Blindness Committee (NPBC), conducted rapid assessments of avoidable blindness and diabetic retinopathy in three regions of the country[14] and the results from these assessments were used to develop a national plan for screening and control of diabetic retinopathy[15].

Prevention of blindness and deafness has been incorporated into Saudi Arabia's new primary healthcare policy with a dedicated budget line and training schedules. To maintain a continuum of eye care, a 5-10 year programme that encompasses screening for Retinopathy of Prematurity (ROP), pre-school vision, diabetic retinopathy, glaucoma and cataract are being developed within existing health structures. The MOH is currently establishing four additional eye centres across the country to deliver these services.

With new data demonstrating that blindness, primarily from diabetic retinopathy, is increasing, the MOH has reactivated its Prevention of Blindness (PB) unit and moving operational responsibility to areas responsible for Public Health and non-communicable disease (NCDs). For the first time ever in 2013, USD 2.66 million was allocated to blindness prevention specifically for diabetic retinopathy screening, the development of protocols for glaucoma, ROP and pre-school screening and additional research.

Regional Overview
Europe

Data on the prevalence of blindness and visual impairment in Europe is sparse. According to 2010 data from the WHO, there are around 3 million blind and 28.7 million severe and moderately visually impaired people across the 53 countries of the region. Diabetic retinopathy and age-related macular degeneration are major causes in Western Europe, while cataract and refractive error are also of focus. As the population ages in Europe, these threats are increasing and in Eastern Europe, ROP is a major cause of blindness among children. The region includes developing, middle-income and fully industrialised nations, and as such eye health provision, financing, payment, and access vary considerably. Lack of awareness of the need for routine exams, outreach issues, problems with referral pathways and inadequate training are key challenges to ensuring universal eye health in Europe.

Images: UK Vision Strategy

In England, 1000 extra buses are to become Talking Buses.

The United Kingdom: The UK Vision Strategy[16]

The UK Vision Strategy (UKVS) is designed to ensure fair and equitable access for all to eye health and sight loss services. Led by civil society, the national strategy was developed following consultations with over 650 organisations and individuals. The strategy provides a national framework for reducing sight loss, integrated service provision and building an inclusive society. It promotes the need for more research into eye health and research priorities for 10 key areas have been agreed after consultation with patients, the public and the professions. The strategy aspires for person-centred delivery

models, excellent services and support appropriate for each individual, in line with their personal preferences.

The strategy will work to a) ensure that everyone in the UK looks after their eyes and their sight; b) everyone with an eye condition receives timely treatment and, if permanent sight loss occurs, early and appropriate services and support are available and accessible to all; c) a society in which people with sight loss can fully participate.

Recent achievements in the UK include:

- In 2012, an indicator on eye health was included in England's Public Health Outcomes Framework to track the rates of three major causes of avoidable sight loss.
- The Royal College of General Practitioners (RCGP) has selected eye health as one of its four clinical priorities for 2013 – 2016.
- In England, 1000 extra buses are to become Talking Buses, which will make travel safer and more accessible for those with visual impairment. A similar commitment has been made in Wales.

Regional Overview
North America

The North America region includes Canada, the United States and most of the Caribbean countries. Major threats to eye health in North America include chronic conditions such as glaucoma, diabetic retinopathy and macular degeneration, as well as refractive error. In the Caribbean, many countries still have high rates of cataract and low surgical rates. Haiti is a focus country for IAPB and a national plan for blindness prevention was developed at a recent workshop. Research by Prevent Blindness America has drawn attention to the high economic costs of eye health in developed countries, with the total economic burden in the US estimated to be around US$ 139 billion in 2013[17].

Barbados: increasing access to Glaucoma screening

With a population of around 284,000, the majority of the people in Barbados are Afro-Caribbean. The Barbados Eye Study, completed in the 1990s, recognised glaucoma as a public health problem and this remains so today. A population-based study found that black Barbadians had the highest rates of primary open-angle glaucoma, around 7.0%. Given the significant impact that glaucoma makes on blindness in the country and the fact that half of those with vision loss due to glaucoma were unaware of their condition, a public outreach effort was initiated by Dr Dawn Grosvenor from the Queen Elizabeth Hospital in Bridgetown.

In World Glaucoma Week, held in March each year Dr. Grosvenor and her team organise a week of awareness-raising activities. In 2010, the Glaucoma Foundation in New York joined the campaign and since then, the event has grown exponentially.

In March 2013, the team organised a media campaign to encourage at-risk individuals to take up free screening. Ophthalmologists and optometrists from around the country were recruited and many opened their practices for free screening during the week. A Glaucoma Expo was held offering free screening, lectures and display booths all day in one location, and estimates suggest over 1000 people were screened in one week. Approximately 7% of those screened were found to have signs of glaucoma and some were previously diagnosed but defaulted from care. The campaign identified new cases and encouraged people with glaucoma to return to follow-up care. As a result of this initiative, the vision of hundreds has been saved. The government of Barbados continues to run glaucoma awareness pieces on television.

All Images: Dr Dawn Grosvenor-Blackman

Dr Margaret Chan, Director General, WHO, has asserted that "universal coverage is the single most powerful concept that public health has to offer".

Integrate eye care at every level of the health system and into other health programmes.

For every dollar spent on eye health in developing countries, there is a four-fold return.

2013 WORLD SIGHT DAY 10/10/2013

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Regional Overview
Latin America

Cataract, diabetic retinopathy, glaucoma and ROP are the major causes of blindness and visual impairment[18] and these are priorities in the Pan American Health Organization's (PAHO) Action Plan on Eye Health. VISION 2020 Latin America was officially launched in 2004 as a three-way partnership between PAHO, Pan American Association of Ophthalmology (PAAO) and IAPB bringing together professional associations, governments and the NGO sector[19]. Over the years, the body capitalised on its partnerships to catalyse change and now, every country in the region has a blindness-prevention committee. Cataract surgical rates have increased with most of the region's 19 countries now reporting rates of 1500 or above. However, eye-health providers are concentrated in major cities and there is very little government support for surgeries on patients who are underinsured or have no coverage. In most countries, there is a shortage of mid-level personnel.

Chile guarantees free eye health to the poor.

National Perspectives

In early 2013, IAPB brought together government, industry, insurance companies and the national society of ophthalmology to develop a new national plan for the **Dominican Republic**. It focuses on modifying criteria for reimbursement and coverage of cataract surgery, which is currently restricted to only 40% of the population. Potential means to improve access include networking of hospitals and large providers to cover underserved areas, and introducing codes for procedures not yet covered (such as cataract surgery not using phaco), to make reimbursement processes more efficient.

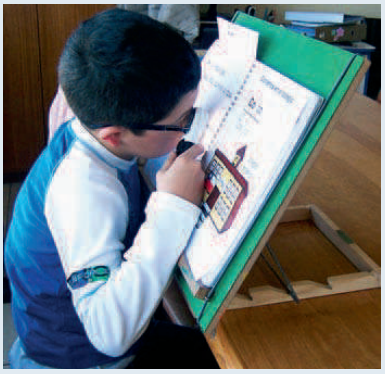
Mexico's *Seguro Popular* (popular insurance) has increased awareness of cataract blindness, and the CSR has

All Images: IAPB Latin America

risen in the last three years from around 100 to over 1600.

Mexico has played a key leadership role in sponsoring resolutions on avoidable blindness at the WHO Executive Board and the World Health Assembly.

Chile has one of the strongest healthcare systems in Latin America. Treatments for eight ocular diseases, including diabetic retinopathy, spectacles for vulnerable age groups and ROP, are funded by the government and in 2012, Chile's CSR reached a median of over 4000. While 70% of the population is not covered by private insurance, Chile guarantees universal eye-health coverage through financing methods including full fees if the patient is unable to afford care. All children receive eye examinations and spectacles are provided; all health services covered for indigenous people and people living with diabetes are entitled to an annual dilated eye examination. In areas where government institutions cannot provide care, private organisations offer services paid for by the government.



Dylan's Story

Seven-year-old Dylan was referred to the Corporacion Evangelica De Hualpen's Low Vision programme. Dylan had been withdrawn from elementary school as he was unable to read from his schoolbooks, the blackboard or use other educational materials. Dylan stayed at home awaiting a miracle treatment. A functional assessment of vision was carried out by professionals from the programme who prescribed appropriate low-vision aids, and with training Dylan was able to read school-books and see what was on the blackboard. However, Dylan's family could not afford the aids prescribed for his benefit. JUNAEB's 'Provide Loupes and Bookholders' Project, donated a 12.5x loupe and a book-holding table that makes it easier to read up close.

Dylan's parents now have the joy of knowing that he will be able to continue his studies and live a normal life.

Regional Overview
South East Asia Region

South East Asia has one quarter of the world's population, but as much as one third of the world's blind people. Half of the world's 1.5 million blind children live in the region[20]. Cataract, childhood blindness, refractive error, glaucoma, and diabetic retinopathy are the leading causes of blindness. Human resources are a major challenge, impeding progress. In most countries, there is only one ophthalmologist for every 200,000 people, and about one mid-level eye-care specialist for every half million people. Most of the eye-care personnel are based in cities and towns; however around 75% of the population live in rural areas. The reduction in the cost of intraocular lenses (IOL) has had a major impact in increasing cataract surgical rates in India and surrounding countries. There are also good examples of pro-poor financing, such as Bangladesh, where cataract surgery is subsidised.

India: Towards Universal Eye Health

Most eye-care programmes in India have been structured around cataract, initially through surgical eye camps and then building the hospital base. India now has a good network of secondary eye hospitals in the voluntary and government sector. Over decades, ophthalmology has developed a strong community orientation and promoted robust intervention programmes, largely through outreach and screening eye camps.

While screening camps identify and refer millions of people for cataract surgery annually, a study[21] conducted a decade ago showed that only 7% of those in need of eye care were attending camps. The focus on cataract was limiting the diagnosis and management of refractive errors, glaucoma and retinal disorders.

Primary Eye Care (PEC) was then adopted as a more effective approach. Permanent centres were established in communities covering a population of approximately 50,000 people. Trained ophthalmic technicians and screening protocols were key to the approach.

The experience at Aravind Eye Hospitals has been most encouraging. Vision Centres, established for four years, have registered close to 20% of the population as unique patients. This represents almost the entire need for eye care services in the area. For the first time we have evidence of a model that can help achieve the elusive goal of universal coverage. This will be the key for managing chronic conditions like glaucoma and diabetic retinopathy, ensure regular follow-up and represent the last mile connection for uncommon medications.

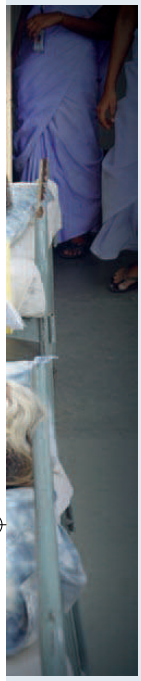


Image: Mr. Rajkumar, Aravind Eye Hospital

Image: Mr. Jacques Vekermans, Aravind Eye Hospitals

Half of the world's 1.5 million blind children live in the region.

With the Vision Centre model, India is closer to the elusive goal of universal coverage.

The PEC approach has become part of India's National Programme for Control of Blindness. Funds have been allocated to establish 5,000 primary eye-care centres during the 12th Five-Year Plan. While there has been some progress in both government and voluntary sectors, more infrastructure is required. Enabling policies, minimum standards and technologies are also needed to expand eye-care services at the community level.

Regional Overview
Western Pacific

The Western Pacific is a large and incredibly diverse region. While causes of visual impairment differ widely, the two main causes are cataract and refractive error. New disease priorities are emerging with the prevalence of diabetes growing fast in many Pacific Island countries and industrialising countries of Asia, as well as Australia and New Zealand. In resource-poor settings with weak infrastructure for water and sanitation, endemic pockets of trachoma remain, especially in the Pacific. In high-income countries, age-related retinal diseases are the most common causes of blindness. In this context, challenges for national programmes vary greatly. In small Pacific Island states, strengthening effective clinical services which rely on effective primary care networks, referrals and outreach programmes remain an ongoing challenge. Many countries of Asia have massive workforce challenges; particularly in the distribution of specialists in rural areas. Encouragingly, Vietnam, China, the Philippines and Cambodia are strengthening social protection programmes and working within their means to provide universal access to eye health. Lao PDR – one of the poorest countries of the region – is committed to establishing a national health insurance authority with universal coverage in the next few years. Countries such as Singapore, Brunei, Australia and Malaysia have long-established universal health agendas. Universal eye care in the Western Pacific region will only be achieved with adequate resources to expand and sustain these financing schemes, and additional funding for good-practice blindness-prevention programmes.

The Philippines: Eye health for every Filipino

The government of the Philippines has made a strong political commitment to ensuring that every Filipino receives affordable and quality health care and early in 2013, the Department of Health (DOH) issued an Administrative Order to make eye health and blindness prevention part of the country's ambitious health agenda. Recently, the Congress passed long-contested legislation for reproductive health and agreed to a new tax on tobacco and alcohol. The funds from that levy will be allocated to expanded health promotion programmes and the national health insurance programme, PhilHealth. These reforms are very timely for eye health.

A 2002 national survey of blindness in the Philippines found 362,000 people blind from cataract and 59,000 blind from refractive error, which put the prevalence of blindness at around 0.58%. To update this, the government is planning to undertake a rapid assessment of avoidable blindness in 17 regions later this year. Previously, eye health programmes were vertical in nature and often

All images: Tanggal Katarata Foundation

The Philippines has made a strong political commitment that every Filipino receives affordable and quality health care.

Many Asian countries have massive workforce challenges.

relied on international organisations and the voluntary sector.

Now, key eye-health objectives contained in the draft national strategic plan for blindness prevention sit within a broader national strategy for non-communicable and degenerative diseases. The DOH blindness-prevention officials work collaboratively with those responsible for diabetes, disability and rehabilitation and other conditions linked to ageing and chronic disease. Programmes and services, particularly at primary level and in provincial settings, will be able to make the most of shared referral and delivery infrastructure.

The Philippines is working to ensure the cost of accessing health is no barrier, and PhilHealth is the key to reducing costs for the individual and expanding access. Through PhilHealth, 40 per cent of the individual allocation goes to the professional (usually the surgeon), and 60 per cent to the hospital (usually a private facility). Reforms are planned to ensure that this is progressively adopted in government hospitals. A recent study commissioned by IAPB found PhilHealth was underutilised for eye health treatments, with rates as low as seven per cent among marginalised population groups. The Department of Health has committed to further promoting PhilHealth and increasing awareness in disadvantaged communities.

Through the National Committee for Sight Preservation, key stakeholders in the Philippines are working to ensure eye-health professionals in private and public practice are equipped to provide quality, comprehensive eye health services for everyone. Like many countries, a key challenge for the Philippines is workforce distribution, and most specialist health providers are located in urban centres. The DOH is guiding reforms to ensure access for people in more remote areas, and considering ways to support professions to contribute to government health programmes.

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Translating the Global Action Plan into Reality; Factors for Success

There is considerable variation in the state of eye health and the progress being made towards universal eye health. The breadth of services offered, fees charged and how services are financed differ greatly. Even within countries, there are huge disparities and differences. Positively, there are many good examples around the world, of countries adopting pro-poor approaches. Efforts to integrate eye health into insurance schemes and increase outreach demonstrate that possibilities exist even in resource-poor settings. However, much more needs to be done and the Global Action Plan sets out a useful framework.

Consistent with Objective 1 of the Global Action Plan, there needs to be greater understanding of the context and evidence for appropriate policies and programmes. More information is needed on the prevalence of visual impairment and its causes, and the availability and take up of services. In many countries, there is a lack of data on eye health, and a lack of systematic reviews on eye care and access[22]. More needs to be done to understand means to attract and keep staff in remote areas and review how task-shifting may improve productivity and service use, learning from those cases where a flexible approach to labour was

Image: Tanggal Katarata Foundation

taken to increase coverage.

In many contexts, eye health tends be delivered in programmes and facilities separate to other health services, although there is a growing recognition of the value of integration and shared delivery systems. By embedding eye health in the broader health system, efficiency and access gains can be made.

Objective 2 of the Global Action Plan calls for integrated eye health, in line with WHO's framework for strengthening health systems to improve health outcomes[23]. Partnerships have proven to be enormously successful in the eye health sector, across government, businesses and NGOs, and with the WHO. It is essential

Partnerships have proven to be enormously successful in the eye-health sector.

that these partnerships be strengthened and that new ones are brokered to achieve the targets of the Global Action Plan. Stronger links can be forged with areas such as Non Communicable Diseases, Neglected Tropical Diseases and maternal and child health. Beyond the health sector, there are common priorities in water and sanitation, housing, education, ageing and disability. Close links with disabled peoples' organisations will continue to be important.

Access for everyone is the central goal. Special effort must be made to reach the poorest and most vulnerable. Most critically, point-of-care payment should be free for the poorest. Human resources and appropriate budget allocations on eye health will be major factors in the push for universal eye health. Without significant investment in eye health the goal will not be achieved.

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Reviewing the Global Action Plan and implementing priority activities at a national level

2013 WORLD SIGHT DAY 10/10/2013

Recommendations for governments, donors and other decision-makers

1. **Invest in eye health, increasing budget allocations to address need.**
2. **Address the human resources crisis, through investments in training and personnel and using innovative means, based on learning from good practices and research.**
3. **Withdraw user fees for the poorest.**
4. **Integrate eye care at every level of the health system and into other health programmes (e.g. child health checks, diabetes screening)**
5. **Increase access to health and eye health for all communities, including the disabled, addressing discrimination, geographical, mobility, sensory and built environment barriers.**
6. **Conduct blindness-prevalence surveys, carry out eye-health system assessments, and develop methods and indicators to measure and evaluate universal eye health.**
7. **Develop national eye-health plans, and integrate eye-health issues within broader health plans, and other relevant sectors.**

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Towards universal eye health: a global action plan 2014–2019

The Sixty-sixth World Health Assembly,

Having considered the report and draft global action plan 2014–2019 on universal eye health;[1]

Recalling resolutions WHA56.26 on elimination of avoidable blindness and WHA62.1 and WHA59.25 on prevention of avoidable blindness and visual impairment;

Recognizing that the global action plan 2014–2019 on universal eye health builds upon the action plan for the prevention of avoidable blindness and visual impairment for the period 2009–2013;

Recognizing that globally, 80% of all visual impairment can be prevented or cured and that about 90% of the world's visually impaired live in developing countries;

Recognizing the linkages between some areas of the global action plan 2014–2019 on universal eye health and efforts to address noncommunicable diseases and neglected tropical diseases;

1. ENDORSES the global action plan 2014–2019 on universal eye health;

2. URGES Member States:

(1) to strengthen national efforts to prevent avoidable visual impairment including blindness through, inter alia, better integration of eye health into national health plans and health service delivery, as appropriate;

(2) to implement the proposed actions in the global action plan 2014–2019 on universal eye health in accordance with national priorities, including universal and equitable access to services;

(3) to continue to implement the actions agreed by the World Health Assembly in resolution WHA62.1 on prevention of blindness and visual impairment and the action plan for the prevention of blindness and visual impairment for the period 2009–2013;

(4) to continue to support the work of the WHO Secretariat to implement the current action plan up to 2013;

[1] Document A66/11.

(5) to consider programme and budget implications related to implementation of this resolution within the context of the broader programme budget;

3. REQUESTS the Director-General:

(1) to provide technical support to Member States for the implementation of the proposed actions in the global action plan 2014–2019 on universal eye health in accordance with national priorities;

(2) to further develop the global action plan 2014–2019 on universal eye health in particular with regard to the inclusion of universal and equitable access to services;

(3) to continue to give priority to the prevention of avoidable visual impairment, including blindness, and to consider allocating resources for the implementation of the global action plan 2014–2019 on universal eye health;

(4) to report to the Seventieth and Seventy-third World Health Assemblies, in 2017 and 2020 respectively, through the Executive Board, on progress in implementing the action plan.

Eighth plenary meeting, 24 May 2013
A66/VR/8

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ANNEX 2

Universal eye health: a global action plan 2014–2019[1]

[A66/11 – 28 March 2013]

1. In January 2012 the Executive Board reviewed progress made in implementing the action plan for the prevention of avoidable blindness and visual impairment for the period 2009–2013. It decided that work should commence immediately on a follow-up plan for the period 2014–2019, and requested the Director-General to develop a draft action plan for the prevention of avoidable blindness and visual impairment for the period 2014–2019 in close consultation with Member States and international partners, for submission to the World Health Assembly through the Executive Board.[2] The following global action plan was drafted after consultations with Member States, international partners and organizations in the United Nations system.

VISUAL IMPAIRMENT IN THE WORLD TODAY

2. For 2010, WHO estimated that globally 285 million people were visually impaired, of whom 39 million were blind.

3. According to the data for 2010, 80% of visual impairment including blindness is avoidable. The two main causes of visual impairment in the world are uncorrected refractive errors (42%) and cataract (33%). Cost-effective interventions to reduce the burden of both conditions exist in all countries.

4. Visual impairment is more frequent among older age groups. In 2010, 82% of those blind and 65% of those with moderate and severe blindness were older than 50 years of age. Poorer populations are more affected by visual impairment including blindness.

BUILDING ON THE PAST

5. In recent resolutions, the Health Assembly has highlighted the importance of eliminating avoidable blindness as a public health problem. In 2009, the World Health Assembly adopted resolution WHA62.1, which endorsed the action plan for the prevention of avoidable blindness and visual impairment. In 2012, a report noted by the Sixty-fifth World Health Assembly and a discussion paper described lessons learnt from implementing the action plan for 2009–2013. The results of those findings and the responses received to the discussion paper were important elements in the development of this action plan. Some of the lessons learnt are set out below.

(a) In all countries it is crucial to assess the magnitude and causes of visual impairment and the effectiveness of services. It is important to ensure that systems are in place for monitoring prevalence and causes of visual impairment, including changes over time, and the effectiveness of eye care and rehabilitation services as part of the overall health system. Monitoring and

[1] See resolution WHA66.4.

[2] See decision EB130(1).

evaluating eye care services and epidemiological trends in eye disease should be integrated into national health information systems. Information from monitoring and evaluation should be used to guide the planning of services and resource allocation.

(b) Developing and implementing national policies and plans for the prevention of avoidable visual impairment remain the cornerstone of strategic action. Some programmes against eye diseases have had considerable success in developing and implementing policies and plans, however, the need remains to integrate eye disease control programmes into wider health care delivery systems, and at all levels of the health care system. This is particularly so for human resource development, financial and fiscal allocations, effective engagement with the private sector and social entrepreneurship, and care for the most vulnerable communities. In increasing numbers, countries are acquiring experience in developing and implementing effective eye health services and embedding them into the wider health system. These experiences need to be better documented and disseminated so that all countries can benefit from them.

(c) Governments and their partners need to invest in reducing avoidable visual impairment through cost-effective interventions and in supporting those with irreversible visual impairment to overcome the barriers that they face in accessing health care, rehabilitation, support and assistance, their environments, education and employment. There are competing priorities for investing in health care, nevertheless, the commonly used interventions to operate on cataracts and correct refractive errors – the two major causes of avoidable visual impairment – are highly cost effective. There are many examples where eye care has been successfully provided through vertical initiatives, especially in low-income settings. It is important that these are fully integrated into the delivery of a comprehensive eye care service within the context of wider health services and systems. The mobilization of adequate, predictable and sustained financial resources can be enhanced by including the prevention of avoidable visual impairment in broader development cooperative agendas and initiatives. Over the past few years, raising additional resources for health through innovative financing has been increasingly discussed but investments in the reduction of the most prevalent eye diseases have been relatively absent from the innovative financing debate and from major financial investments in health. Further work on a cost–benefit analysis of prevention of avoidable visual impairment and rehabilitation is needed to maximize the use of resources that are already available.

(d) International partnerships and alliances are instrumental in developing and strengthening effective public health responses for the prevention of visual impairment. Sustained, coordinated international action with adequate funding has resulted in impressive achievements, as demonstrated by the former Onchocerciasis Control Programme, the African Programme for Onchocerciasis Control and the WHO Alliance for the Global Elimination of Trachoma by the year 2020. VISION 2020: The Right to Sight, the joint global initiative for the elimination of avoidable blindness of WHO and the International Agency for the Prevention of Blindness, has been important in increasing awareness of avoidable blindness and has resulted in the establishment of regional and national entities that facilitate a broad range of activities. The challenge now is to strengthen global and regional partnerships, ensure they support building strong and sustainable health systems, and make partnerships ever more effective.

(e) Elimination of avoidable blindness depends on progress in other global health and development agendas, such as the development of comprehensive health systems, human resources for health development, improvements in the area of maternal, child and reproductive health, and the provision of safe drinking-water and basic sanitation. Eye health should be included in broader noncommunicable and communicable disease frameworks, as well as those addressing ageing populations. The proven risk factors for some causes of blindness (e.g. diabetes mellitus, smoking, premature birth, rubella and vitamin A deficiency) need to be continuously addressed through multisectoral interventions.

(f) Research is important and needs to be funded. Biomedical research is important in developing new and more cost-effective interventions, especially those that are applicable in low-income and middle-income countries. Operational research will provide evidence on ways to overcome barriers in service provision and uptake, and improvements in appropriate cost-effective strategies and approaches for meeting ever-growing public health needs for improving and preserving eye health in communities.

(g) Global targets and national indicators are important. A global target provides clarity on the overall direction of the plan and focuses the efforts of partners. It is also important for advocacy purposes and evaluating the overall impact of the action plan. National indicators help Member States and their partners to evaluate progress and plan future investments.

GLOBAL ACTION PLAN 2014–2019

6. The **vision** of the global action plan is a world in which nobody is needlessly visually impaired, where those with unavoidable vision loss can achieve their full potential, and where there is universal access to comprehensive eye care services.

7. The global action plan 2014–2019 aims to sustain and expand efforts by Member States, the Secretariat and international partners to further improve eye health and to work towards attaining the vision just described. Its **goal** is to reduce avoidable visual impairment[1] as a global public health problem and to secure access to rehabilitation services for the visually impaired. The **purpose** of the action plan is to achieve this goal by improving access to comprehensive eye care services that are integrated into health systems. Further details are provided in Appendix 1. Five principles and approaches underpin the plan: universal access and equity, human rights, evidence-based practice, a life course approach, and empowerment of people with visual impairment. Further details are provided in Appendix 2.

8. Proposed **actions** for Member States, international partners and the Secretariat are structured around three **objectives** (see Appendix 3):

Objective 1 addresses the need for generating evidence on the magnitude and causes of visual impairment and eye care services and using it to advocate greater political and financial commitment by Member States to eye health.

Objective 2 encourages the development and implementation of integrated national eye health policies, plans and programmes to enhance universal eye health with activities in line with WHO's framework for action for strengthening health systems to improve health outcomes.[2]

Objective 3 addresses multisectoral engagement and effective partnerships to strengthen eye health.

Each of the three objectives has a set of **metrics** to chart progress.

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[1] The term "visual impairment" includes moderate and severe visual impairment as well as blindness. "Blindness" is defined as a presenting visual acuity of worse than 3/60 or a corresponding visual field loss to less than 10° in the better eye. "Severe visual impairment" is defined as a presenting visual acuity of worse than 6/60 and equal to or better than 3/60. "Moderate visual impairment" is defined as a presenting visual acuity in the range from worse than 6/18 to 6/60 (Definition of visual impairment and blindness. Geneva, World Health Organization, 2012.) The action plan uses the term "visual impairment". Also, see the ICD update and revision platform "Change the definition of blindness".

[2] *Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action.* World Health Organization. Geneva, 2007.

9. There are three **indicators** at the goal and purpose levels to measure progress at the national level, although many Member States will wish to collect more. The three indicators comprise: (i) the prevalence and causes of visual impairment; (ii) the number of eye care personnel; and (iii) cataract surgery. Further details are provided in Appendix 4.

- **Prevalence and causes of visual impairment.** It is important to understand the magnitude and causes of visual impairment and trends over time. This information is crucial for resource allocation, planning, and developing synergies with other programmes.

- **Number of eye care personnel, broken down by cadre.** This parameter is important in determining the availability of the eye health workforce. Gaps can be identified and human resource plans adjusted accordingly.

- **Cataract surgical service delivery. Cataract surgical rate** (number of cataract surgeries performed per year, per million population) and **cataract surgical coverage** (number of individuals with bilateral cataract causing visual impairment, who have received cataract surgery on one or both eyes). Knowledge of the surgery rate is important for monitoring surgical services for one of the leading causes of blindness globally, and the rate also provides a valuable proxy indicator for eye care service provision. Where Member States have data on the prevalence and causes of visual impairment, coverage for cataract surgery can be calculated; it is an important measure that provides information on the degree to which cataract surgical services are meeting needs.

10. For the first of these indicators there is a **global target**. It will provide an overall measure of the impact of the action plan. As a global target, the reduction in prevalence of avoidable visual impairment by 25% by 2019 from the baseline of 2010 has been selected for this action plan.[1] In meeting this target, the expectation is that greatest gains will come through the reduction in the prevalence of avoidable visual impairment in that portion of the population representing those who are over the age of 50 years. As described above, cataract and uncorrected refractive errors are the two principal causes of avoidable visual impairment, representing 75% of all visual impairment, and are more frequent among older age groups. By 2019, it is estimated that 84% of all visual impairment will be among those aged 50 years or more. Expanding comprehensive integrated eye care services that respond to the major causes of visual impairment, alongside the health improvement that can be expected to come from implementing wider development initiatives including strategies such as the draft action plan for the prevention and control of noncommunicable diseases 2013–2020, and global efforts to eliminate trachoma suggest the target, albeit ambitious, is achievable. In addition, wider health gains coming from the expected increase in the gross domestic product in low-income and middle-income countries will have the effect of reducing visual impairment.[2]

[1] The global prevalence of avoidable visual impairment in 2010 was 3.18%. A 25% reduction means that the prevalence by 2019 would be 2.37%.

[2] According to the International Monetary Fund, by 2019 the average gross domestic product per capita based on purchasing power parity will grow by 24% in low-income and lower-middle-income countries, by 22% in upper-middle-income countries, and by 14% in high-income countries.

APPENDIX 1

VISION, GOAL AND PURPOSE

VISION A world in which nobody is needlessly visually impaired, where those with unavoidable vision loss can achieve their full potential, and where there is universal access to comprehensive eye care services			
Goal	**Measurable indicators**[1]	**Means of verification**	**Important assumptions**
To reduce avoidable visual impairment as a global public health problem and secure access to rehabilitation services for the visually impaired[2]	Prevalence and causes of visual impairment Global target: reduction in prevalence of avoidable visual impairment by 25% by 2019 from the baseline of 2010	Collection of epidemiological data at national and subnational levels and development of regional and global estimates	Human rights conventions implemented, equity across all policies achieved, and people with visual impairment fully empowered Sustained investment achieved by the end of the action plan
Purpose			
To improve access to comprehensive eye care services that are integrated into health systems	Number of eye care personnel per million population Cataract surgical rate	Reports summarizing national data provided by Member States	Services accessed fully and equitably by all populations

[1] See also Appendix 4.

[2] The objective of the Secretariat's programme for the prevention of blindness was "to prevent and control major avoidable causes of blindness and to make essential eye care available to all … the long-term target being to reduce national blindness rates to less than 0.5%, with no more than 1% in individual communities", Formulation and management of national programmes for the prevention of blindness. Geneva, World Health Organization, 1990 (document WHO/PBL/90.18).

APPENDIX 2

CROSS-CUTTING PRINCIPLES AND APPROACHES

Universal access and equity	**Human rights**	**Evidence-based practice**	**Life course approach**	**Empowerment of people with blindness and visual impairment**
All people should have equitable access to health care and opportunities to achieve or recover the highest attainable standard of health, regardless of age, gender or social position	Strategies and interventions for treatment, prevention and promotion must be compliant with international human rights conventions and agreements	Strategies and interventions for treatment, prevention and promotion need to be based on scientific evidence and good practice	Eye health and related policies, plans and programmes need to take account of health and social needs at all stages of the life course	People who are blind or who have low vision can participate fully in the social, economic, political and cultural aspects of life

APPENDIX 3

OBJECTIVES AND ACTIONS

Objective 1	**Measurable indicators**	**Means of verification**	**Important assumptions**
Evidence generated and used to advocate increased political and financial commitment of Member States for eye health	Number of Member States that have undertaken and published prevalence surveys during the past five years by 2019 Number of Member States that have completed and published an eye care service assessment over last five years in 2019 Observation of World Sight Day reported by Member States	Epidemiological and economic assessment on the prevalence and causes of visual impairment reported to the Secretariat by Member States Eye care service assessment and cost–effectiveness research results used to formulate national and subnational policies and plans for eye health Reports of national, regional and global advocacy and awareness-raising events	Advocacy successful in increasing investment in eye health despite the current global financial environment and competing agendas
Actions for Objective 1	**Proposed inputs from Member States**	**Inputs from the Secretariat**	**Proposed inputs from international partners**
1.1 Undertake population-based surveys on prevalence of visual impairment and its causes	Undertake surveys in collaboration with partners, allocating resources as required Publish and disseminate survey results, and send them to the Secretariat	Provide Member States with tools for surveys and technical advice Provide estimates of prevalence at regional and global levels	Advocate the need for surveys Identify and supply additional resources to complement governments' investments in surveys
1.2 Assess the capacity of Member States to provide comprehensive eye care services and identify gaps	Assess eye care service delivery, allocating resources as required. Assessments should cover availability, accessibility, affordability, sustainability, quality and equity of services provided, including cost–effectiveness analysis of eye health programmes Collect and compile data at national level, identifying gaps in service provision Publish and disseminate survey results,	Provide Member States with tools for eye care service assessments and technical advice Publish and disseminate reports that summarize data provided by Member States and international partners	Advocate the need for eye care service assessments Support Member States in collection and dissemination of data Identify and supply additional resources to complement governments' investments in eye care service assessments

	and report them to the Secretariat		
1.3 Document, and use for advocacy, examples of best practice in enhancing universal access to eye care	Identify and document successful interventions and lessons learnt Publish results and report them to the Secretariat	Develop tools and provide them to Member States along with technical advice Collate and disseminate reports from Member States	Advocate the need to document best practice Support Member States in documenting best practice and disseminating results Identify additional resources to complement governments' investments
Objective 2	**Measurable indicators**	**Means of verification**	**Important assumptions**
National eye health policies, plans and programmes for enhancing universal eye health developed and/or strengthened and implemented in line with WHO's framework for action for strengthening health systems in order to improve health outcomes	Number of Member States reporting the implementation of policies, plans and programmes for eye health Number of Member States with an eye health/prevention of blindness committee, and/or a national prevention of blindness coordinator, or equivalent mechanism in place Number of Member States that include eye care sections in their national lists of essential medicines, diagnostics and health technologies Number of Member States that report the integration of eye health into national health plans and budgets Number of Member States that report a national plan that includes human resources for eye care Number of Member States reporting evidence of research on the cost–effectiveness of eye health programmes	Reports that summarize data provided by Member States	Policies, plans and programmes have sufficient reach for all populations Services accessed by those in need

Actions for Objective 2	Proposed inputs from Member States	Inputs from the Secretariat	Proposed inputs from international partners
2.1 Provide leadership and governance for developing/updating, implementing and monitoring national/subnational policies and plans for eye health	Develop/update national/subnational policies, plans and programmes for eye health and prevention of visual impairment, including indicators and targets, engaging key stakeholders Secure inclusion of primary eye care into primary health care Establish new and/or maintain the existing coordinating mechanisms (e.g. national coordinator, eye health/prevention of blindness committee, other national/subnational mechanisms) to oversee implementation and monitoring/evaluating the policies, plans and programmes	Provide guidance to Member States on how to develop and implement national and subnational policies, plans and programmes in line with the global action plan Provide Member States with tools and technical advice on primary eye care, and evidence on good leadership and governance practices in developing, implementing, monitoring and evaluating comprehensive and integrated eye care services Establish/maintain global and regional staff with responsibility for eye health/prevention of visual impairment Establish country positions for eye health/prevention of visual impairment where strategically relevant and resources allow	Advocate national/subnational leadership for developing policies, plans and programmes Support national leadership in identifying the financial and technical resources required for implementing the policies/plans and inclusion of primary eye care in primary health care Secure funding for key positions in the Secretariat at headquarters, regional and country levels
2.2 Secure adequate financial resources to improve eye health and provide comprehensive eye care services integrated into health systems through national policies, plans and programmes	Ensure funding for eye health within a comprehensive integrated health care service Perform cost–benefit analysis of prevention of avoidable visual impairment and rehabilitation services and conduct research on the cost–effectiveness of eye health programmes to optimize the use of available resources	Provide tools and technical support to Member States in identifying cost–effective interventions and secure the financial resources needed	Advocate at national and international levels for adequate funds and their effective use to implement national/subnational policies, plans and programmes Identify sources of funds to complement national investment in eye care services and cost–benefit analyses

2.3 Develop and maintain a sustainable workforce for the provision of comprehensive eye care services as part of the broader human resources for health workforce	Undertake planning of human resources for eye care as part of wider human resources for health planning, and human resources for eye health planning in other relevant sectors Provide training and career development for eye health professionals Ensure retention strategies for eye health staff are in place and being implemented Identify, document and disseminate best practice to the Secretariat and other partners with regard to human resources in eye health	Provide technical assistance as required Collate and publish examples of best practice	Advocate the importance of a sustainable eye health workforce Support training and professional development through national coordination mechanisms Provide support to Member States in collection and dissemination of data
2.4 Provide comprehensive and equitable eye care services at primary, secondary and tertiary levels, incorporating national trachoma and onchocerciasis elimination activities	Provide and/or coordinate universal access to comprehensive and equitable eye care services, with emphasis on vulnerable groups such as children and the elderly Strengthen referral mechanisms, and rehabilitation services for the visually impaired Establish quality standards and norms for eye care	Provide WHO's existing tools and technical support to Member States	Advocate the importance of comprehensive and equitable eye care services Support local capacity building for provision of eye care services, including rehabilitation services in line with policies, plans and programmes through national coordination mechanisms Monitor, evaluate and report on services provided in line with national policies, plans and programmes through national coordination mechanisms
2.5 Make available and accessible essential medicines, diagnostics and health technologies of assured quality with particular focus on vulnerable groups and underserved communities, and explore mechanisms to increase affordability of new evidence-based technologies	Ensure existence of a national list of essential medical products, national diagnostic and treatment protocols, and relevant equipment Ensure the availability and accessibility of essential medicines, diagnostics and health technologies	Provide technical assistance and tools to support Member States	Advocate the importance of essential medicines, diagnostics and health technologies Provide essential medicines, diagnostics and health technologies in line with national policies

2.6 Include indicators for the monitoring of provision of eye care services and their quality in national information systems	Adopt a set of national indicators and targets, including those on rehabilitation, within the national information systems Periodically collect, analyse and interpret data Report data to the Secretariat	Provide technical support to Member States by including national indicators and targets in national health systems Collate and disseminate data reported by Member States annually	Advocate the importance of monitoring using nationally agreed indicators Provide financial and technical support for collection and analysis of national and subnational data
Objective 3	**Measurable indicators**	**Means of verification**	**Important assumptions**
Multisectoral engagement and effective partnerships for improved eye health strengthened	Number of Member States that refer to a multisectoral approach in their national eye health/prevention of blindness policies, plans and programmes The WHO Alliance for the Global Elimination of Trachoma by the Year 2020, African Programme for Onchocerciasis Control, and Onchocerciasis Elimination Program for the Americas deliver according to their strategic plans Number of Member States that have eye health incorporated into relevant poverty-reduction strategies, initiatives and wider socioeconomic policies Number of Member States reporting eye health as a part of intersectoral collaboration	Reports from Member States received and collated by the Secretariat Receipt of annual reports and publications from partnerships	Non-health sectors invest in wider socioeconomic development

Actions for Objective 3	Proposed inputs from Member States	Inputs from the Secretariat	Proposed inputs from international partners
3.1 Engage non-health sectors in developing and implementing eye health/prevention of visual impairment policies and plans	Health ministries identify and engage other sectors, such as those under ministries of education, finance, welfare and development Report experiences to the Secretariat	Advise Member States on specific roles of non-health sectors and provide support in identifying and engaging non-health sectors Collate and publish Member States' experiences	Advocate across sectors the added value of multisectoral work Provide financial and technical capacity to multisectoral activities (e.g. water and sanitation) Provide support to Member States in collecting and disseminating experiences
3.2 Enhance effective international and national partnerships and alliances	Promote active engagement in, and where appropriate, establish partnerships and alliances that harmonize and are aligned with national priorities, policies, plans and programmes Identify and promote suitable mechanisms for intercountry collaboration	Where appropriate, participate in and lead partnerships and alliances, including engaging other United Nations entities, that support, harmonize and are aligned with Member States' priorities, policies, plans and programmes Facilitate and support establishment of intercountry collaboration	Promote participation and actively support partnerships, alliances and intercountry collaboration that harmonize and are aligned with Member States' priorities, policies, plans and programmes
3.3 Integrate eye health into poverty-reduction strategies, initiatives and wider socioeconomic policies	Identify and incorporate eye health in relevant poverty-reduction strategies, initiatives and socioeconomic policies Ensure that people with avoidable and unavoidable visual impairment have access to educational opportunities, and that disability inclusion practices are developed, implemented and evaluated	Write and disseminate key messages for policy-makers Advise Member States on ways to include eye health/prevention of visual impairment in poverty-reduction strategies, initiatives and socioeconomic policies	Advocate the integration of eye health into poverty-reduction strategies, initiatives and socioeconomic policies

APPENDIX 4

NATIONAL INDICATORS FOR PREVENTION OF AVOIDABLE BLINDNESS AND VISUAL IMPAIRMENT

1. Prevalence and causes of visual impairment

Purpose/rationale	To measure the magnitude of visual impairment including blindness and monitor progress in eliminating avoidable blindness and in controlling avoidable visual impairment
Definition	Prevalence of visual impairment, including blindness, and its causes, preferably disaggregated by age and gender
Preferred methods of data collection	Methodologically sound and representative surveys of prevalence provide the most reliable method. Additionally, the Rapid Assessment of Avoidable Blindness and the Rapid Assessment of Cataract Surgical Services are two standard methodologies for obtaining results for people in the age group with the highest prevalence of visual impairment, that is, those over 50 years of age
Unit of measurement	Prevalence of visual impairment determined from population surveys
Frequency of data collection	At national level at least every five years
Source of data	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat periodically updates the global estimates on the prevalence and causes of visual impairment

2. Number of eye care personnel by cadre

2.1 Ophthalmologists

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity–development response for strengthening national health systems. Ophthalmologists are the primary cadre that deliver medical and surgical eye care interventions
Definition	Number of medical doctors certified as ophthalmologists by national institutions based on government-approved certification criteria. Ophthalmologists are medical doctors who have been trained in ophthalmic medicine and/or surgery and who evaluate and treat diseases of the eye
Preferred methods of data collection	Registers of national professional and regulatory bodies

Unit of measurement	Number of ophthalmologists per one million population
Frequency of data collection	Annually
Limitations	The number does not reflect the proportion of ophthalmologists who are not surgically active; clinical output (e.g. subspecialists); performance; and quality of interventions. Unless disaggregated, the data do not reflect geographical distribution
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat annually issues a global update based on the national data provided by Member States

2.2 Optometrists

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity-development response for strengthening national health systems. In an increasing number of countries, optometrists are often the first point of contact for persons with eye diseases
Definition	Number of optometrists certified by national institutions based on government-approved certification criteria
Preferred methods of data collection	Registers of national professional and regulatory bodies
Unit of measurement	Number of optometrists per one million population
Frequency of data collection	Annually
Limitations	The number does not denote performance, especially the quality of interventions to reduce avoidable blindness. There is a wide variability in knowledge and skill of optometrists from one nation to another because curricula are not standardized Numbers do not reflect the proportion of ophthalmic clinical officers, refractionists and other such groups who in some countries perform the role of optometrists where this cadre is short staffed or does not exist
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat annually issues a global update based on the national data provided by Member States

2.3 Allied ophthalmic personnel

Purpose/rationale	To assess availability of the eye health workforce in order to formulate a capacity-development response for strengthening national health systems. Allied ophthalmic personnel may be characterized by different educational requirements, legislation and practice regulations, skills and scope of practice between countries and even within a given country. Typically, allied ophthalmic personnel comprise opticians, ophthalmic nurses, orthoptists, ophthalmic and optometric assistants, ophthalmic and optometric technicians, vision therapists, ocularists, ophthalmic photographer/imagers, and ophthalmic administrators
Definition	Numbers of allied ophthalmic personnel comprising professional categories, which need to be specified by a reporting Member State
Preferred methods of data collection	Compilation of national data from subnational (district) data from government, nongovernmental and private eye care service providers
Unit of measurement	Number of allied ophthalmic personnel per one million population
Frequency of data collection	Annually
Limitations	The numbers do not denote performance, especially the quality of interventions to reduce avoidable blindness. There is a wide variability in knowledge and skill. These data are useful for monitoring of progress in countries over time but they cannot be reliably used for intercountry comparison because of variation in nomenclature
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat annually issues a global update based on the national data provided by Member States

3. Cataract surgical service delivery

3.1 Cataract surgical rate

Purpose/rationale	The rate can be used to set national targets for cataract surgical service delivery. It is also often used as a proxy indicator for general eye care service delivery. Globally, cataract remains the leading cause of blindness. Visual impairment and blindness from cataracts are avoidable because an effective means of treatment (cataract extraction with implantation of an intraocular lens) is both safe and efficacious to restore sight. The cataract surgical rate is a quantifiable measure of cataract surgical service delivery.
Definition	The number of cataract operations performed per year per one million population
Preferred methods of data collection	Government health information records, surveys

Unit of measurement	Number of cataract operations performed per one million population
Frequency of data collection	Annually at national level. In larger countries it is desirable to collate data at subnational level
Limitations	This indicator is meaningful only when it includes all cataract surgeries performed in a country, that is, those performed within the government and nongovernmental sectors
Comments	For calculations, use official sources of population data (United Nations)
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat annually issues a global update based on the national data provided by Member States

3.2 Cataract surgical coverage

Purpose/rationale	To assess the degree to which cataract surgical services are meeting the need
Definition	Proportion of people with bilateral cataract eligible for cataract surgery who have received cataract surgery in one or both eyes (at 3/60 and 6/18 level)
Preferred methods of data collection	Calculation using data from methodologically sound and representative prevalence surveys. Additionally, calculation using data from the Rapid Assessment of Avoidable Blindness and the Rapid Assessment of Cataract Surgical Services, which are two standard methodologies to obtain results for people in the age group with the highest prevalence of blindness and visual impairment due to cataract, that is, those over 50 years of age
Unit of measurement	Proportion
Frequency of data collection	Determined by the frequency of performing a national/district study on the prevalence of blindness and visual impairment and their causes
Limitations	Requires population-based studies, which may be of limited generalization
Comments	Preferably data are disaggregated by gender, age, and urban/rural location or district
Source of information	Health ministry or national prevention of blindness/eye health coordinator/committee
Dissemination of data	The Secretariat periodically issues updates

OPS/PBL/2010.1
PAHO/ECC.

STRATEGIC FRAMEWORK FOR VISION 2020: THE RIGHT TO SIGHT

CARIBBEAN REGION

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION
VISION 2020

Barbados
2010

OPS/PBL/2010.1
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STRATEGIC FRAMEWORK FOR VISION 2020: THE RIGHT TO SIGHT

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CONTENTS

ACRONYMS

CBM	Christoffel Blinden Mission
CCB	Caribbean Council for the Blind
IAPB	International Agency for the Prevention of Blindness
ICEE	International Centre for Eye Care Education
ICEVI	International Council for Education of People with Visual
INGO	International Non Governmental Organizations
MoH	Ministry of Health
MoE	Ministry of Education
NGDO	Non-governmental Development Organization
OAG	Open Angle Glaucoma
OSWI	Ophthalmological Society of the West Indies
PAAO	Pan American Association of Ophthalmology
PAHO	Pan American Health Organization
PBL	Prevention of Blindness
PEC	Primary Eye Care
PHC	Primary Health Care
ROP	Retinopathy of Prematurity
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
WBU	World Blind Union
WHO	World Health Organization

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The meeting participants consisted on Hazel Shillingford-Ricketts, Joan McLeod-Omawale, Dave Duncan, Julian McKoy-Davis, Lucine Edwards, Narine Singh, Charles Vandyke, Ava-Gay Timberlake, Peter Ackland, Pat Ferguson, Nelson Rivera, Jillia Bird, Nigel St Rose, Conrad Harris, Anthony Avril, Philip Hand, Arvel Grant, Frank Bowen, Keva Richards, Kathy Barrett, Gavin Henry, Rachelle Noelsaint, Reginald Paul, Martin Ruppenthal, Juan Carlos Silva.

INTRODUCTION

Blindness and low vision are a public health problem throughout the world, this is why the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB) together with NGOs have launched VISION 2020 - the global initiative for the elimination of avoidable blindness. This initiative that brings together governments, WHO, international and national NGOs, as well as associations of professionals in eye care, aims to determine global, regional and national plans of action in prevention of avoidable blindness and inclusive services. In the Caribbean VISION 2020 was officially launched in Trinidad-Tobago in April 2000.

The World Health Organization's Fifty-Sixth World Health Assembly approved Resolution WHA56.26, which requested the Director to strengthen WHO's collaboration with Member States on the Global Initiative for the Elimination of Avoidable Blindness. In Resolution WHA59.25, the Fifty-Ninth World Health Assembly reaffirmed its commitment to give priority to the prevention of blindness. The 144th Session of the Pan American Health Organization - PAHO Executive Committee recommended that the Directing Council adopt a resolution as a way to bolster regional and national efforts to reach the objectives of the Plan of Action for the Prevention of Avoidable Blindness and Visual Impairment. In September 2009 the 49th PAHO Directing Council - WHO 61st Session of the Regional Committee approved the prevention of blindness plan of action and passed the resolution (Annex 1).

In the year 2002 a VISION 2020 strategic plan was developed for the Caribbean region through a series of in-house discussions in PAHO, as well as through meetings with member states, the IAPB, national and international non-governmental organizations and scientific societies. In the Caribbean, PAHO, implement the VISION 2020 initiative in alliance with the IAPB, Sightsavers, Caribbean Council for the Blind-CCB, CBM, ORBIS and the ICEE. Significant progress has been achieved in the Caribbean in the prevention of avoidable blindness, and access to eye care services has been increasing in most countries working in this initiative.

On December 1st 2009 PAHO, CCB, Sightsavers, CBM, ORBIS and all Caribbean Vision 2020 partners organized a meeting in Barbados to review and update the Vision 2020 Caribbean Plan that was produced in the year 2002. This new strategic framework for VISION 2020 in the Caribbean Region was prepared utilizing a very participatory methodology that included consultation with several Ministries of Health of the English speaking countries, national and international partners and incorporated the strategies of the Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment approved by the PAHO 49th DIRECTING COUNCIL in 2009. This strategic framework serves as a guideline to support countries and stakeholders in priority setting and objectives development, it does not pretend to be a norm and each country may adapt it to its own realities, priorities and resources. Each priority established by a country should utilize a primary health care approach and have a referral system available for quality care for every condition.

1. DISEASE CONTROL AND PREVENTION OF VISUAL IMPAIRMENT

The most prevalent causes of blindness in the Caribbean are non-operated cataract and glaucoma, followed by diabetic retinopathy and uncorrected refractive errors. Childhood blindness is not as prevalent, but is a main cause of blinding years in the population. An important percentage of blindness in the Caribbean region is avoidable (preventable or curable). Cataract and diabetic retinopathy can be cured with relatively inexpensive surgical treatments; refractive errors are correctable with simple optical devices; and preventive strategies and effective referral systems can reduce the burden of childhood blindness. The application of new technology can be used in future to improve the detection and treatment of glaucoma.

1.1 REDUCE BLINDNESS AND VISUAL IMPAIRMENT IN ADULTS

1.1.1 Reduce Cataract blindness

In Latin America and the Caribbean, cataract (opacification of the lens) is the most prevalent cause of blindness; cataract surgery has been shown to be one of the most cost-effective of all health care interventions. Most cataracts are age-related and cannot be prevented, but cataract surgery with insertion of an intraocular lens (IOL) is highly effective, providing almost immediate visual rehabilitation.

Magnitude of Problem

The results of the Barbados Eye Study show that 12% of people 40-84 years old have visual impairment or visual acuity worse than 6/12 (normal value 6/6*).* Three percent (3%) have severe visual impairment worse than 6/60 and most have cataract or lens opacities, thus demonstrating that most visual impairment in this population is associated with lens opacities.

Issues

- Inadequate public awareness of cataract and how it can be rectified with a straightforward surgical procedure, leading to low demand for services.
- Numerous barriers between needs and services, including poor availability and accessibility and high costs.
- Evidence of good vision outcomes lacking after surgery.
- Insufficient information on outputs and outcomes in public sector, private sector and bilateral cooperation initiatives.

Expected Outcome

- Provide cataract surgical services at a rate adequate to eliminate the backlog of cataract, at a price that is affordable for all people, both rural and urban and with high success rate in terms of visual outcome.

Proposed actions for Member States

- Make national assessments of cataract surgical services, including availability, access, affordability and quality, as well as collection and management of information and data.
- Measure prevalence of cataract blindness, determine services coverage level and identify barriers to access in selected countries.
- Develop country and district-specific cataract service plans with measurable targets that address equity (availability, accessibility, affordability) and quality of services.
- Ensure eye health services are integrated into a primary health care system to detect and refer people with eye diseases.
- Develop a human resources development plan for cataract surgical services.
- Promote high-quality surgery and ensure satisfactory visual outcomes and patient satisfaction.
- Develop appropriate communication strategies for the target population- viz. adults 50 years and older.

Proposed actions for organizations supporting VISION 2020 activities

- Provide technical cooperation for the design of Rapid Assessment of Avoidable Blindness (RAAB) and similar studies.
- Develop a situation analysis of cataract surgical services at regional and national levels.
- Advocate and provide technical cooperation for development and implementation of national cataract plans.
- Mobilize resources with regional and international partners.

Indicators

- Reach a cataract surgical rate (CSR) of 2,000 per 1 million population per year in the majority of countries by the year 2014. (See Table 2 below)
- 4 countries utilizing a cataract outcomes monitoring tool/system in 2014.

Table 2. Caribbean Cataract Surgical Rate, Year 2009

Country	Population	CSR year 2010	Target 2014
	Thousands		
Antigua	88	1345	1800
Bahamas	342	2500	3000
Barbados	256	2001	2500
Belize	307	1648	2000
Dominica	67	1746	2000
Grenada	104	1062	1500
Guyana	762	1700	2000
Haiti	10,033	440	1000
Jamaica	2719	1000	1500
St Lucia	172	843	1500
St Vincent	109	1066	1500
Trinidad	1339	2600	3000

1.1.2 Reduce the prevalence of blindness from diabetic retinopathy

Diabetes causes weakening of the blood vessels in the body. Retinal blood vessels are particularly susceptible and weakening of these blood vessels, accompanied by structural changes in the retina, is termed as diabetic retinopathy. Diabetic retinopathy is symptomless in its early stage and eye examinations/screening is the only way to identify affected people to prevent them from going blind. Evidence-based treatment is available to significantly reduce the risks of blindness and of moderate vision loss. Clinical studies spanning more than 30 years have shown that appropriate treatment with laser can reduce the risks by more than 90%.

Magnitude of the problem

The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country. More than 75% of patients who have had diabetes mellitus for more than 20 years will have some form of diabetic retinopathy. After 15 years of diabetes, approximately 2% of people become blind, and about 10% develop severe visual impairment. In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes mellitus; among people with diabetes 30% has diabetic retinopathy 8.6%

of diabetics have clinically significant macular edema and 1% has proliferative diabetic retinopathy needing laser treatment.

Issues

- Inadequate medical management and control of diabetes.
- Inadequate development of detection and referral systems.
- Insufficient public awareness relating to cause and prevention of blindness due to diabetes.
- Insufficient awareness and knowledge of PHC practitioners, general physicians and internists regarding their role in the prevention of blindness due to diabetes.
- Limited number of ophthalmologists with training in diagnosis and treatment of diabetic retinopathy.
- Inadequate technological infrastructure in the health services.
- Poor resourcing and low capacity of national diabetes associations.

Expected Outcome

- Countries implementing early detection, referral and treatment for diabetic retinopathy

Proposed actions for Member States

- Integrate blindness prevention strategies into national diabetes programs and ensure their incorporation into non communicable chronic diseases programs of the Ministries of Health.
- Encourage strategies for prevention, early detection and effective treatment of diabetes and hypertension, which will prevent complications that lead to blindness.
- Develop public awareness programs to target groups that are at high risk.
- Establish referral systems from services for diabetics to the ophthalmologic services.
- Establish screening services using digital photography to detect and refer treatable diabetic retinopathy.
- Ensure laser treatment services for diabetic retinopathy are available, accessible and affordable.

Proposed actions for organizations supporting VISION 2020 activities

- Perform a situation analysis of the management of diabetic retinopathy in the Region as a baseline for planning and advocacy.
- Conduct national assessments of services for diabetic retinopathy in selected countries.
- Develop education packages and training programs for the general public and health care providers.
- Develop continuing medical education programs for ophthalmologists and optometrists.
- Support countries in the development of screening programs and laser services for Diabetic Retinopathy.
- Establish regional protocols and management guidelines
- Establish an inter-country referral system for treatment according to an established protocol.
- Diabetes Associations playing a lead role in awareness raising and prevention of blindness due to diabetes.

Indicators

- Situation analysis conducted in five selected countries by the year 2014.
- At least three of the selected countries integrate early detection and treatment programs for diabetic retinopathy into non-communicable chronic diseases programs by the year 2014.
- Increase the number of countries with digital photograph screening and laser treatment programs from 1 to 4 by the year 2014.

1.1.3 Reduce the incidence of blindness due to open-angle glaucoma (OAG) in high-risk groups

OAG is a major public health problem in the Afro-Caribbean population, where it is a major cause of visual loss and the leading cause of irreversible blindness. Vision 2020 programs need to include mechanisms for

glaucoma detection and treatment for high-risk segments of the population, including persons of African descent in the Caribbean population, persons over 40 years of age, and individuals with a family history of glaucoma.

Magnitude of the problem

Open Angle Glaucoma prevalence in Afro-Caribbean people over 40 years of age is over 7% and increases with age. In the Barbados Eye Study, OAG affected 1 in 11 Afro-Caribbeans older than 50 years of age, reaching a prevalence of 1 in 6 in those over 70 years. About 2% of individuals over 40 years are blind and, of that percentage, one-third are blind due to OAG.

Issues

- High disease frequency.
- Very limited availability of sensitive and specific screening methods at reasonable cost.
- Silent nature of the disease.
- Late detection and poor compliance.
- High cost of medication.
- Lack of public awareness about need for people over 40 years of age to get eyes checked for glaucoma.

Expected Outcome

- Strengthen national programs for detection and treatment of glaucoma in segments of the population with risk factors as outlined in national eye care plans.

Proposed actions for Member States

- Include glaucoma detection as an integral part of comprehensive eye examinations for persons over 40 years of age.
- Ensure that eye care units are have the capacity (equipment & HR) to provide glaucoma diagnosis and treatment.
- Increase awareness among the general population of the importance of regular eye examinations and glaucoma screening for those over age 40, as well of other risk factors for glaucoma.
- Provide affordable treatments and medications.

Proposed actions for organizations supporting VISION 2020 activities

- Utilize available epidemiologic information to promote early detection and treatment in countries in high-risk groups.
- Utilize best practices to promote and design public awareness programs and interventions.
- Mobilize technical and financial resources to strengthen national eye care services in glaucoma detection and treatment
- Train professionals to implement existing evidence-based protocols.

Indicators

- Increasing from 3 to 6 the number of countries carrying out glaucoma community awareness programs by the year 2014.
- A regional procurement and distribution system for affordable glaucoma medications
- Number of countries including glaucoma eye medications in subsidized drug list and encouraging practitioners to use it

1.1.4. Reduce visual disability by detecting and treating uncorrected refractive errors in adults

The Barbados Eye Studies found high prevalence of myopia and hyperopia in adults. Most adults over 50 years of age suffer presbyopia.

Proposed actions for Member States

- Include refraction in a comprehensive eye examination to identify spectacles requirements in adults.
- Increase public awareness through information, education, and communication strategies.

Proposed actions for organizations supporting VISION 2020 activities

- Promote and support screening and refractive errors correction in adults, including presbyopia.

1.2. REDUCE BLINDNESS AND VISUAL IMPAIRMENT IN CHILDREN

1.2.1 Reduction of the preventable causes and of treatable causes of childhood blindness.

Magnitude of the problem

As the causes of Blindness in children differ from those in adults, different control measures are needed; childrens' eye problems need timely attention or they may become irreversibly blind; specific expertise and equipment are required. While data is limited, the following causes of childhood blindness has being reported in the Caribbean Region: Retinopathy of Prematurity (ROP) , cataract and glaucoma in children have been reported in some countries, corneal scarring (the drying out and scarring of the outer eye because of vitamin A deficiency) is not common and has been reported in a few countries. However, visual impairment from trauma is commonly reported in Jamaica, especially among boys.

Issues

- Insufficient data about the causes or magnitude of childhood blindness and visual impairment in the Caribbean.
- Lack of policies that support inclusion of an eye care component in Maternal & Child Health programs.
- Insufficient awareness and knowledge among pediatricians, obstetricians, general physicians and health personnel about their role in prevention of children's visual impairment and blindness.
- Insufficient involvement of general ophthalmologists in prevention of childhood blindness programs.

Expected Outcome

Provide services to detect and treat children with Retinopathy of Prematurity, congenital cataract, congenital glaucoma and corneal ulcer or scarring, and other non-blinding eye problems, such as strabismus, trauma,

Proposed actions for Member States

- Integrate childhood blindness prevention with early diagnosis, evaluation and treatment into all national maternal and child health plans and policies.
- Assess the main causes of blindness and visual impairment in children in the Caribbean as a base for future planning.
- Promote detection of eye diseases and eye problems as part of the national policies in maternal and child health.
- Provide ocular prophylaxis of newborns to prevent neonatal conjunctivitis through utilization of Povidone Iodine.
- Reduce blindness in premature babies due to retinopathy of prematurity
  Prevention of blindness due to ROP is planned on three levels:
  a) Primary prevention: reduce the incidence of ROP through improved prenatal and neonatal care.
  b) Secondary prevention: early identification of severe cases of ROP in premature babies in neonatal care through regular examination of those deemed to be high-risk by skilled ophthalmologists and timely treatment with laser or cryotherapy of severe ROP
  c) Tertiary prevention: restore useful vision in children with retinal complications through vitreoretinal surgery and/or offer rehabilitation.
- Promote systems, networks and protocols for safe neonatal care, adequate referral, and follow-up.
- Elaborate and promote national guidelines and minimum acceptable standards.
- Ensure the availability of the necessary equipment for primary prevention, examination and treatment.

- Improve the quality of available information on neonatal care.

Proposed actions for organizations supporting VISION 2020 activities

- Collect and analyze information on causes of childhood blindness in school children who are blind utilizing the appropriate documentation.
- Conduct national assessments of needs and resources for ROP programs.
- Organize regional and national workshops to increase awareness.
- Organize regional and national training programs for professionals (obstetricians, pediatricians, nurses, and ophthalmologists).
- Promote the utilization of regional guidelines on neonatal care and ROP programs.
- Support countries in the development of ROP services
- Organize a referral pediatric ophthalmology center

Indicators

- Documentation on causes of childhood blindness in school children who are blind in the Caribbean.
- Increase the number of countries that have a national ROP prevention policy from 1 to 4 by the year 2014.
- Number of countries that are implementing an eye care component in maternal and child care programs.
- Number of countries with capacity (pediatric oriented ophthalmologists and equipment) in tertiary facility to perform pediatric cataract, ROP examinations and treatment, and other blinding and non-blinding children's eye conditions.

1.2.2 Reduce visual disability by detecting and treating uncorrected refractive errors in school children

Magnitude of the problem

According to epidemiologic studies in Latin America PAHO-WHO estimates that about 7% of school children may require spectacles for correction of refractive errors.

The steps in the provision of refraction services are as follows:

(a) **Screening:** identification of individuals with poor vision which can be improved by correction.
(b) **Eye examination:** to evaluate the condition of the eye and identify coexisting pathologies requiring care.
(c) **Refraction:** determine what correction is required.
(d) **Dispensing:** provide and supply appropriate corrective eyeglasses.
(e) **Follow-up:** ensure compliance with prescription, care of the eyeglasses, repair or substitution of spectacles, if needed.

Issues

- No data available on need for spectacles in school children.
- No data available on best practices on refractive errors programs in schools children.
- Different priorities and criteria in eye care programs for school children in the different countries.
- Lack of policies that include an eye care component in school health programs.
- Small number of ophthalmologic and optometry services that diagnose refractive errors in school children of low socio-economic status.
- Spectacles often too expensive for the majority of patients.
- Inadequate collaboration between health and education stakeholders.
- Lack of parent's awareness and commitment to comply.

Expected Outcome

- Prevention of visual impairment and blindness due to uncorrected refractive errors in school children by integrating eye health into policies and practice in health and education sectors.

Proposed actions for Member States

- Develop national guidelines for the detection and treatment of refractive errors, taking into account national realities.
- Establish screening during the first school level and during the sixth grade.
- Develop and follow pilot refractive error programs to identify and disseminate best practices.
- Promote refractive error services and provision of spectacles in the public sector for school children, adults and any person in need
- Increase availability and affordability of eyeglasses and facilitate their production through the establishment of low-cost laboratories.
- Increase public awareness through information, education, and communication strategies.

Proposed actions for organizations supporting VISION 2020 activities

- Promote the utilization of the regional guide in refractive errors programs.
- Standardize technology: screening kit and affordable instruments.
- Develop advocacy plan for health and educational authorities.
- Promote a study in refractive error correction needs for school children.
- Support development of low cost spectacle production and distribution systems.

Indicators

- Increase the number of countries implementing a national standard refractive errors program as part of national eye care policies and plans from 2 to 7 by the year 2014.
- Increase in the spectacle labs producing affordable, quality spectacles

1.3. REDUCE THE IMPACT OF BLINDNESS AND VISUAL IMPAIRMENT IN THE GENERAL POPULATION

1.3.1 Enhance vision related quality of life for people with functional low vision.

Low-vision services are aimed at people who have residual vision that can be used and enhanced by specific aids. Low vision is currently defined as 'visual acuity of < 6/18 down to and including 3/60 in the better eye', from all causes.

Magnitude of the problem

It is estimated that for every thousand people, 17 has low vision, of those about 6 could benefit from low vision interventions.

Expected outcome

Provide comprehensive low-vision services for persons who are blind or severely visually impaired integrating clinical eye care, rehabilitation and educational services in each country.

Issues

- Inadequate government policy for visual rehabilitation.
- Limited public and eye care professionals' awareness of low vision.
- Insufficient professional services and technical expertise in this specialty.
- Insufficient affordable optical devices for assessment and prescription.
- Insufficient rehabilitation and educational services for people with low vision.
- Insufficient adapted teaching materials and technologies for students with low vision.

Proposed actions for Member States

- Develop national policies on comprehensive low-vision care.
- Establish low-vision services at the national level in public facilities.
- Promote early identification of all children and adults who are irrevocably blind severely visually impaired and ensure that an effective referral system is in place.

- Establish units that can provide comprehensive low vision services, utilizing technicians in optometry to perform low vision examinations, assess and counsel patients, prescribe optical devices and provide instruction in device use.
- Promote low vision services for children as early as possible through an integrated system of clinical and pedagogic services.

Proposed actions for organizations supporting VISION 2020 activities

- Organize low-vision courses at regional and national congresses of ophthalmology.
- Promote the establishment of resource centers for the training of trainers, curricula standardization, and technology development.
- Support the organization of low-vision centers in underserved countries currently without such services.
- Develop a system to make low-vision aids affordable.
- Advocate for national inter-sectoral policies and plans for inclusive education and for rehabilitation programs for persons who are blind
- Train low-vision teams (eye care, low-vision therapy, rehabilitation, education, and social services).
- Create regional or national funding bases for the purchase of devices
- Develop specific continuing education programs in low vision care for existing/available personnel.

Indicator

• Increase the number of countries with low-vision services from 3 to 6 by the year 2014.

1.3.2. Inclusive services

Children who are blind should have access to inclusive education and supportive services; adults who are blind require rehabilitation (adjustment to blindness) programs to strengthen their emotional and social capabilities; as well as training in daily living skills, orientation mobility skills, and vocational training. Inso far as it is feasible, inclusive education and adjustment to blindness services should be supported by access to adaptive aids, including devices for reading and writing; white canes; adapted domestic aids; and low-vision appliances and technologies.

Issues

- Inadequate government policy for visual rehabilitation.
- Insufficient rehabilitation and educational services for people with low vision and blindness.
- Insufficient adapted teaching materials and technologies.

Expected outcome

Education and Rehabilitation services available for persons with blindness or visual disability.

Proposed actions for Member States

- Legislation and policies approved/enacted that support implementation of the UN Convention on the Rights of Persons with Disabilities UNCRPD (Signed in 2009)
- National Disability Plan is approved and implemented by the Government (MoE and MoH)
- Ensuring availability and accessibility of inclusive services (Rehabilitation, education and social services)
- Education and social services department is strengthened to provide expanded service delivery for children and adults who are blind.
- MoE provides sufficient support to meet the educational needs of blind and VI students.

Proposed actions for organizations supporting VISION 2020 activities

- Advocate for inclusive services in every country.
- Coordinate efforts among NGOs to resource social and education services.
- Make available affordable technical equipment and special supplies for blind and visually impaired.

- Conduct a region wide situation assessment on rehabilitation and education services for persons who are blind.

Indicator

• Number of countries that are implementing national plans for inclusive education and adjustment to blindness by 2014.

2. EYE CARE SYSTEMS

2.1 Central Organization, Leadership and Governance

Expected outcome: Provide leadership and governance that ensures an effective and equitable eye care system.

Involves ensuring strategic policy combined with coalition building, the provision of appropriate regulations, incentives and accountability.

Regional and National Strategy

- Ensure national strategic policy framework.
- Encourage National Committee and a Focal Person for the Prevention of Blindness that will assist the ministry of health, education and other national authorities and organizations in the development of regulations and plans and the implementation and monitoring of programs.
- Support the implementation of the plan.
- Keep updated information on VISION 2020 implementation at all levels.
- Promote networking and capacity building.

2.2 Eye Care Workforce

Issues

- Insufficient ophthalmology and optometry training programs in the region, resulting in an inadequate number of qualified professionals in ophthalmology, optometry and allied health personnel.
- In the Caribbean the surgical productivity per ophthalmologist is low, in part because several clinical ophthalmologists do not perform surgery. Others work in private practice and limit their services to patients who can afford their fees.
- In many countries primary eye care is not yet implemented.

Expected outcome: Have a well-performing health workforce fair and efficient to achieve the best eye care outcomes possible given available resources and circumstances. There are sufficient numbers and mix of staff, fairly distributed; they are competent and productive.

Regional and National Strategy

- Organize new ophthalmology and optometry training programs in the Region and strengthen those that exist.
- Expand numbers of mid level personnel such as refractionists, ophthalmic assistants and low vision technicians in the delivery of eye care in the Caribbean.
- Identify and or train sub-specialists in pediatric ophthalmology and retinal services including the necessary referral system for the established referral services.
- Train primary health care (PHC) workers in primary eye care at the national level.
- Establish the productivity norms for key resources (for example cataract surgeries per ophthalmologist per year).
- Develop continuing educational programs.
- Develop manpower for equipment maintenance repair, low cost spectacle production and eye drops preparation.

Indicators

- Number of countries reaching the minimum ratio set of one active ophthalmic surgeon per 50,000 populations.
- Number of countries reaching the minimum ratio set of one active optometrist per 50,000 populations.

- Number of countries reaching the minimum ratio set of one active ophthalmic nurse per 50,000 populations
- Number of countries having an active PEC service integrated to the PHC service.
- Number of countries with network of maintenance technicians available covering all hospitals in country by 2014.
- Increase the number of countries having spectacles lab technicians from 3 to 6.

2.3. Medical Products and Technologies

Issues

- Limited availability of affordable consumables.
- Limited production of spectacles and medications.
- Underutilization of equipment due to lack of skills.
- Limited government understanding of eye care equipment management.

Expected outcome:

To ensure an optimal supply of appropriate, high-quality, affordable equipment, instruments, consumables essential for the delivery of eye care services.

Regional and national Strategy

- Promote the utilization of small incision cataract surgery.
- Produce and/or distribute affordable consumables.
- Provide practitioners, ministries of health, hospitals and clinics with information on good quality and affordable appropriate technology.
- Ensure availability of spectacles, ophthalmic supplies and equipment at costs appropriate to local economies.
- Provide training to support staff in maintaining and repairing ophthalmic equipment.

2.4. Eye Care Information Systems and Monitoring

Issues

- Insufficient data on outputs and outcomes of services to support planning, monitoring, advocacy and reporting.

Expected outcomes:

Include eye care in the national planning, health and education information system.
Periodic information available on the situation and trends on eye care delivery in the Caribbean.

Regional and national Strategy

- Identify mechanisms to include eye care in the present Health Management Information system.
- Develop data management systems for eye care: data collection, compilation, reporting and analysis
- Define how analysis and distribution of information will be carried out.
- Define procedures for annual, mid-term and final review of the strategy implementation.
- Identify feedback mechanisms for various levels of staff.

3. EYE CARE PROMOTION, PUBLIC EDUCATION & ADVOCACY

About 80% of blindness is avoidable: it either results from conditions that could have been prevented or conditions that may have being successfully treated to restore sight. It is necessary that high risks groups have adequate information to ensure they look for services to detect and treat eye problems and that they increase compliance on follow-up and treatments. The aim of eye care promotion and public education is to improve knowledge, attitudes, motivation and action for high risk groups and health authorities.

The promotion of eye health as part of the national health policy is, invariably, a necessary prerequisite for a National Program for the Prevention of Blindness. This fosters public awareness, leads to societal responsiveness and participation and facilitates co-ordination of activities carried out by various partners, such as non-governmental organizations, the private sector and the government itself.

3.1. Advocacy

Expected Outcomes

- Increased political commitment in all countries to include eye health in the national health plans.
- Increased commitment of professional societies to regional and national eye care programs.

Regional and National Strategy

- Ministries of Health are acquainted with the PAHO and WHO resolutions in prevention of blindness.
- Strengthen national data-gathering capabilities, to facilitate regional collection of epidemiological and service delivery information and allow disaggregation of data by gender and age.
- Establish and keep current a register of all known persons with visual disability.
- Promote epidemiological and service delivery assessments.
- Participate in ophthalmic regional professional societies' meeting.
- Promote eye care professionals gathering regionally and sub-regionally for continuing medical education and eye care planning.
- Promote V2020 / Prevention of Blindness Committees gathering regionally for cross learning, skill sharing and collaboration.
- Publish papers in regional scientific journals.
- Advocate for the inclusion of critical eye care in the national health information systems.
- Observe the second Thursday of October every year as World Sight Day.
- Celebrate any day to promote specific topics.

Indicators

- Number of countries celebrating the World Sight Day and related days each year.
- Increase the number of countries implementing a national vision 2020 plan from 6 to 10 by 2014.
- Number of countries including eye health services in the national health plan from 4 to 8 by 2014.

3.2 Public awareness and education

Expected outcome: Increased public knowledge and utilization of eye care services.

Regional and National Strategy

- Assess the baseline data in knowledge, beliefs, attitudes and actions of the population in regard to eye care.
- Develop a communication program including printed and audio-visual materials.
- Utilise general health and eye health professionals to create public awareness.

Indicators

- Increase the number of countries implementing an eye care public awareness program.

- Increase the number of people using eye care services by 30% over 5 years

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Annex 1

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

49th DIRECTING COUNCIL

61st SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 28 September-2 October 2009

CD49/19 (Eng.)
Annex B
ORIGINAL: ENGLISH

PROPOSED RESOLUTION

PLAN OF ACTION ON THE PREVENTION OF AVOIDABLE BLINDNESS AND VISUAL IMPAIRMENT

THE 49th DIRECTING COUNCIL,

Having reviewed Document CD49/19 *Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment*;

Recalling Resolution WHA56.26 of the World Health Assembly on the elimination of avoidable blindness;

Noting that visual disability is a prevalent problem in the Region and is related to poverty and social marginalization;

Aware that most of the causes of blindness are avoidable and that treatments available are among the most successful and cost-effective of all health interventions;

Acknowledging that preventing blindness and visual impairment relieves poverty and improves opportunities for education and employment; and

Appreciating the efforts made by Member States in recent years to prevent avoidable blindness, but mindful of the need for further action,

RESOLVES:

1. To approve the Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment.

2. To urge Member States to:

(a) establish national coordinating committees to help develop and implement national blindness prevention plans;

(b) include prevention of avoidable blindness and visual impairment in national development plans and goals;

(c) advance the integration of prevention of blindness and visual impairment in existing plans and programs for primary health care at the national level, ensuring their sensitivity to gender and ethnicity;

(d) support the mobilization of resources for eliminating avoidable blindness;

(e) encourage partnerships between the public sector, nongovernmental organizations, private sector, civil society, and communities in programs and activities that promote the prevention of blindness; and

(f) encourage intercountry cooperation in the areas of blindness and visual impairment prevention and care.

3. To request the Director to:

(a) support the implementation of the Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment;

(b) maintain and strengthen PAHO Secretariat's collaboration with Member States on the prevention of blindness; and

(c) promote technical cooperation among countries and the development of strategic partnerships in activities to protect ocular health.

Sightsavers

Delivering V2020 in the Caribbean

Promoting *Vision 2020: The Right to Sight* to eliminate avoidable blindness through capacity building in Guyana, Haiti, Jamaica, St. Lucia and the Caribbean Region

A Partnership between

With technical support from PAHO and Brien Holden Vision Institute

This project is funded by the European Union

Sightsavers

Project Overview

Total Funding:
- €5,429,856 (73.67% from European Commission)

Duration:
- January 2010 – December 2014

Countries covered:
- Guyana, Haiti, Jamaica, St. Lucia, Caribbean Region

Project objectives:
- Reduce prevalence of blindness
- Strengthen collaboration and coordination
- Build capacity of partners and V2020 Committees

Sightsavers

Project Update

RESULT / ACTIVITIES	PROGRESS TO DATE
Strengthen partner capacities, systems and processes	• **All project partners** benefited from staff support, computer and accounting systems development, training and mentoring
Support development, implementation and review of National Eye Health Plans with mentoring and support for V2020 Committees	• Project supports **data collection** which facilitates review of progress against Regional V2020 Framework indicators • Partners contributing to **development and implementation of V2020 Plans & Strategic Frameworks** in project countries • Partners and project contributed to **disease control workshops** in Jamaica (LV, RE, DR) • **Supporting V2020 Committee** development and activities • Support for **Regional V2020 Committees** meetings

Sightsavers

Project Update

RESULT / ACTIVITIES	PROGRESS TO DATE
Human Resource Development  	• **9 Ophthalmology** residents in training • **15 Optometry** students in training plus project providing inputs to support 67 others • **8 Refractionists completed training** - course also provided inputs to support 4 Refractionists funded by Government of Antigua & Barbuda • **784 PHC** workers trained • **88 Low Vision Counselors** trained • **6 Low Vision Specialists** trained • **4 Spectacle Lab Techs** trained • Continuous **support to University of Guyana** Optometry and Refractionist courses

Project Update

Sightsavers

RESULT / ACTIVITIES	PROGRESS TO DATE
Infrastructure Development  	**5 Operating theatres** • Guyana (Linden & GPHC) • Haiti (St. Nicholas & Eliazar Germain) • Jamaica (Mandeville Eye Clinic) **7 Vision Centres** • Guyana x 4 • Haiti x 2 • Jamaica x 1 **4 Spectacle Labs** • Guyana, St. Lucia (Upgrade of equipment) • Jamaica, Antigua (new labs) **Bio-med Technician Training Lab** • Equipment in-situ

Project Update

Sightsavers

RESULT / ACTIVITIES	PROGRESS TO DATE
Communications 	• **CCB website** links Members and partners and provides information on eye health and social inclusion. • **Newsletters, bulletins**, press releases and human interest stories produced regularly • **Over 40 videos produced** which reinforce messaging from other media and advocate for policy development, social inclusion of visually impaired persons and prevention of avoidable blindness • Support to **special events** such as World Sight Day, Glaucoma Day and Health Fairs • **IEC materials & KAP Studies** under development • **Project learning** documented and shared

Planned activities 2014 include:

Sightsavers

- Support to National V2020 Committees and for Regional V2020 Meeting 2014
- Awareness activities & distribution of communication materials
- Graduation of Optometry Students at University of Guyana
- Scholarships for up to 11 Refractionists
- Training LV Specialists and LV Counsellors
- Training Maintenance Techs, Lab Techs , Dispensing Techs and PHC workers
- Surfacing Lab and Maintenance Lab (CCB Antigua)
- Operating Theatres (Haiti & St. Lucia)
- Vision Centre & Spectacle Lab (SHAA, Haiti)
- Vision Centres in Jamaica (3) and St Lucia (1)
- KAP Studies – focus on Glaucoma, DR and Cataract

Delivering V2020 in the Caribbean

Sightsavers

We look forward to your continued support and involvement

SITUATIONAL ANALYSIS OF DIABETIC RETINOPATHY SERVICES IN ANTIGUA

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June - July 2013

Supported by

CCBEYECARE Caribbean Sightsavers

Contents

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Acronyms

PHC	Primary Health Care
MBS	Medical Benefits Scheme
CCB	Caribbean Council for the Blind
NGO	Non-governmental organisation
DR	Diabetic Retinopathy
MOH	Ministry of Health

Aim of the Situation Analysis

To conduct a situational analysis of the available services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients in Antigua.

Objectives

1. Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies.
2. Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.
3. Assess diabetic retinopathy services delivery, eye care systems and screening protocols at the national level.
4. Assess diabetic retinopathy services outputs on the previous year, number of diabetics undergoing eye examinations and treatment.
5. Assess the awareness of health care personnel on diabetic retinopathy.
6. Explore major achievements, best practices and major constrains and barriers.
7. Make recommendations on future actions, objectives and activities required to strengthen diabetic retinopathy programs at the national level, with an emphasis on:
   - Development & use of treatment protocols
   - Screening and referral
   - Monitoring and treatment

Background – Diabetic Retinopathy

The most prevalent causes of blindness in the Caribbean are non-operated cataract and glaucoma, followed by diabetic retinopathy and uncorrected refractive errors.

One of the main objectives of the current *Strategic Framework for V2020: The Right to Sight (Caribbean Region)* is to reduce the prevalence of blindness from diabetic retinopathy.

Diabetic retinopathy is symptomless in its early stages and eye examinations / screening are the only way to identify affected people to prevent them from going blind. Screening is highly effective as treatment of the pre-symptomatic state is cheaper and more beneficial than treating symptomatic patients.

Clinical studies over the last 30 years have shown that appropriate treatment with laser can reduce the risks by more than 90% and that this treatment is a very efficient and sustainable use of resources.

Magnitude of the problem

Globally 350 million people have diabetes. About 90 million may have diabetic retinopathy. About 1:12 diabetics over the age of 40 has vision threatening retinopathy. The incidence and prevalence is increasing at a dramatic rate due mainly to public health issues related to changes in diet and reduced physical activity.

The population of the English speaking Caribbean is 5.5 million. The region is extremely diverse geographically, ethnically and economically. Mass tourism and valuable cash crops enrich some countries whereas other areas have virtually no tourism, few valuable exports and large-scale emigration particularly of their younger population. Because diabetes affects ethnic groups differently, both prevalence figures and the amount of actual diabetic eye disease varies significantly throughout the region. The level of ophthalmic expertise, equipment and technical support also varies very widely.

The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country. In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes; among people with diabetes 30% have diabetic retinopathy. 9% of diabetics have clinically significant macular oedema and 1% have advanced diabetic retinopathy.

Generalised Issues

- Inadequate medical management and control of diabetes.
- Inadequate development of detection and referral systems.
- Insufficient public awareness relating to cause and prevention of visual loss due to diabetes.
- Insufficient awareness and knowledge of Primary Health Care (PHC) practitioners, general physicians and internists regarding their role in the prevention of blindness due to diabetes.
- Limited number of ophthalmologists with useful experience in diagnosis and treatment of diabetic retinopathy.
- Inadequate technological infrastructure in the health services.
- Poor resourcing and low capacity of national diabetes associations.

The *Strategic Framework for V2020: The Right to Sight (Caribbean Region)* proposes a number of actions for organizations supporting VISION 2020 activities, one of which is to conduct national assessments of services for diabetic retinopathy in selected countries. The outputs of these national level assessments will enable organizations supporting VISION 2020 activities to support countries in the development of screening programs and services for diabetic retinopathy and to support development of education packages and training programs for the general public and health care providers.

It is in this context that the Pan American Health Organisation (PAHO), the Caribbean Council for the Blind – Eye Care Caribbean (CCB) and Sightsavers collaborated with Ministries of Health and national organizations supporting VISION 2020 activities in Antigua, Belize and Jamaica to assess the current situation in relation to services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients.

ANTIGUA – Situation Analysis

Antigua is an island in the Leeward Island group in the Caribbean. Its population was around 80,000 at the 2011 Census. Over 1/3rd of the population live in the main town of St John's. The ethnic mix of the island is predominantly black African (91%) with small populations of mixed race (4%), white (2%) and others. Antigua is a geographically small country with a relatively good transport infrastructure.

Regulations, Policies & Plans

- *Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies*

There is no formalised diabetic screening programme and at present, no national policy or plan for diabetic retinopathy or for eye disease in general.

There is no prevalence data for diabetes or diabetic retinopathy in Antigua. There is no diabetic register.

Using data from other surrounding countries with similar ethnic mixes the estimated prevalence of diabetes should be around 12-15% in the population aged over 40. (Ref 2,3,5,6)

This estimates a diabetic population of about 6000 of whom 2000 are likely to have diabetic retinopathy and 400 of which might benefit from laser treatment.

Almost all medication is available through the Medical Benefits Scheme (MBS). Patients eligible for this scheme have a unique medical benefit number and this is a way to potentially capture more accurate data. At present there is no means to do this but there is hope that a sophisticated "smart card" may be introduced, which will allow detailed analysis of patient interaction with government health services.

At present because patients do not use any unique identifier, it is difficult to capture patient episodes and uptake of services as well as prescriptions of insulin and other diabetic drugs.

Human Resources, Infrastructure & Equipment

- ***Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.***

There is a well-established and effective model of primary care.

There are 26 small health clinics and 8 health centres (Gray's Farm, St. John's, Johnson's Point, Jennings, Browne's Avenue, All Saints, Clare Hall, Bishopsgate Street and Pares) throughout the island, plus the Hannah Thomas Hospital in Barbuda. There are 17 Medical Officers and District Medical Officers within Community Health Services. There are Medical Officers in the large health centres (of which there are six) on a daily basis. District Medical Officers visit the smaller clinics weekly. District Medical Officers cover larger geographic areas and primarily see children and the elderly. There is nursing staff at all of the clinics and health centers on a daily basis.

Medical Officers and District Medical Officers refer patients to Mount St John's Medical Centre in St John's. This is the only publically owned hospital in the country. It is a modern hospital and appears to be well run. Patients take the referral from the medical officers to the hospital and organise an appointment for photography or clinic. Patients return again on another day for the appointment. If laser treatment is required it must be organised directly with the private ophthalmology clinics.

There is an established Medical Benefits Scheme (MBS) in Antigua which means that eligible patients do not need to pay for their visit to the health centres. The vast majority of people that are resident in Antigua have access to the MBS. It is funded by contributions made by employers and employees. Once a person becomes eligible they remain so even if no longer working. Children, the elderly and persons diagnosed with certain chronic diseases including diabetes are eligible for benefits from MBS. The only groups that are not eligible are recent migrants who are not working.

Once referral is made to the hospital the patient must pay a contribution for their clinic appointment and for any treatment. This payment is made up front and they are then able to apply for a proportion of this to be refunded by the MBS at a later date.

There are 2 ophthalmologists in the country both based in St Johns. They work mostly in the private sector in their own clinics but each does a session in Mount St John's Hospital alternating every Friday. Both ophthalmologists are able to see, assess and treat diabetic retinopathy with laser.

There is one optometrist who also does sessional work in the hospital and operates the digital camera. There are other optometrists who only work in the private sector. They mostly refer patients privately.

There are 4 refractionists who have been recently trained in the one year Refractionist Techniques Course at the University of Guyana with support from CCB and the Ministry of Health. They are now ready to begin work in four of the large health centres. The required space has been allocated and is being converted and equipped for their use. It is estimated that they will begin work in the second half of 2013.

There is a small diabetic association based in St John's with about 60 members of which 12 are regular attendees at meetings. They currently do not have an active patient education programme and are short of resources.

At present there is little if any ophthalmic equipment in the health centres. Once the refractionists begin work it is hoped that there will be basic equipment to check the front and back of the eye.

There is on-going discussion as to whether digital cameras could be installed in these 4 health centres.

There is one modern digital camera in Mount St Johns Medical Centre eye department. This was purchased using charitable funds. An optometrist operates it.

There are two modern functioning lasers in the private clinics of the ophthalmologists. There is no laser available in the hospital.

There are no facilities for vitreo-retinal surgery and patients who require this usually go to Barbados. This treatment is sometimes part funded by the Government depending on need.

Service Delivery, Systems & Protocols

- ***Assess diabetic retinopathy services delivery, eye care systems and screening protocols at the national level.***

Diabetic patients seen in health centres may be asked to go for screening photos. A referral is made for this and it is up to the patient to organise it at the hospital. There is no screening programme as such and no way of capturing how many patients are referred and how many actually attend.

Once the photo is taken it is assessed by the optometrist and if there is significant pathology a referral is made to the ophthalmologist. If there is no significant pathology then the patient might be asked to re-attend the next

year for repeat digital photos. No record is kept of those asked to re-attend and whether they have or not. No reliable information is available to determine how many diabetics are regularly screened. There is no formal feedback system back to the referring doctors and nurses in the health centres.

Those patients requiring laser must organise this in the private sector. The two ophthalmologists carry this treatment out. No detailed records are readily available of the numbers and types of laser treatments performed and no audit data is available. Laser fees are between 750-1000$EC.

Treatment protocols are loosely based around the established American Academy of Ophthalmology guidelines.

The hospital is in the process of procuring an electronic patient record and management system. This will help to identify diabetic patients and what treatments they receive within the hospital. It will not be linked to the health clinics or the private clinics.

Service outputs

- ***Assess diabetic retinopathy services outputs on the previous year, number of diabetics undergoing eye examinations and treatment.***

There is no data available on service output or robust data on the number of diabetics undergoing eye examinations or being referred into secondary care. The Department of Health Information does get monthly returns from health clinics and this records the number of diabetics seen. It does not say why they were seen or what type of diabetes they have. Because there is no unique patient identifier the same patient may be counted again each time they are seen.

There is a log kept of all digital photographic images taken at the hospital. Some but not all have a comment as to the reason for the photos such as diabetes and diabetic retinopathy. About 1100 photos were taken last year (2012) and the optometrist estimates that about 70% of these were for diabetic retinopathy. There is no data on the grade of diabetic retinopathy seen, the number referred to the ophthalmologist and the number that were treated. There is no data that shows how many patients that were referred for treatment actually went ahead with it.

Awareness of Health Care Personnel

- ***Assess the awareness of health care personnel on diabetic retinopathy.***

There was a good understanding amongst nursing and medical staff of the public health issues surrounding diabetes such as the causative role played by diet and lifestyle. There was also a good understanding of the importance of blood sugar and blood pressure control in reducing the incidence of retinopathy. Management of diabetes within the health centres was good and they reported that health education was available and appropriate. There was good and free access to insulin and other diabetic drugs. The only issue reported was that diabetic patients who are not on insulin couldn't get a supply of glucosticks to monitor their sugar. These have to be purchased. Insulin dependant diabetics on the other hand can get these free through MBS.

Achievements, Best Practice and Constraints

- ***Explore major achievements, best practices and major constraints and barriers.***

Major achievements and best practice

The Ministry of Health is aware of the increasing prevalence of diabetes and diabetic retinopathy and the importance of early treatment and screening. They are engaged in the discussion process and appear amenable to the introduction of schemes designed to reduce the potential burden of visual impairment due to diabetic retinopathy.

The Caribbean Council for the Blind, in partnership with Sightsavers, are an active NGO supporting the development of eye health programmes in Antigua.

There is already a good network of primary health clinics with well-trained and motivated staff.

There is an active public health education programme and patients with diabetes should have access to information about the effects of diabetes and how best to manage it.

There are 2 ophthalmologists in the country who are able to treat diabetic retinopathy with laser.

There are now 4 trained refractionists who are about to start work in 4 of the larger health centres. This means that there is potential for them to operate fundus cameras and to check for diabetic retinopathy as part of their workload. A refractionist with similar training is already working successfully in Jamaica.

Insulin and other diabetic and hypertensive drugs are almost universally freely available although supply and availability can some times be an issue.

Major constraints and barriers

- **Data**

  There is very little data available on the number of diabetics in the population or the number with diabetic related diseases such as retinopathy. Patients are not required to use a unique identifier and it is not possible to track them through the system or ensure feedback to the referring clinics.

  There is no data available on rates of referral for retinopathy or numbers of patients that fail to attend appointments or laser. This makes planning services for the future more difficult.

- **Infrastructure**

  There is currently no national eye health plan/framework for Antigua. Establishment of a committee to oversee implementation of a plan might be beneficial.

  No diabetic screening programme is in place at the primary levels of the health service.

  No established pathway for management of diabetic eye disease exists.

- **Personnel**

  Demand on primary care nurses and doctors is high. Clinics are very busy and there is little time for health education.

  There are no trained nurses in eye care

  There is no ophthalmological assessment available in a primary care setting

  Access to nutritionists and health education expertise is very limited

- **Expense**

  Although primary care may be free, there are then fees for any further service in secondary care. There is a fee for taking a digital image in the hospital and for attending an eye clinic. There is then a significant fee for any laser treatment that would need to be done in the private sector. This is likely to be a major disincentive. There is no data to show how many patients fail to follow through with their photography, hospital and laser appointments. It is possible to get some of this fee refunded through the Medical Benefits Scheme but patients need to pay the full amount up front.

- **Education/compliance**

  Patient compliance with medication to control diabetes and blood pressure is poor and this leads to increased eye and other systemic complications. Patient education could be improved further. Glucometers and test strips

to monitor blood sugars are not freely available for non insulin diabetics. This means that it is difficult for patients to monitor their diet and blood sugars. This almost certainly leads to increased morbidity.

Recommendations

- ***Make recommendations on future actions, objectives and activities required to strengthen diabetic retinopathy programs at the national level, with an emphasis on:***
  - ***Development & use of treatment protocols***
  - ***Screening and referral***
  - ***Monitoring and treatment***

1. Establish a committee to oversee the development of a National Eye Health Plan that could possibly be incorporated into the National Health Plan. This would aid future planning and coordination of eye services.

2. Consider investing in further local initiatives to improve health education specifically for diabetes and diabetic retinopathy. This should include education about the effects of diabetes on the body, blood glucose control and monitoring, diet and blood pressure control. It should also include information about the availability of services, diagnosis and treatment pathway and treatment procedures.

3. Resource and organise more schemes to educate primary care physicians, community nurses, hospital doctors and nurses about diabetes and diabetic eye disease.

4. Improved data collection is required. The following information would be very helpful in planning a sustainable model of care:
   - Accurate recording of all diabetics presenting to health clinics, preferably using a unique patient identifier. The most obvious way would be to use the smart card system that is under consideration and if this does not happen to use national social security numbers.
     Record all referrals to secondary care from primary care for diabetic screening
   - Record all digital photographs taken for diabetic retinopathy in a separate database attached to the camera or in the same location as the camera.
   - Record all patients asked to return for digital screening and to send reminder letters or mobile phone texts.

- Record all diabetic lasers performed, preferably with a timeline between original referral, time seen in secondary care and treatment.

5. Improve formal feedback system to the referring doctors and nurses in the primary care health centres. This could be a letter given to the patient to take back or a letter posted back to the health centre. This could preferably also be done by e mail if all health centres were able to access the information.

6. Make available a solid state diode or frequency doubled YAG laser to treat diabetic retinopathy to be used in Mount St John's Medical Centre. This should have a maintenance contract attached to it as well as guaranteed training for the ophthalmologists who will use it. This should make it more affordable and accessible to patients and make it easier to monitor and control the process. The entire patient pathway from diagnosis to treatment would essentially then be within units owned by the public.

7. Introduce a national diabetic screening and treatment programme
   Because of its small population and size it should be possible to develop a screening programme in Antigua. There are a number of possible mechanisms:
   a. The preferred option is to use the four refractionists that are due to be posted to four major health centres. Each centre could have a digital fundus camera. Images taken by the camera can be sent electronically to the optometrist or ophthalmologists in Mount St John's Medical Centre. Alternatively and preferably the refractionists could be trained to read the photographs at the time they are taken. Every set of photos is then given a "refer" or "not refer" grade depending on the severity of the retinopathy. If they are not referred they are told to return in a year for repeat photos. If they are referred then either they could be seen by an ophthalmologist in a clinic at Mount St John's Medical Centre and treated preferably the same day (one stop) or alternatively given an appointment to return for laser. Other health centres would refer diabetic patients for annual photos to one of the four centres with a refractionist. In this way every diabetic patient is able to get annual digital photos. The geographic location of the 4 centres means that all patients should be able to access the service at least at one centre without too much disruption.
   b. Follow the referral system but use the lasers in the private sector already available as part of a public/private partnership.

Ophthalmologists would again make the decision whether to treat or not and organise laser appointments in their private clinics. These would be paid for through Medical Benefits or at least heavily subsidised.

c. Refer all diabetic patients to the camera at Mount St John's Medical Centre with a time and date given to each patient for their screening photo. The optometrist makes a "refer" or "not refer" decision at the time the photo is taken. Refer decisions are sent to the ophthalmologists and patients are sent a laser appointment at the hospital or if there is no laser then to the private lasers as part of a public /private partnership. The disadvantages of this scheme are that patients need to travel for their photos and one optometrist has to take all of the photographs and do the grading. The take up rate is likely to be lower. It also relies heavily on the presence of single optometrist who may leave or may not have time to do the work. It might be feasible to train a refractionist to work in the hospital alongside the optometrist and to take on some of these responsibilities.

Summary

With the rising prevalence of diabetes and diabetic eye disease in the Caribbean it is essential to introduce screening and treatment programmes to tackle the problem. Antigua has the ability and desire to introduce an effective diabetic retinopathy screening and treatment service.

Some of the recommended changes can be introduced relatively quickly and some may take longer. Strong and productive collaboration between the Ministry of Health, NGO's, the private sector and research institutions will play an important role in tackling diabetes and diabetic retinopathy in Antigua and throughout the Caribbean.

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APPENDIX

Diabetic retinopathy data collection form:

Diabetic Retinopathy Data Collection Form

Health ministers from the region approved by resolution CD49.R11 in 2009 the Action Plan for the Prevention of Blindness and Visual impairment urging Member States to develop national strategies and plans to prevent blindness and visual impairment due to diabetic retinopathy.
In response to the previous resolution, this questionnaire has been developed to chart the progress made by Member States on the plan and to establish a baseline data for future services planning and development.

1. National Data	
Country /District/Municipality:	
Country Population:	
Year of data:	
Source(s) of data:	
Date when data collection began	
Date of data collection completion:	
Estimated number of diabetics in the country:	
Is there a diabetic register	Y/N
Number of registered Diabetics in the country	
Is there an active diabetic association	Y/N
Is primary eye care integrated in primary health care	Y/N

2. Central Organization, Leadership and Governance	
Is early detection (diabetics screening and referral) integrated in the national non-communicable chronic diseases program by a policy, plan or resolution?	Y/N - If yes, give date signed and name of Signatory

Is there a national policy on screening and treatment of diabetic retinopathy?		Y/N Comments
Does the country has a DR clinical guideline?		Y/N Comments
Is there an established screening program for diabetic retinopathy?		Y/N Comments
HEATH FINANCING FOR DIABETIC RETINOPATHY INTERVENTIONS		
Primary Care		Please check
	Government	
	National Health Insurance	
Secondary Care		
	Government	
	National Health Insurance	
	Out of pocket	
	Private health care insurance	
	Social welfare	
	Free for patients	

3. Human Resources		
Ophthalmologists	# of Ophthalmologists trained to treat diabetic retinopathy in public sector:	
	# of Ophthalmologists trained to treat diabetic retinopathy in private sector:	
Ophthalmic technicians	# of ophthalmic technicians trained to screen diabetic retinopathy	
Ophthalmic nurses	Total number	
Ophthalmic assistants	Total number in country	
PHC personnel trained in PEC and managing- referring diabetic patients	Total number trained in DR in the last 3 years:	Brief description of training activity(s)
Health District Nurses trained in PEC and managing diabetic patients	Total number trained in DR in the last 3 years:	Brief description of training activity(s)
FHP and physicians trained in managing –referring diabetic patients	Total number trained in DR the last 3 years:	

4. Infrastructure	
# of health centers	
# of district hospitals	
# District Hospitals with eye department (name the districts)	

# Private and NGO Hospitals with eye department	
# of Public Out-Patient Ophthalmology units:	
# of Ophthalmologic Private Offices:	
# of Public fundus cameras:	
# of Private fundus cameras:	
# of working argon lasers available in public sector	
# of working argon lasers available in the private sector	
Is a Preventive maintenance programme implemented in each hospital with an ophthalmology department?	Y/N
Has an assessment of availability and adequacy of equipment at eye health facilities been carried out in this period?	Y/N – if yes what are the findings

5. Services Delivery	
Has a Diabetic retinopathy services situation analysis been conducted in your country?	Y/N – if yes state when the analysis was carried out.
Is early detection (diabetics screening and referral) integrated in the national health systems?	Y/N Explain
Is digital photography screening available in a. public sector, b. private sector	a. Y/N – state number screened b. Y/N – state number screened
Are diabetic patients routinely referred to ophthalmology units for examination?	Y/N – state number referred
Are laser treatment services available in a. public sector b. private sector	a. Y/N – state number treated b. Y/N – state number treated

6. Program information on the previous year	
# of diabetic patients screened with digital fundus photographs	
# of patients' fundus photos screened by Ophthalmologist	
# of diabetic patients referred by Ophthalmic Technician to the ophthalmologist	
# of diabetic patients who attended the DR eye clinic: First visit or noncompliant follow-up patients	
# of diabetic patients diagnosed with diabetic retinopathy at the DR eye clinic	
# of diabetic patients treated with Laser for the first time	
# of diabetic patients receiving augmentation of laser treatment.	

7. Qualitative assessment (related to the eye health action plan and/or strategic framework for country)
Describe the major achievements and best practices in implementing the diabetic retinopathy program:
Outline the major constrains and barriers in implementing the diabetic retinopathy program:
What are the proposed actions to strengthen the diabetic retinopathy program:

SITUATIONAL ANALYSIS OF DIABETIC RETINOPATHY SERVICES IN BELIZE

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Acronyms

BCVI	Belize Council for the Visually Impaired
BHIS	Belize Health Information System
CCB	Caribbean Council for the Blind
DR	Diabetic Retinopathy
MOH	Ministry of Health
NEC	National Eye Clinic
NGO	Non-governmental organisation
NHI	National Health Insurance
PHC	Primary Health Care

Aim of the Situation Analysis

To conduct a situational analysis of the available services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients in Belize.

Objectives

1. Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies.
2. Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.
3. Assess diabetic retinopathy services delivery, eye care systems and screening protocols at the national level.
4. Assess diabetic retinopathy services outputs on the previous year, number of diabetics undergoing eye examinations and treatment.
5. Assess the awareness of health care personnel on diabetic retinopathy.
6. Explore major achievements, best practices and major constrains and barriers.
7. Make recommendations on future actions, objectives and activities required to strengthen diabetic retinopathy programs at the national level, with an emphasis on:
   - Development & use of treatment protocols
   - Screening and referral
   - Monitoring and treatment

Background – Diabetic Retinopathy

The most prevalent causes of blindness in the Caribbean are non-operated cataract and glaucoma, followed by diabetic retinopathy and uncorrected refractive errors.

One of the main objectives of the current *Strategic Framework for V2020: The Right to Sight (Caribbean Region)* is to reduce the prevalence of blindness from diabetic retinopathy.

Diabetic retinopathy is symptomless in its early stages and eye examinations / screening are the only way to identify affected people to prevent them from going blind. Screening is highly effective as treatment of the pre-symptomatic state is cheaper and more beneficial than treating symptomatic patients.

Clinical studies over the last 30 years have shown that appropriate treatment with laser can reduce the risks by more than 90% and that this treatment is a very efficient and sustainable use of resources.

Magnitude of the problem

Globally 350 million people have diabetes. About 90 million may have diabetic retinopathy. About 1:12 diabetics over the age of 40 has vision threatening retinopathy. The incidence and prevalence is increasing at a dramatic rate due mainly to public health issues related to changes in diet and reduced physical activity.

The population of the English speaking Caribbean is 5.5 million. The region is extremely diverse geographically, ethnically and economically. Mass tourism and valuable cash crops enrich some countries whereas other areas have virtually no tourism, few valuable exports and large-scale emigration particularly of their younger population. Because diabetes affects ethnic groups differently, both prevalence figures and the amount of actual diabetic eye disease varies significantly throughout the region. The level of ophthalmic expertise, equipment and technical support also varies very widely.

The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country. In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes; among people with diabetes 30% have diabetic retinopathy. 9% of diabetics have clinically significant macular oedema and 1% have advanced diabetic retinopathy.

Generalised Issues

- Inadequate medical management and control of diabetes.
- Inadequate development of detection and referral systems.
- Insufficient public awareness relating to cause and prevention of visual loss due to diabetes.
- Insufficient awareness and knowledge of Primary Health Care (PHC) practitioners, general physicians and internists regarding their role in the prevention of blindness due to diabetes.
- Limited number of ophthalmologists with useful experience in diagnosis and treatment of diabetic retinopathy.
- Inadequate technological infrastructure in the health services.
- Poor resourcing and low capacity of national diabetes associations.

The *Strategic Framework for V2020: The Right to Sight (Caribbean Region)* proposes a number of actions for organizations supporting VISION 2020 activities, one of which is to conduct national assessments of services for diabetic retinopathy in selected countries. The outputs of these national level assessments will enable organizations supporting VISION 2020 activities to support countries in the development of screening programs and services for diabetic retinopathy and to support development of education packages and training programs for the general public and health care providers.

It is in this context that the Pan American Health Organisation (PAHO), the Caribbean Council for the Blind – Eye Care Caribbean (CCB) and Sightsavers collaborated with Ministries of Health and national organizations supporting VISION 2020 activities in Antigua, Belize and Jamaica to assess the current situation in relation to services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients.

BELIZE – Situation Analysis

Belize is located on the Caribbean coast of Central America. It is bordered on the north by Mexico, to the south and west by Guatemala and to the east by the Caribbean Sea. Its mainland is about 290 km long and 110 km wide. In general, Belize is considered to be a Central American and Caribbean nation with strong ties to the entire Latin American and Caribbean region. It is divided into six districts, Corazol, Orange Walk, Belize District, Cayo, Stann Creek and Toledo.

The total population is around 330,000 (2009 census) and 1/3rd live in Belize City. The population over 40 is estimated to be about 80,000. It has the lowest population density in Central America. Belize is among the most racially and ethnically diverse countries in the world. The main ethnic groups are the Mestizo, Creole, Ketchi, Yucatec and Mopan Mayas, Garifunas and East Indians.

Regulations, Policies & Plans

- *Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies*

A National Eye Health Plan for Belize 2010-2014 was published in 2010. Strategic Direction 2.2 calls for a "reduction in the prevalence of blindness from diabetic retinopathy". Amongst the outcomes expected are:

1. Integration of blindness prevention strategies into national diabetes and chronic diseases programs
2. Improved public awareness programs
3. Improved referral of patients with diabetes to eye care providers
4. Adopt established international clinical guidelines
5. Implementation of digital photography to detect and refer treatable retinopathy

The public health system does not have an ophthalmology services programme or unit. Belize Council for the Visually Impaired (BCVI) was established in 1981 and provides primary and secondary eye care services and rehabilitation services. Since 1998 the Ministry of Health has had an agreement with BCVI and the Lions Club to provide ophthalmic services on its behalf.

This is done through a National Eye Clinic (NEC) in Belize City. BCVI operates five primary eye care clinics throughout the country. Each clinic has the services of an optometrist, ophthalmic assistant and rehabilitation field officer.

In 2011 a total of 767 clinics were held countrywide and 11,764 people were examined. There is no charge for attending the clinic and an appointment is not required.

There is no diabetes registry in Belize and no national statistics available on eye health. BCVI has a patient database recording all visits and treatments performed. This information is given to the MOH but does not appear to be integrated into the Belize Health Information System (BHIS). National Health Insurance (NHI) clinics have their own electronic patient record system and submit monthly returns to the MOH.

Between 2003 and 2006 a national survey was performed which showed an average adult prevalence rate for diabetes of 13% (17.6% women, 8.8% men). Overall 40% of those with diabetes were undiagnosed prior to the survey. The high prevalence rates are likely to be associated with the fact that 44% population have a BMI >30 (clinically obese). 23% of patients who presented for eye examination in 2012 at NEC had diabetes. 138 people are registered blind due to diabetes on the BCVI register.

Based on population estimates there should be about 45,000 diabetics in Belize. Up to 15,000 are likely to have significant diabetic retinopathy and up to 2,500 of these are likely to benefit from laser treatment.

Human Resources, Infrastructure & Equipment

- ***Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.***

Referral infrastructure

Patients are assessed by a BCVI optometrist in the 5 primary eye care clinics. They are able to manage simple eye problems and do a comprehensive eye examination and refraction. There is no charge for these examinations. Many patients will be prescribed glasses made by BCVI. The income from this offsets some of the cost of the examinations.

Onward referral for secondary care can be done either electronically using BHIS or as a written referral. Referrals are usually made to the National Eye Clinic (NEC) in Belize City or occasionally to a private ophthalmologist. The waiting time to be seen is dependent on the urgency of the case and when visiting ophthalmologists are available at the NEC.

Outpatient diabetes clinics run at a number of government and NHI clinics. There are no joint ophthalmology/diabetes clinics and no formal process of

inter-referral. General physicians and GP's run these clinics. Referrals can be made to BCVI using the BHIS or as a paper referral.

Human Resources

There are 4 optometrists and 5 ophthalmic assistants working in BCVI's primary care clinics.

In secondary care there is currently one permanent general ophthalmologist from Cuba who does not perform surgery. The NEC is mostly reliant on foreign teams/individuals, usually from the USA, to provide specialist services. BCVI have been fortunate recently to have a retired senior American ophthalmologist who spends about four months of each year at the NEC. While he is available they are able to provide a comprehensive service. When he is not present BCVI try to coordinate other visits from overseas ophthalmologists. There are inevitably periods when no specialty services are available.

There are 3 full time private ophthalmologists who have their own clinics and surgical facilities. Their fees restrict access but two of them do see a number of NHI patients under an agreement.

Non-Governmental organisations

The Methodist Church has an occasional eye clinic in Corozal district using visiting doctors and nurses.

Other human resources

There is one trained eye nurse who works for BCVI. There is one nutritionist who works in MOH clinics but is not normally involved with the diabetic referrals.

Equipment

BCVI have one fully functioning modern diode laser. This is mobile and can be used in district clinics. The visiting American ophthalmologist also has his own laser in the clinic. All of the private ophthalmologists have functioning lasers.

There are adequate numbers of slit lamp microscopes and indirect ophthalmoscopes in all clinics.

There are no digital fundus cameras at present in Belize.

There are adequate supplies of dilating drops in all clinics

There is no vitreo-retinal facility in Belize and patients would need to go to Guatemala, Barbados or the USA. There is the occasional visiting

ophthalmologist who provides a vitreo-retinal service, but it is unlikely to be of great benefit or sustainable in any way.

Service Delivery, Systems & Protocols

- ***Assess diabetic retinopathy services delivery, eye care systems and screening protocols at the national level.***

There is no formal screening programme in Belize. Patients are referred for eye assessment on an ad hoc basis.

The NHI clinics have a diabetes management protocol "*Managing Diabetes in Primary Care in Belize 2010*". This suggests that all diabetics are referred to an ophthalmic unit annually for eye examination. Other government clinics have been told to follow a similar protocol. Patients should have the option of going to BCVI or one of the private ophthalmologists for this. This examination is provided free or at low cost depending on the age of the patient and where they live.

Once diabetic patients are seen in a BCVI clinic they are asked to continue coming for regular annual follow up so that they can be fully assessed and checked for diabetic eye disease.

Service outputs

- ***Assess diabetic retinopathy services outputs on the previous year, number of diabetics undergoing eye examinations and treatment.***

In 2012 BCVI examined 1000 patients with diabetes countrywide (700 in Belize City and 300 at district clinics) and performed 241 laser treatments.

There is no meaningful data available from MOH, NHI or private clinics but because many patient interactions are recorded on the BHIS, it is likely that more information could be pulled from the system given adequate resources.

Awareness of Health Care Personnel

- ***Assess the awareness of health care personnel on diabetic retinopathy.***

All of the doctors interviewed agreed that lack of patient education was a major issue. There are diabetic fairs, leaflets, health educators, well trained primary care nurses and the will to improve patient education. Lack of resources and cultural resistance to take on information are significant factors.

Clinics are too busy to have much time to start educating the majority of patients. The Belize Diabetic Association has 150 registered members. Its role

is to educate members and the general public as well as to collaborate with MOH in creating awareness of healthy lifestyle, provide free education and testing equipment to children. Its members all come from Belize City. They have regular meetings with guest specialist speakers but attendance is sometimes poor.

Achievements, Best Practice and Constraints

- ***Explore major achievements, best practices and major constraints and barriers.***

Major achievements and best practice

Over the last 15 years BCVI have transformed eye care in Belize. They have filled the vacuum created by limited resources and investment in government provision of eye services. They are now the only provider of comprehensive eye care and the government essentially contract them to provide affordable national eye care.

At the primary care level they offer refraction, free eye examinations and treatment of cataract, glaucoma and diabetic retinopathy. There is no formal diabetic retinopathy screening and no sustainable model of treatment for this increasing problem.

There is good primary care across the country with well-trained and motivated nurses. Access to drugs including insulin and oral hypoglycaemic agents is generally good and these are often available free or at low cost.

There is an excellent electronic patient management system (BHIS) throughout the public health sector. Each patient has a unique identifier (national security number) and interactions with health professionals in all health clinics are recorded. Patient records, their medications and previous and future appointments are easily accessible in the hospitals and clinics. This should also make it possible to get a lot of information on morbidity associated with diabetes and drug prescriptions for diabetic patients.

Major constraints and barriers

Belize is a poor country with 41% of the population living at or below the poverty line. Although the road infrastructure is fairly good, public transport can be difficult and expensive.

Despite improvements in health education most diabetic patients still present to the eye clinics when they lose vision in their only remaining seeing eye. By this time it is usually too late to stabilise or improve vision.

Management of diabetes in general is problematic. Patients culturally resist seeking healthcare and often refuse to regularly take medication, especially insulin. There is a limited supply of glucose monito ring equipment and the test strips required.

Specialist ophthalmic care for the management of diabetic retinopathy presently relies on visiting ophthalmologists. BCVI attracts many volunteers. Some volunteers also come into the country without the knowledge of BCVI. This means that there may be duplication of services or that support is not evenly distributed and available throughout the year.

Recommendations

- ***Make recommendations on future actions, objectives and activities required to strengthen diabetic retinopathy programs at the national level, with an emphasis on:***
  - ***Development & use of treatment protocols***
  - ***Screening and referral***
  - ***Monitoring and treatment***

1. Belize is likely to benefit from the introduction of a nationwide diabetic screening service. It has a high prevalence of diabetes, which is increasing. Diabetic retinopathy is a significant problem with little or no facility to treat advanced disease. It already has the infrastructure to treat diabetic retinopathy once diagnosed.
   It has a sophisticated national electronic patient record and patient management system. Its population is relatively small and there is a good transport infrastructure allowing access to treatment and screening.
   It has, in BCVI, an established and respected organisation that can organise and maintain a screening programme and coordinate treatment. BCVI has just put in a grant to The Lions for equipment and training that would enable it to introduce just such a programme. The programme model would be:
   - have a number of fixed non-mydriatic digital fundus cameras at 3 or 4 locations throughout the country including NEC in Belize City. These would all be based in BCVI clinics and operated by technicians who are already working in the clinics.
   - An optometrist or possibly a trained technician would review the images. They would make a decision on each image set as to whether that patient needs referral or not (referral grade). If no referral were necessary the patient would be asked to return for photos in a years time. If referral is necessary an appointment would be generated either in NEC or at a regional clinic.

- The ophthalmologist would have access to the images and would have facilities to do laser both in district eye clinics with a mobile laser or in NEC with a fixed laser.
- The images would be stored locally on hard drives and also backed up onto a central server based in NEC. Patients would be able to view their previous images at each visit. This is a very powerful educational tool as patients can see how their retinopathy is progressing. It has been shown that this can have a dramatic effect on how they manage their diabetes and blood pressure control.
- The digital images would also show up other diseases such as glaucoma and hypertension. Another referral pathway would be introduced to manage these patients.
- Technicians and optometrists would need to be trained to take the images and to grade them. It might be possible for them to undertake the City and Guilds training required for screeners/graders in the UK for their national screening programme. This is viewed as a gold standard internationally.

2. Once the programme was running it would benefit from a permanent ophthalmologist in the country who is trained to undertake the treatment of retinopathy as well as general ophthalmology.

3. There is a Cuban ophthalmologist already in country that could be trained to use the laser.

4. Serious thought should be given to training a Belizean National in ophthalmology who would be able to treat retinopathy and offer a comprehensive general ophthalmology service. This would require support from the MOH and is an aspiration and longer term goal.

5. BCVI would benefit from a single person employed to initiate the programme and oversee it until established.

Summary

With the rising prevalence of diabetes and diabetic eye disease in the Caribbean it is essential to introduce screening and treatment programmes to tackle the problem. Belize has the ability and desire to introduce an effective diabetic retinopathy screening and treatment service.

Some of the recommended changes can be introduced relatively quickly and some may take longer. Strong and productive collaboration between the Ministry of Health, NGO's, the private sector and research institutions will play an important role in tackling diabetes and diabetic retinopathy in Belize and throughout the Caribbean.

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SITUATIONAL ANALYSIS OF DIABETIC RETINOPATHY SERVICES IN JAMAICA

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Acronyms

CCB	Caribbean Council for the Blind
DR	Diabetic Retinopathy
KPH	Kingston Public Hospital
MOH	Ministry of Health
NGO	Non-governmental organisation
NHF	National Health Fund
PHC	Primary Health Care
SRHA	Southern Regional Health Authority

Aim of the Situation Analysis

To conduct a situational analysis of the available services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients in Jamaica.

Objectives

1. Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies.
2. Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.
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Background – Diabetic Retinopathy

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The population of the English speaking Caribbean is 5.5 million. The region is extremely diverse geographically, ethnically and economically. Mass tourism and valuable cash crops enrich some countries whereas other areas have virtually no tourism, few valuable exports and large-scale emigration particularly of their younger population. Because diabetes affects ethnic groups differently, both prevalence figures and the amount of actual diabetic eye disease varies significantly throughout the region. The level of ophthalmic expertise, equipment and technical support also varies very widely.

The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country. In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes; among people with diabetes 30% have diabetic retinopathy. 9% of diabetics have clinically significant macular oedema and 1% have advanced diabetic retinopathy.

Generalised Issues

- Inadequate medical management and control of diabetes.
- Inadequate development of detection and referral systems.
- Insufficient public awareness relating to cause and prevention of visual loss due to diabetes.
- Insufficient awareness and knowledge of Primary Health Care (PHC) practitioners, general physicians and internists regarding their role in the prevention of blindness due to diabetes.
- Limited number of ophthalmologists with useful experience in diagnosis and treatment of diabetic retinopathy.
- Inadequate technological infrastructure in the health services.
- Poor resourcing and low capacity of national diabetes associations.

The *Strategic Framework for V2020: The Right to Sight (Caribbean Region)* proposes a number of actions for organizations supporting VISION 2020 activities, one of which is to conduct national assessments of services for diabetic retinopathy in selected countries. The outputs of these national level assessments will enable organizations supporting VISION 2020 activities to support countries in the development of screening programs and services for diabetic retinopathy and to support development of education packages and training programs for the general public and health care providers.

It is in this context that the Pan American Health Organisation (PAHO), the Caribbean Council for the Blind – Eye Care Caribbean (CCB) and Sightsavers collaborated with Ministries of Health and national organizations supporting VISION 2020 activities in Antigua, Belize and Jamaica to assess the current situation in relation to services and referral systems for screening and treatment of diabetic retinopathy and awareness of diabetic retinopathy among medical officers and diabetic patients.

JAMAICA – Situation Analysis

The island of Jamaica lies 90 miles south of Cuba and 120 miles west of Haiti. It has an area of about 4000 square miles and is the largest island in the Commonwealth Caribbean. Jamaica has an estimated population of just over 2.7 million of which 850,000 are aged over 40. Almost 1/3 of the population live in or around the capital city, Kingston.

The country is divided into four regions (South East, Southern, Western, North East) and fourteen parishes.

The private and public sector, as well as the Jamaica/Cuba Eye Care programme and a few International Non-Governmental Organizations, provide eye care services in Jamaica. There are four ophthalmic centres in the country that cover 3 regions: Kingston Public Hospital, University Hospital of the West Indies Kingston, Mandeville Regional Hospital and Cornwall Regional Hospital in Montego Bay. The only area of the country with no public sector ophthalmic facility is the North East region.

Regulations, Policies & Plans

- *Identify national regulations, policies or plans on prevention of blindness due to diabetic retinopathy and its integration into national non-communicable diseases or diabetes control programs and policies*

There is a Draft National Eye Health Plan for Jamaica. Within the plan are specific recommendations with regard to diabetic retinopathy. Strategic Direction Number 2 calls for a "reduction of adult blindness from diabetic eye disease". The target is to "introduce an efficient and effective digital photography screening programme in at least 2 of the 4 health regions by 2015 to facilitate early detection and treatment of DR".

There is also a Draft action plan for the prevention of avoidable blindness and visual impairment 2014-19. One of the aims is to "put in place a health information system that will adequately capture the causes of visual impairment and the effectiveness of the eye care service delivery in both the public and private sectors".

In 2012 the Ministry of Health published national guidelines for diabetic management. One of these guidelines is to "recommend annual screening of eyes for diabetic retinopathy".

Jamaica has carried out two comprehensive national health surveys. This work comes from the Epidemiology Research Unit, (University of West Indies, Kingston). These surveys have "documented low rates of treatment and

control for chronic non-communicable diseases including diabetes despite major policy initiatives". The survey in 2008 indicated a 7.8% prevalence of diabetes among the 15-74 year olds. This is probably nearer 10-12% in those over 40. A previous random population survey from Spanish Town, Jamaica gave an overall prevalence of Diabetes as 13.4%.

There are 26,000 patients registered as diabetic in the returns from health centres throughout the country. With diabetic prevalence around 12%, the expected number of diabetics in the Jamaican population over 40 (850,000) would be 102,000. Of these 34,000 would be expected to have retinopathy and 6000 might need or benefit from laser.

Health care in Jamaica has been free of cost since April 2008 with the Abolition of User Fees Policy. Patients with chronic diseases are eligible for a National Health Fund (NHF) card, which entitles them to free medication as well as a glucometer if diabetic. It does not include the glucose testing strips required to monitor blood sugars. There is often a shortage of drugs and in reality it may sometimes be necessary to purchase drugs including insulin privately. Some reimbursement may be possible through the NHF.

Laser treatment is free at Kingston Public Hospital (KPH). It is subsidised at the University Hospital but remains expensive for the average Jamaican of whom 20% live at or below the poverty line.

There is discussion within Government at present to decide whether to reintroduce a user fee for health services. The advantages of this would be to recoup some funds and also to reduce the strain on services. The numbers of patients accessing secondary care increased significantly after the abolition of user fees. This has meant increased waiting times for most services and an unsustainable demand.

Human Resources, Infrastructure & Equipment

- ***Assess human resources and infrastructure available for referral, treatment and management of diabetic retinopathy, including access to and use of fundus cameras and appropriate laser systems.***

Referral infrastructure

There is a formalised referral system between primary and secondary care. Patients are given a referral slip, which they need to take to a hospital. An appointment is then generated in an eye clinic. The waiting time for a clinic appointment is between 3 and 12 months. If they are seen in Mandeville Regional Hospital or Cornwall Regional Hospital and require laser treatment a

further referral is given to them to take to Kingston. They are then assessed again in an eye clinic in Kingston and an appointment for laser is given to them if required. The wait for the laser clinic in Kingston may be another four to six months. A patient may therefore wait anything between 6 and 24 months between being seen in primary care and getting laser treatment. It is estimated that at least half of all patients referred for laser never get the treatment because they do not make or attend their appointments.

Ophthalmologists estimate that up to 40% of patients will decide to have their laser treatments done privately once they have been seen in the hospital and diagnosed with treatable diabetic retinopathy. This treatment is likely to be performed within a few weeks.

Primary Care

Jamaica has a comprehensive primary care system. There are 317 health centres, which are of 5 levels. Level 1 is essentially a first aid post whereas levels 4 and 5 offer specialty clinics with primary care physicians and specialists. Each of the 14 Parishes has at least one level 4 or 5 clinic. At present no ophthalmologists, optometrists or refractionists work in these clinics. Primary care physicians are not trained in eye care.

There are 15 registered private optometrists in the country and perhaps another 15 practicing without registration.

Referrals to ophthalmology mostly come from health centres and optometrists.

Secondary Care

Ophthalmologists in four Government hospitals:

- Kingston Public hospital has 4 Consultant Ophthalmologists.
- University Hospital of the West Indies (Kingston) has 4 Consultant Ophthalmologists (there is a fee for service in this hospital).
- Mandeville Regional Hospital has 2 Consultant Ophthalmologists.
- Cornwall Regional Hospital (Montego Bay) has 1 Consultant ophthalmologist.
- Alongside the Consultants are between 10 and 15 more junior ophthalmologists and residents training in ophthalmology.

Ophthalmologists in the private sector:

- There are at least 10 ophthalmologists in Kingston who work only in the private sector. There are about a further 10 private ophthalmologists who

work elsewhere in the country. All the ophthalmologists who work in government / university hospitals also do private work.

Jamaica/Cuba Eye care programme

This programme was set up in September 2005 and has continuously evolved. It is run by Cuban ophthalmologists and support staff. In August 2010 diabetic retinopathy screening and treatment was incorporated into their programme for the first time. This is run autonomously and without the involvement of the local ophthalmologists.

Non-Governmental organisations

Support is provided by a number of NGO's including the Caribbean Council for the Blind (CCB), Lions club, Jamaica Diabetics Association and visiting foreign teams. These either support government institutions, offer reduced fees for services or provide occasional visiting teams that provide facilities for examinations and treatments. The Caribbean Council for the Blind is currently playing a major role in the development of eye health services with the Southern Regional Health Authority as part of a 10 year partnership. It is also preparing to enter into a similar partnership with the North-Eastern Health region.

Other human resources

There is one trained refractionist in Mandeville Regional Hospital supported and trained by CCB. There are 2 trained ophthalmic nurses. No optometrists work in hospitals and there are no ophthalmic technicians.

Equipment

There are no working digital fundus cameras in the Jamaican public hospitals at present. There was no indication that any were available and used in the private sector.

At the time of this analysis there was one functioning diode laser in Kingston Public Hospital. The laser at the University Hospital was not working but was due to be repaired. There was no laser in Mandeville and the laser in Cornwall Regional Hospital was beyond repair and had not worked for several years.

There are estimated to be between 15 and 20 functioning lasers in the private sector and most Private Consultants have their own.

The Jamaica/Cuban eye care programme has one functioning and well-maintained laser based in their own facility in Kingston.

There were adequate facilities and equipment to assess the eye for diabetic retinopathy at all centres visited. Some of the slit lamp microscopes were old but enough were working in each unit to allow clinics to function. Some Consultants had to bring their own instruments from their private clinics such as ophthalmoscopes and lenses. Clinic space was often crowded but all units made the most of the space allocated to them. The eye department in Mandeville Regional Hospital has just moved to a refurbished more spacious facility. Cornwall Regional Hospital has the most limited space and has the least equipment.

The University Hospital in Kingston offers a limited Vitreo-Retinal service, which is able to offer treatment for advanced diabetic retinopathy. The waiting times are long and there is a fee for service. In reality very few diabetic patients have the opportunity to have surgery.

Service Delivery, Systems & Protocols

- ***Assess diabetic retinopathy services delivery, eye care systems and screening protocols at the national level.***

There is no established diabetic retinopathy screening or treatment service. The National Health Fund (NHF) organises community screening for diabetes and other diseases. This is managed through the Jamaica Diabetes Association. Outreach teams check blood pressure, blood sugars, do ECG's and do basic vision tests. It is estimated that 40,000 patients were screened last year (2012). Because diabetic retinopathy does not usually affect vision until there is significant disease this programme will not be useful for retinopathy screening.

The Jamaica/Cuba programme also screen in some areas. No data is available on numbers screened or locality of the areas screened. The district hospital eye units are not involved in the organisation of these and do not participate in the programme or treat patients referred in from the programme. Patients are managed back in Kingston at a Cuban managed facility.

Service outputs

- ***Assess diabetic retinopathy services outputs on the previous year, number of diabetics undergoing eye examinations and treatment.***

There is very limited data available. The Jamaica/Cuba Eye care programme has done 806 diabetic lasers since 2010. In 2012 it carried out 1766 diabetic retinopathy consultations and 255 laser treatments.

Kingston Public Hospital carries out around 750 laser treatments a year. Some of these will be on the same patient so it is difficult to know how many individuals are getting treatment.

Awareness of Health Care Personnel

- ***Assess the awareness of health care personnel on diabetic retinopathy.***

There is a national diabetic education programme and a lay diabetes educator programme. There are 3 health educators per parish but they mainly teach sexual health education.

Ophthalmologists do presentations about diabetic eye disease at primary care doctor meetings but all agreed that the frequency of these could be increased and more effort to reach more doctors and nurses could be made.

Achievements, Best Practice and Constraints

- ***Explore major achievements, best practices and major constraints and barriers.***

Major achievements and best practice

Jamaica is a large Caribbean country with varied terrain and limited transport infrastructure. It is finding it difficult to cope with the demands on its freely accessible health care system. The Ministry of Health is aware of the importance of diabetes and diabetic retinopathy. There is a good network of primary health clinics throughout the country with well-trained and motivated staff.

There are many highly motivated ophthalmologists who work in the public sector, often in difficult and demanding circumstances. They work efficiently and provide the very best care that they are able to with the limited resources that they have.

In Mandeville the eye unit has recently moved to a larger and well equipped building supported by CCB and Sightsavers. Once the move is complete and the theatres are functioning it will be able to provide an upgraded service and hopefully reduce waiting times.

In Kingston, KPH has an excellent ophthalmic team providing the majority of the diabetic retinopathy management in the country. It has the only functioning laser, which is used efficiently.

Cornwall Hospital in Montego Bay has a very energetic and motivated team who make use of their limited resources to provide the best care they can.

There is good data available on the number of diabetics in the population from two comprehensive national health surveys performed by teams from the University of the West Indies, Kingston.

The Jamaica Cuban eye care programme has run a screening and treatment programme that has enabled a few thousand people to be screened and a few hundred treated.

There is a limited vitreo-retinal service based at the University Hospital, which is able to treat severe diabetic retinopathy. This treatment is only partly subsidised.

Major constraints and barriers

- **General**

  There is no finalised and approved National Eye Health Plan although it does exist in draft form. A further effort should be made to finalise this and to get it approved. The National Eye Health Plan would be a very useful tool to enable better planning and coordination of eye health activities including diabetic eye disease throughout the country.

- **Infrastructure**

  No nationwide diabetic screening programme is in place and there is no established pathway for management of diabetic eye disease.

  The Jamaica / Cuba eye care programme runs a screening and treatment programme but it is unlikely to be sustainable. The programme has had benefits but it has not integrated with services within Jamaica and has not formed ties with ophthalmology units. It is run as an autonomous unit. There are potential effects on training Jamaican Ophthalmologists as they are getting less experience and it is perceived as a threat by some local ophthalmologists. The programme is costly for Jamaica and there is a strong possibility that it will be run down as the traditional core funding from Venezuela is reduced. It is important to have a service in place that can take over, if and when the programme ends.

- **Data**

  There is no appreciable data available on prevalence of retinopathy, rates of referral for retinopathy or numbers of patients that fail to attend hospital appointments or laser treatments.

- **Personnel**
  There are plenty of trained ophthalmologists to run a screening and treatment programme but few personnel at a more junior level who are available to take on some of the responsibilities. There are no trained refractionists apart from one in Mandeville and very few trained ophthalmic nurses. Because ophthalmology is not viewed as a specialist area there is no upward mobility for nurses and nurses rotate through ophthalmology every 6 months. Optometrists only work in the private sector.
- **Expense**
  In theory both primary and secondary health care is free at the point of delivery. The major limitation is not access to the service but availability of resources. The demands on all services increased significantly after fees for services were removed in 2008.
- **Education/compliance**
  Patient compliance with medication to control diabetes and blood pressure is poor and this leads to increased eye and other systemic complications. Patient education could be improved further. The prevalence of hypertension, which is a significant risk factor for severe diabetic retinopathy, is as high as 25% in the over 40's.

  Patients with retinopathy are seen at a late stage often when the vision in their only seeing eye is affected. This is due to lack of education and limited access to resources.

Recommendations

- ***Make recommendations on future actions, objectives and activities required to strengthen diabetic retinopathy programs at the national level, with an emphasis on:***
  - ***Development & use of treatment protocols***
  - ***Screening and referral***
  - ***Monitoring and treatment***

1. There is a definite need for a comprehensive screening and treatment programme for diabetic retinopathy. Jamaica has a high prevalence of diabetes and diabetic retinopathy. Although there is limited data, all ophthalmologists agreed that diabetic patients made up between 20 and 25% of their clinics. A comprehensive screening and treatment programme for diabetic retinopathy would firstly free up the ophthalmologists to see and treat other problems. Patients with mild or no retinopathy would not need to come to clinics. Secondly it would enable patients with significant retinopathy to get treated more quickly with better visual outcomes.

2. A further effort should be made to finalise the National Eye Health Plan and to get it approved. This would be a very useful tool to enable better planning and coordination of eye health activities including diabetic eye disease throughout the country.

3. Increase the amount of teaching and training of nurses and doctors so that they are more aware of the risks of diabetic eye disease. NGO's might be able to help support this.

4. A general review of current data management practices relating to diabetic retinopathy is recommended with a view to improving and enhancing availability of data on prevalence, referral rates, patient attendance, etc.

5. There is a need to increase the number of refractionists or equivalent trained personnel to undertake screening and referral as appropriate.

6. It is highly desirable to set up a screening programme in Jamaica. The problem is not lack of Ophthalmologists but lack of equipment and the infrastructure to organise and maintain a diabetic screening programme. Some units have better facilities than others. The unit at KPH has the most staff and has a functioning laser. Mandeville has a history of support from CCB, which has enabled them to employ a refractionist and move into new facilities. They have no laser but have the space for one and also the ability to maintain it.

   The idea of running a single national programme would be very ambitious. It would be more straightforward to consider setting up 3 smaller regional programmes in Kingston, Mandeville and Montego Bay. The vast majority of the population should be able to access one of these programmes. Each programme would need a digital camera and access to a laser. The programmes could run in different ways to suit the different populations:

   Kingston:

   Use a single non-mydriatic camera based within the hospital clinic and run by a refractionist. The SRHA has nominated 4 candidates to be trained as Refractionists.
   Referrals come in directly from health clinics and optometrists. The camera could be used for retinopathy screening at a set time every weekday. Once informed, patients would be able to have photos taken on any day and not have to wait for a booked appointment.
   The images would be assessed immediately by a refractionist and a "refer" or "non refer" decision made. If the patient had a refer grade

then an appointment would be given to the patient for a laser/assessment clinic when the patient could be assessed and treated at the same session. If a “non refer” grade is made then the patient is asked to return in 1 year for repeat photos.
All grades would need to be recorded and a register kept of those treated and those due to be reviewed. If resources were available patients could be contacted by text message on their mobile phones to remind them to return for annual photos.

Mandeville:

Start with a single non-mydriatic camera that could remain in the hospital. This could be expanded to establish similar services in each of the 3 parish hospitals in the region; expanding outward to include types 4 & 5 health centres as resources become available.
The images could be taken and assessed by a trained health professional such as a refractionist. They would look at the image and grade it as refer or non-refer.
A list of patients with a refer grade could be sent to the hospital and appointments generated for a clinic for them to be seen and treated if necessary. Appointments could be sent out as a text message on mobile phones.
This scheme would require a laser, which would be situated in the eye unit in Mandeville. Consultants and trainees could have a rota to run an assessment and treatment clinic. The hope would be that the majority of patients would be able to access care as they did not have far to travel and the treatment could be free or subsidised. A mobile service is possible but likely to be more expensive, particularly if trained refractionists were available at some hospitals and health centres.

Montego Bay:

The Cornwall hospital has a similar catchment population to that of Mandeville (approx. 500,000). It covers a large geographic area and has to treat patients from the Northeast region where there is no ophthalmic unit. A screening and treatment programme is feasible and again would require a single non-mydriatic camera and a laser, based in the eye unit. At present the conditions are cramped and the clinic is shared with other specialties. More space would need to be found for the efficient operation of the clinic if screening and laser treatment was to be done.
The images would need to be assessed and graded by the person taking them. If a refer grade was made, the unit in Cornwall Regional Hospital

would need to organise an appointment in a combined assessment and treatment clinic. The patient could be contacted with a text message.
If a “non refer” grade is made the patient is asked to return in a year for more photos.
This programme would require the most investment and training. Once established, similar screening services could be set up in each of the parish hospitals in the region; expanding outward to include type 4 & 5 health centres as resources become available.
A mobile camera moving to a number of different health centres at specific times is also feasible but again likely to be more expensive.

The introduction of these programmes could be staggered. It might be reasonable to start in Kingston and Mandeville and then begin in Montego Bay once the programmes had been shown to work efficiently in the initial locations. In the meantime resources, support and training could be directed to the Cornwall Hospital.

Summary

With the rising prevalence of diabetes and diabetic eye disease in the Caribbean it is essential to introduce screening and treatment programmes to tackle the problem. Jamaica has the ability and desire to introduce an effective diabetic retinopathy screening and treatment service.

Some of the recommended changes can be introduced relatively quickly and some may take longer. Strong and productive collaboration between the Ministry of Health, NGO’s, the private sector and research institutions will play an important role in tackling diabetes and diabetic retinopathy in Jamaica and throughout the Caribbean.

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THE QUEEN ELIZABETH
DIAMOND JUBILEE TRUST

About The Queen Elizabeth Diamond Jubilee Trust

The Queen Elizabeth Diamond Jubilee Trust is a charitable foundation established in 2012 to mark and celebrate Her Majesty The Queen's 60-year contribution to the Commonwealth.

The Trust has received donations from governments, corporate partners, trusts, foundations, community groups and individuals from across the Commonwealth. Its mission is to enrich the lives of people from all backgrounds within the Commonwealth, and its programmes will work in alliance towards eliminating avoidable blindness and to empower a new generation of young leaders.

With a five year timeframe in which to deliver successful programmes, the Trust's aim is to leave a lasting legacy, owned by the whole Commonwealth, to honour Her Majesty The Queen.

Find out more by visiting www.jubileetribute.org.

Youth Leadership

Young people are often overlooked and their contribution, energy and skills not sufficiently harnessed within national and global development agendas. With 60% of its population under the age of 30, young people make up more than half of the Commonwealth's population, and investing in their potential is critical in helpingaddress the challenges of the 21st century.

The Trust's programme on youth leadership aims to empower a generation of young leaders, and create more opportunities for young people in every Commonwealth country.

An awards scheme for young leaders across the Commonwealth will recognise exceptional young people and help them to develop further. Grants will also be provided for youth-led projects and organisations across the Commonwealth, focusing on a range of issues from the recently adopted Commonwealth Charter.

Avoidable blindness

Eighty percent of blindness is avoidable. Globally,an estimated 285 million people are visually impaired, including 39 million people who are blind.There are approximately 31 million people in the world who are needlessly blind.

The Trust's Avoidable Blindness programme aims to make significant progress towards resolving this major issue facing the Commonwealth, by seizing the opportunity to contribute to the goals

set by Vision 2020, the global initiative to eliminate the main causes of avoidable blindness worldwide. The programme will tackle three specific diseases and health issues linked to avoidable blindness – blinding trachoma, diabetic retinopathy and retinopathy of prematurity - and it will support this with a separate, overarching programme that develops fellowships, research and technology in the eye care sector across the Commonwealth.

Blinding trachoma

Adopting the World Health Organisation-endorsed SAFE strategy (**S**urgery, **A**ntibiotics, **F**acial cleanliness and **E**nvironmental improvement) the Trust will work in alliance with partners towards eliminating blinding trachoma in two countries in Africa – Kenya and Malawi - and significantly reduce its prevalence in up to six other Commonwealth countries.

The programme will fund: surgery; the distribution of antibiotics donated by Pfizer to treat and prevent active infection; initiatives to encourage facial cleanliness to prevent disease transmission; and work to improve access to clean water sources and sanitation.

Diabetic Retinopathy

The programme is currently supporting some research to appraise the different models that are currently being used to address diabetic retinopathy in India. The findings from this will be shared widely, to help tackle the issue in other Commonwealth countries and worldwide.

The programme will focus on South Asia, the Caribbean and several Pacific Island nations, to develop and implement specialist screening and treatment to prevent people from going blind.

Retinopathy of Prematurity

As retinopathy of prematurity is caused by giving too much oxygen to premature babies, which results in blinding retinal detachment, this strand of the Trust's programme will support the development of a national plan to improve neonatal care in India, which has the highest number of pre-term births in the world.

This programme is being designed to include the potential for replication by others to address retinopathy of prematurity in other Commonwealth countries.

Fellowships, research and technology

Through fellowships and research, the Trust aims to develop expertise in eye care and strengthen health systems across the Commonwealth. The Trust will also invest in new innovative technologies that will enable eye care to be delivered for a fraction of the current cost.

It is hoped that this programme will lead to a revolution in affordable and high-quality eye care across the Commonwealth and beyond.

How we work

The Trust works with the full commitment of governments to develop national strategies for each of our Commonwealth focus countries.

For its grant making The Trust works proactively, selecting specialist partners who are best-placed to deliver the Trust's programmes, and inviting them to apply for funding.

Once a partner has been selected by the Trust to apply for funding, the Trust will work collaboratively with the selected partners, to jointly develop a five-year programme of work. The following factors are then taken into careful consideration by the Trust before grants are awarded:

The Organisation:

1. *Governance:* Annual Accounts and governance details will be scrutinised, to ensure that the partner is financially sound and has appropriate procedures in place to manage a grant. Diversity is a key assessment factor.

2. *Collaboration:* The partner must demonstrate a willing and experience of collaborating with others, and a commitment to sharing learning externally about successes and failures.

The Programme or Project:

3. *Mutual objectives*: The aims of the project must meet the Trust's objectives. The project itself should have clear overall objective, and have an appropriate target for the numbers of people who will be helped by the work.

4. *Expenditure*: All project expenditure must be eligible for Official Development Assistance (ODA).

5. *Monitoring and evaluation*: The proposed project must have a defined overall impact target, specific outcomes to be achieved (difference to individuals, communities, organisations or policies), and details of how such changes will be monitored and evaluated. Details of poverty reduction should be provided where possible.

6. *Exit strategy*: Information detailing how the work can continue to enrich people's lives in the Commonwealth after the funding period is completed and/or how future funding will be secured must be provided. This must be given careful consideration at the planning stage.

7. *Planning:* The project proposal must include a clear plan for the entire funding period.

8. *Beneficiaries:* The Trust requires evidence of how the views of beneficiaries, including economically disadvantaged and marginalised people, have been taken into account. Evidence of need is also required.

9. *Capacity*: The partner must be able to demonstrate that it has sufficient capacity to undertake the work, and that it will have a positive impact on health systems.

10. *Risks:* A full risk analysis must be taken into account and mitigated for.

11. *Budget:* A detailed budget with good value for money is required. The Trust will also examine the financial procedures and management structure for the project. Management and oversight costs should not normally exceed 10%.

12. *Coordination:* All projects should be carried out in coordination with the Ministry of Health and other appropriate agencies.

13. *Communications:* There should be a clear internal and external communication plan for the work.

Caribbean Diabetic Retinopathy Programme

Concept Paper

This concept paper has been developed by The Caribbean Council for the Blind – Eye Care Caribbean, with the Pan American Health Organisation (PAHO), ORBIS and Sightsavers.

This paper, which outlines a potential Diabetic Retinopathy Programme focusing on Caribbean Commonwealth countries, was submitted to The Queen Elizabeth Diamond Jubilee Trust in September 2013. The Trust's Board of Trustees responded positively to the paper and requested that further discussions take place, to see how the plans could be further developed into a full funding proposal.

Caribbean Diabetic Retinopathy Programme Concept Paper

Introduction

347 million people worldwide have diabetes and the World Health Organisation projects that diabetes will be the 7th leading cause of death in 2030. Diabetes Mellitus is listed among the leading causes of death in the Caribbean and a number of population based studies have documented the high prevalence of the disease.

More than 75% of Diabetes Mellitus patients experience some form of Diabetic Retinopathy and the eye disease is estimated to be responsible for 4.8% of all cases of blindness. Evidence-based treatment can reduce the risk of vision loss from Diabetic Retinopathy by >90%. Most Commonwealth countries in the Caribbean have no national diabetic screening and treatment programme.

Organisations Involved & Capacities

- **Caribbean Council for the Blind / Eye Care Caribbean (CCB)** – Regional coordination, programmatic and financial grant management; monitoring; communications; programme planning and implementation.
- **ORBIS** – programme planning, technical expertise, training, carrying out assessments/reviews, monitoring at regional and/ or national levels
- **Pan American Health Organisation(PAHO)** – programme planning, technical support; advocacy; regional coordination, monitoring at regional and or national level,
- **CCB, PAHO and ORBIS** will collaborate to organise and facilitate regional meetings and to manage programme agreements with National governments / Ministries of Health
- **CCB Member Agencies** – national level advocacy, activity planning & implementation

Working with:

- **Ministries of Health** – Ministries of Health will be requested to nominate a programme coordinator / focal person. A national level Programme Management Committee will also be required to guide the process which should include MOH staff, e.g. Primary Health Care Director, Ophthalmologist, Health Services Manager, Non-Communicable Diseases Programme Manager, Health Promotions Manager and the Chief Medical Officer. This management committee would liaise with CCB at regional level and will work closely with the National V2020 / Prevention of Blindness committee at national level
- **Health Information Departments** – Although the scope of these departments varies from country to country, engagement will be primarily focused on public health communications activities and may also include development of health information systems.
- **National Diabetes Associations** – where they exist, will be involved in national level consultations and coordination and public awareness activities.
- **National V2020 / Prevention of Blindness Committees** – as the role of these Committees includes coordination of all eye health programming at national level and development, monitoring and review of national eye health plans and frameworks, they will be a key stakeholder.
- **Training institutions** – will be involved in provision of training to various cadres and establishing a regional programme to train screeners
- **Research institutions/expertise** – the programme will facilitate Knowledge, Attitude and Practice and other studies relating to Diabetic Retinopathy to support programming and public awareness activities.
- **Moorfields Eye Hospital** – there is the potential to collaborate with Moorfields Eye Hospital in the development of data management systems.

Overall Programme Objective

Reduce the incidence of blindness due to Diabetic Retinopathy in Commonwealth countries of the Caribbean

Programme Overview

Programme location	**Caribbean Commonwealth Countries**
Countries and Regions of a potential programme	**PHASE 1:** Antigua & Barbuda Belize Dominica Jamaica (Southern Region) **PHASE 2:** Jamaica (Western and South East Region) St Kitts & Nevis St Lucia St Vincent & the Grenadines Guyana Barbados **PHASE 3:** Bahamas Grenada
Proposed duration	**5 years – commencing July 2014**

The programme will focus on the following key areas:

- Regional guidelines development
- National programme proposal development, programme management protocols and treatment and referral protocols
- Advocacy to include detection and treatment of diabetic retinopathy as part of the NCDs national policies and plans.
- Advocacy to link each national programme with NCDs department at the MoH, diabetes association etc.
- Human resource development
- Infrastructure development
- Patient screening and treatment
- Patient education
- Research

This programme will adopt a phased approach, whereby:

- **Phase 1** countries/regions will begin establishment of screening, treatment and education programmes as soon as possible. These countries have already completed situation analysis and have adequate levels of human resources and infrastructure in place to support start up. Introduction of screening and treatment in these countries will be phased, e.g. by region or health facility, to ensure approaches can be tested, with learning contributing to eventual roll-out to other regions and facilities.
- **Phase 2** countries will begin with a Situation Analysis and are likely to have some human resource and infrastructure requirements in place, enabling screening, treatment and education programmes to begin in year 2 or 3.

- **Phase 3** countries – current status unknown. Will need to begin with situation analysis and likely to need increased levels of human resource and infrastructure development. At present too little information is available to make any programmatic propositions.

By the end of the programme Phase 1 & 2 countries will have established:

- A policy framework for screening and treating diabetic retinopathy in the Caribbean
- A pathway for management of diabetic retinopathy and other vision related complications arising from diabetes and diabetic retinopathy in each country
- Adequate human resource levels within the public health system (Government/NGO) to manage and implement a sustainable diabetic retinopathy screening and treatment programme (screeners / refractionists / optometrists / ophthalmologists/ bio-med technicians,)
- Infrastructure to facilitate screening and treatment (public health facilities and equipment)
- Improved data management systems at national and regional level

Phase 3 countries, if eventually included, are likely to have completed a situation analysis and developed a programme plan and the necessary protocols. These countries will be uniquely placed to learn from implementation in other countries and also benefit from the training infrastructure developed.

At regional level the programme will have established:

- A body of evidence, through research in the areas of diabetes, diabetic retinopathy; associated diabetic eye diseases; low vision and diabetic related blindness, to support advocacy, planning and health information activities
- A Regional forum to promote information and skill sharing and dissemination of best practice
- A training programme for screeners which meets international standards
- A range of culturally relevant Information, Education & Communication materials to include information on Diabetic Retinopathy, information for diabetics on screening, information for health professional (printed, audio and other formats)

Problems to be addressed

The population of the Caribbean Commonwealth countries is 6.37 million. The region is extremely diverse geographically, ethnically and economically. Because diabetes affects ethnic groups differently, both prevalence figures and the amount of actual diabetic eye disease varies significantly throughout the region. The level of ophthalmic expertise, equipment and technical support also varies very widely.

With the rising prevalence of diabetes and diabetic eye disease in the Caribbean it is essential to introduce screening and treatment programmes to tackle the problem. The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country.

- In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes; among people with diabetes 30% have diabetic retinopathy. 9% of diabetics have clinically significant macular oedema and 1% have advanced diabetic retinopathy.
- A Jamaican survey in 2008 indicated a 7.8% prevalence of diabetes among the 15-74 year olds. This is probably nearer 10-12% in those over 40. A previous random population survey from Spanish Town, Jamaica gave an overall prevalence of diabetes as 13.4%.
- A 2013 situation analysis from Antigua estimates a diabetic population of about 6000, of whom 2000 are likely to have diabetic retinopathy and 400 of which might benefit from laser treatment.

- Dominica Step Survey 2008 identified that prevalence of diabetes mellitus in the 15-64 age group was 17.7% (approx 7,570 persons)

Most Commonwealth countries in the Caribbean have no national diabetic screening and treatment programme.

Beneficiaries

Beneficiaries of a Caribbean Diabetic Retinopathy Programme will include people with diabetes, those at risk, their families, health professionals and health service providers.

The population of all countries included in this proposal is 5,037,130. The average diabetes prevalence (% of population ages 20 to 79) of countries included is 12%. This would assume approx 605,000 of the total population have diabetes. Of these 30%, (181,500 people), are likely to have Diabetic Retinopathy.

Due to the present lack of statistical information it is difficult to establish target beneficiary numbers.

Establishing lists of persons with diabetes who are being treated at individual health care facilities will help to establish more accurate figures. In addition, and where they exist, national diabetics registers will also be used to guide planning and setting targets at national and regional level.

Alignment to The Queen Elizabeth Diamond Jubilee Trust Objectives

This programme will enable the Trust to work with Caribbean expertise to develop cost-effective programmes for screening and treating diabetic retinopathy which will utilize modern technologies.

Public sector eye health professionals' skills will be developed in up to 10 countries which will strengthen health systems and contribute to delivery of sustainable diabetic retinopathy screening and treatment programmes.

Public education programmes will improve health seeking behaviour and contribute to an improved quality of life for people living in Caribbean Commonwealth countries.

Programme Approach:

- At national level, Diabetic Retinopathy programmes will be integrated into existing health delivery systems. Services will be developed or strengthened in existing public health facilities, with service delivery personnel predominantly being Ministry of Health employees.
- Countries with programmes already underway (Dominica) will be assisted to demonstrate success, scale up in underserved areas, strengthen delivery and work with other governments and non-governmental organisations to share expertise to support development of new programmes.
- Countries which have completed situation analysis will be assisted to strengthen existing services and/or introduce, on a phased basis, new services in line with recommendations and collaboratively developed national plans.
- Countries with no programmes or where levels of screening and treatment are not know will be assisted to conduct situation analysis to establish baselines and outline plans to either introduce pilot programmes or strengthen existing services. Pilots will be scaled up over the programme years.
- Primary and secondary public health facilities will be equipped, on a phased basis, to screen, refer and record data. In most cases fixed services will be developed in preference to undertaking outreach activities.
- Secondary and/or tertiary level facilities will be equipped, on a phased basis, to screen, treat and record data.

- Existing Refractionists will be trained as screeners.
- The existing Bachelor of Science in Optometry course at the University Of Guyana will be strengthened and personnel from participating countries will be trained as Optometrists, in order to strengthen and expand detection, thereby allowing Ophthalmologists to focus on treatment.
- A cadre of Optometrists trained in Community Optometry and other public health disciplines will be trained as trainers to support delivery of a course in Diabetic Retinopathy Screening, , which will be established in the Caribbean and will meet international standards.
- Bio-medical technicians, preferably those currently in the employ of MOH, will be trained to install, maintain and repair equipment for screening and treatment.
- Guidelines for screening and treatment of Diabetic Retinopathy will be developed or adopted.
- A short training program will be given to participating ophthalmologists to examine, detect and treat diabetic retinopathy.
- Existing trained ophthalmologists will provide treatment, other qualified ophthalmologists will undertake fellowships.
- A management committee will be established to oversee and coordinate the programme
- The Caribbean Council for the Blind will manage the programme at regional and sub-regional level.
- Ministries of Health will assign a programme manager / coordinator at national level.
- The programme will liase with Health Information Departments and Diabetic Associations to develop awareness and education materials targeting general public, diabetics and health professionals.
- The programme will liase with Diabetic Associations to support development of diabetic registers.
- Development-adoption of eye health information systems to facilitate storage, retrieval and remote review, diagnosis and treatment of diabetic retinopathy cases
- A regional forum will be established to promote information and skill sharing and dissemination of best practice. Ideally this should include participants and donors from the Trinidad and Tobago Diabetic Retinopathy Programme, representative from related programmes in the region and global technical expertise.
- Lessons will also be drawn from case studies, assessments and evaluations which will be published and widely disseminated.

Monitoring & Evaluation Overview

- A Regional Programme Management Committee with participation of CCB, ORBIS and PAHO will be established to oversee and coordinate – this will include responsibilities for monitoring.
- National level Programme Management Committees will also be established to support implementation and monitoring.
- Mid-term and final evaluations will be carried out by external expertise.
- Assessments of individual health facilities will be carried out to ensure minimum requirements are met (skills, equipment, procedures, reporting).
- Quarterly national reports on screening and treatment will be submitted to regional level and compiled (breakdown by gender, age, screened, treated, referred, etc).
- Financial and narrative reports will need to be coordinated and submitted to The Queen Elizabeth Diamond Jubilee Trust every six months.

Sustainability

- Ministry of Health staff, health professionals and diabetes associations will be involved from the outset, i.e. at Situation Analysis stage, and they will then continue to be involved through planning, implementation and monitoring activities. This will ensure their continued involvement in decision making processes and promote local ownership.
- Personnel to be trained (screeners, refractionists, optometrists, bio-med technicians and ophthalmologists) will predominantly be employed and nominated by Ministries of Health. They will be salaried by Ministries of Health and prospects for retention are good.
- Treatment services will be established in public health facilities. Public health facilities will also be able to provide equipment and supplies for blood sugar monitoring. A cost recovery system should be negotiated into diabetic retinopathy programme related agreements with Ministries of Health with part of any income generated by diabetic retinopathy services dedicate to consumable required to keep the service operational.
- National Programme Coordinators / focal persons will be MOH employees and national level programme management and coordination will rely heavily on Ministry of Health staff and representatives of national organisations. This will promote ownership at country level.

National Information – Phase 1

	Country	Equip Class 1	Equip Class 2 / 3	Train	Education	Data / Comments
PHASE 1	**ANTIGUA** Diabetes prevalence (% of population ages 20 to 79) – 12.83	• 4 vision centres with fundus camera, table and chairs plus patient reclining chair equipped with ophthalmic arm and basic refractive system & slit lamp where relevant • Computer/laptop	1 laser and support systems	• 4 existing refractionists in screening techniques • Bio-med tech (laser, camera, etc. *Already has Ophthalmologists competent in laser*	Health education as per Recs 2 & 3 of Antigua DR Situation Analysis 2013	Work with MOH and MSJMC to improve data management re eye health in general. This could be mapped out within a National Eye Health Plan
	BELIZE Diabetes prevalence (% of population ages 20 to 79) – 17.37	• Need to establish inputs from Lions funded DR Programme to understand what complementary equipment and HRD may be required		• 3 personnel and 4 optometrists in screening techniques • 1 ophthalmologist in laser treatment • Bio-med tech (laser, camera, etc.		Belize will start a DR programme in 2013 or 2014 – need to liaise with BCVI to establish inputs required
	DOMINICA Diabetes prevalence (% of population ages 20 to 79) – 9.05	• Carry our formal assessment of existing Dominica DR programme to establish key learning points, best practice and current service delivery gaps – plan inputs based on this assessment.		Already has Ophthalmologists competent in laser plus trained DR programme staff	Document and publish best practice from existing national DR screening and treatment programme	

	JAMAICA (Southern Region) Diabetes prevalence (% of population ages 20 to 79) – 15.97	• 3 parish hospitals with fundus camera, table and chairs plus patient reclining chair equipped with ophthalmic arm and basic refractive system & slit lamp where relevant • computer/laptop	1 laser and support systems (Mandeville) Vision Centre equipment plus fundus camera, patient reclining chair, computer/laptop (Mandeville)	• 5 refractionists in screening techniques (based on existing trained refractionist and 4 to be trained in 2013/14) • Bio-med tech (laser, camera, etc. *Already has Ophthalmologist competent in laser*	As per Rec 3 Situation Analysis 2013 – increase awareness of nurses and doctors re risks of diabetic eye disease Work with MOH and health information department on national and/or regional public awareness campaigns. Potential to also work with Diabetes Assoc on awareness targeting diabetics	As per Rec 4 Situation Analysis 2013 - A general review of current data management practices relating to diabetic retinopathy is recommended with a view to improving and enhancing availability of data on prevalence, referral rates, patient attendance, etc.

National Information – Phase 2

	Country	Equip Class 1	Equip Class 2 / 3	Train	Education	Data
PHASE 2	**JAMAICA (Western Region)** Diabetes prevalence (% of population ages 20 to 79) – 15.97	• 4 parish hospitals with fundus camera, table and chairs plus patient reclining chair equipped with ophthalmic arm and basic refractive system & slit lamp where relevant • computer/laptop	1 laser and support systems (Cornwall)	• 4 personnel as screeners – to be upgraded to Refractionists (1 year course) • Ophthalmologist to be trained to treat with laser (fellowship) • Bio-med tech (laser, camera, etc.	As per Southern Region	As per Southern Region
	JAMAICA (Southeast Region) Diabetes prevalence (% of population ages 20 to 79) – 15.97	• 5 parish hospitals with fundus camera, table and chairs plus patient reclining chair equipped with ophthalmic arm and basic refractive system & slit lamp where relevant • computer/laptop	2 laser and support systems (2 tertiary hospitals)	• 7 personnel as screeners – to be upgraded to Refractionists (1 year course) • Bio-med tech (laser, camera, etc. *Already has Ophthalmologist competent in laser*		
	ST KITTS & NEVIS Diabetes prevalence (% of population ages 20 to 79) – 8.69	• 2 health centres in St Kitts to be designated as screening facilities and equipped with full set of VC equipment	1 laser and support systems in main public hospital	• 3 personnel as screeners – to be upgraded to Refractionists (1 year	Education likely to target health professionals, diabetics and general public	V2020 Report 2012 indicates that a Diabetic retinopathy Services situation

		plus fundus camera, patient reclining chair, computer/laptop • 1 health centre in Nevis to be designated as screening facility and equipped with full set of VC equipment plus fundus camera, patient reclining chair, computer/laptop		course) • Bio-med tech (laser, camera, etc. *St. Kitts-Nevis already has a Government employed Ophthalmologists competent to use laser*		analysis was carried out in 2011
	ST. LUCIA Diabetes prevalence (% of population ages 20 to 79) – 8.57	• 2 health centres to be designated as screening facilities and equipped with fundus camera and other relevant inputs plus computer/laptop (Eye Care SL & Vieux Fort)	• Victoria Hospital to be designated as screening facility and equipped with full set of VC equipment plus fundus camera, patient reclining chair, computer/laptop • Equip Eye Care St. Lucia to serve as a treatment centre with laser and support systems	• Ophthalmologist to be trained to treat with laser (fellowship) • Existing refractionists to be trained as screeners • New refractionists to be trained Bio-med tech (laser, camera, etc.		Situation Analysis required (note national eye health plan 2008-12 indicates 9000 persons on SL diabetics register)
	ST VINDENT & THE GRENADINES Diabetes prevalence (% of population ages 20 to 79) – 8.95	• Designate hospital in Georgetown as a screening centres. Roll out to one or 2 on other family islands	Equip Ophthalmology Department in Kingstown Government	• Ophthalmologist to be trained to treat with laser (fellowship) • Bio-med tech (laser, camera, etc.		Note: St. Vincent and the Grenadines Health Information System (SVGHIS) has already been

		based on experience of first centres	hospital to serve as screening facility and treatment centre with laser and support systems	• 4 personnel as screeners – to be upgraded to Refractionists (1 year course)		implemented and is being used at 36 facilities
	GUYANA Diabetes prevalence (% of population ages 20 to 79) – 16.99	• On a phased basis, designate 9 existing vision centres as screening facilities and equip with fundus camera, patient reclining chair, computer/laptop – Georgetown – Diamond – West Demerara – Lenora – Maichoney – Suddie – New Amsterdam or Port Morant – Skeldon – Linden	On a phased basis, designate and equip 4 main regional hospitals as treatment centres, with laser and support systems – Linden – Georgetown – Port Morant – Suddie	• 4 Ophthalmologist (one from each regional hospital) to be trained to treat with laser (fellowship) • 12 existing refractionists to be trained as screeners • Develop an on-going training of screeners course as part of the emerging training programmes for Refractionists and Optometrists at University Of Guyana (using the City and Guilds course as the template) • 4 Bio-med tech (laser, camera, etc.		Needs to take into account programme being developed with assistance of ORBIS and ensure any programme plans or inputs complement
	BARBADOS Diabetes prevalence (% of population ages 20 to 79) – 12.71	• On a phased basis, designate Polyclinics as screening facilities and equip with fundus camera, patient reclining chair,		• Bio-med tech (laser, camera, etc. • ? personnel as screeners – to be upgraded to Refractionists (1 year		Info from 2010 eye health Situation Analysis: • 1 retinal specialist & YAG laser at QEH.

		computer/laptop (Note there are 8 government polyclinics – it may not be necessary to establish all as screening facilities)		course)		• 1 retinal specialist and 3 lasers in private sector. • All 19 ophthalmologists trained to treat DR • 1 fundus camera in private sector • No national DR screening programme • No national diabetics register • No referral or treatment data available
	TRINIDAD & TOBAGO Diabetes prevalence (% of population ages 20 to 79) – 13.05	Trinidad and Tobago Health Sciences Initiative (in partnership with Johns Hopkins; UWI, MOH and other ministries) have a Diabetes Outreach Programme which recently (2013) launched a DR screening programme, training photographers and graders in an intensive week-long training programme led by Professor David Owens of Cardiff University School of Medicine and Swansea University. The programme also plans to establish a Centre of Excellence to include an ophthalmologist and also train primary health care workers and optometrists in diabetic care. A comprehensive study of people with diabetes and the health care services they receive has also been completed under this programme. While most activity seems to be in the South West Region it looks like T&T has a significant programme under way and we would assume if the model is successful it will be expanded to cover the country. Collaboration with this programme is highly recommended to share learning, skills and best practice.				

National information – Phase 3

	Country	Equip Class 1	Equip Class 2 / 3	Train	Education	Data
PHASE 3	**BAHAMAS** Diabetes prevalence (% of population ages 20 to 79) – 12.40	•		•		Bahamas has a Diabetes Association and MOH has a diabetic nutrition programme – other information hard to establish so no real way of outlining any type of plan.
	GRENADA Diabetes prevalence (% of population ages 20 to 79) – 8.78	•		•		Diabetic Association established. No other info available.

Population & Prevalence info:

Country	Pop	Diabetes prevalence (% of population ages 20 to 79)
Antigua	88,000	12.83
Bahamas	342,000	12.4
Barbados	279,000	12.71
Belize	322,130	17.37
Dominica	79,000	9.05
Grenada	103,000	8.78
Guyana	761,000	16.99
Jamaica	2,721,000	15.97
St Kitts	52,000	8.69
St Lucia	171,000	8.57
St Vincent	119,000	8.95
TOTAL	**5,037,130**	**Average % - 12.03**

Population stats -
http://en.wikipedia.org/wiki/Member_states_of_the_Commonwealth_of_Nations

Prevalence stats -
http://datatopics.worldbank.org/hnp/topic/non-communicable-diseases

Notes:

Group Work Activity 1

Group 1

V2020 Committees Meeting
Tuesday 3rd December, 2013

Time allocation: **Group Work – 1hr**
Feedback Presentation – 10mins

Developing a Diabetic Retinopathy Programme

Presentations and documentation made available to meeting participants has provided an outline for a potential Diabetic Retinopathy Programme focusing on Caribbean Commonwealth countries.
A Concept Note has been developed as a first step. Interested stakeholders can now begin the process of developing this concept further to reach a stage where a detailed, evidence based and robust funding proposal can be submitted to the Queen Elizabeth Diamond Jubilee Trust.

Objective of Group Work:
Identify Who (key players) – How (process) – When (timelines)

Group 1 is invited to discuss the following, with rapporteurs providing key points in a 10 minute plenary feedback session:

1. Who are the key actors likely to be at national, regional and international level to ensure development of a detailed, evidence based and robust funding proposal?
2. What are the key stages likely to be in the proposal development process and what are the associated timelines?
3. What resources will be required throughout the proposal development process?

GROUP 1	
FACILITATOR: Joan McLeod-Omawale	**RAPPORTEUR:** Philip Hand
RESOURCE PERSON: Dr Andrew Cooper	

Group Work Activity 1

Group 2

V2020 Committees Meeting
Tuesday 3rd December, 2013

Time allocation: **Group Work – 1hr**
Feedback Presentation – 10mins

Learning from others – incorporating regional and global best practice and experience into programme design

A Concept Note has been produced as a first step in the development of a potential Diabetic Retinopathy Programme focusing on Caribbean Commonwealth countries. If stakeholders are to undertake a process of developing this concept further, to reach a stage where a detailed, evidence based and robust funding proposal can be submitted to the Queen Elizabeth Diamond Jubilee Trust, best practice and the experiences of others will have to be given due consideration.

Objective of Group Work:

Identify ways of incorporating regional and global best practice and experience into diabetic retinopathy programme design.

Group 2 is invited to discuss the following, with rapporteurs providing key points in a 10 minute plenary feedback session:

1. What national, regional and/or international diabetic retinopathy service delivery and training programmes can we learn from?
2. How do we identify reliable, efficient, cost-effective technologies for DR service delivery which suit the Caribbean context?
3. How do we ensure programme design has meaningful input from diabetics and their representative associations?

GROUP 2	
FACILITATOR: Dr Shailendra Sugrim	**RAPPORTEUR:** Charles Vandyke
RESOURCE PERSON: Dr Michael Eckstein	

Group Work Activity 1

Group 3

V2020 Committees Meeting
Tuesday 3rd December, 2013

Time allocation: **Group Work – 1hr**
Feedback Presentation – 10mins

Barriers and solutions – exploring challenges to introducing screening and treatment policy frameworks and to influencing behavior change.

A Concept Note has been produced as a first step in the development of a potential Diabetic Retinopathy Programme focusing on Caribbean Commonwealth countries. If stakeholders are to undertake a process of developing this concept further they will need to demonstrate a thorough understanding of how policy can guide service provision and how the programme can influence real behaviour change in the growing diabetic population.

Objective of Group Work: Identify challenges and possible solutions to introducing diabetic retinopathy screening and treatment policy frameworks and to influencing behavior change.

Group 3 is invited to discuss the following, with rapporteurs providing key points in a 10 minute plenary feedback session:

1. What diabetes or diabetic retinopathy policies, procedures and/or quality standards currently exist which could be adopted or adapted for Caribbean countries?
2. Identify 3 barriers and 3 possible solutions to integration of existing diabetic retinopathy policies, procedures and standards at national level.
3. On average 12% of the population aged 20 to 79[1] in Caribbean Commonwealth countries have diabetes. Identify 3 barriers to influencing behavior change in this large section of the population and outline 3 possible solutions.

GROUP 3	
FACILITATOR: Dr Juan Carlos Silva	**RAPPORTEUR:** Keva Richards
RESOURCE PERSON: Charles O Pierce	

[1] This is based on the average Diabetes prevalence (% of population ages 20 to 79) for 11 Caribbean Commonwealth countries - http://datatopics.worldbank.org/hnp/topic/non-communicable-diseases

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

49th DIRECTING COUNCIL
61st SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 28 September-2 October 2009

Provisional Agenda Item 4.15

CD49/19 (Eng.)
22 July 2009
ORIGINAL: ENGLISH

PLAN OF ACTION ON THE PREVENTION OF AVOIDABLE BLINDNESS AND VISUAL IMPAIRMENT

Introduction

1. In 1979, the Pan American Health Organization (PAHO) Directing Council approved Resolution CD26.R13 requesting the Director to support governments in the elaboration of national plans on the prevention of blindness. The regional strategy document *Prevention of Blindness in the Americas* (CD34/9) was approved by the 34th Directing Council in 1989. The World Health Organization's Fifty-Sixth World Health Assembly approved Resolution WHA56.26, which requested the Director to strengthen WHO's collaboration with Member States on the Global Initiative for the Elimination of Avoidable Blindness. In Resolution WHA59.25, the Fifty-Ninth World Health Assembly reaffirmed its commitment to give priority to the prevention of blindness. Resolution CD47.R1 of the 47th Directing Council urges Member States to adopt national policies to prevent disability. PAHO's Strategic Plan 2008-2012 (Official Document No. 328) includes visual impairment and blindness in one of the expected results. By acknowledging at the global level and in Latin America and the Caribbean that prevention of blindness and eye care are already priorities, it now becomes necessary for the coming years to revise and reaffirm the regional objectives regarding the prevention of blindness.

2. In June 2009, the 144th Session of the Executive Committee recommended that the Directing Council adopt a resolution as a way to bolster regional and national efforts to reach the objectives of the Plan of Action for the Prevention of Avoidable Blindness and Visual Impairment.

Background

3. Several blindness surveys conducted by PAHO in recent years have demonstrated that the prevalence of blindness and visual impairment is more than twice as high among rural and poor populations and that the coverage and quality of eye care services is very low compared to those among the more wealthy urban areas. In many countries, it is estimated that for every one million persons, 5,000 are blind and 20,000 are visually impaired; at least two-thirds of these are attributable to treatable conditions.[1] Visual impairment and associated disability can lead to discrimination and exclusion, and can become a cause of poverty. Reducing blindness and visual impairment relieves poverty, improves opportunities for education and employment of the population, and further reduces health inequities.

4. Ocular health interventions are achievable, measurable, and cost-effective; in order to prevent cases of blindness and visual disability in the Region, a full range of services must be offered which seeks to increase access to eye health services for rural residents and indigenous groups, women, and segments of the population that are economically and socially marginalized. In Latin America and the Caribbean, prevention of blindness and proper eye care already are priorities in many countries. Significant progress has been achieved in the prevention of avoidable blindness, and access to eye care services has been increasing in most countries that have received support from PAHO, international partners, and bilateral cooperation in the development of their national eye care plans.[2]

5. This regional plan of action document was prepared utilizing a very participatory methodology that included both national and international partners and incorporated the input of various working groups organized by different countries linked with the global program at WHO and with the regional programs and plans of diabetes, neonatal care, health of older persons, and neglected diseases.

Analysis

6. Blindness poses a serious public health, social, and economic problem for the Region's Member States. Globally, up to 80% of blindness is avoidable: it either results from conditions that could have been prevented or conditions that may be successfully treated to restore sight. In spite of international efforts made to date, the burden of blindness may increase in the future due to population growth and aging. At the country

[1] Silva-JC; Bateman-J.B; Contreras F: Eye disease and care in Latin America and the Caribbean. Survey of Ophthalmology 47(3):267-274; May-June 2002.

[2] Pan American Health Organization. Health in the Americas. Health Conditions and Trends. Ocular Health. Regional Volume. pp.141-142, Washington DC, 2007 at: http://www.paho.org/HIA/homeing.html.

level, ministries of health need to develop national ocular health plans, implement these programs, mobilize the necessary resources to strengthen the supply of eye care services, and integrate eye care into national health systems and primary health care services, in order to ensure access to quality eye care by the entire population.

7. Five conditions have been identified as immediate priorities in Latin America. Cataract is responsible today for close to 50% of global blindness. The prevalence of blindness in the population aged 50 years and older varies from 2.3% to 3% in national surveys; it is higher among women than among men;[3] in urban areas of Argentina, it is 1.4%,[4] and it is nearly 4% in rural areas of Peru and Guatemala.[5,6] The proportion of blindness due to cataract in persons age 50 years and older varied from 39% in the urban areas of Argentina and Brazil to about 65% in the rural areas of Guatemala and Peru. National assessments revealed that close to 60% of blindness is due to cataract. Eye care services coverage for eyes with severe visual impairment is close to 80% in well-developed urban areas, but it is under 10% in rural and remote areas. Cataract surgery can be one of the most cost-effective of all health interventions.

8. The prevalence of diabetes among adults in Latin America and the Caribbean varies from country to country. More than 75% of patients who have had diabetes mellitus for more than 20 years will have some form of diabetic retinopathy. After 15 years of diabetes, approximately 2% of people become blind, and about 10% develop severe visual impairment.[7] In Barbados, 18% of persons of African descent between the ages of 40 and 84, report having a history of diabetes mellitus; among people with diabetes 30% have diabetic retinopathy and 1% has proliferative diabetic retinopathy. In the Barbados Eye Studies, open-angle glaucoma (OAG) prevalence in the Afro-Caribbean population over age 40 years is more than 7%, approximately 2% of individuals over age 40 are blind and, of that percentage, one-third of the blindness is due to OAG. Therefore, OAG is a major public health problem in the Afro-Caribbean population, where it is a major cause of visual loss and the leading cause of irreversible blindness.[8]

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[3] Limburg H, Barria von-Bischhoffshausen F, Gomez P, Silva JC, Foster A. Review of recent surveys on blindness and visual impairment in Latin America. Br J Ophthalmol. 2008 Mar;92:315-9.

[4] Nano ME, Nano HD, Mugica JM, Silva JC, Montana G, Limburg H. Rapid assessment of visual impairment due to cataract and cataract surgical services in urban Argentina. Ophthalmic Epidemiology 2006 Jun; 13(3):191-197.

[5] Pongo Aguila L, Carrión R, Luna W, Silva JC, Limburg H. Ceguera por catarata en personas mayores de 50 años en una zona semirural del norte del Perú. Rev Panam Salud Pública 2005; 17(5/6): 387-931.

[6] Beltranena F, Casasola K, Silva JC, Limburg H. Cataract blindness in 4 regions of Guatemala: results of a population-based. Survey. Ophthalmology. 2007 Aug;114(8):1558-63.

[7] World Health Organization: Prevention of Blindness from Diabetes Mellitus. Geneva: WHO, 2006.

[8] Pan American Health Organization. Technology and Health Services Delivery. Health Services Organization Series: Eye Diseases in people 40-84. The Barbados Eye Studies: A summary report. Washington ,DC: PAHO; 2006. (THS/OS/06).

9. About 3% of the world's blind population are children. However, because children have a lifetime of blindness ahead of them, the number of "blind person years" resulting from blindness starting in childhood is second only to cataract.[9] In Latin America and the Caribbean, an estimated 42,000 infants with a birthweight of less than 1,500 g require screening for retinopathy of prematurity (ROP), and 4,300 need treatment every year. If left untreated, 50% of these babies will become blind.[10] Neonatal conjunctivitis may represent a risk for blindness in newborns. Good vision is vitally important for education, and screening at school age is recommended. A study in Chile revealed that more than 7% of children could benefit from the provision of proper eyeglasses.[11] The incidence of myopia is higher among 11–15-year-olds, and this is the highest priority age group for interventions in refractive errors.[12] Congenital cataract is a defect associated with congenital rubella syndrome (CRS). Between 1998 and 2008, the rubella elimination initiative reduced the number of cases by 98% and is preventing some 6,000 cataracts cases annually in children.

10. Despite major advances in eye care, there is a significant number of persons in all age groups who cannot have their sight fully restored. The majority of these have some residual vision that can be enhanced or made more useable and utilized for tasks that require vision. Low-vision services are aimed at people who have residual vision that can be used and enhanced by specific aids. The benefits of low-vision care include reduction of the functional impact of vision loss, facilitation of child education and development, maintenance of independence and productive activity and enhancement of quality of life.

11. Best practices of the PAHO Prevention of Blindness Program include: developing national epidemiologic assessments that proved to be a very strong advocacy tool to secure the necessary political support; giving priority to measurable, cost-effective, and sustainable interventions, developing international partnerships and alliances with Sight Savers International, Caribbean Council for the Blind, CBM, International Agency for the Prevention of Blindness (IAPB), VISION 2020, and academic and research institutions sharing the same vision, thereby establishing a collective knowledge base and improving the use of resources and promoting at the national level, partnerships among governments, donors, civil society, and the private and nonprofit sectors. The collaboration and partnership around the VISION 2020 global initiative for the elimination of avoidable blindness, proved to be very effective at the regional and national level. Bilateral cooperation such as Operación Milagro from Cuba is

[9] Rahi JS, Gilbert CE, Foster A, et al. Measuring the burden of childhood blindness. Br J Ophthalmol 1999;83(4):387-8.

[10] Zin A. Reducing Blindness in Premature Babies. Vision For Children; A global overview of Blindness, Childhood and Vision 2020 The Right To Sight. 2007.

[11] Maul E, Barroso S. et. all. (2000) – Refractive error study in children: results from La Florida, Chile: Am J Ophthalmol. Apr; 129(4): 445-54.

[12] Mutti DO, Zadnik K, Adams AJ. Myopia. The nature versus nurture debate goes on. Invest Ophthalmol Vis Sci 1996;37:952-7.

substantially increasing cataract surgical services coverage and rising eye care awareness in several countries.

Goals and Objectives

GOAL 1: REDUCE BLINDNESS AND VISUAL IMPAIRMENT IN ADULTS

Objective 1.1: Reduce cataract blindness

In Latin America and the Caribbean, cataract (opacification of the lens) is the single most important cause of blindness; cataract surgery has been shown to be one of the most cost-effective of all health care interventions. Most cataracts are age-related and cannot be prevented, but cataract surgery with insertion of an intraocular lens (IOL) is highly effective, providing almost immediate visual rehabilitation.

Indicators

- Increase the number of countries that conducted a Rapid Assessment of Cataract Surgical Services (RACSS) or a Rapid Assessment of Avoidable Blindness (RAAB) from 9 to 14 by the year 2013.

- Reach a cataract surgical rate (CSR) of 2,000 per 1 million population per year in the majority of countries by the year 2013.

Proposed actions for Member States

1.1.1 Make national assessments of cataract surgical services, including of their availability, access, affordability, and quality, as well as of their collection and management of information data.
1.1.2 Measure prevalence of cataract blindness, determine services coverage level, and identify barriers to access in selected countries.
1.1.3 Develop district-specific cataract service plans with measurable targets that address equity (availability, accessibility, affordability) and quality of services.
1.1.4 Establish a primary eye care system to detect and refer eye diseases and educate the population in basic eye care and prevention of blindness.
1.1.5 Develop a human resources development plan for cataract surgical services.
1.1.6 Promote high-quality surgery and ensure satisfactory visual outcomes and patient satisfaction.
1.1.7 Develop appropriate communication strategies for the target population.

Proposed actions for the Secretariat

1.1.8 Provide technical cooperation for the design of Rapid Assessment of Avoidable Blindness (RAAB) studies.

1.1.9 Develop a situation analysis of cataract surgical services at the regional and national levels.
1.1.10 Advocate and provide technical cooperation in the development and implementation of national cataract plans.
1.1.11 Mobilize resources with international partners.

Objective 1.2: Reduce the prevalence of blindness from diabetic retinopathy
Evidence-based treatment is available to significantly reduce the risks for blindness and for moderate vision loss. Clinical studies spanning more than 30 years have shown that appropriate treatment can reduce the risks by more than 90%.

Indicators

- Situation analysis conducted in five selected countries by the year 2013.
- At least three of the selected countries integrate early detection and timely treatment programs for diabetic retinopathy into non-communicable chronic diseases programs by the year 2013.

Proposed actions for Member States

1.2.1 Integrate blindness prevention strategies into national diabetes programs and ensure their incorporation into noncommunicable chronic diseases programs.
1.2.2 Develop public awareness programs that target ethnic groups that are at high risk, depending on the country, and train primary care physicians to refer patients with diabetic retinopathy to ophthalmologists.

Proposed actions for the Secretariat

1.2.3 Perform a situation analysis of the management of diabetic retinopathy in the Region as a baseline for planning and advocacy.
1.2.4 Conduct national assessments on services for diabetic retinopathy in selected countries.
1.2.5 Adapt and promote current international clinical guidelines for eye care for patients with diabetes mellitus, and adapt and promote the WHO principles for organizing eye health systems for patients with diabetic retinopathy.
1.2.6 Develop education packages and training programs for the general public and health care providers.

Objective 1.3: Reduce the incidence of blindness due to open-angle glaucoma (OAG) in high-risk groups

The PAHO Regional Program and national programs on the prevention of blindness shall include mechanisms for glaucoma detection and treatment for high-risk segments of the population, including persons of African descent and the Caribbean population, persons over 40 years of age, and individuals with a family history of glaucoma.

Indicator

- Increasing the number of countries carrying out glaucoma community awareness programs from three to seven by the year 2013.

Proposed actions for Member States

1.3.1 Include glaucoma detection as an integral part of comprehensive eye examinations for persons over 40 years of age.
1.3.2 Ensure that eye care units are properly equipped to provide glaucoma diagnosis and treatment.
1.3.3 Train professionals to implement existing evidence-based protocols.
1.3.4 Increase awareness among the general population of the importance of regular eye examinations and glaucoma screening for those over age 40, as well of other risk factors for glaucoma.
1.3.5 Provide affordable treatments and medications.

Proposed actions for the Secretariat

1.3.6 Utilize the available epidemiologic information to promote early detection and treatment in countries with high-risk groups.
1.3.7 Utilize best practices to promote and design public awareness programs and interventions.
1.3.8 Mobilize technical and financial resources to strengthen the national eye care services in glaucoma detection and treatment.

GOAL 2: REDUCE BLINDNESS AND VISUAL IMPAIRMENT IN CHILDREN

Objective 2.1: Reduce blindness in premature babies due to retinopathy of prematurity (ROP)

Indicator

- Increase the number of countries that have a national ROP prevention policy from 7 to 15 by the year 2013.

Prevention of blindness due to ROP is planned on three levels:

(a) Primary prevention: reduce the incidence of ROP through improved prenatal and neonatal care.
(b) Secondary prevention: early identification of severe cases of ROP in premature babies in neonatal care through regular examination by skilled ophthalmologists and timely treatment of those deemed to be high-risk.
(c) Tertiary prevention: restore useful vision in children with retinal complications through vitreoretinal surgery and/or offer rehabilitation.

Proposed actions for Member States

2.1.1 Promote systems, networks and protocols for safe neonatal care, adequate referral, and follow-up.
2.1.2 Promote national ROP policies and sustainable plans.
2.1.3 Elaborate and promote national guidelines and minimal standards.
2.1.4 Train professionals (obstetricians, pediatricians, nurses, and ophthalmologists).
2.1.5 Ensure the availability of the necessary equipment for primary prevention, screening, and treatment.
2.1.6 Develop curricula for undergraduate and in-service training courses for nurses and physicians.
2.1.7 Improve the quality of available information on neonatal care.
2.1.8 Produce periodical reports based on local neonatal databases.
2.1.9 Provide ocular prophylaxis of newborns to prevent neonatal conjunctivitis.

Proposed actions for the Secretariat

2.1.10 Conduct national assessments of needs and resources.
2.1.11 Organize Regional and national workshops to promote advocacy and awareness.
2.1.12 Promote the development of Regional guidelines on neonatal care and ROP programs.
2.1.13 Identify and provide support to advocacy groups (e.g., parents' networks).

2.1.14 Include standard ROP variables in PAHO's and other available neonatal databases.

Objective 2.2: Reduce visual disability by detecting and treating uncorrected refractive errors in schoolchildren

Indicators

- Published regional document on principles about refractive errors by the year 2011.
- Increase the number of countries implementing a national standard refractive errors program as part of national eye care policies and plans from 7 to 12 by the year 2013.

The steps in the provision of refraction services for patients are as follows:

(a) Screening: identification of individuals with poor vision which can be improved by correction.
(b) Eye examination: to evaluate the condition of the eye and identify coexisting pathologies requiring care.
(c) Refraction: determine what correction is required.
(d) Dispensing: provide and supply appropriate corrective eyeglasses.
(e) Follow-up: ensure compliance with prescription, care of the eyeglasses, repair or substitution of spectacles, if needed.

Proposed actions for Member States

2.2.1 Develop national guidelines for the detection and treatment of refractive errors, taking into account national realities.
2.2.2 Develop and follow pilot refractive error programs to identify and disseminate best practices.
2.2.3 Promote the availability of affordable eyeglasses and facilitate their production through the establishment of low-cost laboratories.
2.2.4 Increase public awareness through information, education, and communication strategies.

Proposed actions for the Secretariat

2.2.5 Elaborate regional principles in to guide refractive errors programs.
2.2.6 Standardize technology: screening kit and affordable instruments.
2.2.7 Develop advocacy plan for health and educational authorities.

GOAL 3: REDUCE THE BURDEN OF BLINDNESS AND VISUAL IMPAIRMENT IN THE GENERAL POPULATION

Objective 3.1: Provide comprehensive low-vision care and services for persons who are blind or severely visually impaired

Comprehensive low-vision care integrates clinical eye care, low-vision, rehabilitation, and educational services at the primary, intermediary, and tertiary levels in each country. The goal is to have one comprehensive low-vision referral center and four satellite centers per each 10 million population.

Children who are blind should have access to inclusive education and supportive services; adults who are blind require rehabilitation (adjustment to blindness) programs to strengthen their emotional and social capabilities; as well as training in daily living skills, orientation mobility skills, and vocational training. Insofar as it is feasible, inclusive education and adjustment to blindness services should be supported by access to adaptive aids, including devices for reading and writing; white canes; adapted domestic aids; and low-vision appliances.

Indicator

- Increase the number of countries with low-vision services from 20 to 25 by the year 2013.
- Number of countries that are implementing national plans for inclusive education and adjustment to blindness by 2013.

Proposed actions for Member States

3.1.1 Develop national policies on comprehensive low-vision care.
3.1.2 Increase access to and demand for comprehensive low-vision services among the visually impaired population.
3.1.3 Train low-vision teams (eye care, low-vision therapy, rehabilitation, education, and social services) focusing on underserved geographical areas, taking into account each country's unique national profile of such professionals. Priority should be accorded to the training of low-vision therapists.
3.1.4 Organize courses for residents in ophthalmology in countries with low-vision services.
3.1.5 Identify early all children and adults who are irrevocably blind and severely visually impaired and ensure that an effective referral system is in place.
3.1.6 Maximize the participation of children who are blind or severely visually impaired in education, offering inclusive education programs; provide rehabilitation (adjustment to blindness) for blind adults.

Proposed actions for the Secretariat

3.1.7 Organize low-vision courses at Regional and national congresses of ophthalmology.
3.1.8 Promote the establishment of resource centers for the training of trainers, curricula standardization, and technology development.
3.1.9 Support the organization of low-vision centers in underserved geographical areas and in countries currently without such services.
3.1.10 Develop a system to make low-vision aids affordable.
3.1.11 Conduct a regionwide situation assessment on rehabilitation and education services for persons who are blind.
3.1.12 Advocate for national intersectoral policies and plans for inclusive education and for rehabilitation programs for persons who are blind and mobilize technical and financial resources to respond to the countries' needs.

Time Frame

12. This plan of action will be implemented in 2009-2013.

Action by the Directing Council

13. The Directing Council, after reviewing the information provided, is invited to consider adoption of the resolution recommended by the 144th Session of the Executive Committee (see Annex B).

Annexes

ANALYTICAL FORM TO LINK AGENDA ITEM WITH ORGANIZATIONAL AREAS
1. Agenda item: 4.15. Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment.
2. Responsible unit: THR - VP **3. Preparing officer:** Juan Carlos Silva
4. List of collaborating centers and national institutions linked to this Agenda item: There are no collaborating centers or national institutions linked to this item of the agenda.
5. Link between Agenda item and Health Agenda for the Americas 2008-2017: Related Areas: Diminish inequities in health, reduce the burden of disease, increase the access to quality services.
6. Link between Agenda item and Strategic Plan 2008-2012: RER. 3.2, Indicator 3.2.6, RER 3.5.
7. Best practices in this area and examples from countries within the Region of the Americas: CUB, DOM, GUY, PER.
8. Financial implications of Agenda this item: For the 5-year period (2009-2013) US$ 590,000 will be invested in personnel, and $245,000 in activities.

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

49th DIRECTING COUNCIL
61st SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 28 September-2 October 2009

CD49/19 (Eng.)
Annex B
ORIGINAL: ENGLISH

PROPOSED RESOLUTION

PLAN OF ACTION ON THE PREVENTION OF AVOIDABLE BLINDNESS AND VISUAL IMPAIRMENT

THE 49th DIRECTING COUNCIL,

Having reviewed Document CD49/19 *Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment*;

Recalling Resolution WHA56.26 of the World Health Assembly on the elimination of avoidable blindness;

Noting that visual disability is a prevalent problem in the Region and is related to poverty and social marginalization;

Aware that most of the causes of blindness are avoidable and that treatments available are among the most successful and cost-effective of all health interventions;

Acknowledging that preventing blindness and visual impairment relieves poverty and improves opportunities for education and employment; and

Appreciating the efforts made by Member States in recent years to prevent avoidable blindness, but mindful of the need for further action,

RESOLVES:

1. To approve the *Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment*.

2. To urge Member States to:

(a) establish national coordinating committees to help develop and implement national blindness prevention plans;

(b) include prevention of avoidable blindness and visual impairment in national development plans and goals;

(c) advance the integration of prevention of blindness and visual impairment in existing plans and programs for primary health care at the national level, ensuring their sensitivity to gender and ethnicity;

(d) support the mobilization of resources for eliminating avoidable blindness;

(e) encourage partnerships between the public sector, nongovernmental organizations, private sector, civil society, and communities in programs and activities that promote the prevention of blindness; and

(f) encourage intercountry cooperation in the areas of blindness and visual impairment prevention and care.

3. To request the Director to:

(a) support the implementation of the *Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment*;

(b) maintain and strengthen PAHO Secretariat's collaboration with Member States on the prevention of blindness; and

(c) promote technical cooperation among countries and the development of strategic partnerships in activities to protect ocular health.

PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

Report on the Financial and Administrative Implications for the Secretariat of the Resolution Proposed for Adoption

1. Agenda item: 4.15. Plan of Action on the Prevention of Avoidable Blindness and Visual Impairment.

2. Linkage to Program Budget 2008-2009:

(a) Area of work: THR-VP

(b) Expected result: OSER THS.04.01: Normative and operational strengthening of ocular health and hearing programs.

3. Financial implications

(a) Total estimated cost for implementation over the lifecycle of the resolution (estimated to the nearest US$ 10,000, including staff and activities): For the 5-year period of 2009-2013, expense on personnel will be of $590,000 and expense on activities $245,000.

(b) Estimated cost for the biennium 2008-2009 (estimated to the nearest US$ 10,000, including staff and activities): Personnel: $236.000, activities $98.000.

(c) Of the estimated cost noted in *(b),* what can be subsumed under existing programmed activities? All funds are already programmed in activities.

4. Administrative implications

(a) Indicate the levels of the Organization at which the work will be undertaken): Regional and national levels.

(b) Additional staffing requirements (indicate additional required staff full-time equivalents, noting necessary skills profile): No.

(c) Time frames (indicate broad time frames for the implementation and evaluation): Evaluation at the end of 2013.

- - -

Group Work Activity 2

Group 1

V2020 Committees Meeting
Wednesday 4th December, 2013

Time allocation: **Group Work – 1hr 05mins**
Feedback Presentation – 15mins

SWOT analysis on the implementation of National Eye Health Plans

A 2012 report and discussion paper described lessons learnt from implementing the *Action Plan for the Prevention of Avoidable Blindness and Visual Impairment* (2009–2013). One of the key lessons learnt is that '*Developing and implementing national policies and plans for the prevention of avoidable visual impairment remain the cornerstone of strategic action.'*
A number of Caribbean countries have acquired experience in developing and implementing national policies and plans for the prevention of avoidable visual impairment. These experiences need to be better documented and disseminated so that all countries can benefit from them.

Objective of Group Work: Capture experiences of Eye Health Plan implementation and make recommendations for improvement.

Group 1 is invited to discuss their experiences of implementing National Eye Health Plans and explore strengths, weaknesses, opportunities and threats, taking into consideration effectiveness in the following areas:

- Integrating eye disease control programmes into wider health care delivery systems.
- Human resource development for eye health.
- Increasing financial allocations to eye health.
- Effective engagement with the private sector.
- Care for the most vulnerable communities.

Please make a minimum of 3 recommendations for improvement relating to implementation of National Eye Health Plans.

GROUP 1	
FACILITATOR: Joan McLeod-Omawale	**RAPPORTEUR:** Keva Richards
RESOURCE PERSON: To Be Determined	

Group Work Activity 2

Group 2

V2020 Committees Meeting
Wednesday 4th December, 2013

Time allocation: **Group Work – 1hr 05mins**
Feedback Presentation – 15mins

SWOT analysis on National V2020 Committee function, stakeholder participation, leadership and communications.

One of the proposed inputs from Member States stated in the Global Action Plan (*Towards universal eye health: 2014–2019*) is to *'Establish new and/or maintain the existing coordinating mechanisms (e.g. national coordinator, eye health/prevention of blindness committee, other national/subnational mechanisms) to oversee implementation and monitoring/evaluating the policies, plans and programmes.'*
A number of Caribbean countries have established committees which have acquired experience in developing, implementing and monitoring national policies and plans for the prevention of avoidable visual impairment. These experiences need to be better documented and disseminated so that all countries can benefit from them.

Objective of Group Work: Capture experiences of National V2020 Committees and make recommendations for improvement

Group 2 is invited to discuss their experiences of National V2020 Committees and explore strengths, weaknesses, opportunities and threats, taking the following areas into consideration:

- Understanding of structure and function of the committee as a whole and the role of its members (e.g. role of Ministry of Health, NGO's, private sector, etc.)
- Ensuring stakeholder participation in planning, implementing and monitoring.
- Internal and external communications, e.g. considering frequency of committee meetings, availability of key documentation (plans, minutes, reports, etc).
- Data collection, management and use.

Please make a minimum of 3 recommendations for improvement relating to V2020 Committees.

GROUP 2	
FACILITATOR: Dr Shailendra Sugrim	**RAPPORTEUR:** Keva Richards
RESOURCE PERSON: Nurse Juliette Joseph	

Group Work Activity 3

Group 1

V2020 Committees Meeting
Wednesday 4th December, 2013

Time allocation: **Group Work – 1hr 15mins**
Feedback Presentation – 15mins

- **Including Retinopathy of Prematurity (ROP) and Diabetic Retinopathy (DR) in national policies and plans**
- **Including Cataract Surgery statistics in National Health Information Systems**

Group 1 is invited to discuss the following topics:

- How to include Retinopathy of Prematurity (ROP) in national Neonatal policies and plans
- How to include Diabetic Retinopathy in national Non-Communicable Disease and Diabetes Policies and Plans
- How to include Cataract Surgery in the national health information systems

Groups should consider best practice and experiences of successful inclusion and also highlight stakeholders, decision makers and resource requirements.

Rapporteurs will feed back key points in a 15 minute presentation

GROUP 1	
FACILITATOR: Joan McLeod-Omawale	**RAPPORTEUR:** Keva Richards
RESOURCE PERSON: To Be Determined	

Group Work Activity 3

Group 2

V2020 Committees Meeting
Wednesday 4th December, 2013

Time allocation: **Group Work – 1hr 15mins**
Feedback Presentation – 15mins

- **Including Refractive Error in school children in national policies and plans**
- **Including Primary Eye Care in Primary Health Care**
- **Implementing National Eye Health Surveys**

Group 2 is invited to discuss the following topics:

- How to include Refractive Error in school children in National Ministry of Education policies
- How to include Primary Eye Care in Primary Health Care
- How to resource and implement national eye health surveys

Groups should consider best practice and experiences of successful inclusion and implementation, while also highlighting stakeholders, decision makers and resource requirements.

Rapporteurs will feed back key points in a 15 minute presentation.

GROUP 2	
FACILITATOR: Dr Shailendra Sugrim	**RAPPORTEUR:** Philip Hand
RESOURCE PERSON: Nurse Juliette Joseph	

Developing the Guyana Eye Care Strategic Framework

Dr. Shailendra Sugrim
Consultant Ophthalmologist and Glaucoma Specialist, Georgetown Public Hospital, Georgetown, Guyana.

VISION 2020: The Right to Sight - the global initiative for the elimination of avoidable blindness was launched by the World Health Organisation (WHO) and the International Agency for the Prevention of Blindness (IAPB) together with NGOs. It was recognized that blindness and low vision are a public health problem throughout the world. The initiative thus brings together governments, WHO, international and national NGOs, as well as associations of eye care professionals under one banner – to eliminate avoidable blindness by the year 2020.

Global data shows that up to 80% of blindness is avoidable this is why it is important that all national focus groups within the country can be able to pool resources together to combat avoidable blindess. The Vision 2020 global initiative was then spread to the regional and national provinces which were tasked to develop plans of action in the prevention of avoidable blindness and inclusive services. Our region, the Caribbean VISION 2020 was officially launched in Trinidad-Tobago in April 2000. Furthermore in our region in September 2009 the 49th PAHO Directing Council - WHO 61st Session of the Regional Committee approved the prevention of blindness plan of action and passed the resolution. This paved the way for tthe VISION 2020 Caribbean strategic plan implemented by PAHO in alliance with the IAPB, Sightsavers, CCB, CBM, ORBIS and the BHVI. In 2012 PAHO commissioned a study of the eye-care sector in Guyana. The report - Situation Analysis: Eye Care in Guyana was used by stakeholders (including CCB-EyeCare Guyana, PAHO, Sightsavers and Ministry of Health) at a planning meeting in July, 2012 held in Georgetown to draft an Eye Care Strategic Framework for Guyana.

The PAHO 2012 Situational Analysis of Eye Care in Guyana

The Situational Analysis of Eye Care in Guyana showed that some important strides were already been made in areas of training and provision of services throughout the country. The collaborative effort between the Government of Cuba and the Government of Guyana called 'Mission Miracle' reports that some 3000 persons were sent to Cuba for eye surgery. Later in 2009 the National Ophthalmology Centre in Port Mourant was set up. In 2005 a pilot project for vision screening in schools was initiated. Guyana now offers a Certificate in Refraction Techniques and a BSc Optometry Programme at the University of Guyana. PAHO along with many non-governmental organizations, such as Sightsavers International, ORBIS and Caribbean Council for the Blind/Eye Care Guyana have made significant contributions in Guyana and have been working to achieve the Vision 2020 goals.

In 2008, our National Vision 2020 Committee was formed but was later dissolved. Thereafter, focal persons at the Ministry of Health functioned in this capacity. With the formation of this new Eye Care Strategic Framework it is hoped that a new Vision 2020 Committee will be

reinstated and given the task to use the framework to offer advice on the formulation of eye care policy, promotion of eye care and prevention of blindness activities and also advocacy in relation to maintaining national commitment and international support for the prevention of blindness

The document highlighted that current infrastructure of regional and national hospitals was commendable but now requires an influx of new equipment and staff with above basis training in eye health. It also highlighted the need for ongoing training at all levels of eye care services.

Even though Guyana had made some strides in some of the Caribbean Region priority performance areas, there remained considerable room for improvement.

Main findings in the document were categorized under Eye Care Management (Both in Public Sector, Private Sector and NGO/Voluntary Sector); Infrastructure and Services in all eye care services across the board; Human Resource distribution and Ophthalmic Care Performance (as with regards to the performance areas (Cataract, Glaucoma, Diabetic Retinopathy, Refractive Errors and Low Vision, Retinopathy of Prematurity).

National Eye Health Strategic Framework – Planning Workshop

The initial planning workshop, which received technical and financial support from CCB-EyeCare Caribbean/Guyana, Ministry of Health, PAHO, Sightsavers and the European Union was held in July 2012 in Georgetown. Under the leadership of the Prinicipal Facilitator, Dr Juan Carlos Silva (PAHO/WHO Regional Advisor on Prevention of Blindess), the process of the creation of the Strategic Framework of Eye Care in Guyana was started. Present at this meeting included all major eye care stakeholders (including ophthalmologists, physicians, optometrists, nurses, international and local Eye Care NGOs, students, the University of Guyana, the Ministry of Health etc.)

After review of international and regional documents and the Guyana Situational Analysis, the Caribbean Strategic Framework was used to guide the formation of the local draft document. At the conclusion of the workshop and editing sessions a final draft was agreed upon which would then be further developed by an elected Editing Committee that will lead the document to finalization and ratification.

Guyana Eye Care Strategic Framework 2013-2020

Over the following months the editing committee collaborated together to verify data, make corrections/additions to the document in consultation with the principal facilitator, Dr Juan Carlos Silva.

The document was subdivided into three major areas as follows:

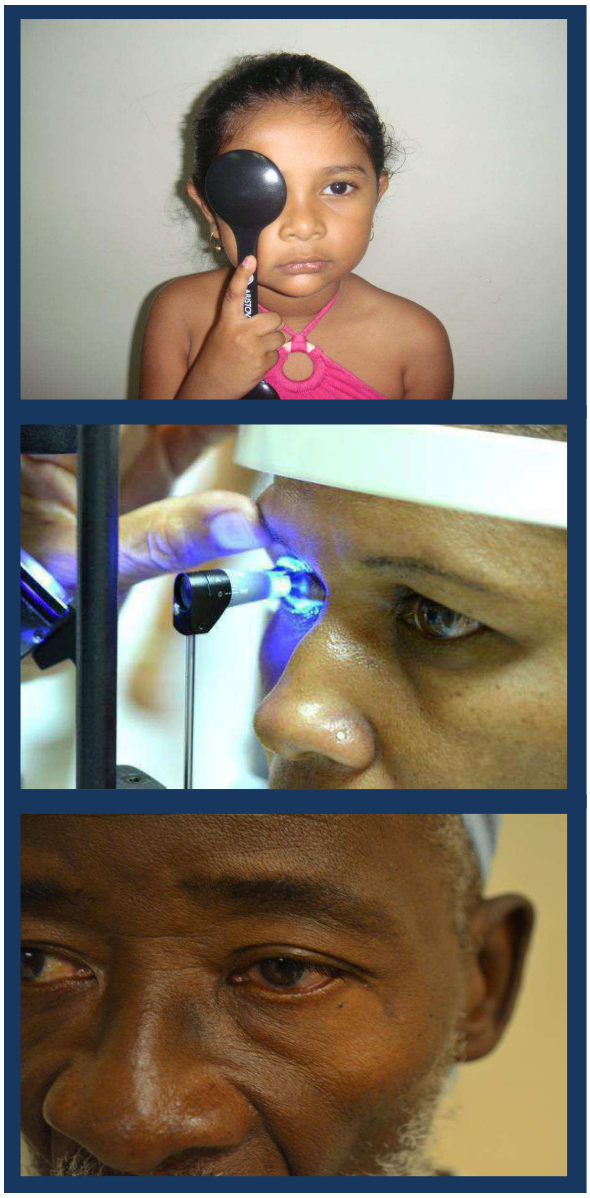
In each section of the document, current status was briefly stated (as drawn from the Situational Analysis of Eye Care in Guyana). Important issues arising from each area were identified by the Planning Workshop with the expected outcomes. This created the base for the listing of suggested strategies that needed to be implemented that would form the entire national framework.

Finalisation and Ratification of the Document

The Editing Committee held meetings and consultations with the Ministry of Health and the Minister of Health. Based on suggestion arising from that meeting, a few elements in the document were edited and which paved the way for the ratification of the document by the Minister of Health. The entire document was presented and submitted to the editing committee of the Guyana National Health Plan. It was decided that an abridged version of the document would be included in the new National Health Plan with the complete document being appendicized as a reference document.

The Ministry of Health and the National Vision 2020 Committee can now rely on this document as a guide when it comes to approaching eye care delivery in Guyana. It is my sincere hope that all stakeholders involved in delivering eye care services in Guyana will be able to collaborate in all the areas with regards to achieving the goals for Vision 2020.

We are optimistic that with further expert planning, assistance and support, Guyana will achieve the objectives of the global initiative for the elimination of avoidable blindness - Vision 2020: The Right to Sight.



GUYANA EYE CARE STRATEGIC FRAMEWORK (2013 – 2020)

Ministry of Health, Guyana

TABLE OF CONTENTS

FOREWORD

Blindness and visual impairment are issues which are actively engaging the attention of the public health sector of our nation, as in other parts of our world. In this regard it must be stated that together with our partners both local and international, several initiatives have been launched in an effort to ensure that the precious gift of sight is preserved and if possible improved.

It is heartening to note, as recorded in the recent Situational Analysis of Eye Care in Guyana which was used to produce the document that follows, important strides have already been made in areas of training and provision of services throughout the country. We are optimistic that with further expert planning, assistance and support, Guyana will achieve the objectives of the global initiative for the elimination of avoidable blindness - Vision 2020: The Right to Sight.

The National Vision 2020 Committee operates as an advisory body under the auspices of the Ministry of Health. The committee consists of key stakeholders in eye care including the Ministry of Health, Ministry of Education, Georgetown Public Hospital Corporation, Caribbean Council for the Blind/Eye Care Guyana, University of Guyana, Pan American Health Organisation [PAHO] and the private sector. The task of the committee includes offering advice on the formulation of eye care policy, promotion of eye care and prevention of blindness activities, advocacy in relation to maintaining national commitment and international support for the prevention of blindness

Blindness poses a serious public health, social, and economic threat for any Government. Global data shows that up to 80% of blindness is avoidable (which means that persons are blind from conditions that could have been prevented or conditions that may be successfully treated to restore sight). This is why the Ministry of Health welcomes this Strategic Eye Care Framework for the country.

Guyana is a signatory to the Vision 2020: Right to Sight Initiative, which was introduced to the Caribbean at a Workshop held in 2000, in Trinidad and Tobago. In 2008, our National Vision 2020 Committee was formed. Some 3000 persons were sent to Cuba for eye surgery. This collaborative effort between the Government of Cuba and the Government of Guyana was called 'Mission Miracle'. Later in 2009 the National Ophthalmology Centre in Port Mourant was set up. In 2005 a pilot project for vision screening in schools was initiated. Guyana now offers a Certificate in Refraction Techniques and a BSc Optometry Programme at the University of Guyana. PAHO along with many non-governmental organizations, such as Sightsavers International, ORBIS and Caribbean Council for the Blind/Eye Care Guyana have made significant contributions in Guyana and have been working to achieve the Vision 2020 goals.

The Ministry of Health and the National Vision 2020 Committee can now rely on this document as a guide when it comes to approaching eye care delivery in Guyana. It is my sincere hope that all stakeholders involved in delivering eye care services in Guyana will be able to collaborate in all the areas with regards to achieving the goals for Vision 2020.

Dr Bheri Sygmond Ramsaran MD, MP
Minister of Health

ACRONYMS

BHVI	Brien Holden Vision Institute
CCB/ECC	Caribbean Council for the Blind /Eye Care Caribbean
DR	Diabetic Retinopathy
GPHC	Georgetown Public Hospital Corporation
IAPB	International Agency for the Prevention of Blindness
ICEVI	International Council for Education of People with Visual Impairment
INGO	International Non-Governmental Organisations
LHC	Linden Hospital Complex
MoE	Ministry of Education
MoH	Ministry of Health
NCD	Non-Communicable Diseases
NGDO	Non-Governmental Development Organisation
OAG	Open Angle Glaucoma
OSWI	Ophthalmological Society of the West Indies
PAAO	Pan American Association of Ophthalmology
PAHO	Pan American Health Organisation
PBL	Prevention of Blindness
PEC	Primary Eye Care
PHC	Primary Health Care
PMOC	Port Mourant Ophthalmology Centre
ROP	Retinopathy of Prematurity
UG	University of Guyana
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
V2020	Vision 2020
VC	Vision Centres
WBU	World Blind Union
WHO	World Health Organisation

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INTRODUCTION

Blindness and low vision are a public health problem throughout the world, this is why the World Health Organisation (WHO) and the International Agency for the Prevention of Blindness (IAPB) together with NGOs have launched VISION 2020: The Right to Sight - the global initiative for the elimination of avoidable blindness. This initiative that brings together governments, WHO, international and national NGOs, as well as associations of professionals in eye care, aims to determine global, regional and national plans of action in prevention of avoidable blindness and inclusive services. In the Caribbean VISION 2020 was officially launched in Trinidad-Tobago in April 2000.

The World Health Organisation's Fifty-Sixth World Health Assembly approved Resolution WHA56.26, which requested the Director to strengthen WHO's collaboration with Member States on the Global Initiative for the Elimination of Avoidable Blindness. In Resolution WHA59.25, the Fifty-Ninth World Health Assembly reaffirmed its commitment to give priority to the prevention of blindness. The 144th Session of the Pan American Health Organisation - PAHO Executive Committee recommended that the Directing Council adopt a resolution as a way to bolster regional and national efforts to reach the objectives of the Plan of Action for the Prevention of Avoidable Blindness and Visual Impairment. In September 2009 the 49th PAHO Directing Council - WHO 61st Session of the Regional Committee approved the prevention of blindness plan of action and passed the resolution.

In the year 2010, the VISION 2020 Caribbean strategic plan developed in 2002 was reviewed and updated through a series of in-house discussions in PAHO, as well as through meetings with member states, the IAPB, national and international non-governmental organisations and scientific societies. In the Caribbean, PAHO implemented the VISION 2020 initiative in alliance with the IAPB, Sightsavers, CCB, CBM, ORBIS and the BHVI. In 2012 PAHO commissioned a study of the eye-care sector in Guyana. The report - Situation Analysis: Eye Care in Guyana was used by stakeholders at a planning meeting in November, 2012 held in Georgetown to draft an Eye Care Strategic Framework for Guyana.

Blindness and Visual Impairment in the Caribbean

The results of the Barbados Eye Study show that 6% of people 40-84 years old have visual impairment, 1.7% are blind or have visual acuity worse than 6/120 (normal value 6/6). The primary causes of blindness are cataract 28%, open angle glaucoma (OAG) 28% and combined cataract and glaucoma 4%.

The prevalence of OAG in Afro-Caribbean people over 40 years of age is over 7% and increases with age. In the Barbados Eye Study, OAG affected 1 in 11 Afro-Caribbean over 50 years of age, reaching a prevalence of 1 in 6 in those over 70 years old.

In Barbados, 18% of persons of African descent between the ages of 40 and 84 report having a history of diabetes mellitus; among people with diabetes 30% have diabetic retinopathy, 8.6% of diabetics have clinically significant macular edema and 1% have proliferative diabetic retinopathy needing laser treatment.

The incidence of visual impairment is high. Age-related cataract and OAG causes approximately 75% of blindness indicating the need to increase cataract surgery and early OAG detection and treatment. Controlling Diabetes Mellitus and hypertension would prevent diabetic retinopathy complications.

Guyana Background

The estimated population in 2002 was 751,223 persons[1]. Data from the 2002 population census showed that the largest nationality sub-group is that of East Indians comprising 43.5 percent of the population. They are followed by persons of African heritage (30.2 percent). The third in rank are those of Mixed Heritage (16.7 percent), while the Amerindians are fourth with 9.2 percent. Other groups are Whites, Portuguese and Chinese (0.04 percent).

Approximately 28% of the population lives in urban areas. Of the 71% that live in rural areas 61 % live in coastal areas. Life expectancy at birth was 67 in 2009. Adult literacy was 98%. According to the 2011 Poverty Reduction Strategy (PRSP) thirty-six percent (36%) of the population live in absolute poverty (less than US$510/year) and 19% live in critical poverty (less than US$364/year).

With the use of the PAHO supported 2012 Situational Analysis of Eye Care in Guyana, a workshop was organised in 2012 by stakeholders (including CCB-EyeCare Guyana, PAHO, Sightsavers and Ministry of Health) to develop a draft Strategic Plan for Eye Care in Guyana. The Ministry of Health in Guyana has promised to adopt this plan and to have it included in the National Health Plan of Guyana. It will serve as a guide for the planning of eye care programs in the country.

[1] 2002, National Population and Housing Census, Guyana National Bureau of Statistics

1. EYE CARE SYSTEMS

1.1 CENTRAL ORGANISATION, LEADERSHIP AND GOVERNANCE

Guyana's National Health Sector Strategic Plan (2008-2012) briefly identified eye health as part of the strategy of total care to persons with chronic diseases. While there is no formal national plan for eye care, there have been several initiatives in the last decade that have contributed greatly to improvement in this area.

The Vision 2020 Committee formed in 2008 is a body operating as an advisory or executive body under the auspices of the government. It is headed by the focal point for eye care in the Ministry of Health and makes recommendations on the way forward in this area. The Committee works in advising the formulation of the eye care policy, promotion of eye care and prevention of blindness activities, advocacy in relation to maintaining national government commitment and international support for the prevention of blindness .

The committee consists of key stakeholders in eye care including the Ministry of Health, Ministry of Education, Georgetown Public Hospital Corporation (GPHC), Eye Care Guyana, Pan American Health Organisation (PAHO/WHO), private sector and NGOs.

Issues:

- Not enough attention was given to eye-health in the National Health Sector Strategy 2008-2012
- The Budget for Eye Care is limited to respond to the needs of the sector
- The Vision 2020 Committee needs to hold more meetings

Expected outcome:

Provide leadership and governance that ensures an effective and equitable eye care system, including ensuring strategic policy, coalition building and the provision of appropriate regulations, incentives and accountability.

National Strategy - Central Organisation, Leadership and Governance

- Include eye care in the National Health Sector Strategy and National Health Plans.
- Ensure a National Strategic Policy Framework.
- Encourage the National Committee to assist the Ministries of Health and Education and other organisations in the development of regulations and plans and in the implementation and monitoring of programs.
- Develop annual operational plans for priorities identified by the Ministry and the National Committee.
- Establish and keep updated an information system for monitoring eye care programs.
- Have a representative from the planning unit of the MOH, and other government sector representatives involved in the National V2020 Committee.
- Obtain a mandatory resolution from the MOH to establish the status of the National Committee.
- Incorporate the Eye Health Plan into the MOH current National Health Strategic plan.
- Ensure inclusion of representatives from other regional and international bodies within Guyana to the V2020 committee e.g. UNICEF, PAHO, Sightsavers, etc.

1.2 EYE CARE WORKFORCE

Ophthalmologists

Public Sector - There are currently 10 ophthalmologists in the public sector:

- Georgetown Public Hospital Corporation (GPHC) – 3 general ophthalmologists and 1 Glaucoma Specialist
- East Bank Demerara (EBRH - Diamond) – 1 general ophthalmologist (who does not perform surgery)
- Port Mourant Ophthalmology Centre (PMOC) – 3 general ophthalmologists and one specialised in medical retina.
- Linden Hospital Complex (LHC) – 1 general ophthalmologist.

6 of these 10 ophthalmologists in the public sector are foreign nationals - 5 Cuban nationals working in Guyana through a partnership with the Guyana and Cuban governments that ends in 2013 and 1 Chinese national through the Guyana-China Medical Services partnership.

Private Sector – There are 6 general ophthalmologists in the private sector who all operate. 5 of these have practices in Georgetown and 1 in New Amsterdam. 2 of the ophthalmologists that work in the public sector are represented in this figure.

Training - Guyana does not have an ophthalmology training programme for doctors. However, scholarships are offered jointly by CCB-Eye Care Guyana and the Government of Guyana. One fully trained ophthalmologist has recently returned in April 2012 after benefiting from this initiative. There are currently 2 doctors receiving training in Latin America and they are scheduled to return in 2014.

Ophthalmologists are registered by the Medical Council of Guyana based on proof of qualifications provided. They are required to reapply for continued registration annually. Optometrists, orthoptists and opticians are also registered with the Medical Council of Guyana.

Optometrists

Currently there are 15 optometrists practicing in Guyana.

Public Sector - Two non-Guyanese optometrists currently practice in the public sector. One is a member of the Cuban team and works at the PMOC; the other is based at the GPHC but visits all of the other vision centres, except PMOC. These visits are done at least once per month, but can be more frequent based upon demand. Visits are done every 2-3 months to Mabaruma, Region 1.

Private Sector - Thirteen optometrists are registered with the Medical Council of Guyana in the private sector in Georgetown.

Training - a BSc in Optometry programme was commenced at the University of Guyana (UG) in September 2010 in collaboration with Caribbean Council for the Blind-Eye Care Guyana. Twenty four (24) students comprised the first cohort.

Orthoptists and Low-Vision Personnel

There is currently only one non-Guyanese person trained in this area and employed in the public sector and visits the Vision Centers except PMOC as required.

Ophthalmic Nurses

There are currently 17 trained nurses and nursing assistants that work in the area of Eye Health in the public sector. However, there are approximately another 10 that are trained but work in other departments. In the private sector, there are

2 nurses with training in eye care at a private hospital in Georgetown.

Training – Nurses and nursing assistants interested in eye care are afforded a 6-months on-the-job training exposure at Georgetown Public Hospital Corporation. The stint involves three months each in the ophthalmology operating room and eye clinic and teaching from a basic outline.

Refractionists

There are 12 refractionists currently working in the public sector (employed by CCB-EyeCare Guyana) who operate the 12 vision centres.

Training – The Certificate in Refraction Techniques programme was started in 2006 at the University of Guyana through their School of Professional Development and Eye Care Guyana. To date, 23 persons have been trained including 19 Guyanese.

Ophthalmic Equipment Maintenance staff

The manager of the Biomedical Department at GPHC is currently the only person with basic training in repair of general ophthalmic equipment. He benefitted from a 2-week training stint in Jamaica in 2004 that was sponsored by ORBIS International. Usually machinery is calibrated and repaired by the company it was purchased from either by returning it or having a technician come to Guyana.

Teachers

There are ten teachers with post-basic training to work with children who are blind/low vision – seven in Georgetown, one in Region 6 and two in Region 10.

Training - An ad hoc format of training currently exists but there is a plan by the Ministry of Education to streamline training in inclusive education for teachers of students who are blind.

Issues

- The current ratio of ophthalmologists performing surgery to population is 1:83,469
- This sector is heavily dependent on foreign ophthalmologists. Currently only 4 are Guyanese, with most of the others being Cuban eye health personnel on fixed term appointments.
- All of the ophthalmologists currently in practice work in regions 4 and 6.
- The current rate of training through scholarships equate to 1/year.
- The ratio of optometrists to population is 1:50,081, but just 2 optometrists work in the public sector and cover regions. There is a four-year Bachelor Of Science Degree in Optometry training program at the University of Guyana. Current enrolment averages 26 in each cohort.
- The Eye Care system is heavily dependent on foreign human resources which is helpful in the short term but may not be sustainable in the long term.

Table 1: HR distribution in the ten administrative regions:

REGION	Ophthalmologists	Optometrists	Refractionists
1	-	-	1
2	-	-	1
3	-	-	1
4	8	14	3
5	-	-	1
6	5	1	2
7	-	-	1
8	-	-	-
9	-	-	-
10	1	-	2
Total	**14**	**15**	**12**

Expected outcome:

Have a well-performing health workforce, including sufficient numbers and mix of staff, equitably distributed across the country to achieve the best eye care outcomes possible.

National Strategy - Eye Care Workforce

- Train Guyanese eye surgeons to meet the target ratio of 1 for every 50,000 population, with emphasis on cataract surgery at public sector facilities.
- Increase cataract surgical productivity (number of surgeries per year per surgeon).
- Identify and/or train sub-specialists according to national needs.
- Develop continuing eye health educational programs for all cadres in the health services.
- Consider establishment of an Ophthalmology residency programme in Guyana in collaboration with other training institutions worldwide especially in the Caribbean and Latin America.

National Strategy - Eye Care Workforce (*continued*)

- Train optometrists to achieve the current United Kingdom ratio of 1 for every 10,000.
- Attain and exceed the World Council of Optometry standards in the training of Optometrist, using as a guide, the United Kingdom's four year Bachelor of Science as the first level of qualification for practice.
- Maintain university-level training programme for Refractionists.
- Train general practitioners and primary health care (PHC) workers in primary eye care.
- Develop or implement interventions, both short and long term, to alleviate some of the human resource issues being affected by the eye health system in Guyana.
- Link eye care and the Non-Communicable Diseases (NCD) chronic diseases together e.g. integrate Diabetic Retinopathy in the diabetic program.
- Health workers in the NCD sectors need to be educated in relation to eye health issues that may affect persons with NCDs.
- Develop a strategy to ensure the regular maintenance of eye care (and other medical) equipment in hospitals and eye health clinics
- Consider implementation of a post basic diploma or Bachelor of Science in the education of children with visual impairment, focusing on inclusive education strategies in basic teacher special education training.
- National Eye Care Committee to develop a human resource monitoring system to identify needs and propose solutions (from nurses to ophthalmologists).

1.3 INFRASTRUCTURE AND SERVICE PROVISION

There are three key sectors that offer services that make up the eye-care services: public, private and non-governmental sectors. Together these provide the scope of services that are currently available in Guyana.

Milestones in Increasing Services Provision:

2007 Introduction of Vision Centres with class 1 eye health personnel (refractionists) at public hospitals including: GPHC, New Amsterdam, West Demerara and Linden.

2009 Opening of the Port Mourant Ophthalmology Complex in Region 6.

2011 Expansion of the number of Vision Centres to 12; an initiative of CCB- Eye Care Guyana in collaboration with the MOH.

Eye Care System

Public health care in Guyana is provided through a 5-tier system of health posts, health centres, district/cottage hospitals, regional hospitals and Georgetown Public Hospital as the main referral centre for most services. Eye patients can enter at any level and should be referred up to the nearest tier offering the service needed. In reality, patients are often sent to the nearest hospital which then refers them further on until they finally arrive where the service is offered.

The medical officer at the health centre level may treat for simple infections. However, more difficult cases are referred to:

- Regional Hospitals – (East Bank Demerara and New Amsterdam) - provides outpatient, non-surgical ophthalmology services on weekdays; New Amsterdam offers surgical services.
- Port Mourant Ophthalmology Centre – offers diagnostic and inpatient and outpatient surgical services to adults. It has 30 inpatient ophthalmic beds, 3 eye operating theatres but only one is currently in use. There is a retinal camera and YAG laser treatment available. The retinal photocoagulation laser is not yet operational (awaiting machine parts). MoH provides free transportation for patients from the various regions to access services at Port Mourant.
- Georgetown Public Hospital Corporation – This facility has seven ophthalmic beds and one eye operating theatre. It offers 24 hour ophthalmic services for adults and children including elective and emergency surgery. There is a Humphrey field analyzer and visual field testing is offered twice weekly. There are neither retinal nor corneal services at the institution.
- Vision Centres - There are 12 Vision Centres that are located in the hospitals in 8 of the ten administrative regions (Mabaruma, Charity, Suddie, West Demerara, Leonora, Georgetown, Diamond, Mahaicony, Port Mourant, Skeldon, Bartica and Linden) that offer refraction and basic diagnostic services during the week. Optometry services are also offered at least monthly. Patients requiring medical treatment are referred.
- Vision Units in Schools – There are currently 2 vision units at schools - one in Region 10 and one in Georgetown. These provide educational support to school children with low vision/blindness during school hours in their respective regular schools.

- Outreach Activities – The Ministry of Health took vision screening and medical eye care to remote areas through 33 eye care outreach sessions in 2011. Patients identified for surgical intervention were afforded same at PMOC.

The Private Health System

There are two private hospitals, both in Georgetown, that offer ophthalmologic services:

- St. Joseph Mercy Hospital – offers outpatient clinics three half-days per week and 24 hour on-call diagnostic and surgical services. There are no dedicated ophthalmic beds or eye theatre. However, they have operating microscopes that are used in their existing theatres as needed.
- Balwant Singh Hospital – offers ophthalmology clinics on weekdays and 24 hour on-call ophthalmology services. They have a retinal photocoagulation laser and plan to introduce Optical Coherence Tomography (OCT). There is one eye theatre but no dedicated ophthalmic beds.

There are four private practices: One in New Amsterdam and three in Georgetown, all offer surgical outpatient services. They each have their own operating microscopes and the one in New Amsterdam also has YAG laser service available.

NGO and Voluntary Sector

Eye Care Guyana is the Guyana chapter of the Caribbean Council for the Blind. They are involved in many areas of service provision within eye care. Currently, they are responsible for the day-to-day functioning of 12 Vision Centers in 8 regions, providing low-cost spectacles utilising their own state of the art spectacle lab, providing opportunities for training in Refraction Techniques, Optometry and Ophthalmology through collaborative efforts with the Government, increasing awareness of eye complaints and disability among others.

Issues

- Some of the services offered in Georgetown are not available in most of the other regions.
- Sub-speciality services such as retinal service and corneal services are not available at Georgetown Hospital.
- Under-utilisation of equipment at the Port Mourant Ophthalmology Centre.
- Vision Centers are only equipped and staffed to perform refraction and basic eye exams (equipment complements level of staff at the VC)
- Limited technical and human resources in some regional hospitals (New Amsterdam, Linden, Suddie, Bartica, Skeldon etc).
- Limited budgetary resources for eye care to equip hospitals and vision centres, and to support integration of eye care into the primary health care system.

Table 2: Distribution of Ophthalmological Services by Region and Capacity

Facility	Region	Ophthalmic Beds	Eye Theatre	Services
Mabaruma Hospital Vision Centre	1	None	None	Refraction on weekdays; Optometry every 2 -3 months
Charity Hospital Vision Centre	2	None	None	Refraction on weekdays; Optometry monthly
Suddie Hospital Vision Centre	2	None	None	Refraction on weekdays; Optometry monthly
West Demerara Regional Hospital Vision Centre	3	None	None	Refraction on weekdays; Tonometry; Optometry monthly
Lenora District Hospital Vision Centre	3	None	None	Refraction on weekdays; Optometry monthly
GPHC Ophthalmology Department	4	7	1	Surgery daily; Outpatient clinics on weekdays; 24 hrs on-call; Tonometry; Gonioscopy; Humphrey's Perimetry
GPHC Vision Centre	4	None	None	Refraction on weekdays; Tonometry; Optometry weekly
Diamond Hospital and Vision Centre	4	None	None	Outpatient clinics on weekdays; Refraction; Tonometry; Optometry weekly or fortnightly
Balwant Singh Hospital	4	None	1	Outpatient clinics on weekdays; Refraction; Tonometry; Biometry; Posterior Segment Laser; 24 hrs on-call; Surgery
St. Joseph Mercy Hospital	4	None	None	Outpatient clinics thrice weekly; 24 hrs on-call; Surgery
Mahaicony Hospital Vision Centre	5	None	None	Refraction on weekdays; Tonometry; Optometry - monthly
Port-Mourant Ophthalmic Hospital and Vision Centre	6	30	3 (1 currently in use)	Ophthalmology Outpatient clinics daily; Refraction daily; Biometry daily; Corneal Topography; Adult elective surgery daily; YAG laser
Skeldon Hospital Vision Centre	6	None	None	Refraction on weekdays; Optometry - monthly
Bartica Hospital Vision Centre	7	None	None	Refraction on weekdays; Optometry - monthly
Mackenzie Hospital	10	None	None	Refraction on weekdays; Tonometry; Optometry monthly

Expected outcome:

Optimal eye care facilities, equipment, instruments and consumables available for the delivery of eye care services.

National Strategy – Infrastructure and Service Provision

- Enhance Infrastructure in the Vision Centres to be better equipped and manned in order to operate beyond basic eye screening to include placement of Class 2 eye care practitioners (Optometrists- with supporting equipment) in all vision centres
- Strengthen and expand current low vision programme and services to include introduction of service at district hospitals with vision centres.
- Equip and staff regional hospitals adequately so that they can provide more than basic eye service
- Upgrade the current services of the Department of Ophthalmology, GPHC and to introduce more sub-speciality services
- Mobilise resources for a significantly higher budget for Eye Care as there are still many areas requiring investment
- Develop a strategic framework in Guyana for Education for all children with special needs and commence its implementation by placing teachers with formal post basic training in the education of the visually impaired in at least 4 schools across Guyana
- Achieve the development of a Guyana Blindness Services Strategic Framework; create and identify the institutional framework to support its implementation.

1.4. EYE CARE INFORMATION SYSTEMS AND MONITORING

Eye Care data in Guyana comes primarily from the Georgetown Public Hospital, Port Mourant Ophthalmology Centre, Eye Care Guyana and with limited reporting from the private sector. The Ministry of Health information department collects reports on number of patients seen at GPHC and at the PMOC and also patients seen during various eye screening programmes across the entire country.

Data on cataract surgeries done at both the GPHC and PMOC is also available. The Georgetown Public Hospital Corporation keeps data arising from services offered at the Department of Ophthalmology and the Ophthalmology Theatre. Data from these sources was used in the Situational Analysis and is also used as reference in other parts of this document.

Issues

- Insufficient data on outputs and outcomes of services to support planning, monitoring, advocacy and reporting.
- There is no national eye-health database for the collection, storage and use of performance and other related data. This database should include the causes of visual impairment and blindness in school children.

Expected outcomes:

Include eye care in the national planning, health and education information system.

National Strategy – Eye Care Information Systems and Monitoring

- Identify mechanisms to include eye care in the present Health Management Information System
- Develop data management systems for eye care: data collection, compilation, reporting and analysis
- Review existing health systems to build on those systems for an improved data management system (that is, utilization of data from vision centers)
- Integrate and include the collection of eye health data into the Ministry's National Health Surveillance System and effectively monitor eye care information using best practices
- Conduct periodic evaluation of eye care, disseminate findings to appropriate stakeholders and utilize information for planning.

2. DISEASE CONTROL AND PREVENTION OF VISUAL IMPAIRMENT

The most prevalent causes of blindness in the Caribbean are non-operated cataract and glaucoma, followed by diabetic retinopathy and uncorrected refractive errors. Childhood blindness is not as prevalent, but is a main cause of blinding years in the population. An important percentage of blindness in the Caribbean region is avoidable (preventable or curable).

Cataract and diabetic retinopathy can be cured with relatively inexpensive surgical treatments, refractive errors are correctable with simple optical devices, and preventative strategies and effective referral systems can reduce the burden of childhood blindness. The application of new technology can be used in the future to improve the detection and treatment of glaucoma.

Guyana has made efforts to develop the five performance areas which were identified as a priority in Caribbean territories – Cataract, Glaucoma, Diabetic Retinopathy, Retinopathy of Prematurity, Refractive Errors and Low Vision.

2.1 Reduce blindness and visual impairment in adults

2.1.1 Reduce Cataract Blindness

In the Caribbean, cataract (opacification of the lens) is the most prevalent cause of blindness; cataract surgery has been shown to be one of the most cost-effective of all health care interventions. Most cataracts are age-related and cannot be prevented, but cataract surgery with insertion of an intraocular lens (IOL) is highly effective, providing almost immediate visual rehabilitation.

In Guyana for the year 2011, 1064 cataract operations were performed in the public sector: 575 at GPHC and 489 at Port Mourant Hospital by the Cuban team. Approximately, 650 cataract operations were performed in the private sector reaching a cataract surgical rate of 2281/ million population in 2011.

Issues

- Insufficient data available on the level of public awareness of cataract and public knowledge on how it can be rectified with a straightforward surgical procedure.
- High proportion of cataract surgery is dependent on bilateral cooperation.
- Insufficient information on outputs and outcomes in public sector, private sector and bilateral cooperation initiatives.
- No institution or private ophthalmologist is currently utilizing a cataract outcome monitoring tool/system.
- Inadequate access of rural population to service centres.
- Insufficient cataract centres distributed throughout the country.

Expected Outcome

Provide cataract surgical services at a rate adequate to eliminate any backlog of cataract, at a price that is affordable for all people, both rural and urban and with high success rate in terms of visual outcome.

Proposed Actions – Reduce Cataract Blindness

- Make regular national assessments of cataract surgical services, including availability, access, affordability and quality, as well as collection and management of information and data. Assessment methodologies like Rapid Assessment of Avoidable Blindness (RAAB) or Rapid Assessment of Cataract Surgical Services (RACSS) should be utilized.
- Establish Ophthalmology clinics at: Linden and Suddie
- Develop country and district-specific cataract service plans with measurable targets that address equity (availability, accessibility, affordability) and quality of services.
- Increase resources for cataract surgery (financial, HR, equipment etc).
- Ensure eye health services are integrated into a primary health care system to detect and refer people with cataract and eye diseases. (Referral system should be refined so not to overload the system with unnecessary referrals, this involves effective screening programs and trained personnel focusing on priorities).
- Promote high-quality surgery and ensure satisfactory visual outcomes and patient satisfaction (Recommend using monitoring tool).
- Facilitate clinic and population based knowledge, attitudes and practices surveys relating to cataract.
- Develop appropriate evidence based communication strategies for the target population- viz. adults 50 years and older (Community approach has been proven in other communities to be effective).
- Ensure remote areas receive regular eye health services (cataract) which can be done through frequent outreach programs.

2.1.2 Reduce the Prevalence of Blindness from Diabetic Retinopathy

Diabetes causes weakening of the blood vessels in the body. Retinal blood vessels are particularly susceptible and weakening of these blood vessels, accompanied by structural changes in the retina, is termed as diabetic retinopathy. Diabetic retinopathy is symptomless in its early stage and eye examinations/screening is the only way to identify those affected to prevent them from going blind. Evidence-based treatment is available to significantly reduce the risks of blindness and of moderate vision loss. Clinical studies spanning more than 30 years have shown that appropriate treatment with laser can reduce the risks by more than 90%.

The prevalence of DR of any stage varies greatly between studies, even amongst contemporary diabetic populations in the same country but is likely up to 40% and sight threatening disease is present in up to 10%[2]

According to the Situational Analysis of Eye Care in Guyana, the prevalence of diabetes in Guyana is estimated at 6.2% of the population. However, more recent data estimates the prevalence of diabetes in the adult population (20 to 79 years) to be 15.5% (PAHO, 2013).

Total population (20 to 79 years)	428,000
Total population with diabetes (15.5% of population)	65,000
Total DR at any stage (40% of diabetics)	26,000
Total sight threatening DR (25% of diabetics)	6,500

Of the 16,000 patients seen at the Eye Care Department, GPHC in 2012, approximately 2,500 were diabetics.

[2] Clinical Ophthalmology, Kanski and Bowling 2011

Issues

- Non-existence of services for DR treatment in the public sector. There is one retinologist but there is no working equipment for retinal laser photocoagulation. One laser is available at Port Mourant but it is not currently in use. In 2008 the Balwant Singh Hospital acquired a Retinal Photocoagulation Laser. This is however limited to private and paying patients.
- Eye care screening not currently included into limited NCD early detection programs
- There is no active detection – screening and referral systems. Digital retinal photography in the public sector is available only at PMOC but not used for screening
- Comprehensive communicative strategic approach needs to be strengthened
- Insufficient data on the level of public awareness relating to cause and prevention of blindness due to diabetes. Insufficient data on the level of awareness and knowledge of PHC practitioners, general physicians and internists regarding their role in the prevention of blindness due to diabetes.

Expected Outcome

Implement early detection, referral and treatment services for diabetic retinopathy

Proposed Actions – Reduce the Prevalence of Blindness from Diabetic Retinopathy (*continued*)

- Integrate blindness prevention strategies into national diabetes programs and ensure their incorporation into non-communicable chronic diseases programs of the Ministry of Health.
- Encourage strategies for prevention, early detection and effective treatment of diabetes and hypertension, which will prevent complications that lead to blindness.
- Facilitate the implementation of clinic and population based knowledge, attitudes and practices surveys on Diabetes and Diabetic Retinopathy.
- Develop public awareness programs for targeted high risk population groups within the comprehensive communication plan.
- Establish appropriate referral centres to diagnose and treat DR.
- Ensure laser treatment services for diabetic retinopathy are available, accessible and affordable at PMOC and GPHC.
- Establish screening services to detect and refer treatable diabetic retinopathy, including at vision centres located in cottage and district hospitals.
- Establish referral systems from services for diabetics to the ophthalmological services.

2.1.3 Reduce the Incidence of Blindness due to Open-Angle Glaucoma (OAG) in high-risk groups

OAG is a major public health problem in the population , where it is a major cause of visual loss and the leading cause of irreversible blindness. Vision 2020 programs need to include mechanisms for glaucoma detection and treatment for high-risk segments of the population, including persons of African descent, persons over 40 years of age, and individuals with a family history of glaucoma.

According to a 2009 Guyanese study by Perreira-Roach and Norton[3], 9% of patients presenting to the Eye Clinic, GPHC are likely to have a diagnosis of simple open angle glaucoma. Unofficial data shows that the Eye Clinic recorded 278 newly diagnosed cases of glaucoma in the year 2011.

There is no national screening program for glaucoma. Some awareness is done during Glaucoma Week and around World Sight Day by both the Ministry of Health and NGOs. There has been an increase in the range of glaucoma medications available; all medications for glaucoma are provided free of charge in the public sector.

Guyana has made previous efforts to raise public awareness but currently there are no sustained year-round awareness programs.

Issues

- High disease frequency in the population.
- Limited availability of sensitive and specific screening methods at reasonable cost.
- There are no outreach programs to detect glaucoma.
- Late detection and poor compliance.
- High cost of the medication in the private sector or for those not served by the public system.
- Lack of on-going public awareness of the need for people over 40 years of age to get their eyes checked for glaucoma.

Expected Outcome

Early detection and treatment of OAG in high risk groups .

Proposed Actions – Reduce the Incidence of Blindness due to Open-Angle Glaucoma (OAG) in high-risk groups

- Include glaucoma detection as an integral part of comprehensive eye examinations for persons over 40 years of age.
- Ensure primary eye care personnel are trained to identify patients with high risk factors and to refer them to the appropriate service centre.
- Ensure that eye care units have the capacity equipment (portable tonometers like tonopens, perimeters, ophthalmoscopes) and human resource to provide glaucoma diagnosis and treatment.
- Facilitate clinic and population based KAPB surveys regarding glaucoma.
- Increase awareness among the general population of the importance of regular eye examinations and glaucoma screening for those over age 40, as well as other risk factors for glaucoma.
- Provide affordable treatment and medications.

[3] Epidemiology of Glaucoma in Guyana, Perreira-Roach, Norton, 2009

2.1.4. Reduce Visual Disability by detecting and treating uncorrected Refractive Errors in Adults

The Barbados Eye Studies found high prevalence of myopia and hyperopia in adults. Most adults over 40 years of age suffer presbyopia. The Government of Guyana and the subscribers of the National Insurance Scheme are provided with subsidies for cost of spectacles. The CCB-Eye Care Guyana programme, through its Vision Centres has been providing low-cost spectacles to the general public.

Issues

- Many patients of low socioeconomic status cannot afford spectacles.

Proposed Actions – Reduce Visual Disability by detecting and treating uncorrected Refractive Errors in Adults

- Ensure that refraction and spectacles are accessible, available and affordable to adults and children
- Facilitate clinic and population based knowledge, attitude and practices surveys regarding refractive errors
- Increase public awareness through information, education, and communication strategies.

2.2. Reduce blindness and visual impairment in children

2.2.1 Reduction of the preventable causes and of treatable causes of Childhood Blindness

While data is limited, the following causes of childhood blindness have been reported in the Caribbean Region: Retinopathy of Prematurity (ROP), cataract and glaucoma in children.

GPHC has the only Neonatal Intensive Care Unit. Unofficial records for the year 2011 showed 44 babies that were 1500g or less surviving to discharge.

Issues

- There is no situation analysis of ROP services.
- There is no Retinopathy of Prematurity prevention policy in the public sector but the usual practice is to refer all premature babies for an eye examination.
- There are no professionals trained to treat ROP (Patients examined and found with ROP are referred for overseas treatment).
- There are no statistics on ROP.

Expected Outcome

Provide services to detect and treat children with Retinopathy of Prematurity, congenital cataract, congenital glaucoma and other non-blinding eye problems, such as strabismus and trauma.

Proposed Actions – Reduction of the preventable causes and of treatable causes of Childhood Blindness

- Develop a national ROP policy and guidelines, which can be developed from existing international guidelines.
- Develop a national program for ROP.
- Explore the integration of childhood blindness prevention (with early diagnosis, evaluation and treatment) into all national maternal and child health plans and policies (e.g. existing IMCI national program).
- Promote systems, networks and protocols for safe neonatal care, adequate referral, and follow-up.
- Ensure the availability of the necessary equipment for primary prevention, examination and treatment.
- Advocate for the improvement of the quality of available information on neonatal care.

2.2.2 Reduce visual disability by detecting and treating uncorrected Refractive Errors in school children

Prevalence of refractive errors in children varies according to the ethnic group: For myopia, Asians had the highest prevalence (18.5%), followed by Hispanics (13.2%), African Americans (6.6%) and whites (4.4%). For hyperopia, whites had the highest prevalence (19.3%), followed by Hispanics (12.7%), Asians and African Americans had 6.4%. For astigmatism, Asians and Hispanics had the highest prevalence (33.6% and 36.9%, respectively, African Americans had the lowest prevalence of astigmatism (20.0%), followed by whites (26.4%). The prevalence of myopia increases with age in all ethnic groups.

In Guyana there is a National Program for Vision Screening in Schools that commenced in 2005. It is a collaborative effort of the MoH, MoE, PAHO, EyeCare-Guyana and UNICEF. According to the 2004 Screening Protocol, children in Grades 1 and 6 undergo a visual acuity check and those with 20/40 vision or less are referred for further examination. Teachers, parents and health workers in the school area are trained so they can continue screening as needed. There are currently some 70-80 schools that have benefitted from this effort. For the period April 2009 – June 2010, 3095 students from 65 schools in Regions 3, 4 and 10 were screened with 633 children referred for further testing. Additionally, as part of the National School Screening Program, the Ministry of Human Services and Social Security supported this initiative by offering subsidies to parents/guardian of underprivileged children.

CCB-EyeCare Guyana operates a low-cost spectacle lab that produces spectacles to meet the requirements of the twelve Vision Centres. For the year 2011, a total of 20,310 patients of all ages were screened for refractive errors, 11,604 were diagnosed with refractive errors and recommended to wear spectacles, and 6,596 low-cost spectacles were actually provided.

Issues

- Limited number of schools implementing the school vision screening program.

- Lack of current operational plan including a monitoring system identifying the type of information to be collected.
- No analysis conducted to identify best practices of refractive errors programs of school children in Guyana.
- Need to continue subsidy programme for financial assistance to children from families of low economic status that need spectacles.

Expected Outcome

- Prevention of visual impairment and blindness due to uncorrected refractive errors in school children by integrating eye health into policies and practices primarily in the health and education sectors.

Proposed Actions – Reduce visual disability by detecting and treating uncorrected Refractive Errors in school children

- Revise national guidelines for the detection and treatment of refractive errors based on available evidence.
- Analyze the refractive error programme experience in Guyana to identify and disseminate best practices.
- Develop a 3-year operational plan (including monitoring and evaluation).
- Increase public awareness through information, education, and communication strategies.
- Engage the relevant authorities to re-establish a mechanism for financial support to those in need of spectacles.

2.3. Reduce the impact of blindness and visual impairment in the general population

Enhance vision related quality of life for people with functional low vision

Low-vision services are aimed at people who have residual vision that can be used and enhanced by specific aids. Low vision is currently defined as visual acuity of < 6/18 down to and including 3/60 in the better eye from all causes. In Guyana, limited Low Vision Aids were previously distributed in the public sector. However, NGOs such as Eye Care Guyana have reported distribution of 70 canes and training of 10 persons in its use for 2011. The Guyana Society for the Blind (GSB) provides training in Information Technology and facilitates access of its members to the One Laptop per Family Government initiative. The Ministry of Education is pursuing its goal to advance the concept of an inclusive education system.

Expected outcome

Provide comprehensive low-vision services for persons who are blind or severely visually impaired through integrating clinical eye care, rehabilitation and educational services.

Issues

- There is limited low vision service in the public sector; with inadequate human resources and an irregular supply of devices.

- There is a lack of coordination and collaboration between, public, private and civil society to provide or subsidise low vision devices.
- There is an absence of a comprehensive approach to the integration of optometry and low vision and blindness services.

Proposed Actions – Enhance vision related quality of life for people with functional low vision

- Develop a policy and protocol for a comprehensive approach for the integration of optometry and low vision/blindness services.
- Establish low vision/blindness services, starting with cottage and district hospitals nationwide.
- Promote early identification of all children and adults who are irrevocably blind and severely visually impaired and ensure that an effective referral system is in place.
- Promote low vision and blindness services for children as early as possible through an integrated system of clinical and pedagogic services.
- Encourage the provision of low vision devices in the private sector and non-governmental agencies to complement the limited services provided in the public sector.

3. EYE CARE PROMOTION, PUBLIC EDUCATION & ADVOCACY

About 80% of blindness is avoidable: it either results from conditions that could have been prevented or conditions that may have being successfully treated to restore sight. It is necessary that high risks groups have adequate information to ensure they look for services to detect and treat eye problems and that they increase compliance on follow-up and treatments. The aim of eye care promotion and public education is to improve knowledge, attitudes, motivation and action for high risk groups and health authorities.

The promotion of eye health as part of the national health policy is, invariably, a necessary prerequisite for a National Program for the Prevention of Blindness. This fosters public awareness, leads to societal responsiveness and participation and facilitates co-ordination of activities carried out by various partners, such the government, non-governmental organizations and the private sector.

Issues

- There are no comprehensive communication strategies.
- The non-prioritisation of financial resources for communication activities.

Expected outcome:

Increased public knowledge of eye care and utilisation of eye care services.

National Strategy – Eye Care Promotion, Public Education and Advocacy

- Assess the knowledge, beliefs, attitudes and actions of the population in relation to eye care, through a series of clinic and population based surveys.
- Develop and implement a communication strategy and implementation plan for eye care.
- Utilize general health and eye health professionals to create public awareness.
- Explore other partnerships to collaborate in the delivery of communication activities.
- Develop advocacy and awareness tools geared at educating the patient and the general public.

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Abstract for CCB Conference Presentation on Caribbean Glaucoma KAP Study

Glaucoma was initially identified as an area of importance for the Knowledge, Attitudes and Practices (KAP) studies, because it is the leading cause of irreversible blindness worldwide, and has a high prevalence in the Caribbean. Given glaucoma's increasing prevalence with age, the number of people living with glaucoma is likely to increase.

The Caribbean Glaucoma KAP Study is being conducted as part of the overall efforts of the participating individuals and organizations, funded by the European Commission in partnership with Sightsavers and The Caribbean Council for the Blind, to prevent low vision and blindness from glaucoma, as one of the Vision 2020 (Right to Sight) priorities in the Caribbean.

Much work has been undertaken by the working group managing the Caribbean Glaucoma KAP Study:

- 4 Caribbean countries and corresponding clinic locations identified - Barbados, Guyana, Jamaica, St. Lucia
- Identified Principal Investigator & Working Group
- Determined study population and sample size
- Completed key documents - research proposal, consent forms, information sheets, questionnaire
- Completed ethical approval requirements and forms for each country
- Obtained Ethics Board approvals in all 4 countries
- Purchased & distributed electronic tablets for data collection
- Recruited & trained data collectors
- Recruited a Project Assistant

Data collection is due to start in a week's time, and last approximately 3 - 4 months. Thereafter we will analyse the data and produce reports of the study.

We hope that the results from this study will enhance our understanding of the issues affecting glaucoma patients and having an impact on their ability to manage their disease. In the long term this should inform public health policy and clinical strategies to improve the care of glaucoma patients.

Miss Dawn Grosvenor, MBBS, MRCOphth, FRCS (Glasg), FRCOphth

Abstract summary of the Diabetic Retinopathy Knowledge, Attitudes and Practises (DRKAP) study

Regional and international epidemiological studies have established diabetic retinopathy (DR) as the leading causes of blindness and disability associated with low vision among the working age population. Research has mainly been confined to the prevalence within predominantly Caucasian populations with limited available data for other ethnic groups.

The Barbados Eye Study (BES) provided a regional perspective on the highincidence of DR among diabetics. The main cause of vision loss in the population was clinically significant macula oedema (CSMO) as opposed to proliferative diabetic retinopathy (PDR). This is likely due to the higher prevalence of Type 2 as compared to Type 1 diabetes in the English speaking Caribbean. Changing population demographics and socioeconomic circumstances lead us to project increasing rates of the disease.A decade prior, laser treatment was the only treatment for CSMO. However, there are now several options available. The implications for national Health budgets are significant and the cost versus benefit for the new therapeutic models will have to be assessed.

The DRKAP study will take place in four territories: Jamaica, St. Lucia, Antigua and Barbuda, Barbados and Guyana. Initial preparation will require a series of strategic consultations with public health policy stakeholders to optimise the study design before applying for ethical approval and implementation.The process will involve administering validated survey questionnaires to a representative cohort of diabetic patients from each country.This procedure will be replicated with medical and allied personnel to establish KAP scores. Collated data will be analysed and a final report presented for peer review.

The DRKAP seeks to identify as a baseline, the existing awareness within the population of the mechanism of the disease process, surveillance methods and available therapy within their country. The resultswill add considerably to the epidemiological data available to the research community. It will constitute a valuable resource for public health officials to assist indeveloping evidence based regional health screening programmes, referral pathways and cost-effective treatment models.

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