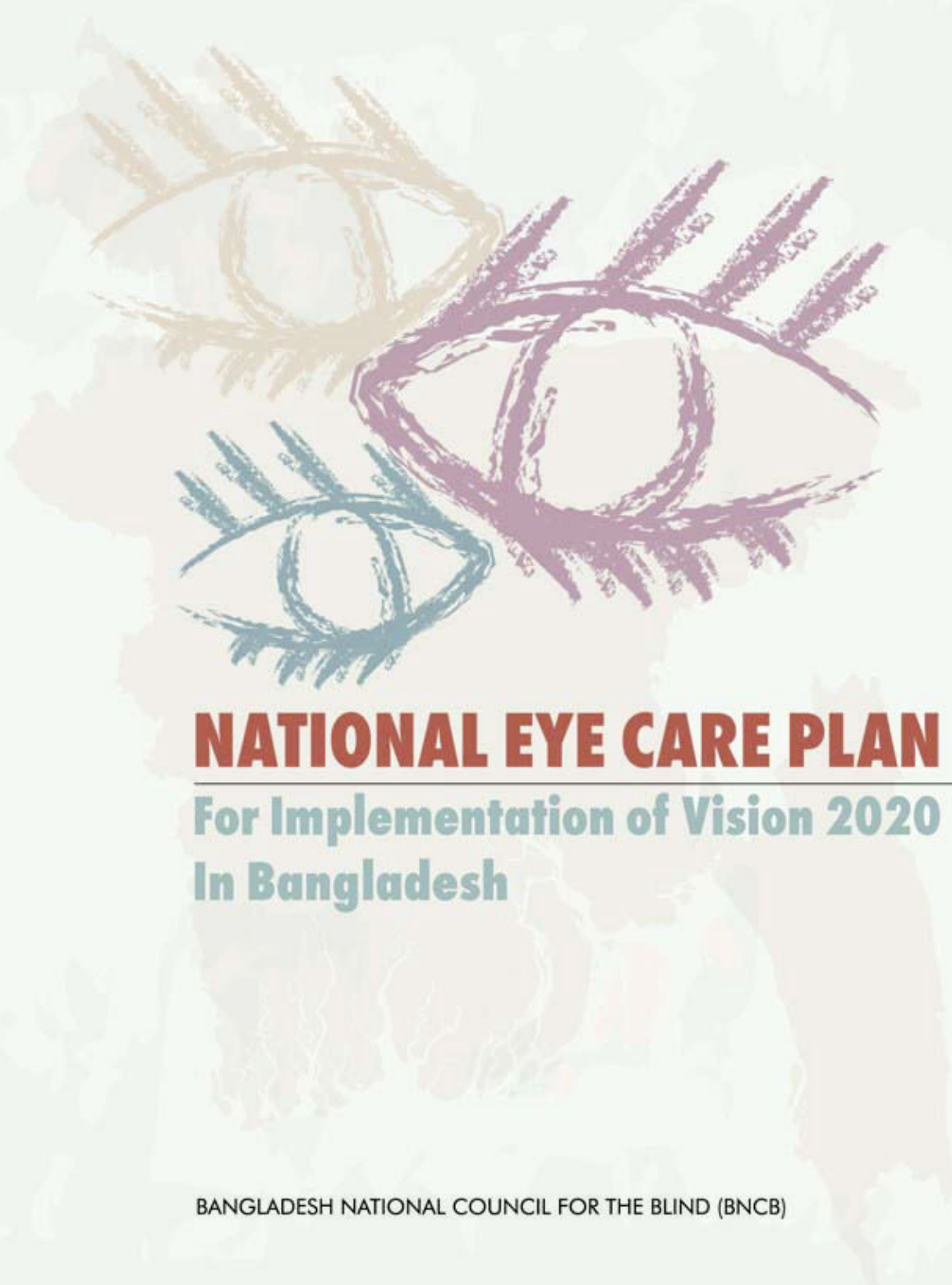




Ministry of Health & Family Welfare



NATIONAL EYE CARE PLAN

**For Implementation of Vision 2020
In Bangladesh**

BANGLADESH NATIONAL COUNCIL FOR THE BLIND (BNCB)



Ministry of Health & Family Welfare



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Prepared by:

National Eye Care Plan Review Sub Committee of BNCB with the following members:

- | | | |
|----------------------------------|----------|-----------------|
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MINISTER
MINISTRY OF HEALTH AND FAMILY WELFARE
Government of the People's Republic of Bangladesh

Foreword

It is a matter of great pleasure that Bangladesh National Council for the Blind (BNCB) has successfully adopted the 'Bangladesh National Eye Care plan' responding to the Vision 2020 - "The Right to Sight"- global campaign to eliminate avoidable blindness by the year 2020.

Blindness is one of the major health care problems in Bangladesh. About .75 million people are blind including 40,000 children, which are avoidable through proper treatment and care. Bangladesh is enjoying the unique status among other few countries to ratify the Vision 2020; which is a meaningful step towards achieving the goals of Vision 2020.

The present Government is firmly committed and determined to ensure the health care services for all under the dynamic leadership of Prime Minister Begum Khaleda Zia. To develop a comprehensive national programme for eliminating avoidable blindness from the country, the present Government has adopted the Vision 2020 as per the decision of the 56th General Assembly of WHO in 2003. It may be noted that, I had the unique privilege to chair that august General Assembly session of the WHO.

I am glad to mention that the Bangladesh National Eye Care Plan has prioritized major areas of disease control such as Cataract, Childhood Blindness, Refraction and Low Vision and recognised the need for focusing on to the tertiary services such as Cornea, Retina, Glaucoma etc.

I would like to congratulate BNCB and the International Eye NGOs, for their active support to the formulation of Bangladesh National Eye Care Plan. I hope that the coordinated efforts of BNCB, NGOs and other private organizations will be able to achieve the goals of the Vision 2020 and ensure "The Right to Sight" in Bangladesh.

I wish the Bangladesh National Eye Care Plan a grand success.

(Dr. Khandaker Mosharraf Hossain)



STATE MINISTER
MINISTRY OF HEALTH AND FAMILY WELFARE
Government of the People's Republic of Bangladesh

Message

With the adoption of National Eye Care Plan, first of its kind in the country, by the Bangladesh National Council for the Blind (BNCB) activities in line with Vision 2020 - "The Right to Sight"- Global Campaign of eliminating avoidable blindness by the year 2020 has been initiated. It is expected that the challenging goal of controlling blindness by the stipulated time would be possible through coordinated efforts by all quarters under the new plan.

I would like to take the privilege to pay my gratitude to Dr. Khandaker Mosharraf Hossain, Minister of Health and Family Welfare, who constantly guided the BNCB in formulating the National Eye Care Plan with active supports from the international eye NGOs. It is also a matter of great pride that the adoption of National Eye Care Plan is also a fulfillment of the commitment made by our Honorable Health Minister in 2003 at the 56th General Assembly session of WHO, which was also chaired by him.

The plan of action and strategies that the National Eye Care Plan incorporated, are timely and very much demanding, as the blindness issue in the country remains to be one of the leading social, health and economic problems.

I thank BNCB for successfully formulating the National Eye Care Plan and also commend the supports extended by the Ministry of Health and Family Welfare in this respect. I hope the Government-NGO coordinated initiative would help Bangladesh achieve the Vision 2020 goals of eliminating blindness from the country by the year 2020.

(Mizanur Rahman Sinha)



SECRETARY
MINISTRY OF HEALTH AND FAMILY WELFARE
Government of the People's Republic of Bangladesh

Preface

Bangladesh National Eye Care Plan, formulated by the Bangladesh National Council for the Blind (BNCB), an apex body under the Ministry of Health and Family Welfare, aims at eliminating avoidable blindness from country by the year 2020. in line with Vision 2020 - "The Right to Sight"- Global Campaign. The gigantic task of eliminating avoidable blindness from the country can be faced with coordinated efforts by the Government, NGOs and other Private sectors. The newly adopted National Eye Care Plan, besides development of infrastructure and efficient utilization of existing resources, aims at taking the eye care services at community level.

The National Eye Care Plan has clearly identified its strategies and outcomes for carrying forward its policy of delivering quality eye care services and maintaining standards of eye care at all levels. It is hoped that under the National Plan victims of eye diseases, particularly the poor eye patients living in remote rural areas would get quality eye care services.

I wish the Bangladesh National Eye Care Plan a grand success and appreciate the sincere efforts of the BNCB in developing the National Plan as part of materializing the Government's commitment of ensuring health service to all people.

(AFM Sarwar Kamal)



DIRECTOR GENERAL
DIRECTORATE GENERAL OF HEALTH SERVICES
MINISTRY OF HEALTH & FAMILY WELFARE
Government of the People's Republic of Bangladesh

A few words from the Director General of Health Services

The adoption of National Eye Care Plan is certainly a long deserving expectation from the community. The proper implementation of this plan will definitely benefit the patients suffering from eye diseases particularly the disadvantaged communities. It is expected that we will be able to eliminate avoidable blindness from our country in line with the Vision 2020 goals - "The Right to Sight." It is true that only the Government alone will not be able to deal with the huge problem. The combined efforts from the Government, NGOs, private & public are equally important to deal with this gigantic problem.

I would like to convey my sincere appreciation to BNCB, DGHS & international eye NGOs for their efforts to prepare this excellent workable document. This plan will act as a broad guideline to all the stakeholders committed to fight against blindness.

I wish this plan a success to eliminate avoidable blindness from our country.

(Dr. Md. Abdur Rahman Khan)

Preamble

World Health Organization (WHO) and International Agency for Prevention of Blindness (IAPB) jointly launched Vision 2020, the global initiatives for elimination of avoidable blindness, in Beijing in the year 1999. Vision 2020 is the global programme to get rid of avoidable blindness by the year 2020.

Bangladesh government first signed off Vision 2020 in the year 2000 in presence of Regional Director of WHO South Asia Region, and was among first few countries to ratify. The 56th General Assembly of WHO, which was chaired by our Honourable Minister of Health and Family Welfare **Dr. Khandaker Mosharraf Hossain**, formally adopted Vision 2020.

Although Bangladesh enjoyed a unique status of being first among few countries to ratify Vision 2020, mentionable progress towards establishing a process for achieving Vision 2020 goals is yet to be visible.

It is interesting to note that Bangladesh is the first country to develop a national programme for prevention of blindness in South Asia Region that triggered & influenced global concept for a national programme. In the year 1980, Directorate General of Health Services (DGHS) under the auspicious of BNCB launched the national programme titled “**National Programme for Prevention of Visual Impairment and Blindness in Bangladesh**”. This programme was eye camp based, nonetheless presented the very first model to the rest of the world with concept & structure, which was used by WHO as an example for others. Royal Commonwealth Society for the Blind (RCSB) ‘now known as Sight Savers International’ supported this programme development and its implementation.

The second national plan was developed immediately after ratifying vision 2020 with the help of international expert consultants Dr Hans Limburg & Dr. R. Pararajasegaram of WHO along with active participation of the DGHS which was subsequently integrated into the HPSP, now HNPSP. This plan is not directly visible as it was integrated and broken down into various components in the logframe to form integral part of HNPSP. Sight Savers International has been supporting some of the strategies & activities of this plan against an agreement with the DGHS since 2002.

The need for reviewing and updating the national plan was perceived by the Honourable Minister for Health and Family Welfare in a meeting of Bangladesh National Council for the Blind (BNCB) on March 5, 2003 and formed a sub-committee titled “**National Eye Care Plan Review sub-committee**” with **Professor M. A. Matin**, MP as the Chair.

The review committee of BNCB with active support from Vision 2020 Coordination Office, International NGOs such as Sight Savers International and ORBIS International implemented a rigorous development process started with nationally conducted eye care capacity assessment to update the baseline data and holding series of consultation & planning workshops across the country during 2003-05.

The review committee drafted a national eye care plan, taking the outcomes of various national and international workshops including IAPB workshop held at CEITC and national workshops held in Dhaka as input. These workshops were participated by the senior officials from DGHS, Divisional level health care staff, Civil Surgeons, Department of Social Services (DSS), senior ophthalmologists, international NGOs, local NGOs and other stakeholders.

The review committee initiated consultation workshops across the country attended by Divisional Directors of Health, Civil Surgeons, District Ophthalmologist, senior Ophthalmologists, representatives from local eye care providers & NGOS, representatives from international NGOs, representatives of beneficiaries etc. Therefore, this document represents a fair degree of national consensus amongst the various stakeholders including those in the field. The review committee synthesized the outcomes of the workshops across the country and prepared this document for placing at the national council for the blind for adoption.

The national Eye Care Plan prioritised 3 major areas of disease control such as cataract, childhood blindness and Refraction & low vision, while recognized the need for focusing on to the tertiary services such as cornea, retina, glaucoma etc., as the emerging priorities.

The national plan emphasized the need for capacity building for secondary care stretched down to upazila level and primary care to community level with effective referral chain from primary to tertiary level of care. This will demand increased government investment in eye care infrastructure and development of various categories of ophthalmic manpower.

The plan further emphasized the need for effective national coordination led by BNCB as well as district level coordination through establishing district coordination cell bringing active care providers working together.

The plan envisioned that increased resource allocation for eye care in government health budget and NGO budget is essential to execution of the plan and realization of the plan objectives.

The plan also emphasised the need for active GO-NGO-Private partnership to implement vision 2020. On going partnership between Government and Sight Savers provides real life example of such partnership. This needs to be expanded

The members of the National Programme Review Sub-committee deserve thanks for their remarkable enthusiasm, relentless efforts and irrevocable commitment towards qualitative & quantitative improvement of the process. Thanks to other contributors who worked behind the scene for preparing, synthesizing & editing the draft for reviewing by the committee. Also thanks to Sight Savers International & ORBIS International for technical & financial supports, particularly Vision 2020 Coordination office for their continuous support in coordinating the review process centrally.

Professor M. A. Matin, MP
Chairman
National Eye Care Plan Review Sub-committee
Bangladesh National Council For the Blind (BNCB)
Ministry of Health & Family Welfare
Government of the Peoples' Republic of Bangladesh

1.0 Introduction and Context

Bangladesh is a developing country with an area of 147,570 sq. kilometers. The estimated population in 2001 was 123.1 million with an annual growth rate of 1.47% (Statistical Pocketbook 2002, BBS); and 77% of the population live in rural areas. Per capita Gross National Income (GNI) in the year 2002 was US\$ 380, and 36% of the population lived below the poverty line (World Bank, World Development Report 2004; World Development Indicators). Agriculture sector provides employment to 63% of the country's workforce. The literacy rate among adults (15+ years) is 51% (BBS Statistical year Book 2002).

The health status of the people has been steadily improving as evidenced from various indicators. The Life Expectancy at birth was estimated to be 61.71 years in January 2004 (CIA World Fact book). The estimated under-five mortality rate in 2002 was 73 per 1000 live births (Unicef website). The government is a major provider of health care in the country along with NGO and private providers. Health care in government facilities are provided free of cost. The per capita annual government expenditure on health and family planning was about US\$ 3 while the overall health expenditure per capita was US\$ 12 as estimated in 2001 (World Bank, World Development Indicators 2004).

The national health policy was officially adopted in 1998 which is now under the process of revision. The national population policy in its draft form has been approved by the cabinet recently. The national drug policy adopted in 1982 is also under the process of revision. The national nutrition plan has been adopted in 1997 and a national nutrition program is under operations. The national maternal health strategy has been adopted in 2001. In context of all these policies and strategies, the health system of the country is currently undergoing a process of reform under a sectoral approach of Health, Nutrition and Population Sector Program (HNPS) which was preceded by Health and Population Sector Plan (HPSP) which ran from July 1998 to December 2003.

The Government of Bangladesh has identified blindness as a critical social and health problem and demonstrated its commitment by forming a national apex body entitled Bangladesh National Council for the Blind (BNCB) in 1978 with a mandate to formulate, facilitate and monitor the national plan of action to prevent and control blindness. Besides, the Government of Bangladesh has ratified the Vision 2020 program; and while chairing the 56th session of World Health Assembly in May 2003, the honorable Health Minister of Bangladesh reiterated commitment for achieving vision 2020 goals within the stipulated time.

Bangladesh was one of the first few countries to have a national program for prevention of blindness. The Directorate of Health Services in collaboration with BNCB developed and launched first National Program for Prevention of Visual Impairment and Blindness in Bangladesh in the year 1980. This program was based on eye camp strategy in order to work within limited resources available during the time. Consequent to the paradigm shift in early 1990s that discouraged eye camps, and launched Vision 2020 in 2000, eye care program strategies in Bangladesh were changed and directed towards sustainable development approaches.

It is in this context BNCB has taken the initiative in response to the decision taken in BNCB full committee meeting chaired by the Health Minister, to review and update the National Eye Care Plan to incorporate in the ongoing Health Care program of the government. Accordingly a National Eye Care Plan Review Sub-Committee of BNCB was formed with selected members. As a methodology, the sub-committee undertook review and research of the existing plan, programs and literature, sought views of stakeholders, and prepared this draft which was widely shared and consulted with cross section of professionals and people including the clients in all the divisions; and finally all the inputs will be synthesized in the national plan through a national level workshop.

National Plan of Action on Eye Care would be based on the eye care needs of population. Plan would focus on human resource development, infrastructure and technology, strategies for control of major blinding eye diseases. Advocacy, resource mobilization, community participation; and continuous monitoring of the implementation of the plan through a coordinated mechanism would also be key elements of the national plan.

2.0 Eye Care Scenario in Bangladesh

2.1 Magnitude and Prevalence of Blindness

In a developing country like Bangladesh prevalence of blindness puts an additional burden to our socioeconomic conditions. According to The Bangladesh National Blindness and Low Vision Survey 2000¹, the age standardized blindness prevalence rate is 1.53% and thus, there are approximately 675,000 blind adult (30 and above age group) in the country (586,880 to 784,000)

The same survey revealed that blindness and low vision (LV) were found to be associated with ageing as both degrees of visual impairment were common among elderly persons, in women as compared with men (1.72% v 1.06% blindness prevalence), in illiterate persons, and, in males, among those who were manual workers when compared with non-manual employees. The study also found that bilateral blindness prevalence was highest in Divisions of Barisal (2.28%) and Khulna (1.97%), lower in Chittagong (1.43%), Sylhet (1.31%) and Rajshahi (1.21%) and lowest in Dhaka division (1.13%).

Cataract was the predominant (79.6%) cause of bilateral blindness the cataract surgical coverage (CSC) was notably low over the whole of Bangladesh (32.5%), especially in Barisal division. The level of cataract surgical coverage was found significantly lower for women than men, as was the CSC in rural areas when compared with urban settings.

One of the striking findings of the study was the number of uncorrected aphakes, with one quarter of intra-capsular cataract extraction eyes not being corrected with a spectacle lens. The imbalance of distribution of refractive rehabilitation was also evidenced by the findings that women, eye camp surgeries, illiterate subjects and rural dwellers were less likely to wear aphakic spectacles. The study emphasized the need for greater quality and quantity of cataract surgery, with strategies targeted at improving operative technique and particularly at ensuring effective post-operative rehabilitation.

The same survey also indicated that the prevalence of Low Vision is 0.56% of total population of 30 & above age group. The main causes of low vision, as per above definition, were: retinal diseases (38.4%); corneal diseases (21.5%); glaucoma (15.4%); and optic atrophy (10.8%). Based on the prevalence of 0.56% for low vision, it is estimated those approximately 250,000 adults¹ in Bangladesh are in need of low vision services.

Despite a substantial reduction in the fertility rate in Bangladesh in recent years, overall population growth continues to rise. As such there will be an estimated 175 million people in Bangladesh by the year 2020, with more than half of the population being over the age of 30 years, and one-fifth (34 million) being 50 years of age and older. The survey recommended organizing eye care service delivery in Bangladesh in near future, focusing principally on cataract surgical and refractive error correction services. The recommendation is consistent with

¹ The Summary Report of The Bangladesh National Blindness & Low Vision Survey (30 & above age group), May 2003 (Childhood Blindness Study in Bangladesh)

the prioritized areas of action for the region as outlined by WHO South East Asia policy document "Vision 2020 - The Right to Sight".

Using the WHO global estimate of Childhood blindness prevalence² of 0.75/1,000 children, there are about 40,000 blind children in Bangladesh. Childhood cataract is the leading cause of childhood blindness in Bangladesh and over 12,000 children³ are suffering from unnecessary blindness due to un-operated cataract and in need of surgical care from well-developed eye care facilities. Another 10,000 children³ are blind due to corneal scarring which could have been entirely prevented through effective primary health care and primary eye care services in the community. For every million population in Bangladesh, there would be 300 blind children. About a third of them (100 children) are blind from cataract. The provision of between 100 (uni-ocular surgery) to 200 bilateral cataract surgeries per million populations would be needed to restore vision in these children. Community based preventive measures will be required to prevent 25% of all childhood blindness, which is related to Vitamin A Deficiency disorders, diarrheal diseases, malnutrition and measles. Childhood cataract is a major treatable cause of childhood blindness that can benefit from future intervention strategies in line with the priorities set by the WHO's Vision 2020.

Refractive errors in children aged 5 to 15 years are an important public health problem. Myopia and hyper-metropia are the leading causes of refractive error in children in this age group-both of which are visually impairing conditions that can be significantly improved through adequate refractive correction. Population based refractive error studies in children have shown that nearly half of the visual impairment associated with correctable refractive errors in this age group is not receiving attention, especially those children living in disadvantaged social and economic conditions. As such refractive error remains uncorrected and unnecessary visual impairment persists.

In Bangladesh, assuming a prevalence of 4% of children aged 5 to 15 years to have visual acuity of less than 6/18, it is estimated that there are approximately 1.3 million children having visual impairment due to refractive errors³, the large majority of which are amenable to correction.

2.2 Current Interventions

The government is the major provider of the health care in the country along with NGOs and private sector. The per capita annual government expenditure on health and family welfare is less than US\$3 (Bangladesh Taka 180, Household Expenditure Survey, 2001). The government health sector has a well-organized service delivery network that is extended down to the village level. The focus of the program in the rural areas is primary health care that included essential health and family planning services but does not include eye care.

According to the National Eye Care capacity Assessment conducted by National Institute of Ophthalmology (NIO), ORBIS International and Sight Savers International in 2003, the country presently has about 141 hospitals providing eye care services that include service provision or deemed to have potentials in terms of strategic location and infrastructure for developing eye care services. Of the total hospitals, 71 hospitals representing 50% are from the government,

² Bulletin of WHO, 2001, 79(3) – Page 231

³ The Summary Report of The Bangladesh National Blindness & Low Vision Survey (30 & above age group), May 2003 (Childhood Blindness Study in Bangladesh)

56 representing 40% from the NGOs and 14 from the private sector representing 10%. The mentioned hospitals include 20 medical colleges, 55 government district hospitals, 53 NGO secondary eye hospitals and 8 private (for profit) hospitals/clinics and 5 tertiary hospitals. Two of the tertiary hospitals belong to the government and the remaining 3 are in NGO sector. Of the medical colleges, 14 are in the government and 6 in the private sector.

There are about 626 ophthalmologists and about 618 Mid Level Eye Care Personnel in the country. 70% of the all eye surgeries in Bangladesh⁴ are cataract surgeries. The productivity of ophthalmologists is affected by the limited availability of ophthalmic nurses and paramedics. There are only about 2,822 hospital beds⁴ available for eye patients in the entire country. Facilities at all levels have inadequate ophthalmic equipment and supplies, and often, the existing equipment is non-operational due to inadequate maintenance procedures and/or lack of trained people who can repair ophthalmic equipment.

Eye care services are virtually non-existing at rural community level and upazila (sub-district) level. Eye care is provided mostly in secondary level hospitals located in the district towns. However, the eye department of the district (government) general hospitals, in most cases, is not equipped with essential diagnostic and microsurgical equipment and adequate human resources. Recently, government has provided equipment for all district hospitals that include one set of slit lamp microscope, one set of ophthalmic operating microscope, one set of direct ophthalmoscope with spare bulb and 2 sets of instruments for cataract surgery. The government has also arranged for availability of either one senior or junior consultant (eye) for 54 district hospitals. Separate OT arrangement for eye surgeries also been made in these hospitals. So it is expected that all district hospitals from now onwards will be able to provide eye care services.

There are a few NGO eye hospitals and for-profit private eye clinics in some old / big district towns but they do not provide sub-specialty care. There are tertiary level government & NGO facilities only in Dhaka & Chittagong which provides sub specialty eye care. . The NGO facilities charge a modest or subsidized fee for services. Thus their fee structures and charity motives allow some poor patients in seeking NGO services. Majority population cannot afford to pay for private services. District level services include refraction, cataract surgery, treatment of corneal ulcer, treatment of ocular injury and medical treatment of glaucoma. A large number of ophthalmologists are working in the larger tertiary level government & NGO facilities and a few NGO facilities in Dhaka & Chittagong. Services in tertiary facilities include all the district level services and surgical treatment of glaucoma and YAG laser treatment.

There are 4 eye hospitals in the country where a full-fledged pediatric ophthalmic unit has been established. Two eye hospitals have established corneal sub-specialty unit; and only two eye banks are functioning in limited scale. Six vitreo retinal units exist in the country. The development of sub specialty in eye care is gradually picking up which need to be augmented both in Government and Non-Government sector.

2.3 Program for the Control of Blindness

In Bangladesh, considerable steps have been taken in the last planning period to develop and promote Vision 2020 at the national level. Vision 2020 was officially launched in Bangladesh in 2000. Many of the activities of Vision 2020 have been included within the National Health, Nutrition and Population Sector Program (HNPS), planned for July 2003 - June 2006; such as comprehensive district level eye care program run by some NGOs.

⁴ National Eye Care capacity Assessment, 2003 (Conducted by NIO, ORBIS, SSI. Final Report yet to be published)

2.3.1. Disease Control Status

2.3.1.1 Vision 2020 disease priorities in Bangladesh

There are many blinding conditions in the country. However, four key blinding diseases have been identified as priorities: cataract, childhood blindness, refractive errors and low vision. The other blinding diseases include: corneal diseases, glaucoma, ocular trauma and diabetic retinopathy.

Cataract

Cataract remains the major cause of avoidable blindness in Bangladesh. The national prevalence survey reveals that there are 4,200 cataract cases per million population and an incidence rate of 840 per million. Current CSR in Bangladesh is considerably below the required level to even manage the incidence. Good quality cataract surgery is essential, not only in terms of benefits to the individual patient, but to increase the uptake of cataract surgery. The cataract surgical rate should be increased to at least 1,500/million population to deal with annual incidence only.

There are 550,000 cataract blind in Bangladesh which can easily be treated with available technology. Implantation of Intra Ocular Lens (IOL) is the best procedure for restoration of sight of a cataract blind person. This requires substantial increase in the CSR to 1500-2000 from existing rate of 957 in next few years to deal with current incidence. For elimination of cataract backlog a CSR of between 2000 - 2500 is required where as in order to bring cataract blindness under control a CSR between 2500-3000 would be necessary.

NATIONAL PERFORMANCES⁴

Total adult cataract surgeries performed in 2002	:	119,561
National Cataract Surgery Rate (CSR) per year	:	957 per million of population

Broken-down into:

Hospital based	:	83220 (69.60%)
Eye camp surgeries	:	36341 (30.40%)

By sector

Government	:	12,535 (10.48%)
NGO	:	101,736 (85.09%)
Private	:	5,290 (4.42%)

⁴ National Eye Care capacity Assessment, 2003 (Conducted by NIO, ORBIS, SSI)

The following table shows the national cataract surgery rates divisions

Table: National Cataract Surgery performance by divisions - 2002

Division	Population in millions in 2002	Total cataract surgeries performed	Divisional CSR
Dhaka	39.2 (31.39%)	41,231	1,052
Rajshahi	30.4 (24.33%)	29,770	979
Chittagong	24.4 (19.54%)	23,640	969
Sylhet	8.0 (6.41%)	10,418	1,302
Khulna	14.7 (11.76%)	10,092	687
Barisal	8.2 (6.57%)	4,410	538
Total	124.9 (100%)	119,561	957

Despite the increased cataract surgical intervention the following issues remain:

- I. The proportion of IOL surgery is only around 59% across the country. Dhaka and Rajshahi divisions accounted for the major (65%) contribution, while Barisal has the least (less than 1%) followed by Khulna (6.6%).
- II. The quality of cataract surgery has to be measured by long-term post-operative visual acuity, which requires significant improvement with regard to the use of technology. Some of this would be addressed by switching over to the IOL surgery there by reducing the need for refractive correction. There is also a need for follow-up for reducing post-operative complications and measuring outcome of the surgery to monitor quality of restored sight. For this standard protocol for service delivery and monitoring quality needs to be developed and agreed by the ophthalmic profession and eye care providers for putting this in to practice.

There are several dimensions to these issues:

- a) *Geographic Coverage*: This has very wide variation within the country between various divisions. There is almost 3-fold difference with Sylhet performing over 1,300 surgeries per million populations while the rate in Barisal is slightly higher than 500.
- b) *Socio-economic*: There is a bias for the urban, since, eye care infrastructure is mostly urban based, hence, literate and financially affluent population are getting a better coverage of cataract services than the others.
- c) *Gender Issues*: The female and male population ratio is almost 50:50 and it is estimated that the prevalence of cataract amongst both the groups is same. Different service delivery studies conforms that the majority of the female population due to various socio-economic factors do not equally receive the services. Hence, emphasis should be given to the female population to reduce the gaps.

Refractive error and low vision

Refractive errors and low vision, in the past, have not been recognized as significant causes of blindness. The national prevalence survey reveals that the number of refractive cases in Bangladesh is 27,250 adults and 9,925 children per million of population. It means there are estimated 3.3 million adult refractive error cases with <math><6/12\text{ VA}</math> and 1.3 million children refractive error cases with <math><6/18\text{ VA}</math>. In addition there are 1,950 adults and estimated 120 children, per million of population, that would be expected to benefit from low vision services.

In addition, the total number of population at the age of 40 needs refractive error correction for near works. Refractive error & low vision should be given utmost importance especially for children because delayed intervention can lead them to blind.

However, some of the challenges to address this issue include the lack of adequately trained human resources, availability of glasses and provision of accessible and affordable services. In specific terms, training of Medical Officers of Upazila level in basic ophthalmology especially in refraction, introduction of optometry course in the country, training opportunity for the opticians, and providing incentive to the private sector so that glasses can be made available and accessible at affordable price especially in rural areas need to be organized.

People with permanent low vision who are not treatable with conventional refraction services are referred as low vision patients. Low vision remains a major challenge with even ophthalmic personnel having a low awareness of this condition. The centres that provide low vision services in the country are only few. The capacity to provide service is far less than the potential need. There is a need to create capacity in terms of trained human resource, establish a reliable and affordable supply chain for low vision devices and have a mechanism in place, which can actively identify those who can benefit from low vision services.

CHILDHOOD BLINDNESS

Childhood blindness is relatively complex and demanding area of work. Though the overall numbers of blind children are low compared to adults, in terms of blindness years, it is second only to cataract. Over past few years quite a lot of effort has gone into enhancing understanding of this key disease area.

The Childhood Blindness Study in Bangladesh revealed that 31% of the blindness was due to problem with the lens (cataract), and 27% of the blindness was due to problems in the cornea (Vitamin A deficiency). Including glaucoma (4%) and aphakia (5%), 67% of the childhood blindness is thus avoidable (preventable or treatable). The study also found that 90% of the childhood blindness was developed within first 5 years of life. The study indicated that an estimated 40,000 children are blind in Bangladesh.

The national workshop on childhood blindness in 2003 recommended that planning for the control of blindness in children should be based on catchment population of 10 million, rather than 1 million used for planning control of blindness in adults. A total of 16 pediatric ophthalmology centers need to be established by 2010 out of existing 4. Teams of pediatric ophthalmology need to be developed at different levels with different skills mix. There are needs for continuing Vitamin A supplementation and its augmentation with pregnant and lactating mothers and in pockets of under performance. Inclusive education of children who are blind or visually impaired needs to be expanded. Most importantly, primary eye care needs to be incorporated in the primary health care system and the identified barriers in availing services need to be removed.

2.3.1.2 Other Blinding Conditions:

CORNEAL DISEASE & OCULAR TRAUMA:

The main area of concern is corneal infections arising out of trauma or other infectious reasons. The issues relate to ensuring that the patient engages in right health behaviour when in need, as well as, to ensure that the providers have skills for making the right diagnosis and the required infrastructure to aid diagnosis and treatment. A lot of the corneal injuries happen in the rural areas during peak harvesting seasons i.e; trauma by paddy grains and leaves. Often such injuries are minor when they happen and there is a tendency to ignore it or resort to local harmful practices that invariably lead to the formation of untreatable corneal ulcers. Other important causes of corneal injuries are road traffic accident, social and political violence, industrial hazards, etc. Most of the eye care institutions/facilities are not equipped with appropriate diagnostic and surgical equipment and basic laboratory facilities to identify the organism that causes the corneal infections. Thus, there is a need to work both at the community level for prevention of eye injuries and ulcer and at the institutional level for developing skilled manpower and appropriate equipment facilities.

For more advanced cases of corneal infections which have lead to corneal opacity, the only intervention often require is corneal transplantation. Although, there is no specific information on how many corneal patients require corneal transplantation in the country, however, it is evident from hospital based statistics that a huge number of corneal opacity cases require cornea transplantation. The current number of cornea collection in the country is very minimum compare to the need and not more than 200 corneas per year². It would be an important step to establish a base line data both in terms of current backlog as well as the new cases that would require corneal transplant. Thus, there is a strong need of establishment of modern eye banking programs in the country.

Nutritional and infective causes of corneal blindness may be reduced through strengthening vitamin A supplementation and integration of the primary eye care into the primary health care may control the problem of corneal blindness especially in children to a very major extent.

GLAUCOMA

Glaucoma affects a significant number of people and is one of the leading causes for permanent blindness. According to the Bangladesh National Blindness and Low Vision Survey 1.2% of all adult blindness is due to glaucoma. In general, more people are affected by glaucoma than the number of actual glaucoma blind.

In a population based epidemiological survey on glaucoma among Bangladeshi adults³, it was found that 2.8% of the population aged 35 years and above were suffering from open angle glaucoma and another 11.2% were glaucoma suspect. Thus, in Bangladesh there are about one million people having open angle glaucoma.

Management of glaucoma is different than any other eye conditions in terms of complex nature of diagnosis and follow up for long period. Currently, only few eye centres have the appropriate technology and trained human resources to diagnose and treat glaucoma patients. One of the immediate steps that can be taken is to ensure that all the eye care providers are encouraged to have in place a process to examine all the patients who come into the system either in the hospital or in out reach programs for glaucoma screening and initiate necessary treatment or referral. This can help prepare community to become more aware of the disease and the treatment options.

² Annual Report of Sandhani National Eye Donation Society and CEITC, 2003

³ Rahman, M Mustafizur, glaucoma a silent sight killer, Trans of the ophthalmological society of Bangladesh, June 1999, vol 26, issue 1, page 14-17

Strategies to improve diagnostic skills through instrumentation and training, opportunistic screening and improvements in surgical skills and research in newer and safer medications can help address the issue of glaucoma.

DIABETIC RETINOPATHY

This is an emerging problem and is likely to get compounded by changing life styles and ageing of the population. The prevalence of diabetic retinopathy among the diabetic patient is 27%⁴. If the condition is diagnosed and treatment initiated early, it can prevent blindness. Available technology with laser treatment can easily help preventing this blinding disease.

The current capacity in the country to diagnose and treat diabetic retinopathy is very limited to few centres only to deal with this huge burden. Therefore, there is a strong need to enhance and develop the capacity for early detection and treatment of diabetic retinopathy.

3.0 Gaps and Constraints

The following program constraints have observed in the national eye care program.

3.1 Lack of National Policy & Program for Eye Care

In Bangladesh, some steps have been taken in the past few years to develop a vision 2020 plan at the national level. There is a strong need for a national blindness prevention policy in the country that will give clear direction and guidance for all blindness prevention activities at all levels. The issue of blindness problem should be incorporated in the HNPSP, Fifth Five Year Plan document and the final PRSP. With the formulation of National Eye Care Plan, this gap can be minimized.

3.2. Poor Coordination Mechanism at national & local level

Mechanism of coordinating the efforts of the private, voluntary and public sectors involved in blindness control in Bangladesh is almost absent; as a result, coverage has been insufficient and erratic. Although urban areas, excepting the urban slums, are generally well served by all three sectors, poor may not have access and afford their services. Most rural areas, particularly the hard to reach (e.g. low lying, char, haor and tribal ones) depend solely on the public sector and receive uneven and infrequent services, or no service at all. Coordination between different cells of department of DG health is extremely important to strengthen the eye care services at all level.

3.3 Uneven distribution of Human Resources

Fifty six percent of the nation's ophthalmologists work in the Dhaka division, of which 44% in Dhaka city only. Rajshahi district ranks the second sharing (16%), followed by Chittagong (12%) of the total ophthalmologists. Very few of the ophthalmologist is working in remote areas. Efforts to place ophthalmologists even at district level have been problematic. Inadequate educational and professional opportunities and higher health risks are major disincentives.

⁴ Rahman, A. H. Syedur and Ali, Md. Hazrat, Diabetic Retinopathy and its Management, Diabetic Association of Bangladesh, 1998, page 3

3.4 Underutilization of Existing Facilities

Despite the investments in infrastructure, equipment and manpower, many public sector facilities remain underutilized for lack of trained human resource, materials and supplies required for service delivery. Though secondary and tertiary level eye care facilities have come up in several cities, the optimum utilization of the available facilities is yet to be effective and ensured due to various reasons.

3.5 Mismatch in infrastructure, human resources and limited training

Nation wide provision of primary eye care has not been established so far and small scales (selected districts) initiatives with support of International NGOs is under way. Primary eye care aims at identifying diseases of the eye at an early stage and providing remedial measures and where necessary timely referrals to secondary and tertiary eye care services.

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About one third of the ophthalmologists do not have any formal micro surgical training. Also limited training facilities for the ophthalmologists & support staff restricts their potential to exercise their skills. Therefore, even with the availability of equipment & infrastructure they are not able to increase the surgical rate which is crucial to reduce our disease burden. So emphasis should be given to increase training centers & arrange fresh & refresher training for the ophthalmologists & other support staffs.

Now NIO and few other centres are providing training in micro-surgery and the quality of the training is substantially improved over the last few years. However, refresher courses and in-service training for ophthalmologists and other ophthalmic personnel are scarce.

3.6 Lack of adequate Primary Eye Care

Nation wide provision of primary eye care has not been established so far and small scales (selected districts) initiatives with support of International NGOs is under way. Primary eye care aims at identifying diseases of the eye at an early stage and providing remedial measures and where necessary timely referrals to secondary and tertiary eye care services.

3.7 Emphasis on Quantity over Quality

In an attempt to reduce the burden of blindness, the focus of eye care programs has primarily been on increasing the number of cataract operations. The concept of quality of outcomes or patient satisfaction is emerging and is being recognised to be as important as quantity. There is increasing emphasis on quality simultaneous to increasing quantity.

3.8 Inadequate awareness among the potential beneficiaries

Rural, illiterate and under-privileged are not fully aware about various interventions that are available to restore vision of the blind. Generally people suffer from eye diseases, do not seek surgery for various social, cultural and psychological reasons such as fear of surgery, hospitals or travel, poor quality outcomes among relatives or neighbours, family obstacles, and reliance

on outdated practices such as village doctors. Many individuals consider blindness a natural condition of life, and are due to ageing.

3.9 Barriers in uptake of eye care services

Some patients do not seek treatment because of logistical and economic constraints. Geographical isolation limits access to facilities posing a serious problem for women without sons who often cannot find an escort. Other major obstacles include: transportation costs, loss of wages as a result of accompanying family members for treatment, unauthorized fees at service facilities and other related expenses.

3.10 Inadequate Comprehensive Eye Care (CEC)

Vision 2020 promotes the comprehensive eye care (CEC) model as its preferred program approach. The CEC concept aims to ensure that beneficiaries have access to a network of services covering the promotion of eye health, prevention of blindness and the provision of clinical services for treating common and blinding eye diseases. The CEC approach relies on building eye care services within overall local health care system. It emphasizes the need for accessibility of services at community level and encourage community participation at all levels in order to maximize ownership and the use of local resources.

Community involvement and ownership is crucial in the CEC concept and community based organizations representing the interest of visually impaired people can play a vital role in the management and advocacy for resource allocation. A major challenge is to ensure that CEC program provides good access to services for beneficiaries, particularly the poorest and the most disadvantaged people across the whole of the target population. Achieving good coverage and access for all is hugely demanding.

The obstacles in achieving self sustainable CEC programs are even more than for CEC programs. Not only must all eye health services be in place and adequately resourced but so too must education and rehabilitation services. Different ministries and sectors of civil society, not necessarily used to collaboration, invariably do have to work together and play their part in the overall provision of services. Good referral between the different agencies, and their ownership of the program, are virtually in terms of the success of a project.

3.11 Targeting Poorest of the Poor

Poverty and prevalence of blindness are intimately linked. In disadvantaged communities a vicious circle exists where a lack of health awareness and health services leads to poor eye health which in turn can lead to blindness and increased poverty. Within poor communities, people who are disabled are amongst the most marginalized. Women with disabilities are often doubly disadvantaged. Promotion of the CES concept would help to break the cycle of poverty and in the longer term contribute to a reduction of poverty.

3.12 Inadequate Government-Non Government and Private Partnership

Effective advocacy at any level requires good networking with individuals and organizations. Partnership between the Government-Non Government and Private sectors ensures local ownership and long term sustainability. The nature and success of any partnership is essentially depends on the relationship between the organizations. The relationship built on mutual aims and reciprocal trust and these are key to the success of the partnership.

3.13 Social Inclusion

Promoting rights, responsibilities, abilities and opportunities of people who are irreversibly blind or severely visually impaired is to be a key part of the national plan. Service delivery in terms of social inclusion through community based rehabilitation (CBR) and inclusive education (IE) services. Such programs are ideally delivered within the framework of comprehensive eye services (CEC). Rehabilitation services should be linked in mainstream of eye care services. Lack of coordination between the different ministries restrict to take & expansion of integrated & coordinated program. So multicultural & network oriented program needs to be developed.

3.14 Financing eye care services

Majority of the eye care services is not accessible to the poorest and most disadvantaged communities as local resources to support comprehensive eye services are scarce. As such a major challenge is to how best develop cost recovery mechanisms that help the move towards local self sufficiency that will ensure that the poorest and disadvantaged people are still able to access the services. Introducing demand side financing to provide safety net to the poorest section of the society should be considered as an option in line of recently introduced maternal health voucher scheme.

3.15 Inadequate Monitoring and Evaluation

The biggest concern in the eye care program was observed in the field of monitoring and evaluation. The only information available with the Directorate is based on yearly disease profile produced by the DGHS. The patients of all eye diseases (district and upazila hospitals) are recorded under one item as "eye diseases" over the years, for example 1988-1997. The disease profile last produced by the DGHS 1999-2000 and was published in December 2001. The performance information on eye care of the NGO hospitals are available on limited scale. The private hospitals do maintain some of the information based on their needs. Mechanism of collecting and reporting of nation wide eye care service related information is yet to be developed. There is no standard set of information collection tool, which is to be followed by the hospitals. Therefore there is a need for a focal points for eye at district level to enhance coordination & monitoring.

In the neighboring countries there are mechanisms to monitor and assess the progress of the national plan of action on eye care by an apex body formulated in consensus of all the important stakeholders. This is yet to be set up in Bangladesh. DG health with assistance from PHC & director hospital should be entrusted to monitor & implementation of National Eye Care Program.

3.16 Absence/inadequate eye care facilities at local level

3.17 Accessibility of eye care service

3.18 Mal practice/treatment

Mal treatment on eyes by the village quack, traditional healers, & the non-qualified health professional is also a major cause of people becoming blind in rural areas. Using of traditional medicine & other mal treatment needs to be regulated & stopped. BMDC & the state medical faculty should be given the authority to control mal practice & other non-qualified technologists.

4.0 Strategic Directions

For effective prevention and control of avoidable blindness, following areas will be addressed under the plan:

4.1 Strengthening Advocacy

- Reactivating BNCB in producing comprehensive national plan
- Formulation of national eye care policy
- Mobilizing additional resources for eye care from Govt, different INGOs, bilateral and multi lateral agencies
- Ensure MSR for eye care at different service delivery level
- National observance of eye care day

Blindness is a public health problem due to higher rate and magnitude. There is a need for giving impetus to blindness control activities through public awareness coupled with strong advocacy from politicians, policy/decision makers, professional bodies, community leaders, NGOs and those involved in providing health care services. The need for the services of mid level eye care personnel are to be endorsed both by the government and professional bodies. Monitoring of the eye care services is to be done using management information system.

4.2 Infrastructure and technology development

- Strengthening existing facilities at different levels
- Establish new facilities at different levels
- Utilization of modern technology
- Establishing referral system

There is evidence that the available infrastructure is inadequately and, often, inappropriately utilized. The surgical outputs of the existing facilities can be doubled in many instances with little additional financial, infrastructural and technical inputs. Infrastructural capacity will be further expanded through strengthening the existing facilities and establishing new facilities. Strong referral system from primary, to secondary and tertiary facilities will be established and made more functional. Better deployment and retention of trained personnel to the district level will be emphasized.

4.3 Human resource development

- Revisiting existing human resource development processes
- Developing sub-specialty
- Developing mid level eye care personnel (MLEP)
- Develop deployment & retention policies to eye care personnel

Efforts will be made to ensure improved (maximum) utilization of human resources by deployment of eye surgeons to eye care facilities. All ophthalmic curricula will be reviewed, standardized as appropriate and accredited. The ophthalmologists will be trained or retrained in IOL/SICS. Efforts are to be made to develop all sub specialty. Training programs for MLEP will be developed, and MLEP be trained, posted and supported, to increase the efficiency of eye care delivery. Programs will be developed in developing primary eye care workers.

4.4 Reducing the disease burden

- Increasing cataract surgical rates
- Improving quality and outcome of surgeries
- Understand barriers to uptake and design strategies to address them

- Training of pediatric eye care team to deal surgical causes of childhood blindness with establishing pediatric eye care facilities
- School screening programs
- Supply of low cost spectacles at different service delivery level
- Reducing blindness due to refractive errors
- Create public awareness for early detection and control of glaucoma/other blinding diseases
- Develop comprehensive service delivery models

Cataract surgical rate is to be increased to at least 2,000/million population by the year 2010 from existing 957/million. There will be improved accessible, available, acceptable and affordable services. The quality and outcome of surgeries be improved through ongoing monitoring of outcomes of individual surgeon against standard protocol. Outreach case findings will replace eye camp surgeries. Programs/new facilities will be designed/created in a way so that barriers to uptake are either eliminated or reduced. Models of comprehensive eye care for the control of blindness will be developed from community through to tertiary level, and evaluated to determine optimal approaches to the control of blindness in children. School screening programs will be established to identify children with significant refractive errors. Low vision centers will be established to provide low vision care. Public awareness will be raised for emerging blinding conditions, so that early case detection and preventive measures can be taken.

4.5 Improving Coordination and partnership

- Strengthening coordination in between Government, NGOs and Private sectors
- Developing intensive partnership programs

Coordination between the Government and NGO activities are critical, and need to be further strengthened. Optimum utilization of scarce resources of the government and NGOs will be done through proper planning and coordination. Some specific principles are to be articulated for coordinated efforts. Partnerships programs between the government and NGOs will be emphasized and expanded to have maximum coverage. In this context collaborative presence of international agencies and national NGOs will be required. Private sector will be encouraged to take more responsibilities in eye care services.

4.6 Developing / Strengthening eye health promotion system

4.7 Programmatic Issues

4.7.1 Socio-cultural, Logistical and Financial Issues for Potential Beneficiaries

- Raising community awareness on eye health and eye care services
- Conducting outreach eye care program
- Introducing financial assistance to the poor in availing services by introducing “Demand Side Financing” in eye care

Rural, illiterate and under-privileged are not fully aware about various interventions that are available to restore vision of the blind. They also do not have the information of the available eye care facilities. Programs be developed to remove these barriers. Eye care services be made available to the community through outreach centres with emphasis to 'Hard to Reach' areas. Mechanisms be developed for financial assistance to poor community in availing the services.

4.7.2 Sustainability

- Developing cost recovery mechanism
- Cost Containment
- Cross subsidy
- Demand generation for eye care services
- Quality improvement

Majority of the eye care services is not accessible to the poorest and most disadvantaged communities as local resources to support comprehensive eye services are scarce. As such a major challenge is how to best develop cost recovery mechanisms that help the move towards local self sufficiency that will ensure that the poorest and disadvantaged people are still able to access the services. Impact assessment case studies and evaluations will be carried out to see the level of sustainability.

4.7.3 Social Inclusion

Increasing emphasis on community based rehabilitation and inclusive education programs

Programs will be developed in terms of social inclusion through community based rehabilitation (CBR) and inclusive education (IE) services. This would be piloted to assess how best to promote inclusive education programs and to ensure that the CBR programs are effective in terms of impact upon the beneficiaries. Such programs ideally will be delivered within the framework of comprehensive eye services CES.

4.7.4 Comprehensive Eye Service

- Promoting comprehensive eye services
- Assessing sustainability of comprehensive eye services

In order to provide rehabilitation and education services to the blind and low vision persons CES concept will be promoted whereby rehabilitation and education services are built on to and integrated with comprehensive eye care programs. Community involvement and ownership is crucial in the CES concept and community based organizations representing the interest of visually impaired people can play a vital role in the management and advocacy for resource allocation. A major challenge is to ensure that CES program provides good access to services for beneficiaries, particularly the poorest and the most disadvantaged people across the whole of the target population. Achieving good coverage and access for all is hugely demanding. Good referral between the different agencies, and their ownership of the program, are virtually in terms of the success of a project. Impact studies will be conducted in assessing the sustainability of CES programs

4.7.5 Targeting Poorest of the Poor

- Designing appropriate programs for hardcore poor
- Strengthening long term planning for mobilizing fund
- Strengthening special monitoring and evaluation system

For covering the hard core poor and developing the better implicative mechanism, a separate program design will be needed which involve separate policies and management. Different modalities of Demand Side Financing will be piloted in selected sites; experiences will be documented and widely circulated. This new program should be designed considering the reach of the programs and how much they will be benefited. Special activities can be introduced for the disadvantaged groups. The program will have along term plan for mobilizing funds. For better implementation of the program, a special monitoring is needed.

5.0 Strategies and Outcomes

5.1 Strengthening Advocacy and Coordination

- 5.1.1 National Council for the Blind restructured to coordinate blindness control program, policies & guidelines in the country.
- 5.1.2 District/upazila level coordination and public-private partnership in blindness control activities strengthened
- 5.1.3 Formation of a national Vision 2020 Forum and Corresponding District level Forum in promoting Vision 2020 comprising of representative from ophthalmologists, BMA, private doctors, local administration, public, social welfare, women affair department, local elites/leaders, teachers, civil society, media groups, NGOs. District committee can be conveyed by Civil Surgeon
- 5.1.4 Organize workshops at district level for preparing Divisional, district and sub district level plan involving stakeholder in district /upazilla/union level
- 5.1.5 Coordination of government, INGOs, local NGOs, private institutions for resource mobilization, networking and prioritization
- 5.1.6 Identify policies, review, and suggest amendments to favor blindness prevention activities. Examples: Eye donation law, high tax on equipment, etc.
- 5.1.7 Conduct evidence-based research studies: Best Practice in eye care services.
- 5.1.8 Organize and support workshop/round-tables on Vision 2020 in districts, upazila & union level.
- 5.1.9 District/upazilla/union blindness prevention committee (BPC) should be formed under the leadership of health dept. and patronized by DC/UNO/Union parishad chairman
- 5.1.10 Organize outreach program at sub-district or grass root level for patient screening
- 5.1.11 Depute/posting of ophthalmologist at sub-district level
- 5.1.12 Development of IEC Material for promotion of eye health and cataract campaign
- 5.1.13 Financial assistance to cataract patients for surgery demand side financing through Voucher distribution
- 5.1.14 All IOL and imported eye instrument should be tax free
- 5.1.15 Inclusion of ophthalmic supplies and IOLs in MSR budget
- 5.1.16 Provision of basic equipments/drugs IEC material at different level of service delivery
- 5.1.17 Coordination and collaboration in celebration of WSD

- 5.1.18 Once the systems are developed and in place, it needs to be incorporated properly at all managerial level through government order so that the activities continued and monitored till required.
- 5.1.19 Eye health information dissemination through IPC, FGD, Group discussion, advocacy meeting, billboard, hand bill, Radio, TV, Newspaper etc.
- 5.1.20 Patient referral system should be patient friendly and supported by other means like: Medicine, IOL and other logistics
- 5.1.21 Functional medical audit system should be established to measure the performance at all level of implementation
- 5.1.22 Monitoring and evaluation and feed back to national level yearly
- 5.1.23 BNSB & other eye care NGOs should work with the Govt. ophthalmic sector in a coordinated manner
- 5.1.24 Govt. subsidy fro poor cataract patients

5.2 Eye care Infrastructure and equipment

5.2.1 National/Divisional level

- 5.2.1.1 Provide tertiary eye care services including paediatric ophthalmology through National Institute of Ophthalmology (NIO), BSMMU, BIRDEM, Chittagong Eye Infirmary and Training Complex (CEITC), Islamia Eye Hospital, private, Govt. & NGO Medical College Hospitals.
- 5.2.1.2 Strengthen existing eye care facilities at tertiary level both government and NGOs
- 5.2.1.3 Establish new eye care facilities in government and NGO sectors
- 5.2.1.4 Provide equipment for operation theatre at tertiary level as set standard (Operating microscope: 4; OT table: 3; Sterilizer:6-8; Vitreo Retinal Unit: Vitrectomy, ENDO Laser; GA backup for paediatric & trauma cases. Color fundus photography, fundus fluencies angiogram)
- 5.2.1.5 Organize/Arrange infrastructure and equipment as set standard (OPD & waiting room; refraction & minor operating room; Trial Lens: 4; Retinoscope: 4; Direct Ophthalmoscope: 4; Indirect Ophthalmoscope: 2; Slit lamp Biomicroscope: 4; 90 D Lens: 2; Applanation Tonometer: 2)
- 5.2.1.6 Arrange for diagnostic and therapeutic equipment as per set standard (A Scan & B Scan: 1; Keratometer: 1; Yag Laser; Diode laser; Autorefractometer; Visual Field Analyser and Ocular Microbiology Laboratory)
- 5.2.1.7 At lest two anaesthetist placed/recruited of each of the 16 proposed tertiary level paediatric eye care centres
- 5.2.1.8 Essential paediatric ophthalmic diagnostic and surgical equipment, including equipment for paediatric anaesthesia, provided to all tertiary level paediatric eye care centres

- 5.2.1.9 Four fully equipped centres established to provide Refractionist/Optomestrist training, including at least 3 in Government health sector. Refractionist must be a medical graduate & at least one be taken from district hospital & UHCs
- 5.2.1.10 Establish a balance between equipment and human resource in each centre
- 5.2.1.11 All facilities for preventive, promotive, curative eye care
- 5.2.1.12 All eye care sub-specialties should be developed at all tertiary level hospital with all logistics & equipment
- 5.2.1.13 One industry should be set up for production of Ophthalmic logistics at national level (i.e: IOL, gel, suture & other disposable items)
- 5.2.1.14 Administrative and financial maintenance support should be ensured regularly at all level
- 5.2.1.15 Authority (administrative & financial) to procure and maintain equipment to be ensured
- 5.2.1.16 Develop micro surgery training provision in all (MCH)

5.2.2 District level

- 5.2.2.1 Equip the government district hospitals (where applicable) in delivering secondary eye care services with immediate effect
- 5.2.2.2 Develop one set up in each district by 2005 to deliver (secondary) eye care services
- 5.2.2.3 Develop two set up in each district by 2010 for one million population to deliver (secondary) eye care services
- 5.2.2.4 Dedicated eye operation theatre (OT) and eye wards (10 beds) or 10% of total beds established/allocated in all government district hospitals. Temporary OT to start with & planned OT by 5 years time.
- 5.2.2.5 Operating microscope, Slit lamp, A-scan, cataract surgical set, Indirect Ophthalmoscope and other essential ophthalmic equipment provided to all government district hospital
- 5.2.2.6 Equipment for out patient/diagnostic room available (Slit lamp, Retinoscope, Auto Refractometer, Trial Lens set, Direct Ophthalmoscope, Goldman Applanation Tonometer, Keratometer, and A Scan)
- 5.2.2.7 Establish a balance between equipment and human resource in each centres
- 5.2.2.8 Develop a referral system from community to sub-district to district to tertiary level
- 5.2.2.9 Equipping / staffing district hospitals as secondary eye care facility with a referral linage between the UHC, district and tertiary eye care facilities
- 5.2.2.10 Mobile screening team with transport facilities at district level
- 5.2.2.11 OPD for eye needs to be developed with adequate logistics and manpower at all district level hospital

5.2.2.12 Authority (administrative & financial) to procure and maintain equipment to be ensured

5.2.3 Upazila & below Level

5.2.2.13 Develop an eye OPD in each UHC with the following facilities:

5.2.2.14 Manpower: At least one eye consultant, MO cum Refractionist (One) & One paramedic/nurse

5.2.2.15 Instrument: Slit lamp Retinoscope, Trail lens set, Direct ophthalmoscope, Schitzo tonometer, Torch light and loop

5.2.2.16 Set up a minor operation theatre which requires required surgical equipment

5.2.2.17 Develop primary eye care services at union health centers with adequate human resources, equipment & supplies

5.2.2.18 Develop a strong referral system from community to district hospital and above

5.2.2.19 Networking facilities need to develop among all level of field staff for providing effective Primary eye care service in the community

5.2.2.20 Develop monitoring mechanism for primary eye care service delivery

5.2.2.21 Organize screening camp for cataract patients

5.2.2.22 Authority (administrative & financial) to procure and maintain equipment to be ensured

5.3 Strengthening Human Resource

5.3.1 Ophthalmologists/Medical graduates trained in Ophthalmology

5.3.1.1 The requirement of Ophthalmologists by 2010 be 1450 as against 626 available in 2003

5.3.1.2 The requirement of Paediatric Ophthalmologists during 2010 should be 16 as against 6 available in 2003 1 paediatric ophthalmologist per tertiary center is required

5.3.1.3 MO should be designated as MO cum refractionist. The requirement of those during 2010 be 400 (100 in year 1, 100 in year 2, 100 in year 3 and 100 in year 4) as against none in 2003

5.3.1.4 All new ophthalmologists are adequately trained to perform ECCE/SICS-IOL surgeries & should be decentralized

5.3.1.5 Accreditation process revised to ensure that new ophthalmologists are able to perform SICS-IOL surgeries

- 5.3.1.6 Identify training institutions/trainers for training of existing Ophthalmologists in SICS-IOL surgeries.
- 5.3.1.7 Develop continuing education program/refreshers training for all ophthalmologists
- 5.3.1.8 150 existing Ophthalmologists trained in SICS-IOL surgeries (100 each year) from tertiary centers, all medical colleges, all eye institutes, all eye hospitals
- 5.3.1.9 At least 16 Ophthalmologists trained in paediatric oriented ophthalmology sub speciality with other members of paediatric team namely:
 - Paediatric anaesthetist
 - Paediatric nurse
 - Paediatric refractionist
 - Paediatric multi skilled ophthalmic medical assistant
- 5.3.1.10 Ten Orthoptists trained
- 5.3.1.11 Ten Ophthalmologists trained in posterior segment ophthalmic sub speciality
- 5.3.1.12 Arrange deployment of 1 Ophthalmologist and 2 medical officers (MO-Eye) in each district hospital & 1 Junior Consultant (Ophthalmology) at THC level with standard eye testing equipment.
- 5.3.1.13 Policy to be framed for 03 years post training mandatory placement
- 5.3.1.14 Provision of replacement with similar qualification and skills for ophthalmologists
- 5.3.1.15 Introduction of performance based career advancement provisions
- 5.3.1.16 Implement proper promotion and career planning for the ophthalmologists
- 5.3.1.17 Admission of number of post graduate students need to increased without compromising quality both in govt. and non-govt. sector to minimize the need / gap.
- 5.3.1.18 Each UHC should have full flagged Ophthalmology unit consisting of one consultant, two M.O. both indoor and outdoor & trained nurse for OT
- 5.3.1.19 An eye care team should be developed at district level facilities comprising of one senior & junior ophthalmologist/consultant, one assistant register, one MO with refraction training & 4 trained senior staff nurses
- 5.3.1.20 At least 6 ophthalmologists trained in glaucoma sub specialty (1 from each division)
- 5.3.1.21 At least 6 ophthalmologists trained in corneal sub specialty (1 from each division)

5.3.2 Mid Level Eye care Personnel

Categories of MLEP include Ophthalmic nurse; orthoptist, optometrist, Low Vision Technician; Bio Medical Technician; Counsellor and Eye Care Manager)

- 5.3.2.1 Consensus building on the numbers of and types of MLEP (Ophthalmologist: MLEP = 1:4)
- 5.3.2.2 Ensure endorsement from the government and the professional bodies
- 5.3.2.3 Conduct in-depth situation assessment for MLEP requirements

- 5.3.2.4 Identification of training institutions (strengthening of existing ones and develop new facilities for MLEP training)
- 5.3.2.5 Develop standard curriculum, syllabus and job description of different categories of MLEP and ensure effective implementation
- 5.3.2.6 Training curriculum for both trainers (TOT) and trainees developed for 300 ophthalmic paramedics/nurses.
- 5.3.2.7 Sixteen low vision technician trained in tertiary level hospitals.
- 5.3.2.8 Ten nurses trained in posterior segment ophthalmic care
- 5.3.2.9 Ten technicians trained in posterior segment ophthalmic care
- 5.3.2.10 Primary eye care strengthened by providing training to Health Assistants from community clinics
- 5.3.2.11 Policy to be framed & strictly maintained for 3 years post training mandatory placement & retention
- 5.3.2.12 Provision of replacement with similar qualification and skills for MLEPs
- 5.3.2.13 Introduction of performance based career advancement provisions MLEP training at all medical college and eye hospital
- 5.3.2.14 Develop community nursing assistant training program for PECWs

5.3.3 Primary eye care workers

- 5.3.3.1 Identification of primary eye care workers from Health Assistants (HA) , Assistant Health Inspectors (AHI), Sanitary inspector, Health educator, Family Welfare Visitors (FWA), , front line workers of health NGOs and volunteers
- 5.3.3.2 Formulating human resource development plan for the primary eye care workers
- 5.3.3.3 Training and follow up of the primary eye care workers
- 5.3.3.4 Primary Eye Care (PEC) should be included Primary Health Care (PHC)
- 5.3.3.5 Orientation on eye care for religious leaders / opinion leaders, Rural Medical Practitioners (RMP)

5.4 Reduction of Disease Burden

5.4.1 Cataract

- 5.4.1.1 Country level CSR should be raised to 2500 by 2010 and 3000 by 2020
- 5.4.1.2 Introduce low cost high volume quality cataract surgical program
- 5.4.1.3 Developing/ Extending micro-surgical training

- 5.4.1.4 Operations research (joint) on cost effective, qualified and replicable model for cataract program
- 5.4.1.5 Develop the standard protocol for modified day care cataract surgery
- 5.4.1.6 Introduce demand side financing for cataract. Emphasis should be given to female patients. Incentive to be given to the service personnel.
- 5.4.1.7 Monitoring and follow up of patients during post operation Period
- 5.4.1.8 Awareness building among mass population on cataract
- 5.4.1.9 Establish referral systems by health worker to district hospital
- 5.4.1.10 Incorporation of cataract operation in existing MIS
- 5.4.1.11 Eye camps/outreach program, Should be organized under the direct supervision of district vision 2020 forum complying definite guidelines. i.e: Permanent set up under microscope, Proper follow up, Proper sterilization
- 5.4.1.12 Develop incentive system/mechanism of incentive for the cataract surgical team & referral person
- 5.4.1.13 Free service provisions for poor patients

5.4.2 Childhood Blindness

Planning for the control of blindness in children uses the recommended catchment population of 10 million, rather than 1 million used for planning control of blindness in adult.

- 5.4.2.1 At least one tertiary level paediatric eye care centre established in each division (Total 16)
- 5.4.2.2 Establish more tertiary centers/develop facilities in medical colleges as per national plan agreement
- 5.4.2.3 Develop in-country capacity to train pediatric ophthalmology team
- 5.4.2.4 Programs for the control of VADD in children to be maintained and expanded to address the underlying causes as well as improving the vitamin A status of women.
- 5.4.2.5 Adequate supply of vitamin A capsule at primary health care level
- 5.4.2.6 Expand tertiary level pediatric eye care services, which includes low vision care
- 5.4.2.7 Include aspects relevant to the control of childhood blindness into primary eye care training curriculum
- 5.4.2.8 Include management of less complex surgical and low vision cases as well as school vision testing into the district level eye care services & upazila level for children
- 5.4.2.9 School vision testing should be at community, school, madrasha & union council office

- 5.4.2.10 MO, teacher, Imam, UP members should be trained to conduct vision screening program
- 5.4.2.11 Pre-admission vision testing should be introduced
- 5.4.2.12 Awareness program be launched side by side in mass media

5.4.3 Refraction and Low Vision

- 5.4.3.1 Refraction services developed in all government district hospitals ,NGO & private level hospitals
- 5.4.3.2 Four fully equipped tertiary low vision centres established including at least 1 in Government sector
- 5.4.3.3 Ensuring spectacles for poor patient at the service delivery end
- 5.4.3.4 Provision for free surgical service and spectacle supply for poor patient (from Govt. and NGOs)
- 5.4.3.5 Introduce school sight testing program to screen children having visual deficiency by school teachers every year
- 5.4.3.6 Introduce community level-screening program
- 5.4.3.7 Training of nurses in refraction
- 5.4.3.8 Training of ophthalmologists & MLEPs in LV
- 5.4.3.9 Extend pediatric vision screening up to thana level
- 5.4.3.10 Awareness program be launched side by side in mass media

5.4.4 Corneal Blindness

- 5.4.4.1 Primary eye care services provided as part of primary health care in all district and introduced referral system through Govt/NGO hospitals
- 5.4.4.2 Six fully equipped corneal subspecialty eye care centres established at tertiary level
- 5.4.4.3 Capacity building in control of corneal blindness
- 5.4.4.4 Strengthening public awareness about corneal blindness and “Eye Donation” especially through mass media
- 5.4.4.5 Establish national eye banking with at least one in each division or medical college hospitals
- 5.4.4.6 Develop at least one in country training facility for corneal disease for ophthalmologist or doctors

5.4.4.7 More research & standard treatment protocol is necessary in case of corneal ulcer, which is very poor & variable in this country.

5.4.5 Diabetic Retinopathy:

5.4.5.1 Introduce of diabetic retinopathy screening program at all diabetic center preferably by an ophthalmologist

5.4.5.2 Undertake public awareness raising on prevention

5.4.5.3 Strengthening the existing centers especially the district branches of Diabetes Association of Bangladesh and establishment of new centers

5.4.5.4 Six fully equipped posterior segment eye care centres established

5.4.5.5 Medical management of diabetic retinopathy should be taken up all medical colleges

5.4.6 Ocular Trauma (OT)

5.4.6.1 Establishment of Ocular Trauma (OT) service in each service center at district level.

5.4.6.2 Awareness raising on prevention of ocular trauma especially related to season, harvest and occupation

5.4.6.3 Training the medical officer in dealing common ocular trauma

5.4.6.4 Quick referral of OT cases to nearby service stations

5.4.6.5 Create awareness of village doctors and PHC workers about OT

5.4.7 Other Interventions

5.4.7.1 Establish at least one center for glaucoma treatment in each division.

5.4.7.2 Prepare a standard clinical guideline for all blinding diseases.

5.4.7.3 Restriction of supplying drug without prescription.

5.4.7.4 Incorporation of primary eye care in existing health education program for PHC

5.4.7.5 Improving MIS proforma in relation to eye disease

5.4.7.6 Include eye message in school curriculum

5.5 Comprehensive Eye Care Service

5.6 Resource mobilization

5.6.1 Cost sharing mechanisms introduced

5.6.2 Develop a policy for assessing contribution from Govt./NGO/Local level

5.7 Monitoring, Evaluation and Research

M&E and research for blindness control developed and implemented with gender-disaggregated data. Health information system needs to be elaborated in line with:

- Strategies
- MIS mechanism
- Quality monitoring indicators

Annexure:

**List of the participants attended in
Divisional Level National Eye Care
Plan Consultation Workshops**

NATIONAL EYE CARE PLAN CONSULTATION WORKSHOP DHAKA DIVISION

SL	Name	Institution
1.	Prof. MA Matin	Chairman, NECP review sub committee, BNCB
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4.	Prof. Md. Saleh Uddin	Professor & Chairman (Oph), BSMMU & President OSB
5.	Prof. Ava Hossain	Professor of Ophthalmology, Ultra Medical College Hospital, Ultra, Dhaka
6.	Brig. Gen. Nazrul Islam	Professor (Eye), Armed Forces Medical College, Dhaka
7.	Prof Shah Md. Buibul Islam	Prof. of Ophthalmology, National Medical College Hospital, Dhaka
8.	Prof. Md. Hasan Shahid	Prof. of Ophthalmology, Bangladesh Medical College Hospital, Dhaka
9.	Prof. Deen Mohd. Noorul Huq	Prof. of ophthalmology, Dhaka Medical College Hospital
10.	Dr. Md. Shahabuddin	Secretary General, OSB
11.	Dr. Samsul Huq	Head of the department (Eye), Faridpur Medical College Hospital
12.	Prof. Khan MA. Manzur	Director General, Islamia Eye Hospital
13.	Dr. SA Samad	Associate Prof. (Eye), Sir Salimullah Medical College Hospital
14.	Dr. Md. Fazlul Huq	Associate Prof. of ophthalmology, Dhaka Medical College Hospital
15.	Dr. Md. Abid Kamal	Asst. Professor, NIO
16.	Dr. Md. Sayedul Hoque	Asst. Professor, NIO
17.	Dr. Md. Tauhidur Rahman	Asst. Professor, NIO
18.	Dr. Md. Ashraful Karim Khan	Asst. Prof. Of Ophthalmology, Gonosastha Nagar Hospital, Dhaka
19.	Dr. Arifur Rahman	Chief Consultant (Eye), Lions Eye Hospital, Dhaka
20.	Dr. Nuzhat Choudhury	MS (Oph.), Part-II, NIO
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22.	Dr. Md. Mohaddas Hossain	Assistant Director, DGHS
23.	Dr. Kazi Shahadat Hossain	Assistant Director, DGHS
24.	Dr. ATM Shahjahan Ali	PM-IST, DGHS
25.	Civil Surgeon	Dhaka
26.	Civil Surgeon	Narayanganj
27.	Civil Surgeon	Shariatpur
28.	Civil Surgeon	Munshiganj
29.	Civil Surgeon	Narsinghdi

NATIONAL EYE CARE PLAN CONSULTATION WORKSHOP DHAKA DIVISION

SL	Name	Institution
30.	Civil Surgeon	Sherpur
31.	Civil Surgeon	Faridpur
32.	Civil Surgeon	Madaripur
33.	Civil Surg on	Gopalganj
34.	Civil Surgeon	Rajbari
35.	Civil Surgeon	Manikganj
36.	Civil Surgeon	Kishorgeganj
37.	Civil Surgeon	Gazipur
38.	Civil Surgeon	Jamalpur
39.	Civil Surgeon	Mymensingh
40.	Civil Surgeon	Tangail
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42.	Dr. Md. Abu Dayood	Jr. Consultant (CC), Shariatpur Sadar Hospital
43.	Dr. Md. Nurul Alam Siddiqui	Sr. Consultant, Munshiganj Sadar Hospital
44.	Dr. Md. Anwar Hossain	Sr. Consultant, Manikgonj Sadar Hospital
45.	Dr. Md. Maidul Haque	Sr. Consultant, Sherpur Sadar Hospital
46.	Dr. Farukuzzaman	Jr. Consultant (CC), Faridpur Sadar Hospital
47.	Dr. Akkas Ali	Jr. Consultant (CC), Madaripur Sadar Hospital
48.	Dr. Amal Kumar Biswas	Jr. Consultant (CC), Rajbari Sadar Hospital
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50.	Dr. Humayon Akhter Faisal	Jr. Consultant, Gazipur Sadar Hospital
51.	Dr. Mostak Ahmed	Jr. Consultant , Jamalpur Sadar Hospital
52.	Dr. Md. Nazrul Islam	Jr. Consultant (CC), Tangail Sadar Hospital
53.	Dr. Md. Khairul Islam	Country Director, ORBIS
54.	Dr. Abu Raihan	Deputy Country Director, ORBIS
55.	Anindita Roy	PO, ORBIS
56.	Tahamin Banu	PO, ORBIS
57.	Sk. Addud Daiyan	MD, Grameen Kalyan, Dhaka
58.	Dr. Enamul Kabir	Country representative, SSI
59.	Dr. Iqbal Anwar	SPM, SSI
60.	Dr. Md. Alamgir Hossain	CHB Coordinator, Sight Savers International
61.	M. Jalaluddin Khan	NPA, SSJ -Vision 2020 Coordination office
62.	Md. Zakir Hossain Khan	PM, SSI - Vision 2020 Coordination office

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9.	Dr. Md. Abdul Kuddus	Asst. Director (Health), Rajshahi Division
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11.	Dr. Kazi Shahadat Hossain	Asst. Director, DGHS
12.	Dr. M.A. Momin	Dinajpur
13.	Dr. SM. Abul Kalam	Thakurgaon
14.	Civil Surgeon	Lalmonirhat
15.	Civil Surgeon	Sirajgonj
16.	Civil Surgeon	Rajshahi
17.	Civil Surgeon	Natore
18.	Civil Surgeon	Chapai Nawabgonj
19.	Civil Surgeon	Rangpur
20.	Civil Surgeon	Gaibandha
21.	Civil Surgeon	Pabna
22.	Civil Surgeon	Nilphamari
23.	Civil Surgeon	Panchagarh
24.	Civil Surgeon	Kurigram
25.	Civil Surgeon	Bogra
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31.	Dr. Adhir Kumar Paul	Jr. Consultant (Eye), Sadar Hospital, Pabna
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36.	Dr. John Theotonius Costa	Project Director, Khajanpur Mission Hospital, Joypurhat
37.	Shamim Ara	Polli Sree, Dinajpur
38.	Altafun Nahar	U. C, Plan Bangladesh
39.	Md. Nazrul Haque Shah	Chairman, 5 No. UP, Khansama, Dinajpur
40.	Mrs. Amina Begum	6 No. Goalgi UP Member, Khanshama, Dinajpur
41.	Prodyut Kumar Chaki	HA, Bogra Sadar
42.	Md. Jalil Uddin	AHI, Bogra Sadar
43.	Alamgir	Bhabki Khanshama, Dinajpur
44.	Kanchan Roy	Khamar Para, Khanshama, Dinajpur
45.	Ajifa	Bhabki, Khanshama, Dinajpur
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47.	Dr. Enayet Hossain	Sz. R. MC, Bogra
48.	Dr. Sajal Dewan	Bogra Mission Hospital, Bogra

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7.	Dr. Kazi Shahat Hossain	Assistant Director, DGHS
8.	Dr. AK.M. Abdus Samad Mia	Asst. Director (SC)- Health,- Khulna Division
9.	Dr. Abul Kalam Azad	Asst. Prof. NIO
10.	Dr. Rafiqueul Hossain Bablu	President, BMA, Khulna
11.	Dr. Jalal Ahmed	Prof. of Ophthalmology, KMC
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13.	Dr. Matiar Rahman Khan	Asst. Prof. Eye, Khulna Medical College
14.	Dr. Ashok Kumar Das	Khulna Medical College
15.	Dr. Md. Naimul	Khulna Medical College
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19.	Civil Surgeon	Bagerhat
20.	Civil Surgeon	Magura
21.	Civil Surgeon	Narail
22.	Civil Surgeon	Kushtia
23.	Civil Surgeon	Jhenaidah
24.	Civil Surgeon	Chuadanga
25.	Civil Surgeon	Satkhira
26.	Civil Surgeon	Jessore
27.	Dr. Hemadri Shekher Sarkar	Eye Consultant, Sadar Hospital, Jessore
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31.	Dr. AS.M. Aminul Haque	Eye Consultant, Sadar Hospital, Meherpur
32.	Dr. Shamsul Islam	Eye Consultant, Sadar Hospital, Kushtia
33.	Md. Aminur Rashid	Eye Consultant, Sadar Hospital, Kushtia
34.	Dr. Monoj Kumar Bose	Eye Consultant, Sadar Hospital, Narail
35.	Dr. Md. Shah-Zaman	Eye Consultant, 250 bed Hospital, Jessore
36.	Dr. G.M. Abu Zafar	Eye Consultant, Sadar Hospital, Bagerhat

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39.	Dr. Md. Nahid Kamal	Asst. Register, 250 bed Hospital, Jessore
40.	S.M. Murshida khatun	General hospital, Khulna
41.	Dr. AK.M. Shaiful Alam	General hospital, Khulna
42.	Dr. Maksuda Begum	UH&FPO, Dumuria
43.	Dr. Shaikh Aatur Rahman	UH&FPO, Khulna Sadar
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45.	Sherina Khatun Polly	UP Member, Phultala
46.	Lipe Begum	UP Member, Phultala
47.	Anjila Begum	Alka, Phultala
48.	Pairs Begum	Alka, Phultala
49.	Md. Faruque Hossain	UP Member, Noapara
50.	S.M. Amjad Hossain	EPI, Dumuria
51.	Gouri Rani Mollik	FWA, Dumuria
52.	Taherun Nahar	HA, Dumuria
53.	Kalidash Mondol	HI, Dumuria
54.	Dr. AKM Mamunur Rashid	Khulna Sishu Hospital
55.	Dr. Md. Shah Jamal	CSS Eye Hospital
56.	Dr. Md. Minhazur Rahman	Addin Eye Hospital, Jessore
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58.	Dr. Salahuddin Rahmatullah	Khulna BNSB Eye Hospital
59.	Dr. Md. Mahmud Hasan	Khulna BNSB Eye Hospital
60.	Dr. Md. Nazrul Islam	Khulna BNSB Eye Hospital
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62.	Md. Moniruzzaman	Khulna BNSB Eye Hospital
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65.	Dr. Abu Raihan	ORBIS International
66.	Ms. Anindita Roy	ORBIS International
67.	M . Tahamin Banu	ORBIS International
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5.	Prof. AH Syedur Rahman	Chief Consultant, BIRDEM
6.	Dr. Md. Shahabuddin	Associate Professor, NIO & Sec. Gen., OSB
7.	Prof. MA Hadi Faquir	President, BAO
8.	Dr. Md. Nurul Alam	Divisional Director- Health, Chittagong
9.	Prof. Chowdhury B Mahmud	Chittagong Medical College, Chittagong
10.	Dr. S. M. Tariq	Chittagong Medical College, Chittagong
11.	Dr. Zubaida Hannan	BNSB, Comilla
12.	Dr. Khurshid Jamil	BMA, Chittagong
13.	S. M. Abu Taher	ADC, Chittagong
14.	Jebunnahar Bela	Ministry of Women Affairs, Chittagong
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16.	Dr. Md. Giasuddin	Chittagong Medical College Hospital, Chittagong
17.	Civil Surgeon	Noakhali
18.	Civil Surgeon	Cox's Bazar
19.	Civil Surgeon	Laxmipur
20.	Civil Surgeon	Feni
21.	Civil Surgeon	Chandpur
22.	Civil Surgeon	B. Baria
23.	Civil Surgeon	Bandarban
24.	Civil Surgeon	Khagrachari
25.	Civil Surgeon	Rangamati
26.	Deputy Civil Surgeon	Comilla
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28.	Dr. Monoj Kanti Mazumder	Eye Consultant, Chandpur Sadar Hospital
29.	Dr. Yosuf Majumder	Eye Consultant, Laxmipur Sadar Hospital
30.	Dr. A.A. Hannan	Eye Consultant, Khagrachari Sadar Hospital
31.		
32.	Dr. Md. Anwar Hossain	Eye Consultant, Feni Sadar Hospital
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34.	Dr. Salahuddin Mahmood	UHPO, Fatikchari UHC
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36.	Amitava Barua	H. I. Fatikchari Health Complex

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40.	Md. Abdul Bari	IDF, Chittagong
41.	Md. Lutfur Rahman	IDF, Chittagong
42.	S. M. Nazar Hossain	I. S. D. E. Chadgaon, Chittagong
43.	Sayedra Ferdaus Akhter	Social Welfare, Chittagong
44.	Dr. Md. Fazlul Haq	CEITC, Chittagong
45.	Dr. Muniruzzaman Osmani	CEITC, Chittagong
46.	Dr. Rajib	CEITC, Chittagong
47.	Dr. G. M. Chowdhury	CEITC, Chittagong
48.	Rezaul Karim Chowdhury	Chairman, Katachara, UP
49.	Abul Kalam Azad	Chairman, Sitakundu, UP
50.	Maimorra Siddique	UP Member, Katachara
51.	Mr. Mamun Abdullah	Sr. Reporter, Prothom Alo
52.	Nurernehar	V.G. D Member, Katachara
53.	Monnan	Service Recipient
54.	Md. Gedu Mia	Service Recipient
55.	Dr. Mizanur Rahman	General Hospital, Comilla
56.	Saidur Rahman	Project Manager, Baitush Sharaf Hospital, Cox's Baz

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4.	Prof. Md. Saleh Uddin	Professor & Chairman (Oph), BSMMU & President OSB
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7.	Dr. Md. Shahabuddin	Associate Professor, NIO & Sec. Gen., OSB
8.	Dr. Md. Abdur Rashid	Director Hospital, DGHS
9.	Dr. Asad Uddin	Divisional Director- Health Sylhet
10.	Dr. ATM Shahjahan Ali	PM- IST, DGHS
11.	Dr. Kazi Shahadat Hossain	Asst. Director, DGHS
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13.	Dr. MA Matin	President, Sylhet BMA
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19.	Dr. E.H. Mojumder	Consultant (Eye), Sylhet Medical College
20.	Dr. MA Aziz Chowdhury	Registrar (Eye), Sylhet Medical College
21.	Dr. M. Takur	MO (Eye), Sylhet Medical College
22.	Dr. MA Latif	MO (Eye), Sylhet Medical College
23.	Dr. Rafikul Islam	Honorary MO (Eye), Sylhet Medical College
24.	Dr. Utpal Sen	Honorary MO (Eye), Sylhet Medical College
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26.	Md. Shamsul Haque	Divisional Director, Family Planning, Sylhet
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32.	Civil Surgeon	Moulviubazar
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37.	Dr. Jamil Ahmed	Jr. Consultant, Sylhet Sadar Hospital
38.	Dr. Md. Abu Zafar	Consultant, Habiganj Sadar Hospital
39.	Dr. Md. Abdul Matin Bhuiyan	THA, Beani Bazar
40.	Dr. Jalal Uddin Ahmed	THA, Zakigonj
41.	Sankary Syadi	MA, Biswanath THC
42.	Shahana Begum	MA, Fenchugonj THC
43.	Ranjit Kumar Baidya	Health Inspector, Sadar
44.	Rowshan Ara Begum	AHI, Sadar
45.	Md. Iqbal Hassan	Chairman, Khadimpara Union Parisad
46.	Selina	UP Member, Khadimpara Union Parisad
47.	Ms. Lily	Female UP Member
48.	Ms. Meherunnessa Bilkis	Female UP Member, Khadimpara Union Parisad
49.	Monsur Ahmed Choudhuri	IMPACT Foundation
50.	Dr. Mohammad Zahirut Islam	ORBIS International
51.	Md. Rafiqul Islam	Sight Savers International
52.	M. Jalaluddin Khan	SSI-Vision 2020 Coordination Office
53.	Md. Zakir Hossain Khan	SSI-Vision 2020 Coordination Office
54.	Mr. Amranul Huq Kamal	Executive Director, VARD
55.	Romesh Chandra	PM, VARD
56.	Md. Golam Sarwar	Field Worker (Eye Prog), MOT-HSP
57.	Dr. KH Shahriar	Surgeon, VARD
58.	Dr. Shah Nurul Islam	BNSB, Moulvibazar
59.	Ln. Dr. Azizur Rahman	Advisor to District Governor, BLF, Sylhet
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61.	Iqbal Siddiquee	President, Press Club, Sylhet
62.	Liaquat Shah Faridi	General Secretary, Press Club, Sylhet
63.	Selim Awal	BSS, Sylhet
64.	Md. Dulal Hossain	Daily Sylheteer Dak

NATIONAL EYE CARE PLAN CONSULTATION WORKSHOP BARISAL DIVISION

SL	Name	Institution
1.	Prof. Syed Maruf Ali	Director cum Professor, NIO & Member Secretary, BNCB
2.	Dr. Md. Shahabuddin	Associate Professor, NIO & Sec. Gen., OSB
3.	Dr. Shahidul Alam	Associate Professor (Eye), Sher-e-Bangla Medical College Hospital, Barisal
4.	Dr. Nizamuddin Faruq	Assistant Professor (Eye), Sher-e-Bangla Medical College Hospital, Barisal
5.	Dr. Md. Mokhlesur Rahman	Divisional Director- Health, Barisal Division
6.	Dr. Md. Moniruzzaman	Deputy Director- Health, Barisal Division
7.	Dr. Kazi Shahadat Hossain	Assistant Director, DGHS
8.	Dr. Aziz Rahim	President, Barisal BMA
9.	Dr. Shabibur Rahman	Secretary General, Barisal BMA
10.	Shawkat Md. Kamal	Deputy Director, Social Welfare, Barisal
11.	Md. Shohidullah	Deputy Director, Primary Education, Barisal
12.	Mr. Humayun Kabir Lasker	TNO, Barisal Sadar
13.	Dr. Nasir Uddin	RS (Eye), Sher-e-Bangla Medical College Hospital, Barisal
14.	Dr. Khurshid Alam	Medical Officer (Eye), Sher-e-Bangla Medical College Hospital, Barisal
15.	Dr. Debaprata Pal	Register (Eye), Sher-e-Bangla Medical College Hospital, Barisal
16.	Civil Surgeon	Barisal
17.	Civil Surgeon	Pirojpur
18.	Civil Surgeon	Barguna
19.	Civil Surgeon	Bhola
20.	Civil Surgeon	Jhalokati
21.	Civil Surgeon	Patuakhali
22.	Dr. Md. Aatur Rahman	Jr. Consultant, Barguna Sadar Hospital
23.	Dr. Md. Siddikur Rahman	Jr. Consultant , Jhalokati Sadar Hospital
24.	Dr. Md. Joynal Abedin	Jr. Consultant, Patuakhali Sadar Hospital
25.	Dr. Md. Golam Faruq Khan	Jr. Consultant, Patuakhali Sadar Hospital
26.	Dr. Kamal Uddin	THA, Bahugonj
27.	Dr. Md. Shahjahan	THA, Bakergonj
28.	Md. Mizanur Rahman	Medical Assistant, Bahugonj UHC
29.	Narayou Chandra Das	Medical Assistant, Bakergonj UHC
30.	Md. Bazlur Rashid	HI, Barisal Sadar
31.	Firoz Alam	AHI, Barisal Sadar

NATIONAL EYE CARE PLAN CONSULTATION WORKSHOP BARISAL DIVISION

SL	Name	Institution
32.	Ferdousi Begum	HA, Barisal Sadar
33.	Ms. Mira Sarker	Staff Nurse, Barisal Sadar Hospital
34.	Md. Zakir Hossain Khan	SSI -Vision 2020 Coordination Office
35.	Ms. Silvia B. Roy	ORBIS International
36.	Mr. Humayun Kabir	Secretary General, Barisal Press Club
37.	Advocate Afzal Hossain	BNSB, Barisal
38.	Dr. Syed Habibur Rahman	Local NGO representative
39.	Md. Hossain Sikder	Chairman, Kashipur UP
40.	Rashida Parveen	Female Ward Commissioner
41.	Mawlana Solayman Amin	Local Imam Representative
42.	Ms. Israt Marin	Teacher, Sarshi Govt. Primary School
43.	Mrs. Khadeza Khanam	Eye Service Beneficiary
44.	Mr. Mizanur Rahman	CSID, Barisal
45.	Mr. Anwar Hossain	CSID, Barisal
46.	Mr. Reza	CSID, Barisal

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