MINISTRY OF HEALTH

NATIONAL STRATEGIC PLAN FOR EYE HEALTH AND BLINDNESS PREVENTION 2012-2018

OPHTHALMIC SERVICES UNIT

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LIST OF ABBREVIATIONS.

ANC	-Ante Natal Clinic
AIDS	-Acquired Immune Deficiency Syndrome
AMREF	-African Medical and Research Foundation
AOP	-Annual Operation Plan
CCC	-Comprehensive Care Centre
CS	-Cataract Surgeon
CSR	-Cataract Surgical Rate
CSRW	- Cataract Surgical Rate Worker
CBM	-Christian Blind Mission
CES	-Comprehensive Eye Services
CHEW	-Community Health Extension Workers
CHW	-Community Health Workers
CME	-Continuing Medical Education
CMV	-Cytomegalovirus
COC	-Clinical Officers Council
DALY	-Disability Adjusted Life Years
DDPC	-Department of Disease prevention and Control
DHMT	-District Health Management Team
DM	-Diabetes Mellitus
DMOH	-District Medical Officer of Health
DOS	-Division of Ophthalmic Services
DM	-Diabetes Mellitus
DMI	-Diabetes Management Information
DR	-Diabetic Retinopathy

EARS	- Education Assessment Rehabilitation Services
EACO	-Eastern Africa College of Ophthalmologists
FHF	-Fred Hollows Foundation
HIV	-Human Immunodeficiency Virus
HMIS	- Health Management Information Services
HZO	-Herpes Zooster Ophthalmicus
HRD	-Human Resource Development
HRH	-Human Resources for Health
IAPB	-International Agency for the Prevention Blindness
IEC	-Information Education Communication
IOL	-Intra Ocular Lens
IMCI	-Integrated Management of Childhood Illness
ITI	- International Trachoma Initiative
IT	- Itinerant Teachers
KAO	-Kenya Association of Opticians/optometrists
KEMRI	-Kenya Medical and Research Institute
KEPI	-Kenya Expanded Programme Immunization
KEU	-Kikuyu Eye Unit
KIEP	-Kenya Integrated Education Programme
KISE	-Kenya Institute of Special Education
KNH	-Kenyatta National Hospital
KMTC	-Kenya Medical Training College
KNOW	-Kenya National Ophthalmic Workers
KSB	-Kenya Society for the Blind

KOP	-Kenya Ophthalmic Programme
LVT	-Low Vision Therapy
LV	-Low Vision
MCH	-Maternal and Child Health
MDG	- Millennium Development Goals
MET	-Medical Engineering Technician
M/E	-Monitoring and Evaluation
MOE	-Ministry of Education
MOH	-Ministry of Health
MP$DP	-Medical Practitioners and Dentists Board
MTRH	-Moi Teaching and Referral Hospital
NECSP	-National Eye Care Strategic Plan
NCK	-Nursing Council of Kenya
NGO	-Non-governmental Organization
NEP	-North Eastern Province
NHSSP	- National Health Sector Strategic Plan
NPBWG	- National Prevention of Blindness Working Group
NTD	-Neglected Tropical Diseases
OCO	-Ophthalmic Clinical Officer
OCOA	-Ophthalmic Clinical Officer Association
ON	-Ophthalmic Nurse
ONC	-Ophthalmic Nurses Chapter
OEU	-Operation Eye Sight Universal
ON	-Ophthalmic Nurse
OSEA	-Ophthalmological Society of East Africa
PEC	-Primary Eye Care

PHC	-Primary Health Care
PGH	-Provincial General Hospital
PHT	-Public Health Technician
PMO	-Provincial Medical Officer
PHO	-Public Health Officer
PPB	-Pharmacy and Poisons Board
PPBWG	-Provincial Prevention of Blindness Working Group
PPP	-Private Public Partnership
QOL	-Quality of Life
RAAB	-Rapid Assessment of Avoidable Blindness
RAACS	-Rapid Assessment of Cataract Surgical Services
SAFE	-Surgery, Antibiotics, Face washing, Environmental hygiene
SBW	- Sight by Wings
SICs	- Small Incision Cataract
SOK	-Salus Oculi Kenya
SQL	-Sequential Query Logic
SSI	-Sight Saver International
TEO	-Tetracycline Eye Ointment
TOR	-Terms of Reference
UoN	-University of Nairobi
VR	-Vitreo Retinal
VST	-Vision Support Teachers
WHA	- World Health Assembly
WHO	-World Health Organization
WSD	-World Sight Day

FOREWORD

This is the 6th Kenya strategic plan for eye health and blindness prevention. The plan will extend from 2012 to 2018 in line with the NHSSP III. The plan also coincides with the realization of the Millennium Development Goals (MDGs). This plan is key in the sense that it provides a strategy to the realization of a Kenya free of avoidable blindness.

The strategy is developed taking cognizance of the WHA 62.1 recommendations and the WHO action plan for vision 2020. The whole strategy is the National representation of the global Action plan for vision 2020. The just completed (5th) Eye care strategic plan (2005-2010), and various evaluation mechanisms were major references.

The strategy feeds into the MDGs, NHSSP III and the Government's development blue print; Vision 2030, in the sense that for every child in whom blindness is prevented, the future economic gains are enormous and will greatly contribute to the country's future economic growth. It is a well known fact that blindness in adults greatly reduces life expectancy. This is besides the fact that blind persons are not able to engage into a lot of economic activities due to cultural challenges and the poor social inclusion. All these are key issues that will be addressed in this strategy, and thus contribute to economic development. Economic development and health are strongly intertwined with either leading to the other.

Health care in Kenya just like in Africa has been challenged mainly by weak health systems, especially due to minimal commitment to the development of the six building blocks of a health system. The plan includes Human Resource management as one of the strategic objectives that will realize equitable, rational development and distribution of eye care workers in line with vision 2020 and Vision 2030 of reducing health irregularities and inequity. The crucial role of human resource in driving a health system is well stipulated, with relevant skills transfer system.

The strategic objective of infrastructure improvement is geared towards providing and improving the environment for safe and quality service delivery. This is expected to greatly improve the quality of eye care services to the highest possible standards for Kenyans in line with the six-point WHO agenda.
Although health financing of eye care has not been tackled by itself, the health Ministry will finance eye care as part of wider comprehensive health care system included in drugs and commodities, equipment, training and managing the human resource for eye health.

While there is specific eye care health information system, which feed onto the National HMIS, Some key eye care indicators are included in our regular annual planning and monitoring process. World over no programme has seen the light of the day without inclusion of the research component. In this strategy there are specific identified research priorities that have been identified with the sole purpose of improvement of services.

The most important aspect of the realization of this strategy is the leadership that will enhance harmonization, coordination and service quality assurance. The NPBWG, whose composition is clearly defined in the plan, will play this crucial role of technical guidance and leadership.

The government will continue to provide overall appropriate leadership, governance and support especially in facilitating the development of policies and strategies for implementation. We shall embrace partnership especially with the private sector in order to have a realistic and comprehensive system.

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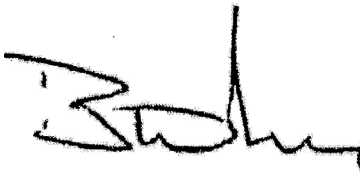

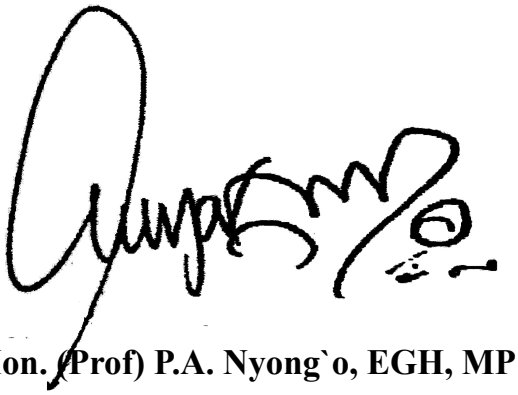

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ACKNOWLEDGEMENTS

The Ministry of Public Health and Sanitation and the Ministry of Medical Services would like to express gratitude to the National Prevention of Blindness Working Group, Sight Savers International, Christian Blind Mission, Fred Hollows Eastern Africa, Operation Eye Sight Universal, Salus Oculi Kenya, Sight by Wings, AMREF, University of Nairobi, Kenya Medical Training College, Kenya Society for the Blind, World Health Organization and the Division of Ophthalmic Services for providing technical and financial support for the development and production of this Plan.

We thank Dr. Michael Gichangi, Head of Division of Ophthalmic Services for providing guidance during the various stages of this development with the subsequent follow up to ensure that the plan was developed as per WHO format. We also want to thank Dr. Kagondu Fredrick for taking the lead in finalizing the preparation and production of this document. This plan would not be produced without the endearing support of Sight Savers International through the Kenya Society for the Blind.

Special thanks go to the following individuals for the great effort and time spent in developing the plan: Dr. Hillary Rono, Dr. Francis Ochieng, Dr. Nyawira Gichingo, Mr. Ernest Barasa, Ms. Dorcas Chelang`a, Sr. Perpetua Nyakundi and Ms. Felistas Mburu all of DOS, Dr. Lucy Manyara, Dr. Nyawira Mwangi and Mr. John Mugui of KMTC. The contributions made by the various eye care workers of all cadres across the country are highly appreciated.

We take cognizance of the immense role played by the National Prevention of Blindness Working group members under the guidance of the chairman Dr.Willis Akhwale.
There are many other individuals and institutions who contributed to the success of this plan in one way or another and we take this opportunity to thank them all for the different roles they have played.

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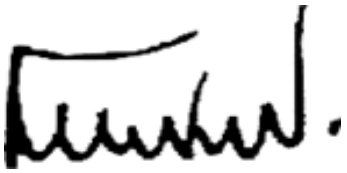

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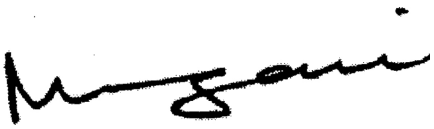

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PREFACE

This strategic plan presents the Division of Ophthalmic Services six year proposed strategies for eye care in Kenya. It sets the strategic direction for the national eye care health system and presents information on the priorities, objectives and indicators that the Division has adopted, especially with regard to the main eye diseases in the country and health system strengthening.

These main diseases include cataract, glaucoma, trachoma, childhood blindness and disabling refractive error. The development of this plan was guided the pillars of VISION 2020; the right to sight initiative which is meant to reverse the trends in eye health.

The process of preparing this plan included a review of key organizational documents including; Vision 2020 "The Right to sight" Global initiative, National Strategic Plan for Eye Care 2005-2010, Kenya National Plan for Elimination of Trachoma, Kenya National Primary eye care Manual, 2011, National Health sector strategic Plan II, Kenya Health Sector Policy framework (1994-2010), Kenya Vision 2030,s 1st five year Medium Term Plan (2008-2012), Ministry of Public Health and Sanitation strategic Plan (2008-2012) and Ministry of Medical Services strategic plan (2008 – 2012).

The strategic objectives are in line with the pillars of the VISION 2020 global initiative, which are; Control of blinding diseases, Human Resource Development and Strengthening of appropriate infrastructure for eye care. In addition, the DOS aims at strengthening networking, co-ordination and monitoring with respect to various aspects of the eye care delivery system.

The critical success factors for this strategic plan are built on; Resources required to fund the business, Human Resources to manage and offer quality services to the patients. Support systems to deliver guaranteed quality, efficient and effective services are also envisaged as well as processes and procedures for managing operations and relationships. Strategic direction and shared vision to give a long term view, unity of direction and purpose will ensure all are focused and aligned to the goals of the plan. Finally, Supportive stakeholders will help the project to succeed and operational research will identify strategic issues and provide evidence for progress.

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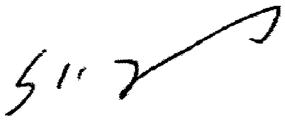

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1.0 BACKGROUND INFRORMATION

1.0.1: General information.

1.0.1.1: Geography

Kenya covers an area of 582,650 square kilometers. From the coast, the altitude changes gradually through the coastal belt and plains, the dry intermediate low belt to what is known as the Kenya Highlands.

The Great Rift Valley bisects the Kenya Highlands into East and West. Mount Kenya is on the Eastern side. The Highlands are cool and agriculturally rich. Both large and small scale farming is carried out in the highlands. The Lake Victoria Basin is dominated by Kano plains, which are suited for farming through irrigation. The Northern part of Kenya is plain and arid and Pastoralism is the main land use activity.

Kenya enjoys a tropical climate. It is hot and humid at the coast, temperate inland and very dry in the north and northeast parts of the country. The long rains occur from April to June and short rains from October to December. The hottest period is from February to March and coldest in July to August.

1.0.1.2: Administration structure

Kenya is a republic administered by a central government under a presidential system and is divided into 47 counties and 158 districts. The hierarchy of administrative units from central government is county, district, division, location, sub location and village.

1.0.1.3: Population Size

Kenya has a population of approximately 39 million (2009 population census) with an annual growth rate of about 2.6% and an overall fertility rate of 4.6%. Age structure is typical for a developing country. Those aged 0 – 4 years are 15.9%, 5-14 years are 28%, and 15-64 years are 55.1% of the total population, and just 2.6% are 65 years and above.

The overall life expectancy at birth is 57.9 years, being slightly higher in females at 58.2 compared to 57.5 in males. Most of the population (78%) is rural with only 22% living in urban areas. The population has a male to female ratio of 1:1.

Primary school enrolment rate is 80% per annum, while the total number of primary school children enrolled in 2011 is estimated to be 8,401,706.

1.0.1.4: Economy

Kenya's economy grew from fundamental stagnation in 2002 to a high rate of 7.0% in 2007, and then slipped in 2008. Kenya's principal wealth lies in its diversified agriculture, which provides more than 60 % of export income although in relative decline. Industrial manufacturing contributed 9.7% of the country's GDP, while tourism contributed approximately 12%. Improved economic growth enabled an increase in recurrent and development funding for health services from 7% in 2003/04 to 7.9% in 2006/07 (Economic survey 2008)

1.0.1.5: Transport and communication Network

Kenya is a sub regional; hub for transport and communication serving Eastern Africa, the great lakes, the horn of Africa and Southern Sudan. It has a well developed international and domestic air transport infrastructure, a fairly good national and international road network linking all major towns and also serving as transit routes to a number of landlocked countries in the region. The railway line stretches from the port city of Mombasa to link into the national grid and connects into the network in Uganda.

Telecommunication is currently well developed, characterised by over 16 million mobile phone subscribers and a fairly advanced internet service industry. This is expected to be further enhanced by the newly acquired fibre optic link. This communication network has the potential of improving health information and data flow systems.

1.0.1.6: Health Sector Overview

Kenya's vision for health is to provide equitable and affordable healthcare to her citizens. This is in recognition of the fact that good health and nutrition boosts human capacity to produce thus enhancing economic growth, poverty reduction and realization of social goals.

1.0.1.7: Health Policy

The Kenya Health Policy framework 1994 set out a policy agenda for the health sector up to the year 2010. This included strengthening of the central public policy role of the Ministry of Health, adoption of an explicit strategy to reduce the burden of disease, and definition of essential cost effective health care package. To have this operational, the health policy framework paper informed the development of the National Health Sector Strategic Plan (NHSSPI), for the period 1999-2004, this took over 5 years to develop. The strategic plan emphasised the decentralization of health care delivery through redistribution of health services to rural areas. The plan was revised as NHSSP II for the period 2001 – 2010. The later shifted the emphasis from the burden of disease to the promotion of individual and community health. In this context the plan emphasises strong community involvement in health care. The national eye care strategic plan 2005- 2010 was an annex of the NHSSP II and this current plan is an annex of the NHSSP III.

1.0.1.8: Health Services Delivery.

Health service delivery in Kenya is implemented through the Kenya Essential Package for Health (KEPH) which integrates all health programmes into a single package to improve the health of the population in the different stages in their life cycle and incorporates the various systems that support KEPH. This takes three dimensions that include: improving lifestyle, preventing diseases and curing illnesses. Each district sets baselines and targets for service delivery programmes for all level. The NHSSP is envisaged to delivery KEPH across all cohorts wit ha focus on the individual through Primary Health care (PHC) and advocate on health approaches; and on the community through population –based activities using the household as the entry point. The existing reforms and PHC are supportive to the control of eye diseases and blindness in Kenya through the community strategy which addresses the issues of PHC. In the KEPH, preventable eye diseases are covered together with other preventable diseases. A simplified eye care module is included in the community strategy documents for use by all levels.

1.0.1.9: Eye care Service Providers and workforce.

The Kenyan health delivery systems comprises of: Government, NGO, Mission and private facilities at various levels and this also applies to eye care.

For eye health goals to be achieved, adequate numbers of eye care workers with appropriate training should be available. Eye care workers are also unevenly distributed within the country with the greatest number available within the urban and non arid areas.

CHWs, CHEWs, PHO/Ts, Nurses and clinical officers are the cadres mainly based at the peripheral health facilities and are the staff mainly to be involved in eye care disease prevention and control. A policy exists in the Ministry for continuous recruitment and deployment for this cadre of staff.

1.0.1.10: Eye Health Information system.

The HMIS department in the Ministry of Health receives routine data on the causes of outpatient and inpatient morbidity and mortality from Government health facilities across Kenya. National disease summary and capture tools (registers) have been designed for capturing majority of the diseases that are reported in the country including eye diseases. Eye diseases/conditions are ranked between 6th and 8th position in the data summary annually.

The Eye Health information desk at the DOS is charged with the responsibility of collecting eye care data generated from all eye clinics and units in the country. Several diseases and conditions and operations are captured in the tools developed to address Vision 2020 targets for Kenya. The electronic HIS will be linked to the national HIS within the Ministry of health. This version allows eye units to send eye care summary information on a monthly basis to the division using email. This reduces the workload on the already burdened eye care worker.

1.0.1.11: Burden of Disease

Communicable diseases are the greatest cause of morbidity and mortality in Kenya. HIV/AIDS is a serious public health and socioeconomic problem in Kenya. Eye diseases and condition is one of the top ten causes of morbidity in Kenya and often ranked 8th in the ministries HMIS report.

1.0.1.12: Current Eye Care Status

It is estimated that the prevalence of blindness in Kenya is 0.7%. In this respect, 250,000 people are estimated to be blind with another 750,000 Kenyans suffering from low vision. Cataract is the leading cause of blindness accounting for 43% of the total cases. Trachoma is second accounting for 19% followed by Glaucoma and Childhood blindness accounting for 9% and 6% respectively. This implies that over 80% of the cases are due to curable and preventable causes. However, there is need for a national survey to establish the exact burden of eye diseases.

The eye care services are currently provided by a combination of Government, NGOs, Private and Faith Based organizations. There are 90 static eye units and clinics with a bed capacity of about 700, with another 20 units providing outreach services. Various International and local NGOs have continued to play an integral role in supporting eye care work in Kenya. These include CBM, OEU, SSI, FHF, AMREF, LIONS, SBW, KSB, SOK and Rotarians among others.

The UON and KMTC on the other hand have continued to play a significant role of training eye care workers.

The Division of Ophthalmic Services, in the Department of disease Prevention and control as well as department of Surgery is charged with the co-ordination of eye care services in Kenya carried out by different actors. All the above are in line with the Vision 2020 pillars.

1.0.1.13: Human Resource Current Status.

A detailed analysis of eye care workers is in annex 1.

The University of Nairobi and Kenya Medical Training College are the two institutions involved in training eye care workers. UON has the capacity to train 10 ophthalmologists per year and KMTC can train 10 Ophthalmic Clinical officers/Cataract Surgeons and 16 Ophthalmic Nurses per year.

1.0.2: BROAD STRATEGIC OBJECTIVES.

1. To strengthen strategies for control of blinding diseases in all levels by 2017
2. To strengthen human resource capacity and systems at all levels for effective delivery of eye care services
3. To improve and maintain appropriate infrastructure for provision of sustainable eye care services in the national, county, district and community levels by 2017.
4. To strengthen networking coordination and policy framework in order to ensure maximum and efficient utilization of resources at all levels of eye care delivery systems.
5. To establish the magnitude and enhance systems of monitoring the pattern of blindness and low vision in Kenya

2.0: CONTROL OF BLINDING DISEASES

2.1 CATARACT

2.1.1. Current situation

Cataract surgical rate (CSR) refers to the number of cataract operations per million population per year. It is a measure of the delivery of cataract surgical services .In Kenya, the cataract surgical rate in the year 2010 was 589. This is low performance compared to WHO recommended CSR target of 3000 by 2020. It is estimated that 43% (120,000 blind persons) of blindness in Kenya is due to cataract. Only 64.5% of those identified with cataracts were operated in year 2010. The need to operate on the cataract blind people has become more urgent due to the increased life expectancy following development and even more so as the elderly are finding themselves with an additional uphill task of taking care of the increasing number of AIDS orphans.

2.1.2. Achievements last 10 years

Ophthalmologists and cataract surgeons have been trained in changing techniques of cataract surgery which has seen most surgeons performing Small Incision Cataract Surgery (SICs). Phacoemulsification Services are also in place in various centres in the country, in line with changing trends. IEC materials on cataract blindness have been developed, pre-tested, produced and distributed to health facilities and communities to improve uptake of cataract surgery. Equipment such as Operating Microscopes, Slit lamps and ophthalmoscopes have been made available to various centres, as well as consumables like the cataract kits. Certain facilities also have Yag Lasers services for treatment of post operations complications of cataract. The mobile outreach services, IOL implantation rate, the CSR and the quality of cataract services have increased remarkably.

2.1.3. Limitations

The main limitations are lack of resources, lack of awareness by blind persons, high cost of treatment and limited access to services. The number of personnel performing surgery is less than adequate and unevenly distributed across the country. Most facilities lack equipment like biometry equipments (keratometer, A and B ultrasound scan) and laser equipment.

The cost of cataract kits and other equipment is prohibitive. Equipment maintenance services were also a challenge for a while.

The cost of surgery was identified in community based surveys as a key barrier to uptake of surgery by many patients. This is besides the lack of awareness, lack of access to surgical centers, patient reluctance and poor outcome of surgery. In remote areas patient follow up after surgery is extremely difficult for various reasons. The lack of outcome monitoring by most operating centres is also a challenge.

2.1.4; Aim and Objectives

Aim

To reduce blindness due to cataract by 95% by the year 2018.

Objectives

•The target is to increase CSR from 589 in the year 2010 to 700 by the year 2018

• To increase demand for services by overcoming barriers to the uptake of cataract surgical services through Community sensitization.

• To develop and mobilize local manpower and resources to provide cataract services including Ophthalmologists in the private sector

• Promote services at a cost that most patients can afford.

• To develop functional eye care system with Outreach programs to remote areas in each county by 2018.

•To promote high-quality surgery with a good visual outcome (visual acuity of 6/18 or better) from the current 53.3% to 65% by 2017.

•To develop a friendly functional cataract audit system by 2012 in all centers performing surgery.

2.1.5 Indicators

• Cataract output (number of cataract operations per year) and cataract surgical rates (number of cataract operations per million populations per year)

• Proportion of cataract surgery with intraocular lenses (intraocular lens implantation rate)

• Quality of cataract surgery in representative samples of the population in some surgical centres

Objectives	Activities	Process Indicators	Expected Outcomes
Increase CSR from 589 to 700 (33,600) operations by the end of 2017	Initiate/Intensify community outreach services to each County per year (total of 705) To perform over 32,000 cataract surgeries per year	Number of outreach services done in every county Number of cataract surgeries done	Up to 33630 patients with cataract operated per year
Increased proportion of people with blinding cataracts seeking surgical services	Train at least 34 CHEWs per County as Cataract Surgical Rate Workers (CSRW)by 2017 Enhance waiver system where necessary.	Number of CSRWs trained Number of cataract surgeries patients waived	Increase in demand for cataract surgery services by the reached communities Increased accessibility of eye care by the communities
Improve good visual outcome of cataract surgery from current 53.03% to 65%	Develop and use friendly functional cataract audit tools by end of 2012 Re-train/improve proficiency of eye/cataract Surgeons depending on the cataract audit out comes.	Number of eye centres carrying out cataract audits Number of eye/cataract surgeons retrained	Functional visual outcome auditing system Improved good Visual outcome of patients undergoing cataract surgery from the current 49% to 65%(increase the sight restoration rate)

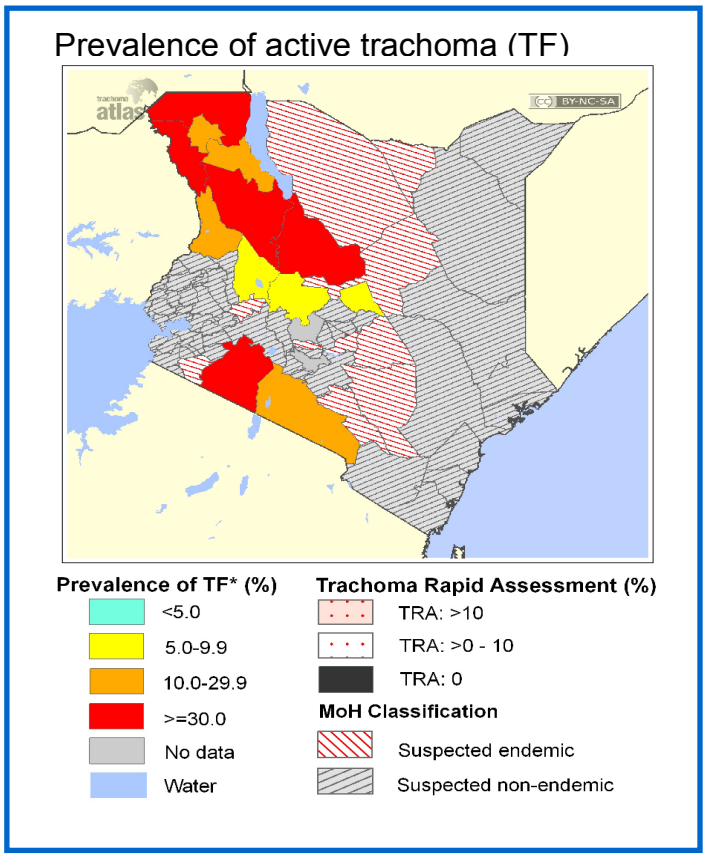
2.2. TRACHOMA

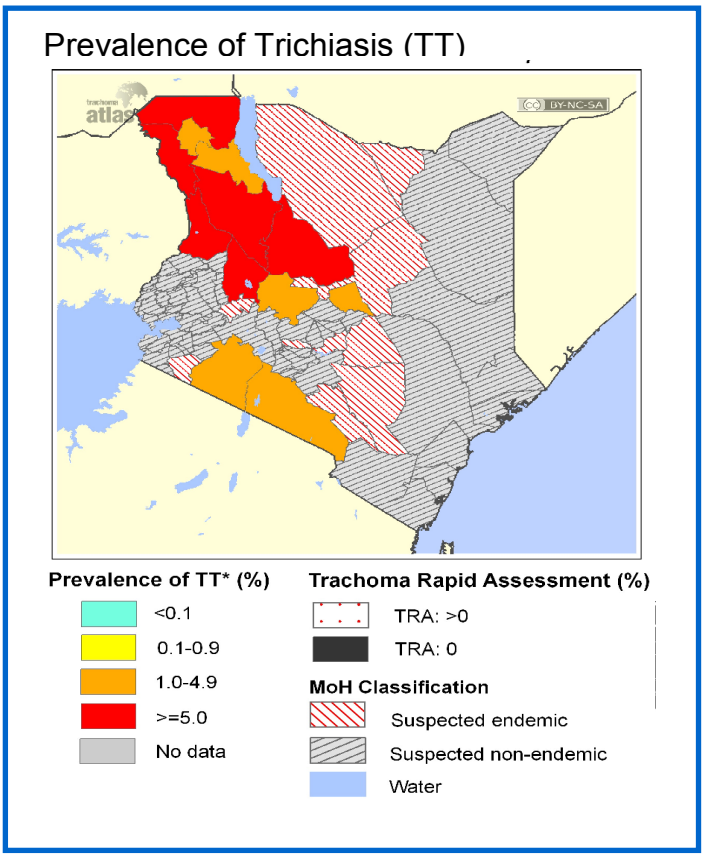
2.2.1Current situation

Trachoma is a condition of poverty and is a focal disease, affecting communities that have poor water supplies, sanitation and health services. It is suspected to be endemic in 17 of Kenya's 73 districts, putting an estimated 7.3 million people at risk of infection and even blindness.

These 17 suspected endemic districts are clustered in two distinct geographic areas; the North-west lowlands and the South-central plains. All are characterized by challenges of perennial water shortages, inadequate sanitation, poor hygiene and poverty. Through the collaborative effort of eye care stakeholders, 11 of the 17 districts have been surveyed to date (Kajiado, Narok, Baringo, West Pokot, Meru North, Samburu, Laikipia, and Turkana, Isiolo, Marsabit and Moyale).

2.2.2Current trachoma burden





The trachoma Maps indicates a broad view of the status of Trachoma in Kenya with respect to active and Blinding Trachoma

2.2.3; Achievements in last ten years

Trachoma control efforts in Kenya currently benefit from the support of a wide array of local and international stakeholders, including the Ministry's Division of Ophthalmic Services (DOS, lead partner), the Ministry of Water & Irrigation, the Ministry of Education, the African Medical Research Foundation (AMREF), University of Nairobi, CBM, the Fred Hollows Foundation (FHF), Spanish Doctors, Ol Malo Eye Trust, Kenya Society for the Blind (KSB), Operation Eyesight Universal (OEU), Sight savers International (SSI), Kenya Medical Training Center (KMTC), the European Commission (EC), the International Trachoma Initiative (ITI), St. Mary's Elementaita and Lions Club International among others.

The SAFE strategy has been rolled out to varying degrees in endemic districts. The table below shows the current distribution of targeted trachoma support across the 17 districts. The F&E components are present to varying degrees in each district, largely as a result of efforts from the Ministry of Water and Irrigation, Water Aid, and others, and may not be focused on trachoma alone.

Current Status of SAFE implementation and partner alignment:

This analysis shows the significant breadth of efforts already underway, but also highlights the substantial gaps, particularly in the 7 unmapped districts.

District	Surveyed	S	A	F	E
Kajiado		AMREF/SSI/CBM			
Baringo		SSI/FHF		?	?
Samburu		CBM/SSI/ Ol Malo/ AMREF			
Narok		OEU			
West Pokot		OEU		?	?
North Meru		CBM		CBM	CBM
Turkana		Spanish Doctors/ AMREF/ OEU	Spanish Doctors	WASH NGOs	
Laikipia		SSI/CBM/OI		SSI/CBM/OI Malo/AMREF	
Mwingi		SSI		?	?
Makueni		SSI		AMREF	AMREF
Koibatek		SSI			
Marsabit		CBM/ SSI (planned)		CBM/ SSI (planned)	SSI
Isiolo				?	?
Trans-Mara				?	?
Moyale				?	?
Mbeere				?	?
Kitui				AMREF	AMREF

Partner present in intervention in district

Partner support planned

Not currently supported

• Provide surgical services with trained and certified medical or paramedical staff at community level to operate on cases of trachomatous trichiasis.

• To institute an ongoing audit of the quality of trichiasis surgery on the basis of the WHO guidelines for assessment.

• Provide mass antibiotic administration (Azithromycin or tetracycline ointment) for populations living in districts where the prevalence of active disease (trachoma follicular) in children aged 1–9 years is above 10%. In districts where the prevalence is below 10% but above 5%, community or family treatment will be required. The treatment interventions must be implemented as complete SAFE.

2.2.6. Indicators

• Number of districts/counties with blinding trachoma as a public health problem

• Proportion of endemic communities covered by the SAFE strategy;

• Prevalence of trachomatous entropion trichiasis at district/county level;

• Prevalence of active trachoma in 1–9-year-olds at district/county level

A detailed strategy for trachoma is found in the Kenya National Plan for Elimination of trachoma(KNPET)2008-2015, the Kenya Trachoma Action Plan(KTAP), and also in the Neglected Tropical Diseases (NTD)Master Plan2010-2015

2.3. GLAUCOMA.

2.3.1. Current situation.

Glaucoma is the commonest cause of irreversible blindness accounting for an estimated 25,200 blind Kenyans. It is estimated to affect 2% of patients attending eye clinics in Kenya and accounts for 6% of blindness in the country. Early detection and treatment are essential in the preservation of sight. However, there are a significant proportion of undetected cases in Kenya due to lack of national policy guidelines, trained personnel and adequate facilities among other factors.

2.3.2. Achievements last 10 yrs

1. National guidelines on early detection and management of glaucoma are being developed.
2. Two glaucoma sub specialists have been trained,
3. Equipment relevant to glaucoma like Visual Field Analyzers have been acquired

2.3.3. Limitations

• Glaucoma-associated visual impairment and blindness remain difficult to prevent because of the lack of methods to identify persons who are likely to develop substantial visual loss.

• There is lack of awareness in the community about glaucoma and the threat it poses to vision.

• Most glaucoma patients present to the clinic at advanced stages when visual loss has already developed.

• Early diagnosis of primary open-angle glaucoma is difficult, as no single test is sufficiently sensitive or specific for screening populations for glaucoma.

• Assessment of all adults attending eye units for glaucoma is not routine practice everywhere.

• Compliance with daily, medication particularly so where the cost of medication is relatively high, services are at a distance and understanding of the condition is limited.

• Lack the necessary equipment and expertise for diagnosing and managing glaucoma. Many public health facilities experience shortage of glaucoma medications.

•Referral system not well outlined.

2.3. 4. Aim and Objectives

Aim

• To reduce visual impairment and blindness from glaucoma

Objectives

• Establish the magnitude of glaucoma in the country through research
• Ensure that training curricula for ophthalmologists and other eye care personnel adequately address glaucoma, including the skills needed for diagnosis and treatment.
• Identify opportunities for diagnosing glaucoma, e.g. at eye camps, regular eye checks, refraction testing, before or after cataract surgery.

• Ensure that eye-care units are adequately equipped for the diagnosis and treatment of glaucoma.

• Ensure that effective, low-cost eye drops are available for lowering intraocular pressure.

• Strengthen advocacy and awareness of possible ways of preventing visual loss due to untreated glaucoma, targeting the public, eye health-care professionals and policy-makers.

2.3.5. Indicators

- Prevalence of blindness and visual impairment due to glaucoma
- Accurate diagnosis by eye care workers
- Glaucoma awareness level in communities
- Number of patients taking up surgery for Glaucoma
- Availability of Glaucoma medicine in health facilities

Objectives	Activities	Process indicator	Expected outcome
Establish the magnitude of glaucoma prevalence in Kenya	Carry out research on magnitude pattern, diagnosis and management of glaucoma by 2017	Researches done	Updated information on glaucoma
Improve knowledge and skills of eye care workers on detection and management of glaucoma	Update all eye care workers on glaucoma detection and management	Number trained on diagnosing	Glaucoma recognized and taken on board as a key component in the eye care service.
Intensify Glaucoma awareness to all health workers and community members.	4 media Campaigns per year to create awareness and educate the public on Glaucoma both regionally(counties) and nationally	Number campaign undertaken	Increased glaucoma awareness level among the community members and key service providers.
Screen for Glaucoma among eye patients at risk	Check IOPs in all patients above 40/ with presbyopia by the eye care providers	Percentage of patients over 40 with IOPs checked	Increased number of patients with early glaucoma identified
Avail glaucoma medical and Surgical services	Advocate for inclusion of glaucoma drugs in the essential drugs list.(to the counties, where there are eye units)	- Regular supply of drugs in essential list. - Number of centers offering surgery for glaucoma	Increased number of patients receiving treatment for glaucoma

2.4: CHILDHOOD BLINDNESS

2.4.1 Current situation

Childhood blindness is directly linked to poverty and under five-mortality rate. The mortality rate has been reducing over the years .In the year 2009, the infant mortality rate was 52 per 1000 births down from 77.3 in 1999 while under five-mortality has reduced from 115 per 1000 live birth in 2003 to 74 per 1000 live births in 2009.

Childhood blindness is second only to cataract in terms of Disability Adjusted Life Years (DALY). Children have a long life to live and the many blind years (number of the blind children x length of life) which have associated significant negative impact on their overall development- social, psychological and economic aspect of their lives.

It is estimated that around 16,800 children are blind in Kenya. The main causes include: Congenital cataract, corneal diseases (including those associated with nutritional deficiencies), congenital glaucoma, trauma, cortical blindness, retinopathy of prematurity, tumors and hereditary retinal diseases. With the persistently high poverty level and lack of access to pediatric eye care services, childhood blindness is expected to increase.

2.4.2. Achievements in the last 5 years

Over the last five years, awareness about childhood blindness has increased among members of the public and also among primary health care workers. The school health policy has been formulated with specific guidelines addressing eye care in early school life. Efforts have been made to enhance early detection of childhood diseases with inclusion of eye examination into maternal and child health booklet (MOH 216). A simple manual on childhood blindness for medical and health workers has also been developed and distributed. A total of 6 ophthalmologists have received specialist training on childhood blindness. Great strides have been made towards management of childhood diseases that cause childhood blindness, such as measles and vitamin A deficiency, through the integrated management of childhood diseases (IMCI) approach. The national immunization coverage has also gone to over 80%.

2.4.3. Limitations

Addressing childhood blindness has continued to be constrained by factors highlighted below among others.

- Childhood blindness agenda is still not well understood and inculcated into eye care and health care in Kenya.
- Inadequate population-based data on the prevalence and causes of blindness in children.
- Lack of awareness among parents and the community about preventive measures and that the vision of children who are blind can often be improved or maximized.
- Barriers to accessing services, including lack of awareness, distance, poor detection rates of childhood blindness, high cost of pediatric eye services, fear and competing demands for scarce resources within the family.
- Shortage of pediatric eye-care professionals and inadequate opportunities for training in pediatric ophthalmology and eye care.
- Eye care workers perceive examination of children as cumbersome and labor and time-intensive especially in view of competing tasks.
- Poor referral and follow-up system, so that children who need specialist expertise are managed by general Ophthalmologists.
- Inadequate provision of special education and rehabilitation services for children with irreversible visual loss.

2.4.4. Aims and Objectives

Aim

To eliminate causes of avoidable childhood blindness in Kenya.

Objectives

- Increase awareness in the community and encourage primary health care, including specific preventive measures at the primary level, through primary eye care, including:
    - Measles immunization, to prevent corneal scarring

- Vitamin A supplementation, and nutrition education to control vitamin A deficiency
- Avoidance of harmful traditional practices, to prevent corneal scarring
- Ocular prophylaxis of newborns, to prevent neonatal conjunctivitis.

• At the secondary level, strengthen diagnosis and management of childhood blindness.

• At the tertiary level, provide specialist training and services for the management of surgically remediable visual loss from cataract, congenital glaucoma and corneal scarring, including long term follow up.

• To provide optical services for children with refractive errors, especially in school eye-health programmes

• To provide services for children with low vision.

• Provide comprehensive services for children at all levels of service delivery.

•To ensure good linkages between eye-care services and those providing education and rehabilitation services for irreversibly blind children.

2.4.5. Indicators

- Prevalence of childhood blindness
- Prevalence of avoidable childhood blindness, by cause
- Number of Children accessing eye care services In Kenya

A manual on PREVENTING BLINDNESS IN CHILDREN, A production of the Division of Ophthalmic Services, and MOTHER AND CHILD HEALTH BOOKLET (MoH-216) ARE REFFERED TO HERE

Objectives	Activities	Process indicators	Expected outcomes.
Increase Awareness on Childhood blindness among the health workers and community health workers	Sensitization and dissemination of manuals for prevention of childhood blindness for DHMT, health workers and CHWs in 10 counties per year	Number of counties covered/ Sesitised	Increased number of cases/referral
Integration of childhood primary eye care services within the other existing health care activities	Collaborate with division of nutrition in distribution of vitamin A to children under 5 years. Liaise with ANC/MCH for screening of high risk mothers and instilling of TEO to newborns eyes at birth and immunization	Vitamin A coverage Number of health facilities screening and instilling TEO at birth	Increased Vitamin A Coverage Reduced number of Children with Neonatal conjunctivitis and immunization related complications.
At the secondary level, strengthen diagnosis and management of childhood blindness	Develop national policy on early detection, management and referral of childhood eye conditions by 2017	Policy developed	National policy developed and adopted
Develop comprehensive pediatric eye services, at all levels	Establish referral from community health systems feeding to the tertiary centers Set up and equip 5 regional pediatric, ophthalmology centre of excellence for service delivery 2017 at selected hospitals ,including refractive and low vision services	Referral system in place Centres set up at selected hospitals	Increased Number of children detected with childhood eye conditions early
To Provide optical and low vision services for children	Advocate for screening of all children entering primary school with effect from 2012	Number of school where screening has taken place	

2.5 REFRACTIVE ERRORS.

2.5.1. Current situation

The magnitude and pattern of refractive errors (myopia, hyperopia, astigmatism and presbyopia) varies enormously from population to population. There is very little data from population based studies available, particularly in Eastern Africa. Preliminary surveys and anecdotal observation indicate relatively low prevalence of myopia in the African population in comparison to Asian populations.

For the planning of refractive services, the criteria for significant refractive errors is taken to be myopia of at least minus 0.5 diopters and hyperopia of at least plus 2.0 diopters.

This plan will endeavour to make refractive services an integral component of eye care in all levels with an overall aim of decreasing binocular visual acuity due to refractive errors in adults with less than 6/18 and in children with less than 6/12. Most of the need is expected to come from children aged 11 – 15 with myopia and from people aged 40 years and above who require spectacles for near vision (reading).

2.5.2. Achievements in the last 5 years

- Training at for Refractionists and optometrists is available at KMTC.
- Started advanced refraction and low vision specialist TOT at KMTC for OCOs
- Optometrist training at a higher level has started at the Masinde Muliro University of Science and Technology
- A bill to regulate the practice of optometrists and opticians has been prepared and awaits to be tabled in parliament.
- The number of Refractionists/Opticians/Optometrists in private practice has increased
- Refractive surgery is now available in private setup.

2.5.3. Limitations

- •Insufficient data on the prevalence and types of refractive errors in different populations and age groups
- •Lack of qualitative research on the impact of refractive errors on quality of life, visual function and economic productivity
- •National guidelines and legal regulation are lacking
- •Underestimation by health-care providers and policy-makers of the extent and potential socioeconomic impact of uncorrected refractive errors in the community.
- •Lack of established optical services and cadres in public services.
- •Lack of public awareness on Refractive errors.
- •Lack of well developed harmonized curricula on opticians and optometrists

2.5.4. Aim and Objectives.

Aim

To eliminate visual impairment arising from uncorrected refractive errors

Objectives

- •Develop national guidelines and legal regulation framework for optical services/practice
- •Train human resources to ensure that high-quality refraction and optical service are available where needed.
- •Improve public awareness and generate demand for services through community-based initiatives, media campaigns primary eye care and school eye-health programmes.
- •Provide spectacles that are new, of good quality, accessible and affordable.
- •Establish the magnitude of refractive errors, and explore the optimal means of delivering services that are acceptable and cost effective.
- •Establish optical centers at secondary and tertiary level

2.5.3. Limitations

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- •Establish the magnitude of refractive errors, and explore the optimal means of delivering services that are acceptable and cost effective.
- •Establish optical centers at secondary and tertiary level

2.5.5. Indicators

- Proportion of people with uncorrected refractive errors that cause visual impairment (i.e. presenting with visual acuity < 6/18 in the better eye)

Objectives	Activities	Process indicators	Expected Outcome
Develop national guidelines and legal regulation framework for optical services/practice	Draft guidelines for the management of Refractive errors Review opticians/Optometrists draft Bill Stakeholders meetings Present Draft bill for parliament debate and approval.	National guidelines developed and adopted. Opticians bill adopted and published	Reduced number of people with in - correct refractions Reduced malpractice in optical prescriptions
Improve public awareness and generate demand for services through community-based initiatives, media campaigns primary eye care and school eye-health programmes	Conduct 3 outreaches and 2 media sessions per county per year	Number of outreaches and media sessions held	Increase number of people seeking refractive services.
Provide spectacles that is good quality ,accessible and affordable	Set up 5 regional comprehensive optical/eye care centres by 2017	Regional centres with optical units in place	Refraction and optical services with good visual outcome. Improved quality of life
Establish magnitude and pattern of refractive errors	Conduct refractive error population survey	Surveys conducted	Proper planning of refractive services
Establish LASIK services at Tertiary Level Hospitals (KNH MTRH)	Procure relevant equipments and consumables Train relevant Personnel	Lasik available	LASIK available in public service

2.6. LOW VISION

2.6.1 Current situation

It is estimated that there are about 840,000 people with low vision in Kenya with only a small percent accessing low vision services. There has been noted to be minimal focus on low vision compared to total blindness within the eye care services, with only 4 institutions providing specialized low vision services. The recent initiative by KMTC and KISE to start training on low vision is a positive step towards development and scaling up of low vision services in Kenya.

2.6.2. Achievements in the last 5 years

- Low vision courses has been established at KMTC, starting with Training of Trainers
- There is increasing awareness of low vision among health workers.

2.6.3. Limitations

- Lack of low vision services in public health facilities.
- Lack of clear Guidelines on low vision services
- Provision of low-vision services is generally not favored by eye-care providers because of the low economic gain.
- The need for low-vision services is often not fully recognized, owing to inadequate epidemiological data on the prevalence and causes of functional low vision.
- There is little evidence for the cost-effectiveness of low-vision care interventions.
- Persons with low vision are often unaware that they can be helped.
- Communication and referral between eye-care, special education, rehabilitation and low-vision services are often inadequate.

2.6.4. Aim and Objectives.

Aim

To enhance and improve vision-related quality of life for people with functional low vision

Objectives

- To increase awareness about low-vision care among eye-care professionals and persons with low vision

- To develop national guidelines on low vision
- To enhance training in low vision for eye care workers and low vision therapists
- To provide evidence on the prevalence and causes of functional low vision;
- To establish comprehensive low-vision care for children and adults
- To provide evidence for the impact of low-vision services on quality of life and barriers to access to low-vision services.
- Advocate for the inclusion of low-vision care as part of eye-care, education and rehabilitation services.
- Establish low vision centers around the country

Indicators

- Proportion of eye units with low vision services that have that have equipment that meets or exceeds the VISION 2020 standard list requirements;
- Number of persons with functional low vision who have access to low-vision services

Objectives	Activities	Process indicators	Expected Outcome
To increase awareness about low-vision care among eye-care professionals and the community	Conduct at least four low vision outreaches per region per year Hold at least 2 media sessions per region per year.	Number of outreached conducted Number of sessions held.	Increased number of patients seeking low vision services
Develop national guidelines on Low vision Service provision	Develop guidelines for Low vision Develop and produce manuals for Low Vision Services	Draft guidelines Manuals developed, produced and Distributed	Appropriate management of low vision needs Increase in number of patients receiving appropriate low vision services
Develop comprehensive Low Vision Services in five regional centres by 2017	Integrate and equip low vision centres in at least 5 regional hospitals by 2017, one centre per year.- KNH,MTRH, NEW NYANZA, MERU L5, COAST	Low vision centres established	Increase enrolment of patients with low vision accessing services and with improved QOL
Advocate for the inclusion of low-vision care as part of eye-care, education and rehabilitation services.	Collaborate with KIEP and EARS in outreach services Liase and network with existing low vision centres	Number of outreaches attended	Integrated low vision services available

2.7. DIABETIC RETINOPATHY

2.7.1 Current situation

The prevalence of diabetes mellitus in Kenya is estimated to be at 3.5% (4.8% in the world) with up to 50% being undiagnosed. The number of diabetics is expected to rise dramatically in the near future in most developing and intermediate societies, affecting particularly urbanizing societies and the middle-aged population. Diabetic retinopathy is now known to be an early and important indicator for cardiovascular morbidity and mortality as well as an important cause of preventable blindness mainly in the working-age population. Currently, diabetic retinopathy is estimated to contribute about 3% of blindness in Kenya.

Blindness from diabetic retinopathy is an emerging factor for loss of productivity and rising health costs. Reportedly, almost 50% of diagnosed diabetics in Nairobi and almost 20% in rural Central Kenya, had diabetic retinopathy, with the majority never having undergone any eye examinations before.

2.7.2 Achievements last 10 years

- Seven Vitreoretinal surgeons/ ophthalmologists have been trained.
- IEC material on DR have been produced and well distributed
- Basic equipments to enhance diagnosis of Retinopathy have been acquired (slit lamps, ophthalmoscopes, and loupes)
- Laser services for Retinopathy are available in the following centres; Kenyatta national Hospital, Kikuyu eye unit, Lions sight first, Kitale DH, Sabatia eye unit, Tenwek eye hospital, Light house eye hospital, Kwale District eye centre and private clinics/Hospitals.
- A Mobile Laser Service is also available in a Public Private Partnership, to augment the existing ones, and reach more.

2.7.3 Limitations

- The magnitude of diabetic retinopathy has not been established.
- Lack of awareness by health workers that blindness due to diabetes can be prevented by laser treatment, besides sugar control.

- Lack of awareness by the patients that they need regular eye examination.
- There is also shortage of equipment e.g. laser mainly due to high costs and uneven distribution of the available equipment.
- Poor sugar control is associated to poverty, and lack of appropriate Medications

2.7.4 Aim and Objectives.

Aim

• To reduce the incidence of blindness and visual impairment due to diabetic retinopathy

Objectives

- To create awareness about blindness due to diabetes to patients and community.
- To Identify persons at risk for visual loss due to diabetic retinopathy
- To train medical workers on diagnosis and management of DM and DR
- To Provide appropriate equipment to 5 major regional eye care service centre with a retinal laser unit.
- To ensure adequate availability of consumables for laser and vitrectomy centres

2.7.5. Indicators

- Prevalence of blindness and visual impairment due to diabetic retinopathy
- Population per tertiary eye centre providing comprehensive medical and surgical posterior segment services
- Number of diabetic patients who undergo an annual eye examination or as indicated.
- Number of patients with diabetic retinopathy who are accessing laser services where indicated.

Objectives	Activities	Process indicator	Expected Outcome
Increase awareness on DR to all patients with diabetes	Network with self-help groups, professional organizations and DMI addressing diabetic retinopathy by 2018 Regular health talks to all patients attending diabetic clinics. Undertake 4 media session per year DR	Networking meetings Number of health talks given to self help groups and professional bodies No. Of sessions held	Increased number of patients with diabetes seeking for eye care services.
Train medical workers on diagnosis and management of DM and DR by 2018	Conduct CMES for Nurses, Clinical Officers and Doctors involved in the care of diabetic patients yearly	Number of CMES held	Improved management of DR Increased numbers of Patients referred for DR Services
Develop Five comprehensive centres for diabetic retinopathy services by 2018.	Provide one laser unit per year Train at least 5 VR surgeons by 2018 Ensure availability of consumables for laser and vitrectomy	Number of lasers units supplied Number of VR Surgeons trained Number of Kits procured	Increased number of patients with DR receiving quality and appropriate treatment

2.8. OTHER DISEASES/CONDITIONS.

2.8.1 Current situation

Diseases capable of resulting to corneal blindness e.g. corneal scar-injury/infection, ophthalmia neonatorum/conjunctivitis of the newborn, corneal foreign bodies, corneal ulcers, keratitis and Xerophthalmia contributed to 7.2% of all ocular morbidity in 2010. Eye injuries contributed to 2.7% of all ocular morbidity in the same year, while harmful practice and misuse of eye medications has not been documented. Anecdotal observation indicates that these practices exist both among the rural poor and urban populations. Blindness from complications of HIV results from such conditions as CMV retinitis and corneal complications from HZO and has been noted to be a cause of blindness in Kenya.

It is paramount that we ensure that all drivers meet the minimum recommended vision for driving in order to curb road traffic accidents, which contribute to visual loss and blindness from such accidents, besides the country economic drains.

Methanol poisoning is an equally challenging problem for many Kenyans. It poses a challenge to the health workers in terms of management. The most serious effect apart from death is blindness. The eye care team therefore should clearly define the guidelines to address this challenge.

2.8.2. Achievements over the last ten years

- The National eye care reporting tools have been revised to capture information on various diseases and conditions.
- Health workers have been sensitized on opportunistic infections affecting the eye ,in relation to HIV/AIDS

- Health workers have been sensitized on opportunistic infections affecting the eye ,in relation to HIV/AIDS

2.8.3. Limitations

- The actual burden of these conditions nationally has not been established through scientific research
- Lack of stringent policy on vision requirements for drivers, despite the alarms from the road traffic accidents.
- Lack of management guidelines for methanol poisoning in Kenya

2.8.4. Aim and Objectives

Aim

To eliminate avoidable e blindness in Kenya

Objectives

- Reduce blindness from corneal related causes
- To reduce prevalence of eye injuries
- Reducing blindness from complications of HIV
- To develop a national policy on eyesight and driving
- Promote awareness on harmful practices and misuse of eye medications
- To develop guidelines on management of methanol poisoning

2.8.5. Indicators

- Prevalence of blindness due to eye injuries, corneal related pathology, HIV related conditions, harmful eye practices and medications

Objectives	Activities	Process indicator	Expected Outcome
Reduce blindness from corneal related causes	Establish corneal transplant services in regional hospitals	No. Regional hospitals with established corneal transplant services Number of corneal transplants done	Reduction in the number of blind cases due to injuries and Corneal scars
Ensure all drivers meet the minimum recommended visions for driving	Development of national policy on eyesight and driving	Policy developed	Reduction in visual related road accidents
To reduce incidence of eye injuries	Awareness creation on safety measures Lobby for the ministry of labour to enforce use of protective devises.	Number of sessions held	Reduction of potentially hazardous physical injuries to the eyes
Promote awareness on harmful practice and misuse of eye medications	Health talks on dangers of self medication, harmful traditional practices and safety measures	No. of awareness sessions held	Reduction in self-medication and harmful substances related blindness
educing blindness from complications of HIV	Collaborate with CCC to have ocular examination and appropriate management for persons suffering from HIV/AIDS.	Number of patients examined.	Increased number HIV patients with ocular conditions on treatment and follow-up.
Reducing blindness from methanol poisoning	Develop guidelines for methanol poisoning in liaison with other relevant partners Awareness creation on harm caused by methanol to the eyes to the public Sensitize/Educate health workers on management of methanol poisoning	Guidelines developed Number of sessions held Number of health workers sensitised	Reduction in avoidable blindness

3.0. INFRASTRUCTURE AND TECHNOLOGY; EQUIPMENT, CONSUMABLES AND DEVICES

3.1. Introduction.

The realization of vision 2020 is dependent on availability of appropriate tools and environment to enable eye care workers address the issues of the identified major blinding diseases. A unit will be said to be comprehensive if it has adequate outpatient consultation, admission and theatre facilities. While equipping the units is expensive, the following will form the basic equipments to enable the eye unit function; Microscopes(2), Slit Lamps with applanation tonometer(2), Biometry Set(1), Yag Laser(1), Argon Laser for 5 Regional Centres(1), Visual Field Analysers (1), Ophthalmoscopes and Retinoscopes (6), Refraction box(3), Cataract Sets (6 every 2 years), Indirect Ophthalmoscope set (1), +78 and +90 D lenses (2 each).

Other items to be availed are the low vision Devices including Magnifiers, telescopes etc.

While these forms the basic specialized tools for eye care, it will be necessary to establish what else may be required to reach a comprehensive state, e.g. Autoclaves and sterilizers.

3.2. Current situation

1. Twenty seven eye units and 64 eye clinics are operational
2. Most of the 91 eye clinics and units have basic eye care equipment but lack more specialized equipment for detailed ophthalmic examination and surgery
3. Supply of consumables is a constant challenge to most facilities
4. 13% of ophthalmic equipment/instruments are out of order with quite a number not functioning optimally

3.3. Achievements in the last ten years

1. Nine new eye units have been constructed and equipped
2. Nine other eye units have been renovated and equipped
3. The GOK has procured ophthalmic instruments and equipment to the tune of Kshs. 120 Million with partners contributing almost a similar amount

4. The Government in conjunction with partners has trained 8 Medical Engineering technicians in maintenance of ophthalmic equipment
5. A full time MET has been deployed at the Division of ophthalmic services to provide Planned Preventive Maintenance services as well as skills transfer to field officers
6. A national workshop for Ophthalmic Equipment is being established and equipped at Kenya Society for the Blind
7. Seven sensitization workshops for end users of ophthalmic equipment and instruments have been carried out in various regions of the country
8. One training for 8 regional equipment maintenance technicians on ophthalmic equipments has been conducted
9. Consumables have been provided to eye units in several regions by partners

3.4. Limitations

1. Lack of guidelines for the procurement of ophthalmic equipment, consumables and devices
2. Lack of funds to establish a revolving fund for ophthalmic spare parts
3. Some regions lack the support of partners in supply of consumables
4. Lack of funds to further develop more infrastructure

3.5. Aim and Objectives

Aim

To provide an optimal supply of appropriate, high-quality, affordable equipment, instruments, consumables and resource materials essential for the delivery of eye-care services

Objectives

1. To develop a national policy on equipment and consumables for eye care.
2. Develop and equip more eye units and clinics
3. Avail appropriate and cost effective equipment, consumables and devices to all eye care service delivery units by 2017

4. To strengthen existing units / clinics and enable them to fulfill their clinical and teaching functions by providing them with appropriate equipment.
5. To train available eye care staff on proper use and basic maintenance of ophthalmic equipment.

3.6. Indicators

- Populations served by primary, secondary and tertiary centers
- Number of primary, secondary and tertiary centers in the country
- Number of county eye units with adequate facilities and equipment, established referral networks, medicines and commodity coverage
- Number of equipment training programmes and numbers of personnel trained

Objectives	Activities	Process indicator	Expected Outcome
Develop and equip more eye units and clinics	Develop and Construct 20 eye units by the year 2017 Renovate and equip 9 eye units Establish 40 new eye clinics	Number of new units established and equipped Number of eye units renovated and equipped Number of new eye clinics established	Adequate infrastructure made available for V2020
Develop National Equipment and Consumable Policy for Ophthalmic services	update inventory on all available equipment every 2 years develop and avail the equipment policy to regional units	Number of updates Policy developed and distributed	Updated inventory
Avail appropriate and cost effective equipment,, consumables and devices to all eye care service delivery units by 2017	Equip all eye units with the appropriate equipment by 2017	Number of units equipped	Improved working environment in all the districts
Integration of procurement with the Ministries department	Collaborate with other government agencies (like KEMSA) to ensure procurement of quality ophthalmic products.	No. of joint procurement meetings held	Ensured quality products/equipments for for eye care
Decentralization of maintenance units	Establish the development of at least 2 more regional Ophthalmic Maintenance Units by 2017	Number of Maintenance units established	Improved working environment in all the districts Maximum/cost effective utilization of available equipment
Skills upgrading for equipment maintenance technicians on ophthalmic equipments	Train at least 5 ophthalmic equipment technicians and start deployment at referral units	Number of technicians trained	
	Develop and Support a program of preventive maintenance by 2013	Functional Programme in place	
	Ensure adequate maintenance of specialized equipment e.g. laser and vitrectomy units) by retaining 2 equipment technicians 2017	Number retained	Maintenance all equipment types made possible
	Include a module on ophthalmic instrument maintenance/equipment repair into the Diploma of Medical engineering at KMTC by 2017	Curriculum review for the METs	Comprehensive training for METs
	Work in conjunction with non-profit making procurement agencies to develop a stock of spare parts and consumables.	Availability of spare parts and consumables	Availability of spares and consumables in eye units Maintenance all
Sensitisation of eye care workers on proper use and care of equipments and instruments	Train eye care workers on basic preventive and correct/proper use and maintenance of the basic equipments, by conducting at least 4 workshops per year	Regional and /or national workshops held	Reduced spending on replacement of equipment and devices

4.0. HUMAN RESOURCE DEVELOPMENT

4.1. Introduction

A skilled and motivated work-force is central to a strong health system that can provide universal coverage, improve quality of a people's life and help the country achieve the MDGS. The realisation of this National plan and vision 2020 in general will be heavily dependent on development of eye care teams which will comprise of different eye care cadres. Leadership and management are hereby identified as soft skills that will greatly improve efficiency of our health systems.

4.2 Current Situation:

One of the key factors slowing down the implementation of Vision 2020 in Kenya is the lack of adequately trained, empowered and motivated staff. It is however important to recognise that the UON has the capacity to train 10 ophthalmologists per year while KMTC is producing 10 OCO/cataract surgeons, 16 Ophthalmic nurses and 20 Optometrist technologists per year.

Several advances have been made in human resource with 30 new ophthalmologists being trained in the last five years. The currents ratio of ophthalmologists to population stands at 1:450,000 down from 1:550,000 five years ago. This is However below the WHO's recommendation of 1:250,000.

There is also a significant drop in the number of ophthalmologists based in Nairobi, from as 62% of the 58 Ophthalmologists five years ago to 48 % of the 86 currently. Unequal distribution of available resources is still the major challenge. (See the current status of human resources per province (Annex). This leaves the rural (67%) majority with limited access to eye care services.

In view of the above, HRD has to be integrated into the comprehensive development of strengthening of efficient and cost-effective eye care services. The numbers required to be trained to respond to the current gap is presented in annex 3A. One of the challenges noted over the last five year period is the deployment of ophthalmic nurses to other departments out of eye care services. This is bound to affect the proper functioning of the eye unit as well as interest of new applicants to train as ophthalmic nurses. It has also been noted that the number applicants has already started going down.

The training institutions will keep close links with the division of Ophthalmic Services and the implementers on the ground with a view of reviewing the training offered to respond to major gaps experienced in the field. This implies new short term courses and modification of the curriculum would be considered from time to time to enhance quality.

4.3. Achievements in the last 5 years

Since the last strategic plan, there has been an increase in all cadres of staff:

- Ophthalmologists have increased from 58 to 87. Currently the distribution of ophthalmologists in the population is 1: 450.000 and is a skewed distribution.
- Ophthalmologists have also received training in sub-specialties: Anterior segment,, Glaucoma (2), Vitreo-retinal (4), Pediatric (5), Oculoplastic (3)
- Ophthalmic Nurses have increased from 13 to 78 (65 trained)
- Ophthalmic clinical officers/Cataract Surgeons have increased from 54 to 81
- Some Ophthalmic clinical officers have been retrained to be cataract surgeons.
- Three classes of Optical technologists have so far graduated though not absorbed into the public Services

4.4. Limitations

- Lack of incentives that motivate staff to work for the vulnerable in rural areas
- Deployment of staff is generally uneven - most are still in urban areas
- Need clarity of categorization and clear terms of reference of various eye-care cadres.
- Recognition of some cadres (optical Technologists) in the public service, and so employments and placement.

4.5. Aim and Objectives

Aim.

To ensure a sufficient number of well trained personnel and to integrate them into eye care system effectively

Objectives

1. a. To strengthen training for the following cadres of personnel:

    1. General Ophthalmologists and Subspecialties
    2. Ophthalmic Clinical Officers and Specialized OCO
        - Cataract Surgeons
        - Refractionists /Low Vision Specialists
        - Orthoptists
        - Community eye health
    3. Ophthalmic Nurses and specialist in;
        - Community eye health
        - Eye theatre Nursing
        - Eye care Management
    4. Optometry

b. To provide training for the following new cadres

- Specialized Ophthalmic Equipment Technician - 1 per County
- Comprehensive Eye care managers

2. To develop a human resource development policy

3. To strengthen training institutions in capacity to offer quality training

4.6. Indicators

- Number of staff trained in each cadre
- Ratio of personnel per population

Objectives	Activities	Process indicator	Expected Outcome
To increase the number of eye care workers in all cadres A. Skilled	To train the following by 2017: **50** Ophthalmologist s, **210** OCO (CS, CRs, LV) **238** Ophthalmic nurses **280** Optometrists	Number of each carders trained Modules introduced	Increased eye-care workforce.
B. Highly skilled	Train 5 in each of the following Sub specialties for Ophthalmologists • Glaucoma Specialists • Pediatric eye specialists • Vitreoretinal Specialist • Anterior Segment specialists	No of sub specialist trained	Increased scope/quality of the workforce
Skilled supportive	Eye care Strategic Leaders Train 5 senior eye care Managers annually. Advanced Training for 5 senior TOTs for equipment Maintenance	No of Eye care leaders and managers trained No of METs Trained	Enhanced utilization of Ophthalmic equipments and instruments
To develop Human Resource Development Policy for eye-care, and integrate it into the public service structures by 2017	Draft HRD policy for eye care HRD Stakeholders forum	Policy developed, adopted and used	Well coordinated and cost effective eye care service delivery
To enhance capacity of relevant training institutions to offer appropriate specialized training	Support the development of a comprehensive training structure for mid-level eye-care cadres at KMTC from 2014 Monitor and evaluate the output and impact of all training programmes for eye-care cadres and adjust where necessary by 2013 Lobby for the specialization of clinical Eye-Nurses within the nursing profession allowing for full career progression within Ophthalmology by 2018	Curriculum reviewed Curriculum and training evaluation reports No of Nurses working in mainstream eye care.	Improved quality of training Coordinated training for eye care workforce Improved eye patient care
To enhance professional capacity of all eye care cadres	In cooperation with OSEA,OCOA,ONC, KAO and international professional bodies, support the development of national CME structures for eye-care cadres in regions from 2012	Number of CMEs planned and done	Improved/quality of care

5.0 CO-ORDINATION AND MANAGEMENT OF EYE SERVICES

5.1. Overview

The Health ministries (Public Health and sanitation and the Ministry of Medical Services) have delegated the coordination and management of eye services to the Division of Ophthalmic Services. Whereas the coordination structure is well articulated at the national level, this may not be the case at the county level. The provincial/regional prevention of blindness committees have been formed and implementation structures strengthened during the planned period while county committees need to be formed. They will be expected to have strong links with the Division, and to the county health service system to be adopted

A full time head of the division will play key roles as a chief advisor to the Government on strategic direction with respect to eye health and blindness prevention. S/He oversee and coordinate and assure quality eye care services at national level in addition to facilitating deployment, distribution of resources and training of eye care workers in the country. This together with upgrading of office communication is expected to effectively make the Division more responsive to the needs of all stakeholders.

It is envisaged that with the Division effectively coordinating activities of all partners in eye care delivery in the country, there will be minimal duplication/ mal distribution of resources, promote information sharing and provide feedback to all partners.

5.2. Division of Ophthalmic Services (DOS)

5.2.1. Current situation

- There is an existing restructured NPBWG and (Regional)PPBWG
- Development and implementation(recently completed) of NECSP 2005 – 2010
- Stakeholders forums for partnership development

5.2.2. Achievements in the last 10 years

- Successful implementation of the NECSP 2005 - 2010

• Several sections in the Division created, to widen the scope, to dealing with Community Services; Clinical Services and Eye Health Information/ Epidemiology, Preventive Equipment Maintenance, Trachoma control relevant personnel deployed.

• Continuous Capacity Building of DOS Technical Staff.

• Recommendations for procurement and distribution of Equipments from the MOH central procurement system (KEMSA)

• Rationalization and equitable distribution of HR

• Facilitation of partners in provision of eye care services and needs, PPP, trachoma etc

• Annual advocacy events like World sight day.

5.2.3. Limitations

1. Eye care viewed as a low priority agenda which needs further advocacy
2. Limited government funding to support eye care services including DOS Operations vote.
3. Inappropriate deployment of eye care staff e.g. OCO, ON in general duties (a compound of HRH scarcity)
4. Decreasing number of applicants for training in eye care- UoN, KMTC
5. Lack of sponsorship support for mid level cadres.

5.2.4. AIM and Objectives

Aim

To coordinate, harmonize, and facilitate provision of quality and equitable eye care services to all Kenyans

Objectives

• To strengthen coordination and harmonization of eye care services

• Advocate for support for eye care services

• To facilitate integration of eye care services

• To promote and facilitate training for eye care workers at all levels

• To enhance productivity of eye care workers

• To advise the government on issues relating to eye care

5.3. The National Prevention of Blindness Working Group. (NPBWG).

The National Prevention of Blindness Working Group, that brings together eye care service providers within the government, mission and NGO sectors, has been mandated with the crucial task of developing policies and ensuring its implementation. In this respect the working group will also oversee implementation of this plan. In addition, the body will play a key role of advocacy both at National and International levels on matters pertaining to eye care.

The NPBWG has in the last two years been reconstituted and will comprise of the following

The membership of NPBWG will include the following: -

Chairman: Head of Department – DDPC. Secretary: Head; DOS

Memberships and Representation from the Subcommittees:

1. Disease Control (2)
2. Equipment and Infrastructure development (2)
3. Human Resource Development and Management (2)
4. Advocacy, Communications, PEC and Coordination (2)
5. Standards, Regulation and Quality assurance (Head - DOS)
6. Provincial Working groups (2)
7. DOS ;OCO rep, Head of DOS (2)
8. WHO (1)

The total number of members to sit in NPBWG is 14 and, will seat three times a year (March, July, and November). The subcommittees can adopt any institution or individual found suitable depending in the issues at hand. KMTC and UoN are permanent members of NPBWG as their role of human resource development (many cadres) is crucial.

Memberships to (5) subcommittees

A. *Disease Prevention and Control:* Head – DOS, KSB, AMREF, UON, OEU, SBW/KAO, KNH,FHF,

B. *Equipment and Infrastructure Development:* SOK. OEU, DOS

C. *Human Resource Development and Management:* UON, CBM, MTRH, SSI, OSEA/EACO, KMTC, KNH, DOS, FHF.

D. Advocacy, Communications, PEC and Coordination; SSI, SBW, DOS, KSB, CBM, AMREF,

E. Standards, Regulation and Quality assurance: MP& DB, COC, NCK, PPB, UON, KMTC, DOS

5.3.1. Terms of Reference for the NPBWG

1. To Provide leadership in Eye care in line with V2020,and the Country Health and Development Plans
2. To guide the development of the National eye care Policies and Plans
3. To Guide the implementation of National eye care Policies and Plans
4. To approve the TORs for the relevant subcommittees
5. To guide the monitoring and evaluation of the TORs for the subcommittees and national plans.
6. Conflict management and resolution
7. Set Dates and Hold meetings three times per year.

5.3.2 Provincial Prevention of Blindness Working Group (PPBWG)

Ophthalmologists in the provinces will organize quarterly meetings for eye care workers and invite partners who work within the province and the DOS.

Some of the partners in the regions were as identified as follows;

1. Nairobi - Lions, SBW, SSI, OSEA
2. Eastern - Spark, AMREF, UON, SSI, SOK, Impact EA, Vision care services
3. Coast - Light House Eye Centre
4. NEP - UoN
5. Rift Valley: -Tenwek, Kericho CES, MTRH, AMREF, SSI, Spanish Doctors, OEU
6. Nyanza - SOK, SSI, FHF
7. Western -Sabatia Eye centre.
8. Central -KEU, CBM

Two weeks before the NPBWG meeting, the Head of DOS will convene a meeting of provincial representatives.

5.3.4: Stakeholders Forum.

This is a forum for all eye care stakeholders to be convened in (April / May) and (October /November). It involves the different sectors and players in eye care, including Media, other Government ministries and agencies. It has been found very important to develop and foster partnerships for eye care.

DOS and WHO will coordinate this.

Objectives	Activities	Process indicators	Expected Outcome
To strengthen coordination and harmonization of eye care services by 2017	Organize and hold NPBWG three times a year Strengthen NPBWG subcommittees Organize and hold two eye care stakeholders meetings per year Encourage eye care NGOs to join Hennet Develop and Enhance Policy on PPP	No. of Meeting Held No of subcommittee meeting held No. of Meeting Held No of Partners in HENNET Draft Policy PPP	Harmonized Eye care service delivery
Advocate for support for eye care services	Ensure equitable distribution of eye care resources Lobby for funding for eye care daily operations for implementation of the Plan (vote) Advocate and facilitate Local Support of eye care services	Attendance /Participation in TEC/Procurement process	Improved access to eye care services
To facilitate integration of eye care services	Advocate and facilitate local Support for national workshops, events and seminars like KNOW, OSEA, etc Develop eye care service indicators and include them in the joint health sector AOPs. Facilitate and Participate in the procurement of drugs and consumables.	Government allocations for implementation of Plans Eye care indicators in the AOPs Eye units and clinics fully supported locally for all requirements, including consumables	Improved access for eye care Improved support/ monitoring of eye care service Improved common budget allocation
To promote and facilitate training for eye care workers at all levels	Market eye care courses to health workers at all levels Lobby for sponsorship of training opportunities in eye care(for all cadres)	No. of applicants in eye care cadres Deployment proposals to HR from DOS	- Reduced skewed distribution of HR
To advise the government on	Facilitate and participate in deployment of Skilled eye work force	Reports/inventory of HR,	- Improved access for eye

6.0. ADVOCACY AND COMMUNICATION

6.1. Preamble:

Advocacy is a crucial component of VISION 2020: The Right to Sight. It has been an important part of global health promotion initiatives for the past twenty years. It can lead to better provision of services to ensure that patients and their families have more say to what they are treated for. Advocacy can also raise awareness of eye health problems and their impact. A public that is aware is more likely to contribute, to participate and to put pressure on authorities and policy makers to allocate resources to eye health. It can also help organizations and the authorities to gain access to human, material and financial resources that are needed to bring about improvements in eye health.

6.2. Current Situation and Achievements

- DOS and NPBWG and Thematic Working groups in place, and developing well
- Regular meetings conducted by the groups (3 times per year)
- World Sight Day held nationally and in some provinces and districts annually
- Plans in place for eye care stakeholders forums, twice a year, two held before
- Biennial trachoma summits, two already held

6.3. Limitations

- Active community involvement is minimal
- Minimal awareness creation by eye care workers
- Lack of capabilities to mobilise resources for sustenance of eye care services
- Poor resource distribution
- Shortage and uneven distribution of eye care workers

6.4. Aim and Objectives

Aim

To increase advocacy and communication to enhance support for eye care service delivery

Objective

To obtain increased and sustained support from the central government, partners and communities

Objective	Activities	Indicators	Expected Outcomes
To Link Global – National Advocacy strategies Linkages	Adoption and Domestication of Global advocacy events, like WSD. Facilitate activities like media communications for national advocacy activities.	Number of national advocacy events	Improved Eye care profile in the region.
Advocate for improved and sustained support from the central government by 2017	Hold open days for DOS to other Departments Involvement of government officials on WSD, trachoma summit, NTD activities and stakeholders forums	No. open days held No. Of activities attended by the policy makers.	Increase in support from the government, partners.
Advocate for improved and sustained support from the partners by 2017	Strengthen the linkages between relevant government ministries and departments e.g. Education, water & social services Eye Care Newsletters – quarterly Advocate for support for the training of eye care workers Involvement of partners on WSD, trachoma summit, NTD activities and stakeholders forums	Number of joint projects implemented under inter-departmental initiatives Newsletters edited and disseminated No. Of eye care workers trained No. Of activities attended by partners Local Goodwill ambassador identified	Improved Eye care profile in Government and Partners front Increased eye care workforce Improved Partners support for eye care
Advocate for improved and sustained support from the community by 2017	Identify and Source for a Community goodwill ambassadors Develop, produce and distribute	IEC material produced and distributed, Translated No. of sessions/print	Increase in number of patients seeking services increased

7.0. SUSTAINABILITY OF EYE CARE SERVICES AND PRIMARY EYE CARE

7.1. Introduction.

Through integration of PEC into PHC, counties will own and implement their own eye care plans with supplements from partners and donors. At the county level, DOS will advocate for the inclusion of eye care plans in the comprehensive annual operation plans (AOP), creative approaches to mobilize resources for eye care which include promoting multi-sectoral approaches and involving other relevant ministries and programs like water, community development, education, and NHIF. Marketing of eye care services will be done in all eye care service delivery points to ensure we tap into the benefit of large scale operations.

Partners will be encouraged to work in collaboration with local static hospitals to provide subsidized services to the poor. Efforts should be made to create awareness among our clients on the benefits of NHIF.
The PEC unit at the DOS will also be available to facilitate technical support to the counties through the eye units and clinics. The trainer of trainers at regional/ county will enhance PEC implementation since they will be the champions for PEC at that level.

The collaboration with the community strategy will enhance PEC integration and implementation and improves awareness creation on eye care services to the community at large. Awareness creation on PEC services will emphasize the relationship between eye care and other basic health services like immunization, vitamin A supplementation, and attendance to ANC etc. Funding and allocation of resources by the Ministries of health for PEC activities at national and county level will be crucial for the PEC activities to be implemented and hence improve eye care services delivery to the community. PEC awareness creation and activities implementation is an important contributor to meeting the targets set out for VISION 2020 and in the ultimately Kenya's Vision 2030. Strong support supervision and monitoring and evaluation as well will require funding and skills for the TOTs and PEC coordination team at national level.

7.2. Challenges

The key challenge facing PEC implementation is the limited funding for its activities at all levels and lack of decentralization of activities. There is need to lobby for an increase in funding from both the ministries of Health and partners in eye care activities as well as implementation of its activities in order to achieve the objectives in this plan.

Lack of awareness by the health workers and the community also hampers success of PEC implementation.

7.3. Objectives

- To develop PEC implementation guidelines by 2012
- To create awareness on PEC to the health workers and community by 2018
- To improve eye care service delivery to the community by 2018
- To integrate primary eye care into the existing health system by 2012
- To lobby for funding to undertake PEC activities by 2012
- To develop a monitoring and evaluation strategy by 2012
- To network with other stakeholders in promoting eye care activities.

7.4. Measuring indicators for PEC.

Some of the indicators will have the data collection tools to measure them in place while others need tools to be developed so that they can be measured. Detailed qualitative and quantitative data to be collected by each PEC worker is in the PEC guidelines 2011.

Objectives	Activities	Process indicator	Expected outcome
To develop PEC implementation guidelines by 2012	The PEC subcommittee to develop guidelines for PEC implementation by 2012 Develop PEC manuals by 2012 Development of visual aids for use in PEC for the community and schools	No of guidelines developed Number of manuals developed Number of visual aids developed No of schools using/ communities reached	- Improved PEC knowledge - Improved quality of eye care services
	Conduct quarterly CMEs to Health workers at all health facilities with eye units/clinics	Number of CMEs conducted	- Increased number of persons seeking eye care services
To create awareness on PEC to the health workers and community by 2017	Quarterly media health talk of selected PEC topics in liaison with the counties Collaborate with other departments to undertake health talks on eye care issues	Number of media talks undertaken Number of health talks done	- Improved eye care service delivery
To integrate primary eye care into the existing health system by 2012	Conduct trainings for community health extension workers Conduct sensitization workshops for DHMT and CHWs Inclusion of eye care indictors into the district and national AOP	Number of trainings conducted No on CHEWs trained Number of DHMT sensitized No of CHWs sensitized Number of districts with	- Improved Eye care sustainability and ownership

8.0 RESEARCH NEEDS

8.1. Introduction

Research plays an important role in planning, prioritizing and coming up with appropriate and cost effective interventions to provide quality eye care services. Research in eye care programs has been inadequate and given low priority in the country. There is a strong need for baseline data on blindness as the little available information is more than 20 years old.

The government has established institutions to carry out research on health issues. KEMRI, AMREF and other higher learning institutions like Universities have played an important role in coordinating and disseminating research in the country. DOS will reestablish and revive a National Eye Care Training and Research Committee (NECTRC) to guide on priority research areas. All institutions undertaking research on eye care issues within the country (local and international) will be requested to submit a copy of the research proposal to the NETCRC, besides to the various Ethical Review committees. The NECTRC will seek to work together in support to the various ethical Review committees. The DOS will further seek to establish and develop National Eye care research Desk, to eventually give technical support and build capacity for research in eye care.

The Information and Epidemiology unit within the division shall coordinate and share out various research findings with other stakeholders.

8.2. Current situation

- Resource materials are available within the Division of Ophthalmic Services
- Research working group established as a sub committee of the NPBWG is in place but is not functional.
- There is an existing data bank accrued from trachoma surveys, eye health information system, and unpublished data from UON and KMTC students research.

8.3. Achievements in the last 5 years

- Trachoma surveys have been conducted in 12 districts between 2004 to 2011
- RAAB has been done in Nakuru in 2005, Kericho in 2007 and Homa Bay in 2010
- Ocular Morbidity Surveys study was done in Kibera in 2007 and in Mbeere in 2011
- RACSS was done in the greater Embu District in 2007
- Data collection tools for eye care have been developed, revised and put into use.
- Material needed for resource center have been identified
- SQL (sequential query logic) software for on line use is available for data collection
- Information Technology equipment (computer, photocopier, scanner, internet facilities) are available at the division

8.4. Limitations

Baseline data on ocular morbidity is lacking and the capacity for research (personnel, material and funding) is grossly inadequate. There are gaps in the structure of research, data analysis, report writing and publication of findings. Operational research has not been given sufficient priority.

8.5. Aim and Objectives.

Aim

To improve the overall eye health system by providing an efficient, quality and evidence-based health/eye care information system

Objectives

- Establish and equip national resource center with research material/Capacity as from 2012
- Obtain national baseline data on ocular morbidity
- Build capacity for research beginning 2012
- Review existing data and expand EHIS to all counties by 2018

8.6. Indicators

Number of Scientific research activities done and documented/Published by eye care workers

objectives	Activity	Indicators	Expected outcome
Establish and equip National eye care resource and Research center.	Procure Computers, appropriate Software's, Subscribe to ejournals Appropriate Technology Establish/Staff Eye care Research Desk	A functional research centre/desk Staffed research Desk	Improved capacity for eye care research
Develop the research capacity	Build a website for eye care (Research part to include ongoing research, proposed research, funding available, priority research areas, will include call for proposals when the funds are available) Fundraise/ build a Kitty for research by 2012 Short Courses on Research Methods	Website in place Number of Research proposals funded Short course developed Number of eye care workers trained	Decision based on Evidence
To identify research priority areas by research team by 2013	Identify mentors and Mentees in research by 2012 To identify research priority areas by research team by 2011	Number of Mentors/Mentees identified Areas identified	Accurate and timely data collection
Review existing data	Analyze, publish findings by 2012	Available data in DOS analysed Published findings	Accurate and timely data collection
Expand EHIS to all counties	Provide appropriate hard and soft ware	Centres with integrated eHIS	Accurate and timely data collection
Advocate and Develop Eye care Research agenda for Vision 2020	Draft Research Agenda for vision 2020	Adopted Research agenda	Planned eye care research, contributing to Vision 2020.

Annex1: Human resource versus population analysis. The bracket indicate the lacking personnel

HUMAN RESOIURCE DISTRIBUTION IN KENYA					
Province	**Ophthalmologists**	**OCO/CS/specialist**	**OCO**	**ON**	**OA**
Coast **Pop : 3,325,307**	**7 (6) 1:475,043**	**10 (23) 1: 312,851**	**3 1: 1,108,435**	**2 (31) 1: 1662,653**	**1 1: 3,325,307**
Eastern **Pop:**5,668,123	**5 (17) 1,133,624**	**16 (40) 1:354,257**	**7 1:809,731**	**8(49) 1:708515**	**4 1:1,417,030**
N/Eastern **Pop: 2,310,757**	**2 (7) 1,155,378**	**3 (20) 1:770,252**	**0**	**2(21) 1:1155378**	**1 1: 2,310,757**
Central **Pop: 4,383,743**	**12 (5) 1: 365,312**	**13 (30) 1:337,211**	**9 1:487,082**	**12(32) 1:365311**	**2 1: 2,191,871**
Rift – valley **Pop:10,006,805**	**11 (29) 1:909,709**	**27 (73) 1:370,622**	**8 1: 1,250,850**	**25(75) 1:400,272**	**7 1:1,429,543**
Western **Pop: 4,334,282**	**4 (13) 1: 1,083,570**	**7 (26) 1:619,183**	**2 1: 2,167,141**	**5(38) 1:619,183**	**17 1: 254,957**
Nyanza Pop: 5,442,711	**5 (17) 1: 1,088,542**	**6 (48) 1:907,118**	**3 1:1,814,237**	**3(51) 1: 1,814,237**	**2 1:2,721,355**
Nairobi Pop: 3,138,369	**41 (-28) 1: 76,54 5**	**10(20) 1:318,837**	**11 1: 285,306**	**10(21) 1:318,837**	**0**

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