



EYE HEALTH SYSTEMS ASSESSMENT (EHSA): SIERRA LEONE COUNTRY REPORT



March 2013

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Eye Health System Assessment (EHSA) is an ICEH project funded by Sightsavers for strengthening eye health systems worldwide. By supporting countries to improve their health financing, governance, operations, and institutional capacities, EHSA helps eliminate barriers to the delivery and use of priority eye care.

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All EHSA-related documents and guidelines can be found online on:

<http://www.healthsystemassessment.com/eye-health-system-assessment-ehsa-2/>

Acronyms

APOC	African Programme for Onchocerciasis Control
BEHL	Baptist Eye Hospital, Lunsar (Northern Province)
BPEHS	Basic Package of Essential Health Services
CBM	Christian Blind Mission
CBR	Community Based Rehabilitation
CDD	Community Directed Distributer
CDHP	Comprehensive District Health Plan
CHC	Community Health Centre
CHN	Community Health Nurse
CHO	Community Health Officer
CHP	Community Health Post
CMH	Catholic Mission Hospital, Serabu (Southern Province)
CMO	Chief Medical Officer
(C)ON	Certificate or Community Ophthalmic Nurse (with an SEHRN background)
CSC	Cataract Surgical Coverage
CSO	Civil Society Organisation
CSR	Cataract Surgical Rate
DDMS	Directorate of Drugs and Medical Supplies
DHIS	District Health Information System
DHMT	District Health Management Team
DMO	District Medical Officer
DPO	Disabled People Organisations
(D)ON	Diploma Ophthalmic Nurse (with a SRN background)
EC	European Commission
ENT	Ear Nose & Throat
EPECP	Eastern Province Eye Care Programme
EPI	Extended Programme of Immunisation
FBO	Faith-based Organisations
FHCI	Free Health Care Initiative
HFAC-SL	Health for All Coalition, Sierra Leone
HR	Human Resources
HReH	Human Resources for Eye Health
HRH	Human Resources for Health
HRIS	Human Resource Information System
IOL	Intra-Ocular Lens

JPWF	Joint Programme of Work and Funding, Ministry of Health and Sanitation
MCH	Maternal and Child Health
MCHP	Maternal and Child Health Posts
MOHS	Ministry of Health and Sanitation
MOSW	Ministry of Social Welfare, Gender & Children's Affairs
MOU	Memorandum of Understanding
MVI	moderate visual impairment
NECP	National Eye Care Programme (the former name of the NEHP)
NEHP	National Eye Health Programme
NEML	National Essential Medicines List
NHSSP	National Health Sector Strategic Plan, Ministry of Health and Sanitation
NPPU	National Pharmaceutical Procurement Unit
NTD	Neglected Tropical Diseases
OCHO	Ophthalmic Community Health Officer
ON	Ophthalmic Nurse
OPD	Outpatients Department
OPP	Out of Pocket Payment
PBF	Performance Based Financing
PEC	Primary Eye Care
PHC	Primary Health Care
PHU	Peripheral Health Unit
RAAB	Rapid Assessment of Avoidable Blindness
SCB	Standard Chartered Bank
SECHN	State Enrolled Community Health Nurse (eligible to train as a Community Ophthalmic Nurse)
SRN	State Registered Nurse (eligible to train as a Diploma Ophthalmic Nurse)
SLAB	Sierra Leone Association of the Blind
SLUDI	Sierra Leone Union on Disability Issues
SPECP	Southern Province Eye Care Programme
SVI	severe visual impairment
UMC	United Methodist Church, Kissy (Western Area)
WAECP	Western Area Eye Care Programme
WHO	World Health Organisation
WTE	Whole time equivalent (of a member of staff)

Executive Summary

Overview of the eye health system

Strengths

- The Ministry of Health and Sanitation (MOHS) is engaged and eye care is integrated into government policies.
- During the last five years, service coverage and quality of eye care services has increased.
- Faith-based Organisations (FBOs) make services available in areas where there are no government facilities, often provide free cataract surgery, and undertake two thirds of the cataract surgeries in Sierra Leone.
- There are plans to train significant numbers of new eye care staff by 2016.

Weaknesses

- The public budget for eye care is inadequate.
- Inequitable distribution of government eye facilities and staff, particularly in the north.
- The integration of eye care services into general hospital administration varies between facilities.
- Low Cataract Surgical Rates (CSR).
- Limited provision of refraction and low vision services.
- Weak monitoring systems for patient feedback, eye care activity or outcomes.

Governance of the eye health system

Strengths

- Eye care is included in core health services in Sierra Leone, and health regulations and policies are applied to eye care.
- In areas where there are government-managed eye care staff and facilities, they tend to be well linked to traditional chiefs, the District Health Management Team (DHMT) and any local Schools for the Blind.

Weaknesses

- The national VISION 2020 Committee has not met regularly in the past, to the detriment of national coordination.
- The government is not responsive to the eye health needs of the population in the north.
- Disabled People's Organisations (DPOs) and other Civil Society Organisations (CSOs) have limited opportunity to be involved in the planning of eye health services.
- Limited feedback or complaint mechanisms to enable service users to have a voice.

Eye health financing

Strengths

- Introduction of the Free Health Care Initiative (FHCI) in 2010 means eye care services (where available) are free to all under fives, pregnant or lactating women.
- National Eye Health Programme (NEHP) Manager is involved in MOHS budget negotiations.
- FBOs are often able to provide free surgery, which positively impacts on cataract surgical rates.

Weaknesses

- MOHS budget for eye care is inadequate, and mainly covers administration rather than service delivery.
- Whilst FHCI has increased access for the groups it covers, it has limited the MOHS funds available for other services or population groups.
- There are no budgets for eye care at district level which limits integration of eye care services.
- Government eye units are often perceived as separate from the rest of the hospital, as funding for drugs and consumables comes directly from NEHP or from Sightsavers.

Eye health service delivery

Strengths

- There is a comprehensive network of Peripheral Health Units (PHUs) covering Sierra Leone, staffed with health care workers who have some training in recognising and treating basic eye conditions.
- Eye care services are included in the Basic Package of Essential Health Services (BPEHS) for Sierra Leone.
- The number of people accessing eye care services has increased, through a combination of increased awareness, increased service provision, and reduced financial barriers through the free healthcare initiative.

Weaknesses

- Inequitable distribution and access to eye health services. This affects the Northern Province particularly, and remote areas of other Provinces.
- Although the network of PHUs with staff trained in basic eye care theoretically provides a good referral system, in practice, the referral rate is poor.
- The CSR is too low to deal with the incidence and prevalence of blindness due to cataract.
- Lack of clear supervision system defining responsibilities at each level for eye health.

Human resources for eye health

Strengths

- General health care staff working in primary care are trained in basics of eye care.
- Key eye care staff (Certificate and Diploma Ophthalmic Nurses (CON/DON), and Ophthalmic Community Health Officers (OCHO)) can now be trained in country due to available funds and training courses.
- Consortium European Commission (EC)/ Standard Chartered Bank (SCB) funding is available to address some of the key gaps in eye care staff.

Weaknesses

- Significant gaps in numbers of eye care staff, and inequitable distribution compared to the population distribution, particularly in the Northern Province and outside urban areas.
- Nurses and doctors are not attracted to specialise in ophthalmology.
- The pool of staff eligible to train as Cataract Surgeons is limited, and current delays in training Ophthalmic Nurses impacts on the throughput required to train Cataract Surgeons in the future.

Medicines, products and equipment for eye health

Strengths

- Health regulations are applied to eye care in the same way as to other health services.
- The National Essential Medicines List (NEML) and the BPEHS drug list include key eye care drugs.
- Separate funding and procurement mechanisms in government-run Sightsavers-funded eye clinics helps to maintain the supply of eye drugs and consumables.

Weaknesses

- Some key eye drugs are missing from the NEML.
- FBOs are not included in FHCI so are not reimbursed for drug spend on children or pregnant/lactating women.
- Specialised eye care drugs are not always available in government hospitals in the Northern Province that are not supported by Sightsavers.

Health information systems for eye health

Strengths

- A standardised Health Information System is used by all PHUs and government hospitals; the system has the capability to add more eye care-specific indicators in the future.

- Activity reports are generally sent from eye health staff within hospitals to the DHMT, hospital management and the NEHP.

Weaknesses

- Reporting on the number of eye infections seen in PHUs does not provide enough information to make decisions at the local, district or national level.
- There is lack of sufficient data to effectively monitor services, or assess whether particular groups are under-represented.
- Facilities often do not receive any feedback from the NEHP about their performance.

Acknowledgements

- Sightsavers for funding the development of the EHSA approach
- Sierra Leone National Eye Health Programme for leading and hosting the assessment
- Sightsavers Sierra Leone Country Office for providing vehicles and oversight to the assessment
- All those who agreed to participate in interviews

1. Introduction

Governments across the world face difficult challenges in meeting their populations' health needs, and this is especially the case in Low and Middle Income Countries (LMIC) which, whilst facing economic and human resource constraints, need to respond to communicable health threats such as HIV and malaria, as well as an increasing burdens of Non-Communicable Diseases (NCDs).

There is an increasing acknowledgment that a "health system approach" is needed to address these challenges. Instead of targeting a single area or disease, a country's health system needs to be strengthened as a whole. USAID have therefore developed the Health Systems Assessment (HSA) Approach¹⁻², for rapidly assessing strengths and weaknesses of a country's health system. The impact has been very positive: between 2007 and 2012 more than 20 countries have undertaken assessments.³

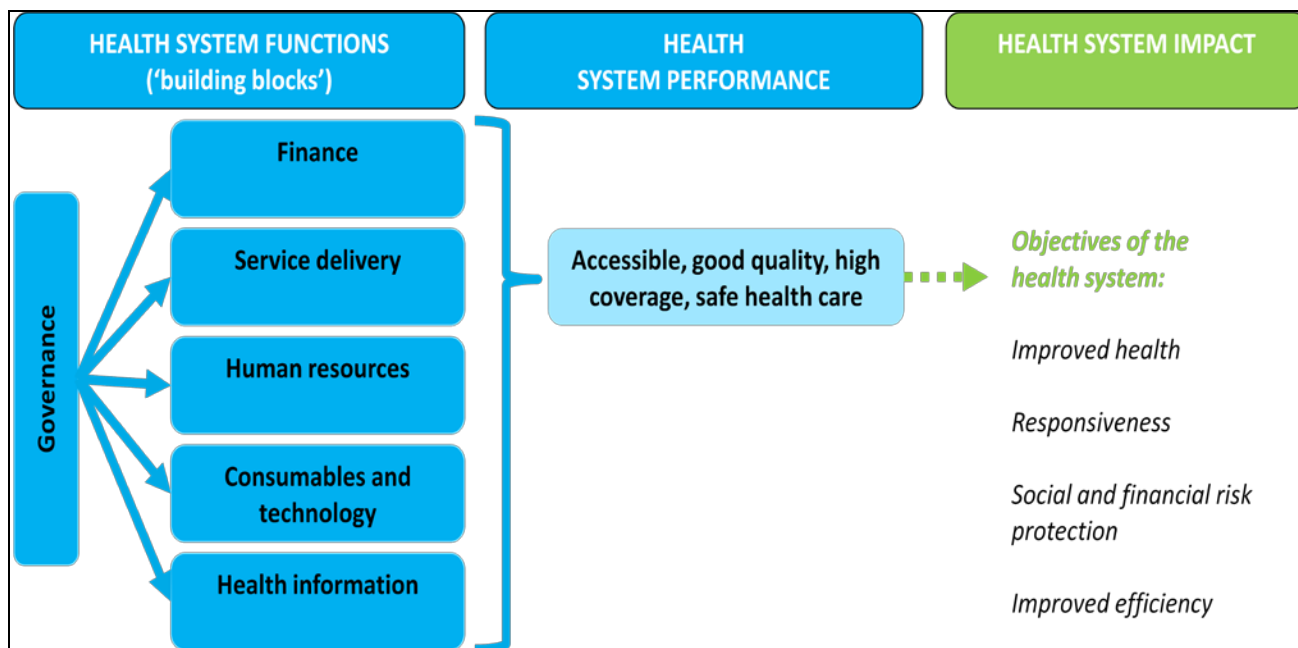
Over the last few years, increasing efforts have been invested in exploring the relationship between the eye health system and the general health system. Around 80% of visual impairment is preventable or curable through effective eye care services. General consensus is emerging in the international eye care community that the effectiveness of eye care interventions can only be improved through better understanding how health systems function. A consortium of eye care experts and health experts, coordinated by the International Centre for Eye Health (ICEH) at the London School of Hygiene and Tropical Medicine (LSHTM), have therefore developed the Eye Health Assessment approach (EHSA),⁴ funded by Sightsavers.

The objectives of the EHSA are to:

- Enable national and international eye care actors to regularly assess a country's eye health system, in order to diagnose the relative strengths and weaknesses of the eye health system, to plan, prioritise key weakness areas, and identify potential solutions or recommendations for eye care interventions.
- Assist national eye health authorities and international organisations to include eye health systems interventions in eye care programme design and implementation, and into the general health system.

The EHSA approach is designed to provide a rapid and yet comprehensive assessment of the key health systems functions as they relate to eye health, and their interactions, based on the health system 'building blocks' framework elaborated by the World Health Organisation (WHO), as shown in Figure 1.⁵

Figure 1: Foundations of Health Systems



Adapted from World Health Organisation 2007 and Islam 2007

The EHSA’s focus is not necessarily to discover new evidence but rather by examining all components of the eye health system and their inter-relationships at the same time, make important cross-cutting recommendations that affect the functioning of the whole eye health system.

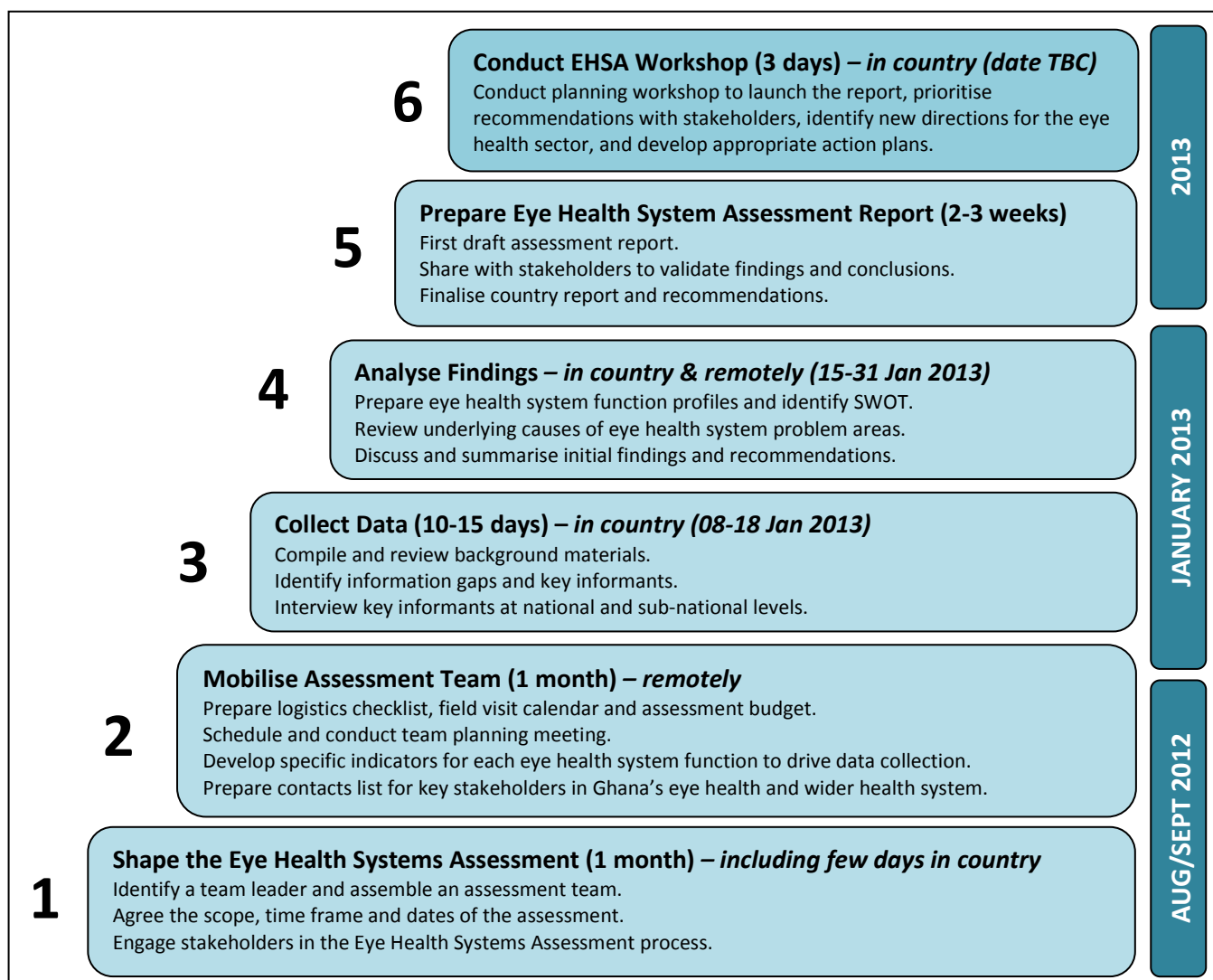
Sierra Leone was selected as one of the first countries to pilot the EHSA, through discussion between the National Eye Health Programme (NEHP) of the Ministry of Health and Sanitation (MOHS) in Sierra Leone, Sightsavers, and ICEH. This report documents assessment findings, providing a basis for work to strengthen the eye health system in Sierra Leone and improve outcomes for eye conditions.

2. Methodology of the Eye Health System Assessment

The EHSA approach provides a rapid yet comprehensive assessment of the key health systems functions relevant to eye health and their interactions. This includes the leadership and governance of the eye health system, the financing of eye care, delivery of eye health services, the available human resources for eye health, the medical products, vaccines, and technologies or equipment relevant to eye care, and the information systems that enable collection, analysis and use of information about eye health.

The EHSA tool⁴ used to undertake this assessment focuses on a list of selected indicators used to measure the performance of the eye health system, and on possible sources of information where relevant information can be found. The HSA manual¹ was also consulted when planning the assessment, synthesis of findings, and identifying eye health system strengths and weaknesses, due to the extensive experience in undertaking whole health system assessments underpinning it. The approach to the EHSA process in Sierra Leone was agreed with the NEHP and Sightsavers Sierra Leone Country Office, and consisted of several successive steps, shown in Figure 2.

Figure 2: Steps in the approach to Eye Health System Assessment in Sierra Leone, August 2012-January 2013



Adapted from Islam 2007

Ethical approval

Ethical approval for this work was sought and obtained from the Sierra Leone Ethics and Scientific Review Committee, and from the LSHTM Ethics Committee.

Data collection

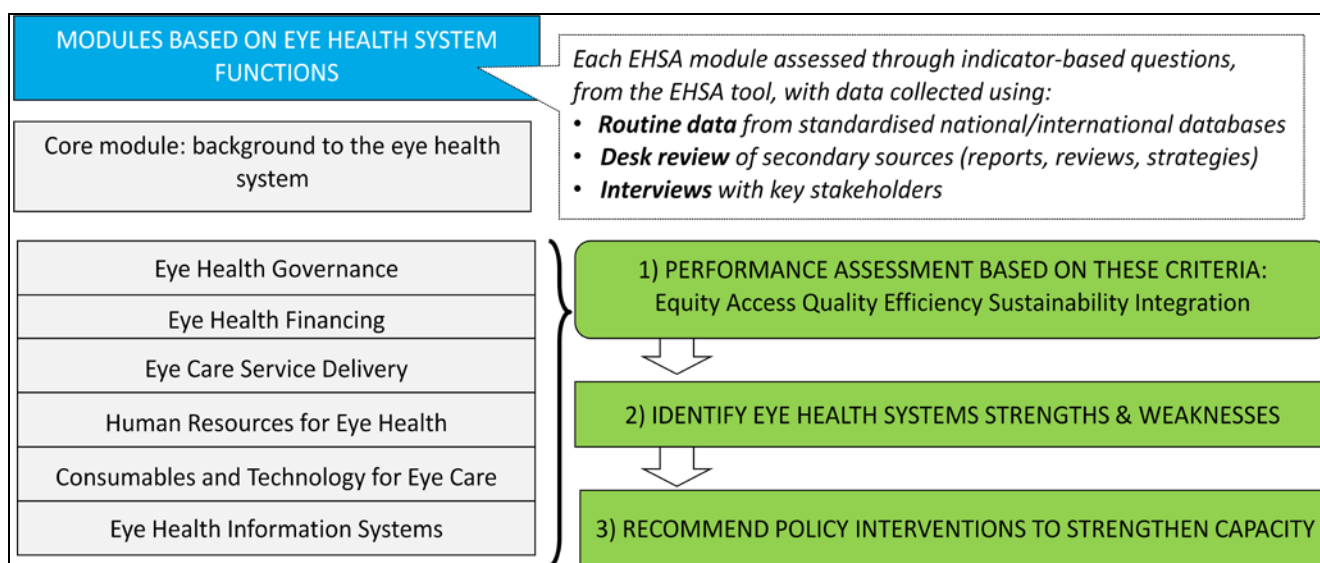
Data collection methodology

Data was collected for each module (1 core module and the 6 technical ‘health system building blocks’ modules) by members of the assessment team using the indicators detailed in the EHSA tool⁴ (supported by a series of standardised probing questions developed by the ICEH^a, if necessary to ensure comprehensive enough information was collected).

As a rapid assessment, the EHSA does not aim to collect primary quantitative data but rather to consolidate and analyse the available data across all components of the eye health system. As seen in Figure 3, the EHSA assessment was therefore carried out through:

- Desk-based review of documents and data sources
- Interviews with eye health system stakeholders

Figure 3: Eye Health Systems Assessment Approach



The assessment team

The assessment team was led by the Manager/Senior Ophthalmologist of the National Eye Health Programme in Sierra Leone. The team consisted of 5 people from the National Eye Health Programme and from Sightsavers, and technical support was provided by a Lecturer and a public health specialist from ICEH/LSHTM. Names and job titles are given in Annex B: Eye Health System Assessment Team.

Dates of assessment

^a Available on request from ICEH - iceh@iceh.org.uk

In-country data collection and analysis was conducted over two weeks between 9th to the 18th January 2013, with interviews of key informants at the national level, as well as travel to selected provinces and districts. Figure 2 gives the overarching timeframe for the whole assessment process; Annex C: Sierra Leone EHS Schedule: 08-18 January 2013 gives the specific timetable for the 2 weeks of data collection and analysis.

Location of assessment

Data collection was carried out in the capital (Freetown, in the Western Area) and in two provinces (Northern, and Southern). Data collection at the national level was important to collect information on strategic health service planning and organisation relevant to eye health, and to gain understanding of how eye health services in Sierra Leone fit into the general health system.

The two provinces were chosen to give a picture of eye health services in Sierra Leone; both where they are relatively strong (Southern Province), and where there may be gaps in service provision or logistical challenges (Northern Province). The choice of provinces and areas visited was not intended to be statistically representative for the whole country, but to provide case studies and insights into some of the strengths and weaknesses across eye health in Sierra Leone.

Interviews

The EHS team interviewed 70 individuals from national, regional and district health authorities, hospital management teams and health staff involved in the delivery of eye care services.

The sampling procedure to identify relevant people to interview was chosen according to the objectives of the study: generating theories and concepts rather than generalising findings to a wider population. Therefore, a purposive rather than a probabilistic sampling method was deliberately used by the team.⁶⁻⁷ Purposive sampling is used when researchers “seek out groups, settings and individuals where ... the processes being studied are most likely to occur.”⁸

The list of those interviewed is given in Annex D: List of Interviews conducted and sites visited.

Document review

The EHS team reviewed the documents in Annex E: List of documents consulted, which were identified through the interviews and through discussion within the EHS team and with the Manager of the National Eye Health Programme.

3. Sierra Leone: health system overview

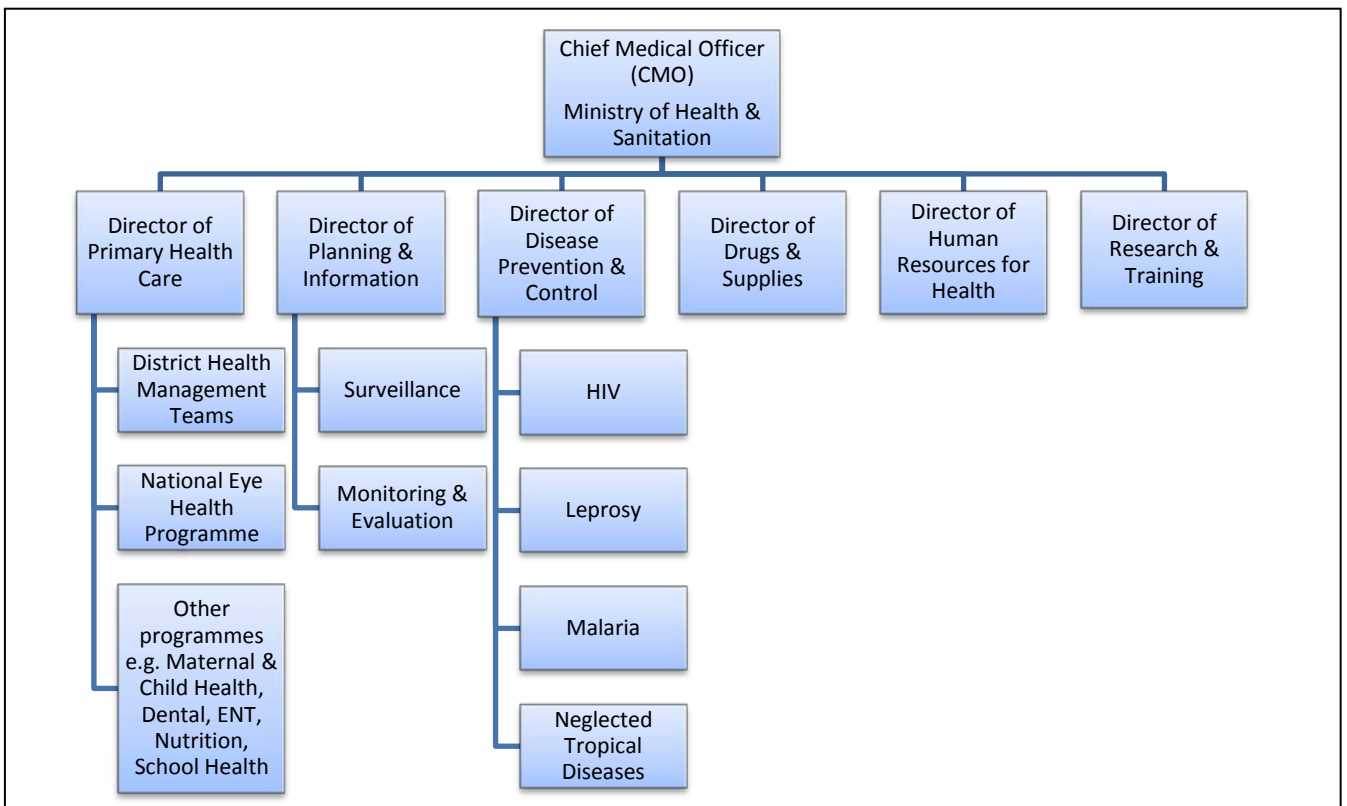
Overview of the whole health system

The Ministry of Health and Sanitation (MOHS) has oversight of the health sector in Sierra Leone, including the following core functions, as set out by the National Health Sector Strategic Plan (NHSSP) 2010-2015:⁹

- Policy formulation
- Standard setting and quality assurance
- Capacity development and technical support
- Provision of nationally coordinated services (e.g. epidemic control)
- Collaboration and coalition building
- Monitoring and oversight of the overall sector performance and training
- Resource mobilisation

The basic structures of the departments within the Ministry of Health and Sanitation that are relevant to eye health are set out in Figure 4.

Figure 4: Organisational structure of the Ministry of Health and Sanitation, as relevant to eye care



Since 2004, responsibility for operational management of primary and secondary health care services has been decentralised and devolved to the local district council level, under District Health Management Teams (DHMT) headed by a District Medical Officer (DMO).

Organisation of services

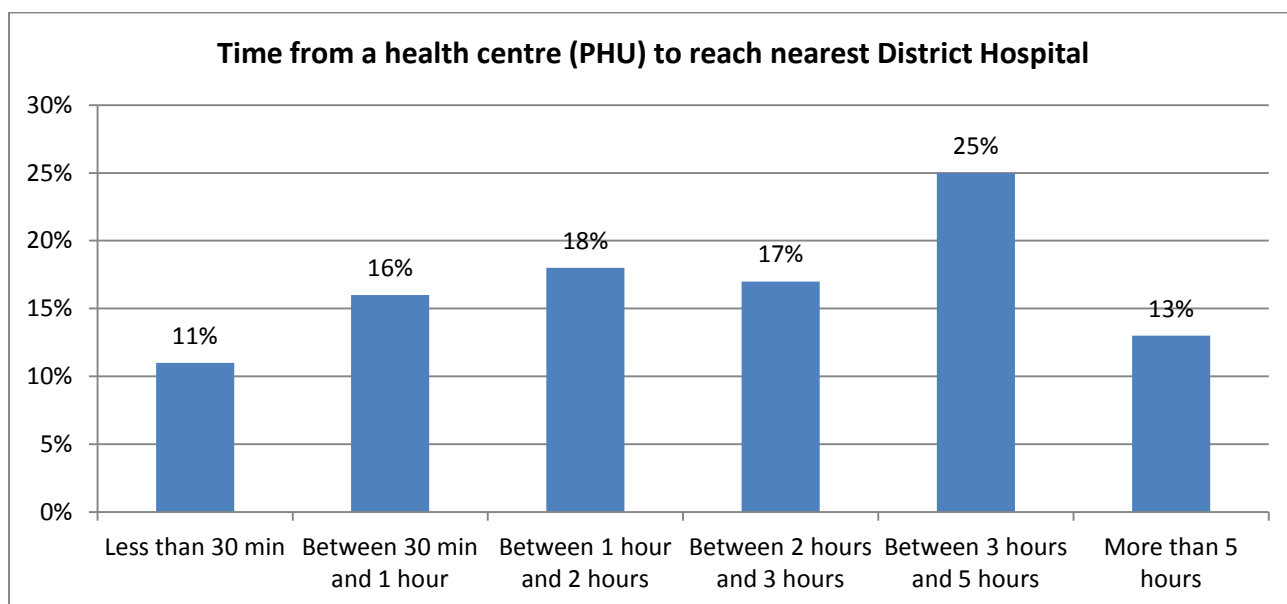
Administratively, Sierra Leone is split into four main areas: three provinces (Northern, Eastern and Southern) further sub-divided into 12 districts and then into Chiefdoms, and the Western Area (WA) around the capital Freetown, which is made up of WA Urban district and WA Rural district. This results in a total of 14 administrative health districts.

The public health care delivery system is comprised of three tiers:

- Peripheral Health Units (PHU), including Community Health Centres (CHC), Community Health Posts (CHP) and Maternal and Child Health Posts (MCHP), which delivery primary health care;
- District hospitals for secondary care: one in each of 12 provincial districts; one in WA rural district;
- Regional/national hospitals for secondary and tertiary care, one in each provincial capital, plus Connaught Hospital in Freetown.

There are over 1,000 PHUs across Sierra Leone.¹⁰ A network of PHUs staffed with trained primary care personnel has potential to be an important component of access to services and appropriate referral in Sierra Leone. District hospitals can be a long way from communities (Figure 5) and transport costs can be high. More than 90% of health institutions are physically located in rural areas;¹¹ however much of the healthcare infrastructure was damaged during the civil war, and rural facilities may not always be adequately staffed (numbers or skill mix) as most of the well qualified staff are found in urban centres. Although PHUs should be the entry point into health services, and secondary and tertiary facilities accessible only via referral, in practice this is not the case. Patients often bypass the PHU and go directly to a secondary or regional care facility.

Figure 5: *Distribution of time needed to reach nearest District Hospital from a health centre (Source: Institutional Reform and Capacity Building Project (IRCBP) Report 2007, cited in the 2008 'Health Insurance Options for Sierra Leone' report)¹²*



There are a number of faith-based organisations (FBOs) in Sierra Leone, providing vital services that complement those provided by the government or fill key gaps in public service provision. There is ongoing dialogue about how the MOHS might support their integration into the delivery of public services, although the salaries of health care workers in FBOs are often higher than government salaries. The government has already rehabilitated some FBO-facilities, and has posted some government-funded staff to work in FBOs.

Health Financing

As WHO figures suggest in Table 1, government expenditure on health makes up a relatively low proportion of total expenditure on health: much comes from international donors or from individual's out of pocket payments (OPP).

Table 1: WHO National Accounts data for Sierra Leone (Source: World Health Statistics 2010)

Indicator	Sierra Leone (2010)
External resources for health as % of total expenditure on health	26.8
Total expenditure on health as % of Gross Domestic Product	20.8
General government expenditure on health as % of general government expenditure	13.7
General government expenditure on health as % of total expenditure on health	15.3
Private expenditure on health as % of total expenditure on health	55.7
Out of pocket expenditure as % of private expenditure on health	89.5
Social security expenditure on health as % of general government expenditure on health	0

The proportion of the government budget spent on health is reported as 13.7% in 2010, below the 15% agreed to in the Abuja Declaration. However, even this figure, comparatively close to the target, may be over estimated and may have been due to particularly high public expenses in 2010 during the introduction of the free healthcare scheme. Indeed, the civil society organisation (CSO) 'Health for All Coalition of Sierra Leone' (HFAC-SL) reports that in 2011/2012 the percentage was as low as 6.5%, and in 2012/2013 has increased to 10.5%.¹³

In 2013, 38 billion Leones were allocated by the government of Sierra Leone to the health sector, out of 220 billion Leones requested by the MOHS. Ministry interviewees reported that only about 85% of the 38 billion was likely to actually be transferred by the end of the year. In other words, MOHS will receive 15% of what had been requested in the national budget. Interviewees at all levels acknowledged issues with actual disbursement of funds compared to allocated amounts.

As the activities of the health sector have been devolved to local councils since 2004, so have the majority of the funds. Allocated budgets to each district are based on annual activity plans compiled by District Health Management Teams (DHMTs) on behalf of the local councils.

- **Free Healthcare**

In April 2010, the government of Sierra Leone launched the Free Health Care Initiative (FHCI), providing free health care for children under five, pregnant women and lactating mothers.¹⁴ Interviewees reported that up to 75% of people who attended PHUs fell into these categories. The key goal was to reduce maternal and child mortality in Sierra Leone, which is amongst the highest rates in the world. The initiative may be extended to other population groups:

- Phase 1: Free Health Care available for children under five, pregnant or lactating women, attending government health facilities for any condition.
- Phase 2: there are plans to expand to other groups such as the elderly, or those with disabilities, and potentially to other non-governmental facilities.

Introduction of FHCI led to a large increase in access to and utilisation of health facilities, and concurrent a strain on human resources and infrastructure. The level of activity appears now to have stabilised at this higher level. The government is in discussions with private and mission facilities regarding extending the scheme, particularly recognising that mission funding is decreasing. However, the required budget is too large to consider in the short term, and there is need for another mechanism to bring money into the system before the criteria can be broadened, otherwise the initiative will be unsustainable. The government is looking into extending access to health care through a national health insurance scheme¹² to try to ensure sustainability of resourcing for the health care system. From mid 2013, a pilot insurance scheme will be implemented over 24 months in 2 districts. Exemptions are likely to include children under 18, pregnant women, the elderly, indigent and disabled people, although there are currently no clear definitions of these groups.

Although technically the FHCI currently only covers government-funded public facilities, there are a couple of part-government part-faith-based hospitals that have arrangements with the government to provide Free Health Care, for instance Mattru Jong and Serabu in the Southern Province.

- **User fees**

For those who are not eligible to access Free Health Care, the level of fees for services differs between hospitals. Often meetings are held with the local community to agree prices, and then stipulated fees are displayed on a board outside the facility. Apart from the FHCI exemptions, there does not appear to be any national policy for exemptions for any other groups, for instance the indigent population. In practice, it is likely that facilities have considerable discretion over those receiving exemption from fees.

- **Performance-based Financing**

With the anticipated increase in activity and consequent pressure on the health system through the introduction of the FHCI, a Performance-Based Financing (PBF) scheme was introduced to ensure quality was maintained.¹⁵ PBF aims to change health worker behaviour at facility level by distributing funding according to outputs (health care activity) or outcomes (health status of the target population), and secondarily to act as a driver to improve the quality of data reporting.

- Phase 1 (2011-2013) focuses on six reproductive and child health interventions undertaken at Community and PHU level, supporting Sierra Leone's focus on Maternal and Child Health (MCH). There are PBF incentives for activities including outreach in these priority areas: the more people the health workers see, the more financial reward is received, split between the facility (40%) and the staff of that facility (60%). The DHMT is responsible for monitoring what the facility PBF incentives are spent on.
- The plan is to expand at a later date to a Comprehensive PBF Scheme covering both primary and secondary healthcare. Specific indicators are still to be discussed.

Health Planning

Planning is a bottom-up process, with each DHMT producing an annual Comprehensive District Health Plan (CDHP) on behalf of the District Council, incorporating all sources of funding at the district level (government, locally generated funds, local donor funds) and all planned activities. Hospital Medical Superintendents are often members of the DHMT, and the DMOs of local hospital management teams, so there tend to be good working relationships between districts and their local facilities.

The National Health Sector Strategic Plan (NHSSP)⁹ provides the national framework which guides planning; the Joint Programme of Work and Funding (JPWF) 2012-2014¹⁶ sits under the NHSSP and provides a more detailed operational plan for the government and its health sector development partners. It is organised according to the six WHO building blocks of effective health systems. A Results and Accountability Framework¹⁷ aims to improve monitoring and evaluation, in order to measure progress towards achieving the NHSSP objectives.

Once district plans are collated, national decisions about how much budget to allocate to each programme are based on the following:

- National priorities, for instance as set out in the NHSSP;
- Data on disease prevalence, mainly based on facility attendance data (demand and supply, rather than need) but also any surveys that have been undertaken;
- Whether there are external donors/partners who could contribute;
- Whether district councils are able to support delivery;

- Whether there are frontline staff available to support delivery.

Human Resources for Health (HRH)

Sierra Leone has one of the world's worst health worker-to-population ratios, with 8.8 doctors and 4.7 nurse midwives for every 100,000 people,¹⁸ and in general across Sierra Leone, health facilities are operating with less than 50% of the workforce they require compared to target.¹¹ There is a particular gap in production of specialist groups of professionals,¹¹ for instance, there is no specialist training of doctors available in Sierra Leone. Distribution of HRH is skewed towards urban centres. It is estimated that around 70-85% of key primary care staff such as Community Health Officers (CHOs) and Maternal and Child Health (MCH) Aides are located in urban areas, which does not support an effective Primary Health Care approach.¹⁹

Although in general the funds for and management of health services are devolved to district level, recruitment and posting occurs nationally. Salaries for health workers are held by central government: the MOHS is responsible for employing health workers and monitoring performance and attendance, but the Ministry of Finance pays the salaries. DHMTs are responsible for organising nurses from their districts to be identified for further specialist training, including in eye care.

To support the delivery of the FHCI, the MOHS introduced a standard Human Resources (HR) salary scale in March 2010, which substantially increased the salaries of healthcare workers in Sierra Leone. The aim was to encourage staff to work in the public sector rather than for NGOs, support the delivery of the FHCI, and reduce informal charges to patients used by healthcare workers as a salary top up.

At MOHS level there is a recognised lack of capacity to strategically manage the Human Resources for Health function.¹¹ There is no central or systematic mechanism for monitoring the operations of training schools in Sierra Leone, and training is currently not coordinated to reflect workforce needs: the MOHS has not been involved into decisions related to training schools' output targets.¹⁹

There is no electronic system to capture HRH data: the Human Resource Information System (HRIS) is currently paper based and only includes payroll data, but there are WHO-funded plans to expand and computerise it.¹⁹ This is being approached in a phased way:

- Phase 1: pilot collection of data from PHUs/hospitals in Western Area, followed by lessons learned.
- Phase 2: will then cover all districts, capturing all 10,000 staff on the government payroll. Health professionals will be tracked from entry into training, through recruitment, to emigration, retirement or death.¹⁷

The data captured will not include any staff employed in the private sector (NGOs, Mission hospitals, or for-profit private facilities), although there are plans to conduct some private sector mapping as information on private sector human resources is scanty.

Key issues that have been identified in the recently developed 2012-2016 Strategic Plan for HRH¹⁹ include improving HRH data and policies, production of more HRH through national training (pre-service, in-service and postgraduate programmes), strengthening of recruitment systems at central and district levels to ensure equitable deployment of staff across the country, and improved performance assessment and appraisal.

The three Regulatory bodies operating in Sierra Leone are the Medical and Dental Council, the Pharmacy Board and the Nurses and Midwifery Board.

Medicines, Equipment and Procurement

There is a National Medicines Policy and a National Essential Medicines List (NEML), both of which have been revised and re-issued in late 2012. A Sierra Leone 'National Formulary' and 'Standard Treatment Guidelines for Primary Level Prescribers' were produced for the first time in 2012, with the aim to improve the effective and rational prescribing, dispensing and use of medicines.

According to the Directorate of Drugs and Medical Supplies (DDMS), the total government budget for drugs, laboratory agents and consumables is around US\$22 million, one third of which is funded by the government and the remainder two-third by donors. In common with other areas of health spend, the amount allocated to the DDMS by the Ministry of Finance is only a proportion of that requested, and not all of the amount allocated is always received by the end of the financial year.

Government procurement of drugs is mainly done centrally, and then distributed to Central and District Medical Stores, to distribute further to hospitals and PHUs. In general there are two methods for supplying and monitoring drugs: those covered by the Free Health Care Initiative scheme, and those not.

- **Free Health Care drugs:** this is the method for providing and financing all drugs for the categories of patients covered by the FHCI: children under five and pregnant or lactating women. It also covers all malaria diagnostics and treatment. This makes up about 30% of all drugs procured by government. A standard package of drugs is provided to PHU facilities depending on the type of facility: CHP, CHC or MCHP. At the end of each month, the facility reports to the DHMT which drugs have been used and which are left: the DMHT then resupplies the necessary drugs to top up the facility's store. As the FHCI covers any disease that a patient in the eligible categories is suffering from, this includes eye diseases and so basic eye care drugs are included in the batch of procured FHCI drugs.

- **Cost-recovery drugs:** For drugs required by patients who are not covered by the FHCI (about 70% of the total), each DHMT distributes drugs based on requests from facilities. The facilities sell drugs to patients at a nationally stipulated and highly subsidised price, and reimburse the DHMTs who then replenish the facility's supply. This system of cost-recovery only started in 2010. The MOHS is unable to say how much cost has actually been recovered, although interviewees estimated that only around 60% of the actual cost of drugs is recovered, to be channelled back into drug procurement.

Specialist drugs may be distributed in other ways, for instance those for Onchocerciasis control, or specialist eye care drugs which are distributed directly to eye facilities by the NEHP, or purchased directly by eye care facilities through revolving funds maintained by user fees.

Interviewees reported that there are often shortages of common drugs, and a considerable proportion of medicines and medical supplies (more than 60%) are still purchased through the private sector (from pharmacies, or FBOs), due to inadequate funding and storage facilities in the Central Medical Stores.

As a result of the existence of parallel supply systems, for government facilities, FBOs and donors, the MOHS plans to establish a National Pharmaceutical Procurement Unit (NPPU), based on the NEML, to centrally procure, store and distribute drugs, consumables and equipment for the public sector. This would then be used by all government facilities, FBOs and NGOs, to streamline processes, reduce cost and improve quality. The plan is that drugs would be bulk-purchased directly from manufacturers at lower cost, and provided to facilities at a lower price than drugs are available now. The anticipated result is that the public would be able to purchase drugs cheaper in hospitals than from private providers, and that the government could also sell drugs to the private sector for them to provide at a more affordable price. There is currently a national price list for NEML drugs, but private facilities (including FBOs) can decide their own prices: there is no policy on price control.

A national medicine's management information system is currently being installed and trialled. In the future it will be able to provide data on drug use by specialty, by facility or by drug, in order to support procurement, supply and drug management. Currently it is a static database, but in the future it will be accessible via the internet. There is currently limited capacity in facilities to manage and use such a system.

Health information systems

A District Health Information System (DHIS) has been developed, a district-based electronic data management system which aims to integrate and improve quality and efficiency of data capture, analysis and dissemination. It is an activity-based system, collecting information on diseases and coverage, and all facilities which are government-funded or which have government-payroll staff should report to the DHMTs.

Not all private facilities report to the DHMTs, but the MOHS is in the process of developing Memorandum of Understanding (MOU) with private providers to collect and report data.

The District Health Management System is computer-based, but, depending on local internet connections, is often not accessible remotely, only by physically transferring via USB stick for data to be downloaded. This limits who can access the data, and so restricts timely sharing and monitoring of data.

MOHS representatives acknowledged during the EHSA that the information from DHIS is used infrequently by districts or at national level, and that reviews are not being done to assess how implementation matches planned activity: “the circle does not go all the way around.” Since 2012, a district review programme has started, whereby districts are now ranked by the MOHS according to performance. This has acted as a motivator for DHMTs and facilities to improve first timeliness and subsequently completeness of reporting.

The new PBF initiative incentivises reporting by PHUs, so data completeness is likely to improve over time. Secondary hospitals are not yet included in the PBF, so there is less incentive for their reports to be timely or complete, although the plans to extend PBF to secondary facilities will be a future driver for improved health information.

Health Information Systems for tracking HRH and drug procurement, supply and management are in the planning stages by the MOHS.

4. Overview of the eye health system

Key Findings

Strengths

- The MOHS is engaged and eye care is integrated into government policies.
- The NEHP has good relationships with donors such as Sightsavers and Helen Keller International, and there is good coordination between eye care providers in the country.
- During the last five years, service coverage and quality of eye care services has increased.
- FBOs make services available in areas where there are no government facilities, often provide free cataract surgery, and undertake two thirds of the cataract surgeries in Sierra Leone.
- The RAAB study provides a baseline for prevalence of blindness and low vision.
- There are plans to train significant numbers of new eye care staff by 2016.
- Significant refurbishment of some eye health service infrastructure over the last 15 years.

Weaknesses

- NEHP Manager is also the government's only ophthalmologist: much of his clinical time is taken up by administrative duties.
- The public budget for eye care is inadequate.
- Public funding is not available to cover eye care services provided by FBOs or private clinics, and there is no health insurance scheme.
- Inequitable distribution of government eye facilities and staff, particularly in the north.
- The integration of eye care services into general hospital administration varies between facilities
- Low Cataract Surgical Rates.
- Limited provision of refraction and low vision services.
- Limited private sector involvement in eye care, and all private facilities located in the capital.
- Weak monitoring systems for patient feedback, eye care activity or outcomes. The information system focuses on outputs (consultations and number of cataract surgeries) and there is no data on quality.

Eye Health Status

Pre-Rapid Assessment of Avoidable Blindness (RAAB) data:

Until a RAAB Survey was undertaken in December 2010,²⁰ there had been no national population-based survey to assess prevalence and incidence of blindness and low vision in Sierra Leone. The blindness prevalence was estimated to be at least 1%, and that of low vision to be 3%.²¹

Table 2: Estimates of prevalence of blindness and Low Vision, pre-RAAB (Source: NECP VISION2020 Plan 2008-2013²¹)

DESCRIPTION	PERCENTAGE	POPULATION	SOURCE
Population	100%	4,976,871	2004 Census
Blindness	1%	49,769	WHO & Eye Care Providers
Low Vision	3%	147,306	WHO
People who have difficulty with their sight	-	22,652	Statistics Sierra Leone Report on the Population with Disability
People who are blind	-	8,898	Statistics Sierra Leone Report on the Population with Disability
Total number who are visually impaired	-	31,550	Statistics Sierra Leone Report on the Population with Disability

Table 3: Main causes of blindness in Sierra Leone, pre-RAAB (Source: NECP VISION2020 Plan 2008-2013²¹)

DESCRIPTION	PERCENTAGE OF BLINDNESS	SOURCE
Cataract	29-39%	WHO & Eye Care Providers
Onchocerciasis	30%	WHO & Eye Care Providers
Glaucoma	8%	WHO & Eye Care Providers
Corneal Scars	5-23%	WHO & Eye Care Providers

Onchocerciasis is endemic in 12 districts of Sierra Leone, according to regular epidemiological studies funded by the African Programme for Onchocerciasis Control (APOC), last done in 2010. Other causes of blindness are trachoma and trauma. Vitamin A deficiency, measles and traditional treatments by untrained health workers also accounts for a sizeable proportion of loss of sight particularly in children. Other main causes in children include congenital cataract, congenital glaucoma, cerebral malaria and orbital ocular tumours.

Rapid Assessment of Avoidable Blindness data:

The RAAB found the prevalence of blindness (presenting VA<3/60 in the better eye) in those over the age of 50 years old was 5.9%. For severe visual impairment (SVI) the prevalence was 4.4% and for moderate visual impairment (MVI) 12.2%.

Cataract was found to be the major cause of blindness and SVI (54.2% and 42.4% respectively) followed by glaucoma (17.5%)^b, other posterior segment disease (6.8%) and non-trachomatous corneal opacities (6.2%). Of all blindness in Sierra Leone, 91.5% was estimated to be avoidable and 58.2% treatable. 12.4% could have been prevented by Primary Health Care (PHC) or Primary Eye Care (PEC) services and 20.9% by ophthalmic services. Refractive errors are the most important cause of MVI (49.5%), followed by cataract (29.7%). The prevalence of bilateral cataract blindness was found to be 2.7%. For cataract and VA<6/60 the prevalence is 4.1% and for cataract and VA<6/18 7.6%.

The RAAB highlights that due to population growth, the number of people at risk for cataract and other age-related diseases will increase by at least 150% by 2025 due to a doubling of people aged 50+ and a projected increase in life expectancy of 10 years. This needs to be taken into account when considering service provision over the next few years, and particularly the required Human Resources for Eye Health (HReH).

Cataract Surgical Coverage (CSC) (VA<3/60) was found to be 44.1%, meaning that for every person operated for cataract there is one other person bilaterally blind and not yet operated. CSC (VA<3/60) for eyes is 27.3%, indicating that for every eye operated for cataract, there are three eyes blind from cataract not yet operated on. The table below shows the required Cataract Surgical Rates sufficient to cover the new incidence of cataract at different levels of Visual Acuity, for different surgical scenarios, for both sexes combined.

Table 4: Required Cataract Surgical Rate (CSR) estimates for Sierra Leone (Source: RAAB 2010)²⁰

Levels of Visual Acuity	Surgical Scenarios		
	Unilateral	Bilateral	All Eyes
CSR for 6/18	1,627	958	2,596
CSR for 6/60	1,329	639	1,978
CSR for 3/60	1,184	494	1,679

In terms of barriers to access to cataract surgery, the RAAB highlighted ‘costs of surgery’ as the main reason for not coming for cataract surgery, followed by ‘need not felt’, ‘unaware treatment is possible’, and ‘Fear’. For women ‘cost’ appears a more important factor; in men ‘awareness’.

83.8% of all persons with a refractive error do not have glasses. Uncorrected presbyopia is 94.4%.

^b Although many glaucoma patients still have good central vision and remain undiagnosed in the RAAB

Eye Health System Governance

The NEHP, previously called the National Eye Care Programme (NECP), sits under the Director of Primary Health Care in the MOHS (Figure 4). It consists of the NEHP Manager, the only government-funded ophthalmologist in Sierra Leone, with some small administrative support (the NEHP Secretariat). There are three NEHP Programme Managers, for Southern Province, Eastern Province and Western Area, all Cataract Surgeons operating in the main towns in those locations.

As part of the MOHS, the NEHP is responsible for the same functions as the MOHS but with a focus on eye care. In practice, the NEHP appears to be relatively active in supporting policy formulation, for instance having been involved in developing the HR National Scheme of Service for eye care staff, and the drafting of the first National Eye Health Policy is planned for 2013. The NEHP does some resource mobilisation, through involvement in the MOHS planning and budgeting processes and through liaison with international partners, and appears to be improving in collaboration and coalition building, especially with the recent granting of four- year funding (2012-2016) to strengthen eye health in Sierra Leone from the European Community (EC) and Standard Chartered Bank (SCB).

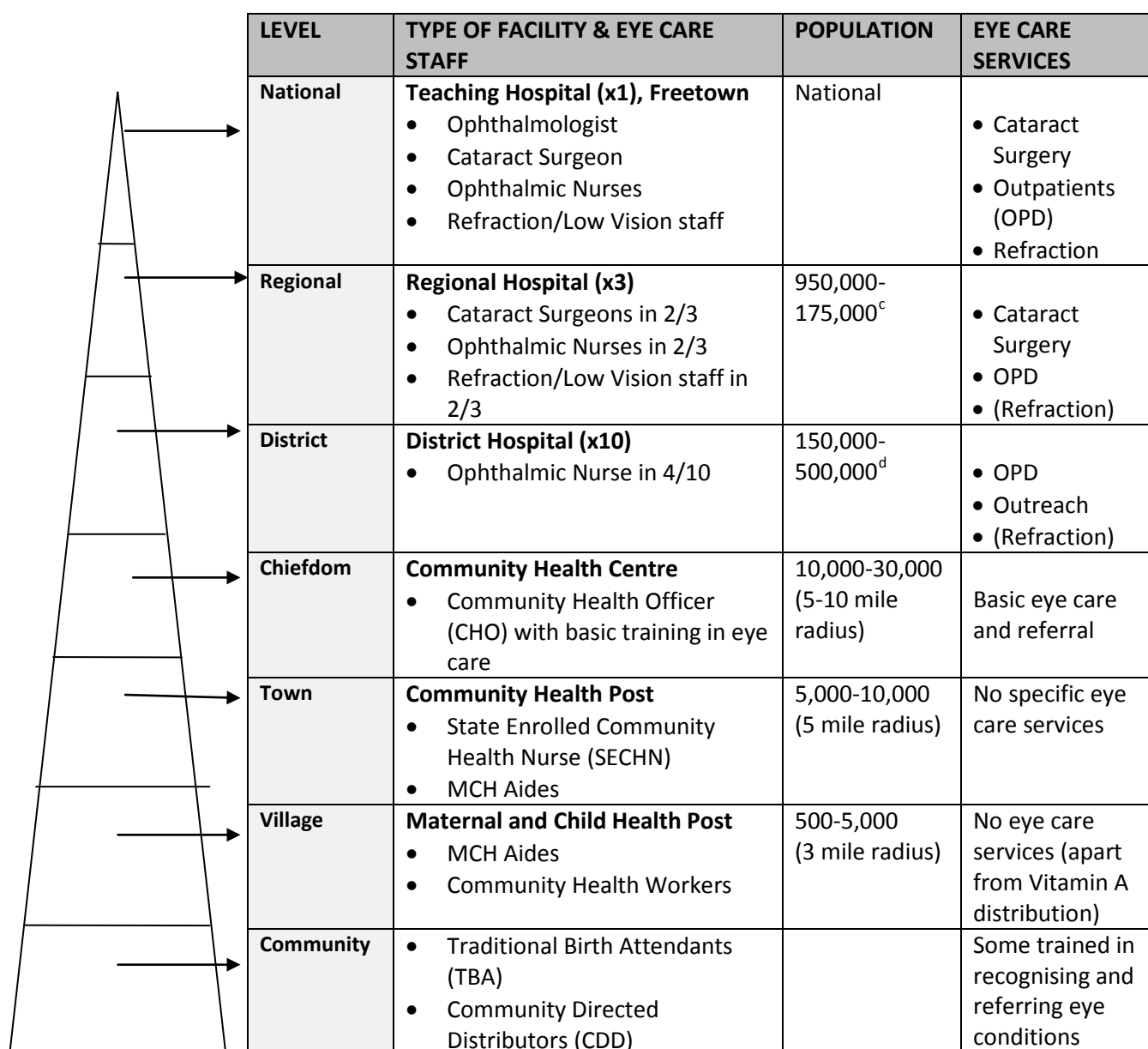
Although it oversees provision of some nationally coordinated eye services through government eye units, there are other departments within the MOHS who are responsible for some aspects of eye health (e.g. Onchocerciasis control or Vitamin A distribution), and partners such as Sightsavers, CBM and Helen Keller International (HKI) play a major role in oversight and coordination of service provision.

The NEHP has limited capacity in monitoring and oversight of the overall sector performance and training, and does little standard setting and quality assurance, capacity development and technical support.

The location of the NEHP within the Directorate of PHC facilitates integration of eye health with other primary health care programmes. It was reported by a number of interviewees that eye health was beginning to be integrated into general health services, where as previously it was seen very much as a parallel or vertical programme. Interviewees also commented that despite major challenges, eye health services have improved in the past five years, with increasing awareness of facilities by the population, attempts to structure and effectively establish the NEHP, and development of training, salary and career structures for eye health staff. Interviewees recognised the importance of donor funding in provision of eye care services in Sierra Leone, and felt that the government was increasingly acknowledging the importance of eye health, both of which were key enablers to drive progress.

Figure 6 shows the general structure of government-funded eye health services in Sierra Leone.

Figure 6: Sierra Leone public eye health sector pyramid



Public sector services:

• **National picture**

Until relatively recently, the only government-funded eye clinic was in Freetown: now there are eye care personnel in 8/13 health districts, even if half of these districts only have a single Ophthalmic Nurse (ON). The civil war (1991–2002) disrupted the progress of growth in eye care services.²¹ Despite considerable gaps and challenges, there has been an increase in the provision of public eye care services in Sierra Leone over the last decade since the civil war ended. This has included significant improvements to infrastructure (buildings and equipment), with refurbishments of the eye departments at Bo (1995), Connaught (2002) and Kenema (2010), funded by Sightsavers.

^c Based on Province catchment populations from the Sierra Leone Census 2004 data

^d Based on District catchment populations from the Sierra Leone Census 2004 data

There is an eye unit within the Teaching/Tertiary Referral Hospital, Connaught Hospital in Freetown, Western Area, staffed by the country's only government-funded ophthalmologist, also the head of the NEHP. In addition to Connaught Hospital, there are three other Regional Hospitals in each of the three main cities: Makeni in the Northern Province, Bo in Southern Province and Kenema in Eastern Province. The hospitals at Bo and Kenema are staffed by Cataract Surgeons supported by a team of Ophthalmic Nurses; however the Regional Hospital at Makeni does not currently have an operational eye unit due to lack of eye care staff.

There is another government-funded hospital in the capital, Freetown, which provided eye care services: the Kingharman Road Hospital. The eye unit is no longer operational as the Chinese team has been transferred to Sierra Leone – China Friendship Hospital Jui. This hospital is a joint venture between the government of Sierra Leone and the Chinese government, and is staffed entirely by a team of Chinese doctors. There is a Chinese ophthalmologist, but no other eye care staff, and eye patients are often referred to Connaught.

There are two public sector Optical Centres, one at Bo and one at Connaught. These have been funded by Vision Aid Overseas (VAO), who are in the process of setting up a third Optical Centre in Kenema. The other optical centres are at UMC eye hospital, Freetown Southern Eye Clinic, Serabu and Lunsar Eye Hospital in Lunsar, Northern Province. There are also two private optical shops in Freetown (Apex Optics and Kairaba Optical).

There are five schools for the blind in Sierra Leone, which are mainly government funded, with assistance of NGOs (including Sightsavers and HKI). These are located in Freetown, Bo, Makeni, Kono and Kabala.

- **District structures**

As health activities and funds have been decentralised to the local district level, the DHMTs are responsible for oversight of all health services in each district. DHMTs are responsible for peripheral health units, including eye health services provided by hospitals (either regional hospitals or district hospitals) and in the community through outreach or at PHU level. Hospital management committees headed by either medical superintendents or hospital care managers are responsible for all government hospitals.

The NEHP plans to have an eye unit in every district hospital, staffed by at least one Community Ophthalmic Nurse, undertaking clinic and outreach work and providing training and supervision for local community health workers. Although progress has been made, there are still six district hospitals without any eye care staff: Waterloo District Hospital in Western Area Rural; Port Loko, Tonkalili and Kambia District Hospitals in Northern Province; and Bonthe and Moyamba District Hospitals in Southern Province.

Within each DHMT there are Sector Heads, for priority programmes such as Safe Motherhood, Nutrition, Extended Programme of Immunisations (EPI), Water and Sanitation (WatSan), as well as leads for finance and drugs/supplies. There are no Sector Heads for eyes or other sub-specialisations such as epilepsy. This means that no one at district administration level has a specific focus on eye health, for instance when developing the annual Comprehensive District Health Plan. Although some DMOs encourage PHUs and hospitals to contribute to the planning process, this does not happen systematically, and where there are no existing eye care facilities or staff, for instance in much of the Northern Region, there will be no district-level input regarding eye health services.

DMOs reported that there is a general lack of awareness about eye health within the DHMTs, let alone within frontline health staff or the community. As it tended to be only eye care staff who perceived the importance of eye health, DMOs reported that it was difficult to get DHMTs behind eye care. If DHMTs are not convinced by the importance, then councils who hold the local health budgets will not be. For this reason, the NEHP Manager has plans to visit every DMO annually to advocate for the DHMTs to include eye health activities and staff in the district plans and budgets.

- **Sub-District and Community**

At the sub-district level (Chiefdom level), there are no eye care specialist staff, although ONs undertake outreach where possible, and all PHUs are staffed by healthcare workers (either Community Health Assistants or Community Health Nurses who have had some basic training in eye care).

The NEHP VISION2020 Plan²¹ states a vision that the following activities should be undertaken at community level, although all of these are certainly not yet in place:

- Promotion of Eye Health
- Prevention of Eye Diseases and Blindness
- Treatment of Eye Diseases
- Identification of refractive errors and provision of glasses
- Registration of the blind and visually impaired
- Recruitment of curably blind and visually impaired for referral for curative services (surgery, glasses)
- Referral of incurable blind adults and children for education and rehabilitation
- Delivery of Ivermectin tablets in Onchocerciasis endemic areas.

In Onchocerciasis endemic areas, distributors of Ivermectin (Community Directed Distributors, or CDDs) already have detailed data on the population of their communities, and there are plans to train CDDs in Primary Eye Care and expand their data collection to include the blind, as estimated by visual acuity.

Faith-based and NGO services

The following faith-based facilities are providing eye care services in Sierra Leone:

- **Baptist Eye Hospital, Lunsar (Northern Province):** rural eye services were started at Lunsar in the Northern Province by the Baptists in the early eighties, with support from CBM.
- **UMC Eye Hospital, Kissy (Western Area):** provides comprehensive eye care services, with support from the United Methodist Church, CBM and other partners.
- **Serabu Catholic Mission Hospital (Southern Province):** the eye care unit at Serabu is funded by an American Ophthalmologist, with support from the Catholic Mission.

Sightsavers used to run eye care services at Nixon Memorial Hospital in Eastern Region (at that time, Sightsavers were known as the Royal Commonwealth Society for the Blind). Sightsavers extended services to the Southern Province and then moved to Freetown in the Western Area as the civil war progressed and the Eastern and Southern areas became unsafe to work in. Now Sightsavers does not run any stand-alone facilities, but supports government-run services in Eastern and Southern Provinces and in Western Area.

The current pattern of government vs. NGO vs. FBO funded support to eye services, with a lack of Sightsavers/government programme in the Northern Province, seems to have come about as a result of historical patterns of support by international NGOs, together with the progress of the civil war in Sierra Leone, pushing insecurity from the East, through to the South and then to Western Area.

Private Sector services:

There is a private hospital in Freetown, the Choithram Memorial Hospital, which has an Indian ophthalmologist but no other eye care staff. There are also three private optical clinics, all located in the capital, Freetown.

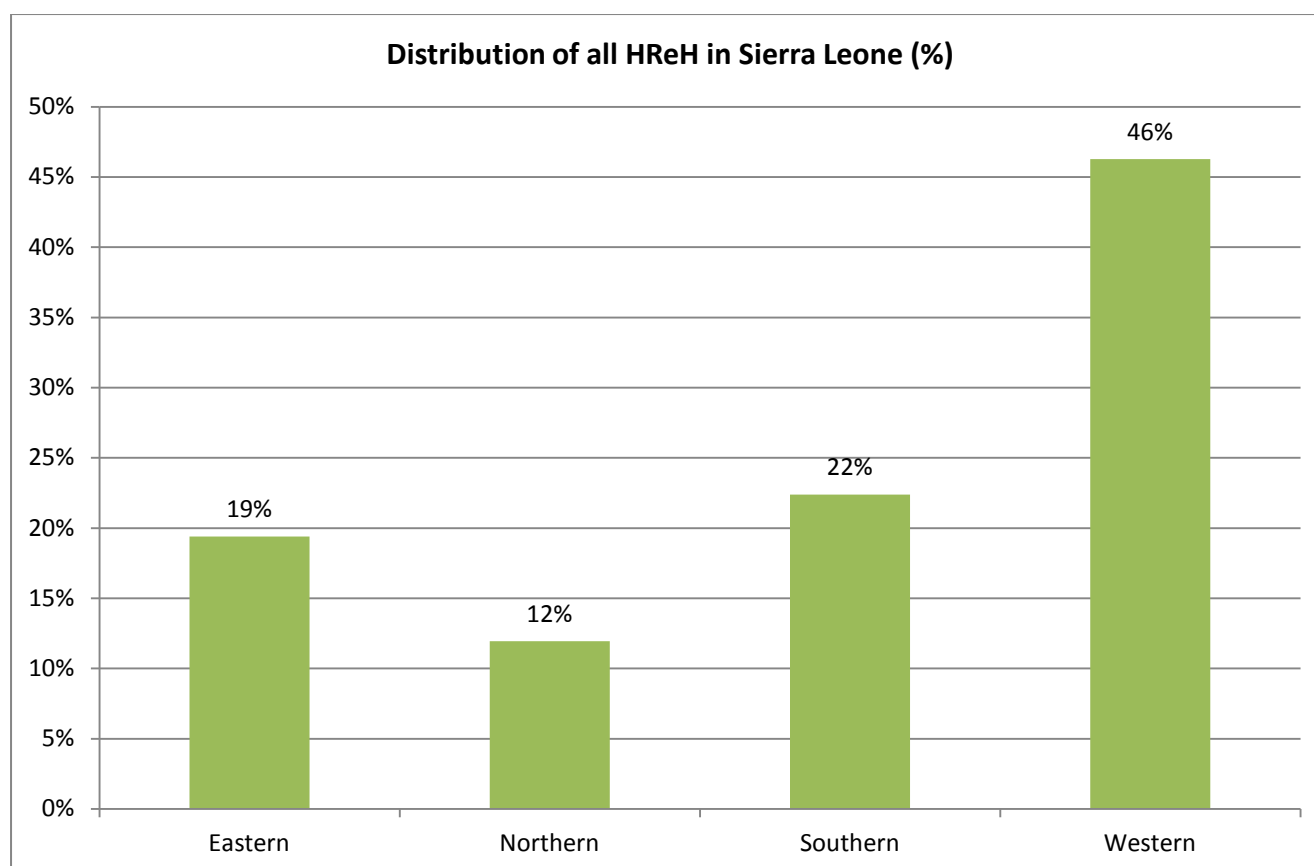
Summary of eye care service delivery in Sierra Leone

Table 5 gives a summary of all eye health facilities in Sierra Leone; Figure 7 shows the overall distribution of eye care staff in Sierra Leone by region, and Table 6 shows how those staff are distributed between the different types of facilities: government, faith based and private.

Table 5: Eye health service delivery system: overview of facilities (Source: NEHP)

Setting	Public	Private		Total
		For-profit	NGO/FBO (not-for profit)	
Hospitals	8	1	3	12
Optical Centres	2(3) ^e	-	3	6
Optical Clinics	-	3	-	3
Blind Schools	5	-	-	5

Figure 7: Distribution of eye care staff in Sierra Leone by Region (Source: NEHP)



^e The third optical centre is in the process of being set up in Kenema, by Vision Aid Overseas

Table 6: Distribution of eye care staff in Sierra Leone by District, Facility and Cadre (Source: NEHP)

Area / Province	District	Facility	Ophthalmologist	Cataract Surgeon	(D)ON	(C)ON	Refractionist	Optometrist	Optometrist technician	Optical technician	Total HReH
		KEY: Regional Hospitals <i>District Hospitals (DH)</i> Faith based hospitals Private facilities									
Western Area	WA Urban (Freetown)	Connaught Government Hospital	1	1	-	13	-	-	2	2	19
		Kingharman Road Hospital	(1) ^f	-	-	-	-	-	-	-	1
		UMC Eye Hospital, Kissy	(1) ^g	2	1	2	1	-	-	1	7(8)
		Choithram Memorial Hospital (private)	(1) ^h	-	-	-	-	-	-	-	1
	Private Optical Clinics	-	-	-	-	2	-	-	-	2	
WA Rural	<i>[Waterloo DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0	
Northern Province	Bombali	Makeni Government hospital	-	-	-	- ⁱ	-	-	-	-	0
	Koinadugu	<i>Kabala Government Hospital</i>	- ^j	-	-	1	-	-	-	-	1
	Port Loko	<i>[Port Loko DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0
		Baptist Eye Hospital, Lunsar	1 ^k	-	-	4 ^l	1	-	-	1	7
	Tonkalili	<i>[Tonkalili DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0
Kambia	<i>[Kambia DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0	
Eastern Province	Kenema	Kenema Government Hospital	-	2	-	8	-	-	1	-	11
	Kono	<i>Kono Government Hospital</i>	-	-	-	1	-	-	-	-	1
	Kailahun	<i>Kailahun Government Hospital</i>	-	-	-	1	-	-	-	-	1
Southern Province	Bo	Bo Government Hospital	-	1	-	7	1	-	-	1	10
		Serabu Eye Clinic, Catholic Mission	1 ^m	-	-	2	1	-	-	-	4
	Bonthe	<i>[Bonthe DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0
	Pujehun	<i>Pujehun Government Hospital</i>	-	-	-	1	-	-	-	-	1
	Moyamba	<i>[Moyamba DH has no eye staff/facilities]</i>		-	-	-	-	-	-	-	0
		TOTAL	3(6)	6	1	40	6	0	3	5	66(67)

^f staffed by a Chinese medical team, including a Chinese ophthalmologist, but unknown activity

^g Since Oct 2012, no ophthalmologist at UMC Kissy; to be replaced Mar 2013 (CBM-funded). The CBM-funded ophthalmologist based at BEHL is currently working at UMC 0.5 WTE to provide service cover in the meantime.

^h Unknown if (Indian) ophthalmologist is performing cataract surgeries

ⁱ Currently no eye personnel at the Northern Province Regional Hospital, although due to be replaced (through redistribution of existing staff in Eastern/Southern Regions) early 2013.

^j Once a year, an Italian ophthalmologist comes to operate. However, cataract data not included in NEHP CSR totals for Sierra Leone so not included as HReH (unlike the Serabu Hospital ophthalmologist, see footnote m).

^k Currently 0.5 WTE, as per footnote f.

^l Two of these 4 ONs are funded by the government, and seconded to BEHL

^m Twice a year, an American ophthalmologist comes to do operate.

Strategies and policies relating to eye health

Whilst neither the NHSSP nor the Results & Accountability Framework mention eye health specifically, the Joint Programme of Work and Funding produced in January 2012 mentions eye health a number of times, including under the following strategic objectives, corresponding to two of the six WHO building blocks for effective health systems:

Box 1: Strategic national objectives relevant to eye health (Source: Joint Programme of Work & Funding, 2012)

1. Leadership & Governance

1.1 To review the legal framework and provide the necessary capacities for implementation

> *Policy on eye health developed by 2013*

2. Health Service Delivery

2.1 To increase the utilisation of health services especially for mothers and children, the poor and other vulnerable groups

> *Prevention, early detection and case management of NTDs, eye care and disabilities services provided in all districts*

2.2 To improve quality of health services

> *Basic eye health services provided in all districts by 2014*

The outputs and activities under these strategic objectives are shown in Table 7. A budget is allocated for each of the stated activities across the 3 years (2012-2014), but it is unclear whether the funding is coming from government or another source (for instance, the recently awarded EC/SCB funding to be disbursed via the NEHP with support from Sightsavers, HKI and CBM). However, inclusion of eye care outputs in the national operational plan is evidence that the NEHP and Sightsavers have been somewhat effective in advocating for eye care: few other specialities are similarly included. A National Health Policy was drafted by the MOHS in 2009 but not finalised as major policy issues such as the introduction of FHCI were underway. It will be revised in 2013, so there is opportunity for any NEHP Policy developed to be built into the National Health Policy.

The Basic Package of Essential Health Services (BPEHS) for Sierra Leone¹⁰ sets out a minimum package of essential services to be provided at different facilities in the health system, with a focus on maternal, newborn and child health care services. It has been implemented as part of the government's policy of free health service delivery to under fives and pregnant women, and provides a comprehensive list of services to be offered at the following levels of health facilities within the health system:

- Maternal and Child Health Post
- Community Health Post
- Community Health Centre and
- District Hospital

Table 7: Relevant eye health outputs and activities included in the JPWF (Source: JPWF, 2012)

Narrative Summary		Objectively Verifiable Indicators	Means of Verification	Deliverables		
				2012	2013	2014
OUTPUT 1.1.10: Policy on eye health developed [by 2014]						
OUTPUT 2.1.4.2: Prevention, early detection and case management of NTDs, eye care and disabilities.						
<i>Indicator: % of districts with LF/Oncho, eye health, disability services integrated into the general health services delivery</i>						
ACTIVITIES	Sensitize the public on NTDs, eye disease and disability	# of people accessing NTD, eye health and disability services	Reports	4	4	4
	Provide rehabilitation services at facility and community level in all 4 regions	# of regional units providing services	Attendance Register	4	4	4
	Conduct blindness/low vision survey	Survey & completed	Survey	1		
	Conduct quarterly surgical outreach cataract service	# of cataract outreach services	DHMT Reports	4	4	4
	Conduct School Eye Screening Activities	# of School Screening Eye Activities	DHMT Reports	1	1	1
	Conduct eye screening outreach service	# of eye care outreach services	DHMT Reports	2	2	2
	Distribution of LF/Oncho logistics and drugs to 16,000 communities.	# of communities supplied logistics and drugs	Distribution reports	5,000	6,000	5,000
OUTPUT 2.2.10: Basic eye health services provided in all districts						
<i>Indicator: % of districts providing basic eye health services</i>						
ACTIVITIES	Training of PHU staff on basic eye health services	# of PHU staff trained	DHMT reports	300	250	250
	Conduct in-service training for PHU staff on eye health	# of PHU staff trained	DHMT reports	200	200	200
	Training of DHMT members on monitoring of eye health	# of DHMT members trained	DHMT reports	40	40	40
	Develop/review monitoring framework for eye health and incorporate into MoHS/DHMT monitoring framework	Monitoring frame work available and utilised	MoHS/DHMT reports	1		
	Conduct advocacy on eye health & disability issues	Advocacy plan and no. of advocacy meetings	MoHS/DHMT reports	1	1	1
OUTPUT 2.2.20: Quality assurance framework and clinical guidelines developed for hospitals and other health service delivery points on staff development; supplies and maintenance						
<i>Indicator: % of hospitals and other health service delivery points; staff development; supplies and maintenance programs with quality assurance framework</i>						
ACTIVITIES	Quarterly data collection, analysis and reporting on eye health activities in the 13 Districts	# of Data collection activities conducted	Coverage report.	52	52	52
	Quarterly monitoring and supervision of eye health activities in all 13 Districts	# of Monitoring and Supervision activities conducted	Supervision Reports	52	52	52
OUTPUT 2.4.2: Specialised diagnostic facilities provided in secondary and tertiary hospitals						
<i>Indicator: % of hospitals with Specialised diagnostic facilities</i>						
ACTIVITIES	Procure 3 A-scan pachymeters	# of A-Scan/pachymeters	Hospital report	1	1	1
	Procure 3 keratometers	# of keratometers	Hospital report	1	1	1
	Procure 3 slit lamp/bio-microscopes	# of slit lamp/bio-microscopes	Hospital report	1	1	1
	Procure 9 direct ophthalmoscope	# direct ophthalmoscope	Hospital report	3	3	3
	Procure 9 schiottz tonometers	# of schiottz tonometers	Hospital report	3	3	3
	Procure 3 scanoptics operating microscopes	# of scanoptics operating microscopes	Hospital report	1	1	1
	Procure vehicles/bikes for Eye Clinic	# of vehicles and bikes procured	Log of vehicles and bikes	2	2	2
OUTPUT 2.5.2: Community participation in health activities enhanced						
<i>Indicator: % of districts with established community health workers and equipped</i>						
Collaborate with the NEHP in CDD training and eye health.		Collaboration training of CDDs conducted by NEHP and NTD	Training reports	0	1	1

The BPEHS specifically includes eye care, listing ‘Eye Care’ (eye injuries, eye infections) under the content of the Basic Package, along with Maternal and Newborn Health, Child Health and Immunisations, Infant and Young Child Nutrition, School and Adolescent Health Services, Control of Communicable Diseases, Essential Drugs and Supplies, Emergency care, Mental Health / Non Communicable Disease, Ear Nose & Throat (ENT) and Audiology Services, Environmental Health Interventions, Health Education, Oral Health, and Disability.

The following table sets out what eye care services *should* be provided at each level of the health service, although the BPEHS document does acknowledge the huge constraints to implementation, including HRH and financing for the health system:

Figure 8: Eye care services and the inter-linkages between them (Source: Basic Package of Essential Health Services)¹⁰

INTERVENTIONS AND SERVICES PROVIDED	COMMUNITY (TBAs, CDDs)	MCHP	CHP	CHC	HOSPITAL
Red Eye	Refer	Refer	Refer	Yes	Yes
Cataract	Recognize & Refer	Recognize & Refer	Recognize & Refer	Recognize & Refer	Yes if facility available
Onchocerciasis	Yes	Yes	Yes	Yes	Yes
Childhood Blindness:		Refer	Refer	Refer	Yes
- Measles	Refer	Refer	Refer	Yes	Yes
- Febrile Convulsions	Refer	Yes Refer	Yes Refer	Yes	Yes
- Vit. A Deficiency		Yes Refer	Yes Refer	Yes Refer	Yes
- Other causes	Refer	Refer	Refer	Refer	Yes
- Neonatal Conjunctivitis	Recognize, start & refer	Start & refer	Start & refer	Yes	Yes
Refractive Error & Low Vision	Recognize & Refer	Recognize & Refer	Recognize & Refer	Recognize & Refer	If facilities available Yes
Eye Injuries	Refer	Refer	Refer	Yes & Refer	Yes
IEC/BCC on Prevention of Blindness	Yes	Yes	Yes	Yes	Yes
Distribution of Vit. A Capsules	Yes	Yes	Yes	Yes	Yes
Distribution of Mectizan Tablets	Yes	Yes	Yes	Yes	Positive Oncho patients – Yes
Measurement of Visual Acuity	Yes & Refer if abnormal	Yes & Refer if abnormal	Yes & Refer if abnormal	Yes & Refer if abnormal	Yes if facilities are available
Glaucoma	Refer	Refer		Refer	Yes

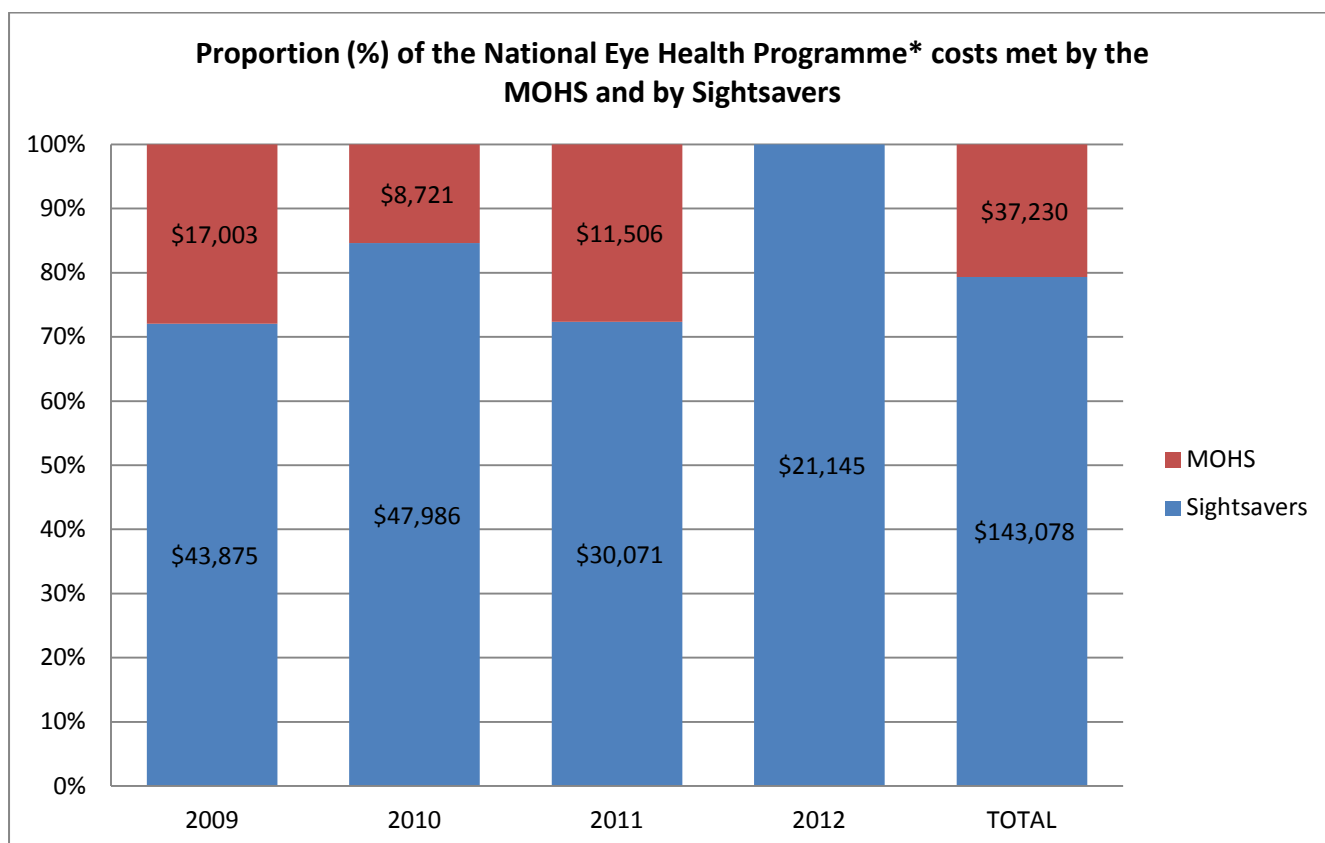
Financing of eye health services

As with the general government health budget, only a proportion of that requested by the NEHP is allocated, and only a proportion of that is then actually released. Access to allocated funds is an issue. Figure 9 shows the amounts of funding transferred to the NEHP between 2009-2012.

There are other sources of funding for eye care services in Sierra Leone, including:

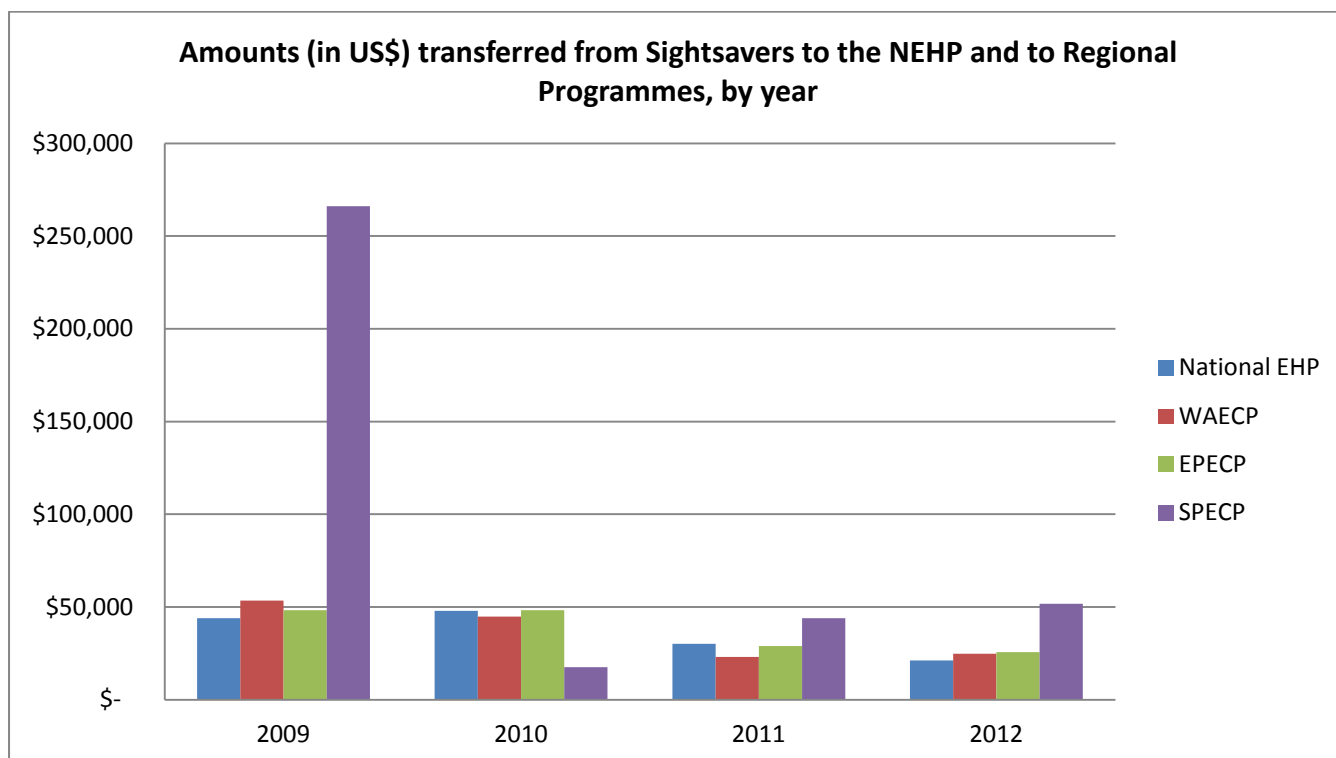
- Sightsavers funds channelled through the NEHP to government eye facilities in the Western Area (via the Western Area Eye Care Programme, WAECPC), and Eastern and Southern Provinces (via the Eastern Province Eye Care Programme, EPECP and the Southern Province Eye Care Programme, SPECP). The amounts involved are shown in Figure 10. Sightsavers is moving away from heavy subsidy of eye departments: although it currently funds a large proportion of clinic and outreach, drugs and consumables, staff salaries are government-funded, and Sightsavers has plans to reduce the subsidy further, withdrawing completely from direct service delivery by 2016.
- HKI funds direct to specific programmes, such as Onchocerciasis control and Vitamin A supplementation
- Funding from donors directly to non-governmental eye facilities, for instance the faith-based hospitals at UMC Kissy and BEH Lunsar each receive funding from CBM for eye staff and basic medical supplies.

Figure 9: Proportion of the National Eye Health Programme costs met by the MOHS and by Sightsavers (staff salaries not included) (Source: NEHP)



*N.B. this is calculated using the amounts transferred directly to the NEHP by the MOHS and by Sightsavers, by year. It does not include the amounts from Sightsavers for service delivery in Eastern, Southern and Western Area (which are shown in Figure 10), only that given centrally to the NEHP Secretariat.

Figure 10: Amount (in US\$) of funding provided by Sightsavers to the National Eye Health Programme, and to the Regional Programmes for service delivery, by year (Source: Sightsavers)



N.B. The large amount in 2009 for the Southern Province Eye Care Programme includes the rehabilitation of the eye care facility in Bo, located in Southern Province.

Donor mapping and coordination

A number of Non-Governmental Organisation (NGO) partners work in eye health in Sierra Leone, including:

- Sightsavers International
- Christoffel Blinden Mission (CBM)
- Helen Keller International
- Vision Aid Overseas
- Baptist Convention
- United Methodist Church (UMC)
- Southern Eye Care, Serabu (Catholic Mission)

Since 2012, the three main international donors, Sightsavers, HKI and CBM have joined together in a consortium to deliver a significant four year programme to comprehensively improve eye care in Sierra Leone by 2016. This is jointly funded through the European Commission and Standard Chartered Bank’s ‘Seeing is Believing’ programme:

- The EC component is around Euro 700,000 to support eye care service delivery and social inclusion across eight districts in the Southern, Eastern and Western Areas. Services (outpatient services, cataract surgery, outreach, school screening, optical services, low vision) will be offered for free to pregnant and lactating women, children under five years old, the elderly and disabled; other groups will pay cost-recovery prices. The funds will cover drugs, consumables and equipment, with plans for every PHU and district hospital to have basic eye equipment such as Snellen Charts and torches by 2016.
- The SCB component is about US\$1 million, and covers eye care service delivery, Vitamin A supplementation and Onchocerciasis control in the Northern Province, and activities not covered by the EC programme.

Underpinning these two sets of programme activities is the training of a significant number of eye care staff, as detailed in Table 8. The aim is to have one Cataract Surgeon and enough ONs for each district hospital, in order to provide at a minimum an effective clinic-based eye service across the country.

Table 8: *HReH to be trained through the EC/SCB programme, 2012-2016 (Source: Sightsavers)*

Cadre	Number to be trained by 2016
Ophthalmologist	6
Cataract Surgeon	8
Ophthalmic Community Health Officer (OCHO)	24
Ophthalmic Nurses	24
Low Vision staff	1
Optometric Assistant	1

Although there are no specific donor coordination meetings (as more than one interviewee commented, “there are too many meetings as it is”, although the majority are important and if you do not attend particularly the MOHS meetings, “you miss having a voice”), donors seem to have a good relationship (another interviewee commented that “Sierra Leone is a small country and so you hear about what’s going on”) and seem to be working relatively collaboratively, particularly with the initiation of the current EC/SCB project.

GOVERNANCE OF THE EYE HEALTH SYSTEM

Key findings

Strengths

- The NEHP Manager is part of the MOHS senior management team and has a good relationship with relevant Directorates (e.g. HRH, Finance, Planning).
- Eye care is included in core health services in Sierra Leone, and health regulations and policies are applied to eye care.
- In areas where there are government-managed eye care staff and facilities, they tend to be well linked to traditional chiefs, the DHMT and any local Schools for the Blind (for instance, in Kabala).
- Active Association of the Blind (SLAB) in a number of districts, working through existing Province/District/Chiefdom structures and with national government and NGO partners.
- Recent enactment of legislation regarding Disability, and setting up of a Commission, give a framework for disability rights in Sierra Leone.

Weaknesses

- The national VISION 2020 Committee has not met regularly in the past, to the detriment of national coordination.
- Inclusion of eye care in government plans and disbursement of funds appears to be dependent on regular contact and personal relationships more than systematically embedded structures.
- The government is inadequately responsive to the eye health needs of the population in the north.
- District administrations in areas where there are no eye care staff are not proactive in requesting eye care services.
- DPOs and other CSOs have limited opportunity to be involved in the planning of eye health services.
- Limited feedback or complaint mechanisms to enable service users to have a voice.

Organisational structures and their impact on governance

There is a NEHP which coordinates eye health services nationally, headed by the NEHP Manager. The NEHP Manager reports to the Director of PHC who is also the Deputy Chief Medical Officer (CMO). The NEHP Manager is part of the senior management team at the Ministry of Health and Sanitation. The NEHP Secretariat is located in the Sightsavers' premises at Connaught Hospital. This may contribute to the mistaken perception that the post is Sightsavers-funded rather than MOHS-funded, and that the Eye Health projects in the Western, Southern and Eastern Provinces are not part of government-managed services.

At a national level, the NEHP Manager was seen to have good relationships with relevant Directorates within the MOHS (e.g. HRH, Planning, DDMS), and strength of inter-personal relationships appear to be very

important in advocating for eye health resources. It was reported by a number of interviewees that for eye care to be included in national planning and allocation of resources required presence at MOHS meetings. In practice this means that much of the NEHP Manager's time is taken up with attending meetings, which constricts time available to conduct clinical activities, supervision and oversee delivery of NEHP activities. MOHS interviewees reported that other Programmes within the MOHS had commented "why are there so many activities for eye care?" [included in national strategic plans], and that they felt it was a direct result of the presence of Sightsavers and NEHP representatives at key meetings, submitting eye care plans for inclusion.

The NEHP Manager was in the UK undertaking an MSc in Public Health for Eye Care in 2011/2012, and the NEHP Manager for the Western Area (the cataract surgeon at Connaught Hospital) was acting as NEHP Manager during this time. Despite positive reports of the hard work by the Acting NEHP Manager, the NEHP did not receive any of its allocated funds during the time that the substantive NEHP Manager was out of the country, some indication of the nature of personal relationships or official standing to make things happen. There is no national Eye Health Policy to guide programme planning and implementation for the whole country, although there are plans to develop a National Eye Health Policy in 2013. The over-reliance on NEHP representation at key meetings may improve with the development of a National Eye Health Policy, with eye health indicators and targets embedded in national MOHS plans and processes.

A detailed National VISION2020 five year plan²¹ was produced in 2008, however it is unclear how many of the projected objectives have been tracked or met since 2008. There were no VISION2020 or National Eye Care Programme meetings between 2008 and 2011, despite the fact that they should have been held quarterly. This was nominally as the Chairman (the Director of PHC) was unavailable to call the Committee, but national coordination meetings could still have been held. Since mid-2011, meetings have been happening more regularly: at least four in the last 18 months. All the key players in eye health in Sierra Leone appear to be members of this committee, including Sightsavers, SLAB, the NTD programme manager, and representatives from FBOs providing eye care services.

Sierra Leone held elections in late 2012, and there have been changes in government Ministers responsible for many areas impacting on eye health services. The NEHP historically has had a good relationship with Ministers, and there are plans in place for the NEHP and for some of the key INGOs such as Sightsavers to meet the new Ministers early in 2013, to build relationships and advocate for eye health.

At district administration level, the prominence and priority given to eye care in a district is variable, and highly dependent on the presence of any eye care staff in that district, the strength and interest of the local DMO and DHMT, and of any active DPOs.

Picture 1: Invitation to VISION2020 Committee Meeting in January 2012, showing the attendees



GOVERNMENT OF SIERRA LEONE
DIRECTORATE OF PRIMARY HEALTH CARE

Ministry of Health and Sanitation – 4th Floor, Youyi Building, Brookfields, Freetown
Tel: 222963 Mobile: +232-76-602-342

18th January 2012.

Dear Sir/Madam,

INVITATION TO STEERING COMMITTEE MEETING OF THE NATIONAL EYE CARE PROGRAMME

This is to inform you that there will be a meeting of the Steering Committee scheduled to take place on the 25th January 2012 (Wednesday) in the conference hall of the Ministry of Health and Sanitation, Youyi Building at 10.00 a.m. prompt.

In this regard, you are hereby cordially invited to attend this meeting.

We look forward to seeing you.

Yours faithfully,

Dr. Hassan Seisay
Deputy Chief Medical Officer/Director of Primary Health Care

ADDRESSED TO:

- | | | |
|--|---|-------------------------------|
| 1. The Chief Medical Officer | - | M.O.H & S |
| 2. The Director of Hospitals & Laboratories | - | M.O.H. & S |
| 3. The Director of Support Services | - | M.O.H. & S |
| 4. The Director of Nursing | - | M. O.H. & S |
| 5. The Director of Planning & Information | - | M. O. H. & S |
| 6. The Director of Disease Control & Prevention | - | M. O. H. & S |
| 7. The Director of Financial Resources | - | M. O. H. & S |
| 8. The WHO Representative | - | Riverside Drive, Freetown. |
| 9. The Doctor In-Charge | - | UMC Eye Hospital, Kissy |
| 10. The Doctor In-Charge | - | Baptist Eye Hospital, Lunsar. |
| 11. The Country Director | - | Sightsavers-Sierra Leone |
| 12. The Officer In-Charge | - | Bo Eye Department, Bo |
| 13. The Officer In-Charge | - | Kenema Eye Department |
| 14. The Officer In-Charge | - | Eye Unit, Makeni Govt. |
| 15. The Deputy Secretary II/WAHO Liaison Officer | - | M. O. H. & S |
| 16. The Programme Manager | - | National Eye Care Prog. |
| 17. The Project Manager | - | Western Area Eye Care |
| 18. The Programme Manager | - | NOCPI/NTD |
| 19. The Programme Manager | - | Helen Keller Int. |
| 20. The Director of Primary Health Care | - | M.O.H.&S |
| 21. The Project Manager | - | CBR |

If eye care is not included in the local CDHP, there will be no budget included for eye care activities or staff training, for instance to send ONs for specialist ophthalmology training. This has been identified as a risk by the NEHP Manager who has visited every DMO this year to try to encourage eye care activities to be incorporated.

There are no V2020 project management committees at district level, to undertake a coordinating and monitoring role. Establishment of these is one of the key activities included in the 2012-2016 EC/SCB project.

On the whole, in areas where there are eye care staff, both DHMTs and hospital administration can articulate their role in delivery of eye care services at district and facility level, and do provide some support. For instance, in Kabala, the DHMT provides fuel for outreach activities, and the hospital management provides two large rooms to the eye clinic. However, in Makeni where there used to be an Ophthalmic ON, the hospital administration has not requested a replacement and the eye clinic is being used for other purposes. There appears to be a lack of communication between the hospital, the DHMT, the NEHP Manager and MOHS regarding what action is being taken to address the lack of eye staff.

At facility level, there is an issue with perception regarding responsibility and accountability for government eye clinics: both patients and hospital managers often refer to them as ‘Sightsavers Clinics’ rather than government eye clinics.

FBOs providing eye care services have no direct link with the general MOHS, except through the NEHP. It was reported that the NEHP Manager was a member of the hospital management board of UMC Kissy and plays an active role, and that training programmes have been developed collaboratively between FBOs and the NEHP.

Disabled People’s Organisations in Sierra Leone: role and capacity

In terms of Disabled People’s Organisations (DPOs), Sierra Leone has a national Association of the Blind (SLAB) which exists to advocate on behalf of those who are blind or have low vision to increase their independence, their voice and their status in society, ensure they know their rights, and to help them develop appropriate skills through training. SLAB has around 2,500 members across 5 Districts (Bo and Kenema in the south, Bombali, Port Loko in the north, and the urban Western Area). They have plans to expand into other districts but lack necessary funds, particularly since mechanisms for collecting monthly membership dues of 1,000 Le per month are not currently effective. In order to advocate effectively on behalf of its members, SLAB executives collect issues of importance from members at each level, discuss with the relevant authorities at that level, and feed information up through the chiefdom and district membership structures to the national level.

SLAB is affiliated with the Sierra Leone Union on Disability Issues (SLUDI), and works with government through the Ministry of Social Welfare, MOSW. They also work with Sightsavers and Helen Keller International on disability issues affecting those who are blind or low vision, and are particularly involved in Vocational Centres and Community Based Rehabilitation (CBR) programmes. The salaries of some SLAB CBR staff members used to be paid by Sightsavers, but now are not: SLAB’s aim is that the government begin paying these salaries. SLAB staff reported that they were well known to local eye care facilities across Sierra Leone, and often received referrals from eye units of newly blind patients who needed counselling and advice.

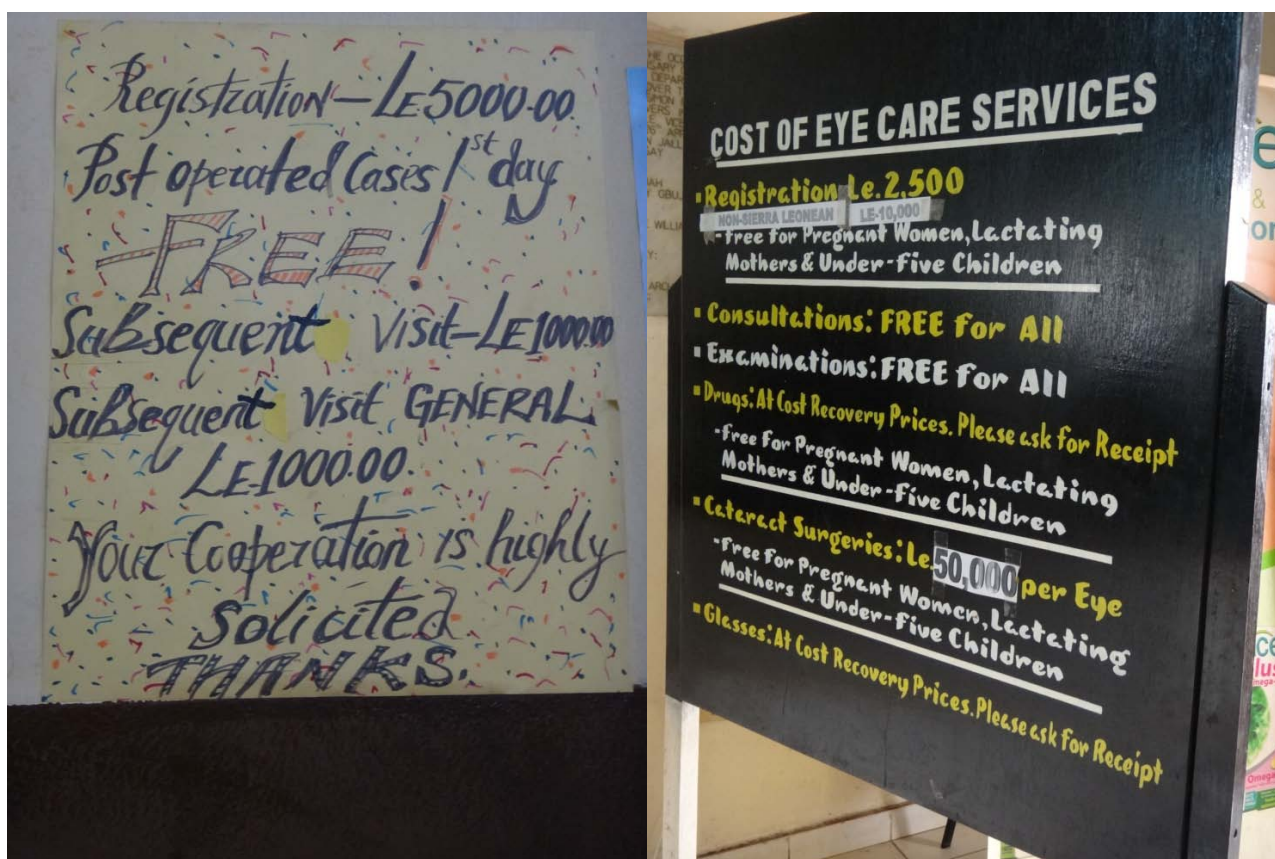
A Disability Act was recently enacted, and a National Disability Commission set up in 2012 with representation from government, NGOs, SLAB and others, which has generated a framework for disability rights in Sierra Leone which can be built on. There is opportunity to advocate for free education and free healthcare for all people living with disability. SLAB leadership highlighted the following key gaps and opportunities in Sierra Leone: increasing education, skills training and self-employment opportunities for girls and women who are blind or disabled; computer training to reduce barriers to jobs; and empowering the youth to lead SLAB in the future.

The influence and voice of DPOs varies across Sierra Leone, depending on the strength of local branches or members and their integration into decision-making structures such as district councils or DHMTs. Some DMOs reported that they knew that SLAB existed but had very little communication with them, did not send any reports to them and that no SLAB reports were sent to the DHMT, and that this relationship could be improved.

Public information and feedback about eye care services

Some but not all eye health facilities prominently display a service charter, clearly giving a full list of fees for services (Picture 2). Where these are lacking, patients do not have full and easy access to information about initial and follow up costs of treatment, including of any drugs.

Picture 2: Display of eye care service fees at the UMC Eye Hospital, Kissy (L) and the Connaught Hospital Eye Clinic (R)



Facilities rarely display posters listing the rights of the patient (quality standards types of services, complaints mechanisms). There is a lack of surveys to request feedback from patients and the public about services. Medical superintendents reported that whilst there may be desire to elicit feedback from patients, hospitals often lack funding to carry out surveys. A similar picture was given by the FBOs: individual feedback is often solicited, but there are no structured surveys to obtain patient feedback on services or their relationship with professionals.

The Health for All Coalition of Sierra Leone is a Civil Society Organisation (CSO) which undertakes advocacy, monitoring, and community mobilisation work in the area of health. It is established across the country in 149 Chiefdoms (Northern, Eastern and Southern Provinces) and 52 Wards (Western Area), and appears to be relatively well embedded into district structures. In addition, it has a relatively high profile at the national level, with their annual report launched by the President of Sierra Leone. HFAC-SL collates feedback from the public and stakeholders on government policy and services, for instance reporting on the Free Health Care Initiative,²² monitoring the drug procurement chain, investigating the proportions of allocated budgets that are actually disbursed to the local councils, reporting to the MOHS on patient satisfaction at government health facilities, and campaigning against user fees.

Health for All Coalition appears an effective advocate for quality and accountability for health services to the local population. HFAC-SL has not previously worked on eye health specific issues, but has the potential to do so and is very interested in working with the NEHP on increasing the awareness around prevention and treatment of blindness, and extending existing facility monitoring work to include eye care services. There are opportunities for NEHP collaboration with HFAC-SL, including monitoring eye care services at local level and advocating for eye care resource to government.

In general , DPOs and other Civil Society Organisations (CSOs) have limited opportunity to be involved in the planning of eye health services. There is no consultation process at local or national level regarding the priorities of the members of DPOs/CSOs for services, and limited feedback mechanisms for patients.

The recent Disability Act may have an influence on the future role of DPOs and CSOs such as SLAB and HFAC-SL in the health sector.

EYE HEALTH FINANCING

Key findings

Strengths

- Introduction of the FHCI in 2010 means eye care services (where available) are free to all under fives, pregnant or lactating women.
- NEHP Manager is involved in MOHS budget negotiations.
- District councils often meet transport costs for eye health outreach in their District.
- Government has started to provide financial support to eye health FBOs, for instance the transfer of two government-payroll Ophthalmic Nurses to BEHL.
- FBOs are often able to provide free surgery, which positively impacts on cataract surgical rates.

Weaknesses

- MOHS budget for eye care is inadequate, and mainly covers administration rather than service delivery.
- The FHCI does not extend to non-governmental organisations, and does not cover vulnerable groups such as the elderly or the disabled.
- Whilst FHCI has increased access for the groups it covers, it has limited the MOHS funds available for other services or population groups.
- There are no budgets for eye care at district level which limits integration of eye care services.
- The Performance-based Financing system currently does not provide any incentives for eye health.
- Prices for eye health services are not standardised.
- Government eye units are often perceived as separate from the rest of the hospital, as funding for drugs and consumables comes directly from NEHP or from Sightsavers.

Revenue collection: sources of financial resources for eye care

Government

MOHS is developing a Health Care Financing Strategic Plan to look at different options for sustainable funding of health care, including the introduction of health insurance. This process will involve looking at technical programmes such as eye care, dental and ENT in more detail, areas where there is currently no data available to assess activity at the macro level. MOHS did not have figures for how much has been spent on eye care in Sierra Leone, as eye care spend is subsumed within general secondary care spend. Despite the lack of monitoring of financial spend on eye care, the NEHP Manager has recently been successful in ensuring that there is a separate allocation each year for eye care, through advocacy to create separate MOHS budget lines for eye care and other sub-specialities such as mental health and ENT.

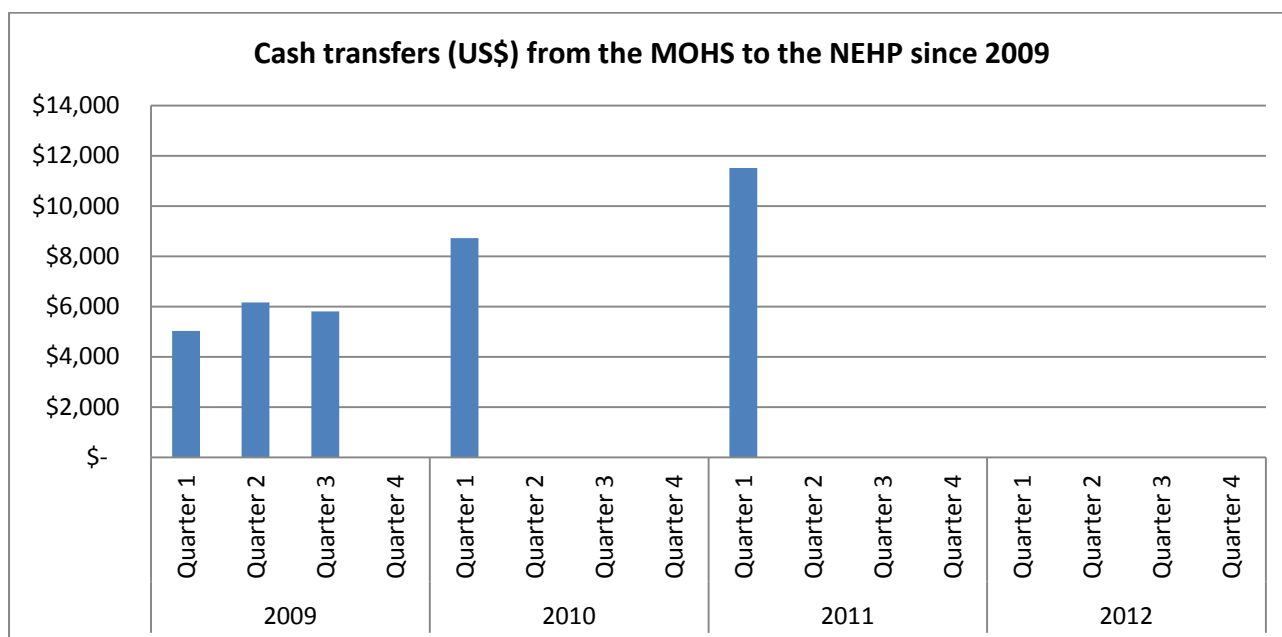
In terms of deciding annual allocation of funds to eye care, NEHP annual plans are scrutinised to assess whether planned activity looks realistic given the budget requested, and whether it appears to be value for money, for instance compared to the number of beneficiaries targeted. However, there is no in depth analysis such as return on investment studies or cost benefit/cost-effectiveness analysis which takes into account long term outcomes such as impact of blindness on employment, or use of Disability Adjusted Life Years to weight the priority given to eye care compared to other specialities. There is opportunity for the NEHP or donors to undertake these types of economic analyses to support MOHS priority setting and advocacy for eye care resources.

The MOHS has provided funding to the NEHP Secretariat since about 2000. The budget for eye care is inadequate, covering administration of the NEHP (the Secretariat) rather than service delivery, the majority of which is funded by Sightsavers or by faith-based organisations. There are also difficulties in accessing allocated funds from the MOHS for eye care. For instance, funds are often transferred in the first quarters of the year but not subsequently, despite funds having been allocated. See Figure 11: in 2009, \$17,000 was transferred; in 2010 nearly \$9,000; in 2011 \$11,500; and nothing in 2012.

A number of interviewees commented that the total lack of funds transfer in the latter part of 2011 and in 2012 was likely due to the fact that there was no substantive NEHP Manager at this time to advocate for eye care with the MOHS and that access to the bank account was restricted due to the absence of the national coordinator in training in London. Despite allocations, and presence of an active acting NEHP Manager, no funds were transferred. It appears that action is often dependent on personal relationships and regular advocacy.

In 2013, the NEHP may receive its largest allocation from MOHS so far: the NEHP requested \$183,000 from the MOHS; the MOHS put about half of this amount into its request to the Ministry of Finance. Only a fifth of this was allocated back to the MOHS, and the exact amount allocated to the NEHP is not yet clear. This is an opportunity, but as allocation of funds is not the same as transfer of funds, it is also a risk to delivery of planned activities.

Figure 11: Funding received by the NEHP from the Ministry of Health and Sanitation since 2009 (Source: NEHP)



The same pattern of allocation vs. transfer of government funds is seen for the NTD aspect of eye care: whilst there is a budget line from the MOHS for NTDs, and 200 million Leones was allocated in 2012, only 10% of funds were disbursed. In 2013, 300 million has been allocated, an increase, but the amount that is likely to actually be received is anticipated to be lower.

Interviewees suggested that the mismatch between allocations and receipt of funds may be due to the impact of the Free Health Care Initiative on available funds.

Sources of funding for government eye health service delivery:

- In government facilities with eye clinics, the staff and general running costs (water, electricity etc) are met by government funding to facilities through local councils and DHMTs. The Districts also often provide funding for fuel for outreach. The eye clinics in government facilities in the northern region (Kabala, and Makeni when it had eye care staff) are mainly funded by general government funds rather than the NEHP or Sightsavers.
- Sightsavers funds tend to be channelled through MOHS National Eye Health Programme, hence are included under this heading of 'government funding'. The eye clinics in Western Area, Eastern Region and Southern Region are funded by a combination of mainstream government funds (salaries, patient food, beds, utilities), Sightsavers funds to the WAEHP, EPEHP and SPEHP (drugs, consumables, outreach), and cost-recovery mechanisms set up by Sightsavers.
- There are a few anomalies to this direct government vs. Sightsavers/NEHP split: Sightsavers still directly funds the cataract surgeon in Kenema, but the Cataract Surgeon in Bo is funded through the revolving cost-recovery fund and there are plans for this post to be absorbed into the national HRH workforce. Sightsavers also provided capital funds to rehabilitate the facilities in Connaught, Bo and Kenema.

Non-governmental organisations

The main non-governmental sources of funding for eye care are through FBOs providing eye services. FBOs such as BEHL and UMC Kissy are funded mainly by national and international donors and through user fees. Most partners only give things in kind (e.g. equipment, consumables, vehicles), and money to pay for running costs (salaries, fuel, medical supplies) is generated by the hospital itself, through user fees/cost-recovery. A few salaries come from international donors, for instance the ophthalmologists at BEHL and UMC Kissy.

Prior to the war the government used to provide subsidies (staff and running costs) to many of the FBOs, including those delivering eye services. Since the war the governmental focus has been on rehabilitation of structures, and funds are not available as they were previously. In general, faith-based eye services such as BEHL and UMC Kissy do not receive any funding from government. There are exceptions: for instance, the government has recently transferred two government-salaried ONs to BEHL. Although Serabu CMH receives a large portion of its funding for eye care services from an American ophthalmologist, it also has some access to government funds, as a part-government part-FBO facility.

Other external sources of funding to eye care include an Italian ophthalmologist who has a relationship with Kabala hospital in the Northern Province and has provided funding for equipment, a motorbike and consumables to the eye department. Where ad hoc funding or resources are provided by sources external to the government, this does not tend to be included in the facility accounts. This means that funding for maintenance is not usually budgeted for, and sustainability can become an issue.

Regarding international NGOs, the consortium of Sightsavers, CBM and HKI has been awarded grants from EC and Standard Chartered Bank totalling over \$1.5 million to upgrade the eye care system by 2016. Through this, Sightsavers plans to phase out of the Southern and Western Area eye health programmes by 2016, and focus on providing technical services such as training. They will continue to work in the Eastern Region and to facilitate the MOHS and other partners to support and develop eye services in the Northern Province.

Pooling and allocation of financial resources for eye care

Free Healthcare Initiative

The Free Health Care Initiative (FHCI) for children under five, pregnant women and lactating mothers covers all government-provided health services including eye care, and is reported to have increased access particularly by those living in poverty, highlighting that lack of money is a real barrier to care in Sierra Leone.(23) There are a lack of figures for the impact on access to eye health services specifically, but it is likely to have increased access for these groups eligible for free healthcare. Inaccessible rural areas and high transport costs are still an issue.

Whilst FHCI has increased access for some groups, interviewees suggested that it may have had a knock on impact on availability of funds from MOHS for other health services, key diseases or population groups. It does not cover other vulnerable groups such as the elderly or the disabled, both groups with higher than average need for affordable eye health services

In addition, where there are no government facilities, there is no access to FHCI even for eligible groups. Government eye clinics are not equitably distributed, and there is a lack of government facilities in the Northern Province and rural areas of other Provinces. The FCHI does not cover FBOs such as BEHL, Serabu CMH or UMC Kissy, although FBOs often provide free or subsidised services so in practice access to eye care may be less of an issue than it otherwise could have been.

Eye care staff at BEHL and UMC Kissy reported that they would be keen to be included in the Free Healthcare Initiative(FHCI), to complement the work of the government. Support from partners is reducing, particularly missionary funds, which is a risk to sustainability of service provision. Other ways that the government could increase collaboration with FBOs providing eye care is to expand the secondment of government-payroll staff to FBOs. Having a government-funded ophthalmologist or cataract surgeon would improve long-term sustainability of the service, particularly important in an FBO such as BEHL in the Northern Province where there is a lack of government-funded eye services, and free up funds for other services.

The inequity of access to government eye services will continue to be an issue if/when the FHCI is rolled out to other groups. For instance, as no government facilities undertake glaucoma surgery, if vulnerable groups such as the elderly or the poor are included in FHCI, they will not have access to free glaucoma care.

Health insurance

There is currently no national health insurance scheme in Sierra Leone, although this is currently under discussion as a way to sustainably extend the FHCI to other vulnerable groups. The list of target services and drugs is currently being developed, and will be circulated to specialists including the NEHP Manager once a draft is ready, prior to piloting. This is an opportunity for the NEHP to be involved in discussions about what services it should cover, and to advocate for eye health.

District budgets for eye care

The budget for all health services in a District are managed by District Councils, via the DHMT. This includes any government-allocated funds for eye health services, although government funds are limited and the majority of funds for government-run eye services come from Sightsavers and go directly to eye health facilities in Western Area, and Eastern and Southern Provinces. There are no budgets for eye care at the

district council or Chiefdom level. Having budgets at this level would facilitate integration of eye care within health services at a local level.

Although districts accept the responsibility to fund outreach, transport costs are high and vehicles in short supply so although budgeted for, funds may not be forthcoming. ONs in some facilities reported using their own money for outreach, and receiving limited money from the DHMT or the facility.

The PBF scheme does not currently cover hospitals, or eye health outreach, so there is less incentive for DHMTs to provide funding for eye health outreach. However, this may change when PBF is extended to secondary care facilities, which may be as soon as mid-2013 if MOHS funds are available. There is suggestion that the 40% share of the PBF funds which go to the facility rather than to staff will be divided up proportionally according to the percentage of indicators met by each department, and then ring-fenced for that department to invest in services. This is a key opportunity for the NEHP to make sure that indicators relevant to improving the quality and quantity of eye care services are included in the PBF scheme for secondary care.

Budget-setting and expenditure at facility-level

Budgeting in government facilities is bottom-up, with each unit submitting their own workplans and associated budgets to the hospital administration, and then each hospital submitting a plan to the district. These plans do not include salaries which are paid for centrally.

Only a proportion of the requested funds are allocated, to be disbursed quarterly, but again facilities reported problems with timely disbursement of allocated funds. Eye health tends to be a small percentage of the total, for instance one hospital reported that they had received only 60% of requested funds from the district council, and that the amount put aside for eye care was less than 1% of the total allocation. The priority activities in hospitals tend to be maintaining electricity and water, running the laboratory, X-Ray, and blood bank, and paying for patient food, cleaning and fuel: these activities can consume more than three quarters of the total budget.

Particularly in facilities with no current eye care staff, including funds for training of eye care staff or for delivering eye care services is not a priority.

For Sightsavers-supported government facilities, whilst money from the sale of registration cards and admission forms goes to the hospital, any income received through fees for eye services go into a separate eye unit 'cost-recovery' bank account, used to fund outreach and purchase consumables. The separate account gives flexibility and degree of autonomy: accessing governmental money from the hospital can be hard, and eye staff reported that other departments within the same facility may only get a third of what

they requisition. However, this can also be a weakness to integration with the rest of the hospital, a barrier to hospital and district administration taking responsibility for the effective running of the eye care department, and consequent longer term sustainability.

In contrast, the eye unit in Kabala is not supported directly by Sightsavers/NEHP, and does not have a separate account or procurement system (although some glasses and ophthalmoscopes were donated by an INGO). The benefit is that it is well integrated in the hospital: patients are registered by the hospital, drugs managed by the pharmacist and funds managed by the administrator. As a result, the clinic is seen as government-run, rather than a 'Sightsavers clinic'.

In general, the Sightsavers-funded departments were seen as well organised, and as can be seen from Case Study 1, this can have a knock on effect on the rest of the facility. The NEHP must ensure that the positives of receiving external funding such as better quality facilities and control over procurement are not outweighed by a lack of integration within the general hospital services. Eye units in government facilities must ensure that they are sharing plans and activity reports with the hospital administration as well as with the NEHP and Sightsavers.

Case Study 1: Eye care as a model for other services, at Bo Regional Hospital

Although there were reports that the separate funding of the eye unit was detrimental to its integration within the rest of the facility, there were also positive outcomes. Non-eye care staff from Bo Government Hospital reported that the NEHP/Sightsavers-supported eye unit at Bo was seen to be well-maintained, clean and organised. As a result the hospital administration applied to the Government for funding to update the facilities in the rest of the hospital to meet the same standards.

User fees

Prices for eye health services are not standardised: there is variation in registration and service fees between government facilities, as well as between government and FBO eye facilities (Table 9).

UMC Kissy and BEHL appear to charge more than the government facilities for eye surgery, although there may be other costs such as post-operative drugs not included in the government figures. The cost of cataract surgery at FBOs such as BEHL (180,000 Leones, around \$40) reflects the full cost of surgery, and is high compared to the living standard in Sierra Leone. FBOs also reported that they might need to increase user fees if there was a lack of funds for hospital running costs.

However, although cost could be a barrier to access to services, FBOs often have donor funds available to reduce the charge if individual patients cannot pay, or provide cataract surgery for free. For instance, in 2011

the Turkish government provided 75 million Leones to BEHL to provide more than 1,000 free cataract surgeries. BEHL also raised money from donor churches in America in 2012 and of 1,000 cataract surgeries undertaken, were able to provide half for free.

There do not appear to be any rigorous criteria to determine levels of poverty and who should pay, although community leaders are often able to advise whether someone is really in need.

Table 9: Comparison of user fees for eye health services in a selection of facilities, for patients not eligible under the FHCI (Source: facility visits and discussions with eye health staff)

Facility		Cost (Leones) ⁿ	
		Registration	Cataract Surgery (per eye)
Government	Connaught	2,500	50,000 Le
	Kenema	2,000	50,000 Le
	Kabala	5,000	Free
	Bo	2000	50,000Le
Faith-based	BEHL	5,000	180,000 Le or free
	UMC Kissy	5,000	150,000 Le or free
	Serabu	Free	Free (only available twice a year)
Private	Choithrams	25,000	No cataract service

Approximately: 2,500 Leones = 60c; 5,000 Le = \$1.20; 50,000 Le = \$12; 150,000 Le = \$35; 180,000 Le = \$42

For FBOs, there is a clear correlation between provision of free surgery and higher cataract surgery figures: the number of cataract surgeries drops when free surgery is not available. FBOs appear to be relatively effective in accessing donor funds to provide free surgery. The government does not appear to make use of any potential funding sources (e.g. BRAC, World Vision) in order to be able to offer free surgery: this is worth investigating. However, as discussed later, increasing the number of surgeries must go hand in hand with increasing (and monitoring) quality.

Cost-recovery mechanisms exist in most eye health facilities, both government and faith-based. However, the effectiveness of cost recovery in creating funds for investment varies: in Kabala (Northern Province, not currently supported by NEHP or Sightsavers) the low level of cost-recovery means that the eye clinic has limited capacity for investment or subsidising services, whereas in BEHL and UMC Kissy, user fees are key to the sustainable functioning of the hospitals. Government eye facilities must make sure they run effective cost-recovery, ensuring that all patients buy drugs from appropriate sources rather than through informal arrangements which results in a loss to hospital income. Monies collected from patients by eye health staff during outreach are often not reported, although there is no suggestion that the money is not well used, to pay for drugs and subsistence costs for the ONs.

ⁿ N.B. this table does not represent all the costs to a patient: there may be other costs associated with accessing eye services in different facilities, e.g. drugs or follow up appointment fees, not to mention cost of food, transport or the opportunity costs of the patient or carers attending the clinic.

The increase in staff salaries which went along with the FHCI, in recognition of the increased strain on human resources and the existence of informal salary arrangements, may have reduced the amount that health care staff charged informally for services: however it is difficult to tell if this is actually the case.

EYE HEALTH SERVICE DELIVERY

Key findings

Strengths

- There is a comprehensive network of PHUs covering Sierra Leone, staffed with health care workers who have some training in recognising and treating basic eye conditions: this provides a strong foundation for an effective referral system.
- Eye care services are included in the Basic Package of Essential Health Services for Sierra Leone.
- Free health care is available for target populations (pregnant/lactating women, and children under five), and this includes eye care.
- Work underway to integrate Vitamin A supplementation into Maternal and Child Health services.
- The number of people accessing eye care services has increased, through a combination of increased awareness, increased service provision, and reduced financial barriers through the free healthcare initiative.

Weaknesses

- Inequitable distribution and access to eye health services. This affects the Northern Province particularly, and remote areas of other Provinces.
- Although the network of PHUs with staff trained in basic eye care theoretically provides a good referral system, in practice, the referral rate is poor.
- Eye care outreach is constrained in government facilities by lack of vehicles and staff.
- The CSR is too low to deal with the incidence and prevalence of blindness due to cataract.
- Productivity of ophthalmologists and cataract surgeons varies widely by individual.
- Where cataract surgical output is low, there is an impact on maintenance of surgical quality, but quality is not measured.
- Lack of services for glaucoma and inadequate services for refraction and low vision.
- Lack of clear supervision system defining responsibilities at each level for eye health.

Availability, access to and utilisation of eye care services

The BPEHS includes eye health services, and the structure of Primary Health Care in Sierra Leone supports the delivery of Primary Eye Care, as Community Health Officers, Community Health Assistants and Community Nurses are able to recognise and treat basic eye conditions such as conjunctivitis. The majority of eye health services are provided by specialist eye care staff based in some district hospitals, although there are gaps in the number and distribution. Patients either attend directly, or are referred from PHUs within that district. Where there are eye care facilities in regional capitals, they tend to be good quality infrastructure thanks to refurbishment by Sightsavers.

However, there is inequitable distribution and access to eye health services in Sierra Leone, especially via the FHCI programme through public facilities, and particularly in the Northern Province and in remote areas of other provinces. Distribution of resources appears to be based on opportunities rather than needs. Where there is no district eye clinic, the local population does not have access to any eye health service in that district, unless they live near one of the three FBOs in Western Area, Port Loko or Bo Districts. The majority of populations are far from district hospitals and from any FBOs, and travel distances and costs are a barrier to accessing eye services.

There is a deficiency of government-provided eye services in the Northern Province, with only Kabala Hospital's small eye unit currently functioning, staffed by one ON. Although there are plans to move eye care staff there, the Regional Hospital in Makeni currently provides no eye services. BEHL is operating in the Northern Province but even so, only 2/5 Districts in this province have any facility-based eye care services. BEHL organises outreach in every district of the Northern Province, although this is not always done in liaison with Kabala, or with the District Health Authorities. The NEHP Manager's vision for service delivery in the north is to extend services to districts that do not have any eye care provision, increasing awareness and increasing uptake of services.

Other areas where access is a particular issue include rural areas in the far East of the country and in Bonthe district which is riverine and difficult to access.

Even if there is eye care provision at a facility, the population can be very spread out and the most vulnerable are often the farthest away. As a result, outreach services are very important, targeted to the most vulnerable. Getting the right information to people is also important to create awareness in remote locations. Access to radio has improved enormously over the past decade, is a good way of communicating undiluted health messages, and could be used more to promote eye health.

There is a lack of private provision of eye care services throughout Sierra Leone. There is a single private hospital in Freetown, although this does not appear to provide cataract surgery, and a couple of optical clinics also in the capital.

Outreach

Although some DMOs reported that eye care outreach was built into their district's annual plan, others reported that money is often not put aside to fund eye care outreach, as it has not been prioritised through the annual planning process. DMOs reported that there was a need to move away from the point of view that services should be hospital-based, although there are often competing priorities at district level, and outreach requires logistics and resources. Eye care outreach is often done on an ad hoc basis when funds are available. Loss to follow up following outreach is likely to be high where vehicles are not available to collect patients for surgery.

Currently, eye health services are not part of the PBF system, unlike other outreach activities designed to reduce the Maternal Mortality and Child Mortality Rates (antenatal and postnatal care, deliveries, family planning, EPI) where the more people are seen the more financial incentives are received, so it may be that there is less of a driver for facilities to prioritise eye care outreach.

In government facilities with more than one ON, each week some nurses are allocated by the head of the unit to outreach, and others to the clinic. However, in facilities where there are limited eye care staff such as Kabala in Northern Province with a single ON, there is a trade-off between the amount of outreach that can be done and the number of days that the clinic is open for facility-based consultations, as staff cannot be in two places at once. Staffing gaps also impact on cover for annual leave or sick leave. Whilst increasing outreach is important, this should not be at the expense of facility-based consultations.

FBOs have a different incentive to do outreach as their operating model is based on generating user fees, otherwise the hospitals will close. Approximately a quarter of their income comes from outreach, a quarter from the sale of glasses, and the rest from outpatient services. Outreach is done on a different model by BEHL and UMC Kisumu:

- BEH Lunsar has a well established 'hub and spoke' model of outreach, underway for over 10 years. They have a dedicated vehicle and a full time outreach team who cover 70% of the country, treating basic eye conditions and bringing patients back to Lunsar for surgery. They go to hospitals (some government, some non-government) in major population centres so that there are sufficient numbers to find patients requiring operations. Without the vehicle, the loss to follow up was high as transport costs proved a barrier to patients. Staff reported that there was "no need to coordinate with the government as government facilities are not doing outreach".
- UMC Kisumu have a twice a year surgical outreach, where a team goes out specifically to operate. This is coordinated with government eye facilities to ensure that they do not target the same places at the same time. They target areas that are known to be very poor, and cover all costs for the patients including transport and surgery.

Although non-governmental organisations undertake vital outreach into areas where there are no eye care services, there can be a lack of communication with DHMTs or government facilities, and this can lead to duplication of efforts, , and does not support eye care integration with other health services. For instance, the DHMT in Bombali reported that the BEHL used to come regularly to government facilities but had not been for some time and they were not sure why. Others reported that when patients are referred to the BEHL, the referring facility does not always receive a report on the outcome of that referral. Communication could be improved, to develop coverage and coordination. This has been discussed in national meetings, for instance, that of the NECP Steering Committee in Sept 2011, and should improve with the re-starting of the VISION2020 meetings

Regular timetabled outreach increases cataract surgical rate. The ON at Kabala reported an increase in the number of consultation from 718 in 2010 to 2,600 in 2012, due to an increased focus on regular outreach: 4 days of outreach and 2 days of facility-based consultations each week. This should impact on the number of cataract surgeries, although there is no government facility able to undertake surgery in the Northern Province. In addition, whilst the increased activity is going some way to meet local need, it is unknown what activity would be expected if *all* the need for eye health was being met in the local population, and there is a lack of detailed data to show whether the needs of the 'hard-to-reach' are being met. There is potential for the NEHP to calculate targets for outreach, per head of catchment population and based on available staff per facility.

Cataract Surgeries

The Cataract Surgical Rate (CSR) is low and is relatively constant: between 2006-2010 it averaged 600. However, trends are difficult to see because one-off funding or ad hoc service provision is a feature of cataract surgical provision in Sierra Leone. As an example, in 2011 the CSR increased to 876, mainly because of over 1,000 cataract surgeries done by Mercy Ships, who were only in Sierra Leone for part of the year; also BEHL undertook a large number of cataract surgeries due to one-off funding from the Turkish government.

The RAAB in 2010 highlighted that although the CSR in Sierra Leone is higher than the minimum CSR (494 eyes in 494 bilateral blind persons, Table 4), it is not sufficient. The target CSR identified in the EC/SCB project is **1,500** by 2015, which aims to tackle not only the incidence of cataract but also the backlog.

For the past 7 years there has been a constant number (n=12, 6 ophthalmologists and 6 cataract surgeons) of eye care staff in Sierra Leone able to undertake cataract surgeries. Since December 2012 there are only 11 as the CBM ophthalmologist at the UMC Kissy Eye Hospital left, but will be replaced by March 2013. However, the numbers mask wide differences in quality and productivity. Not all the ophthalmologists are actually undertaking significant numbers of cataracts: it is likely that only the two ophthalmologists at UMC Kissy and BEH Lunsar, and the one (American) ophthalmologist who visits Serabu twice a year are undertaking any amount of surgery. The ophthalmologist at the Connaught Government Hospital is also the NEHP Manager and so has other duties (and was in the UK completing his MSc during 2011-2012); those at the private hospital and the Chinese-staffed hospital in Freetown reportedly do not undertake much eye surgery, no more than 200 cataracts per year if at all, and the quality of outcome is uncertain.

With respect to cataract surgeons, the surgeon at Connaught, the main government hospital, acts almost as an ophthalmologist in overseeing the 100 patients a day who attend the clinics, and performs about 300-400 surgeries a year. The two government-funded cataract surgeons at Kenema undertake less than 300 between them, and the surgeon at Bo government hospital does about 200 a year. The relatively low output of many of

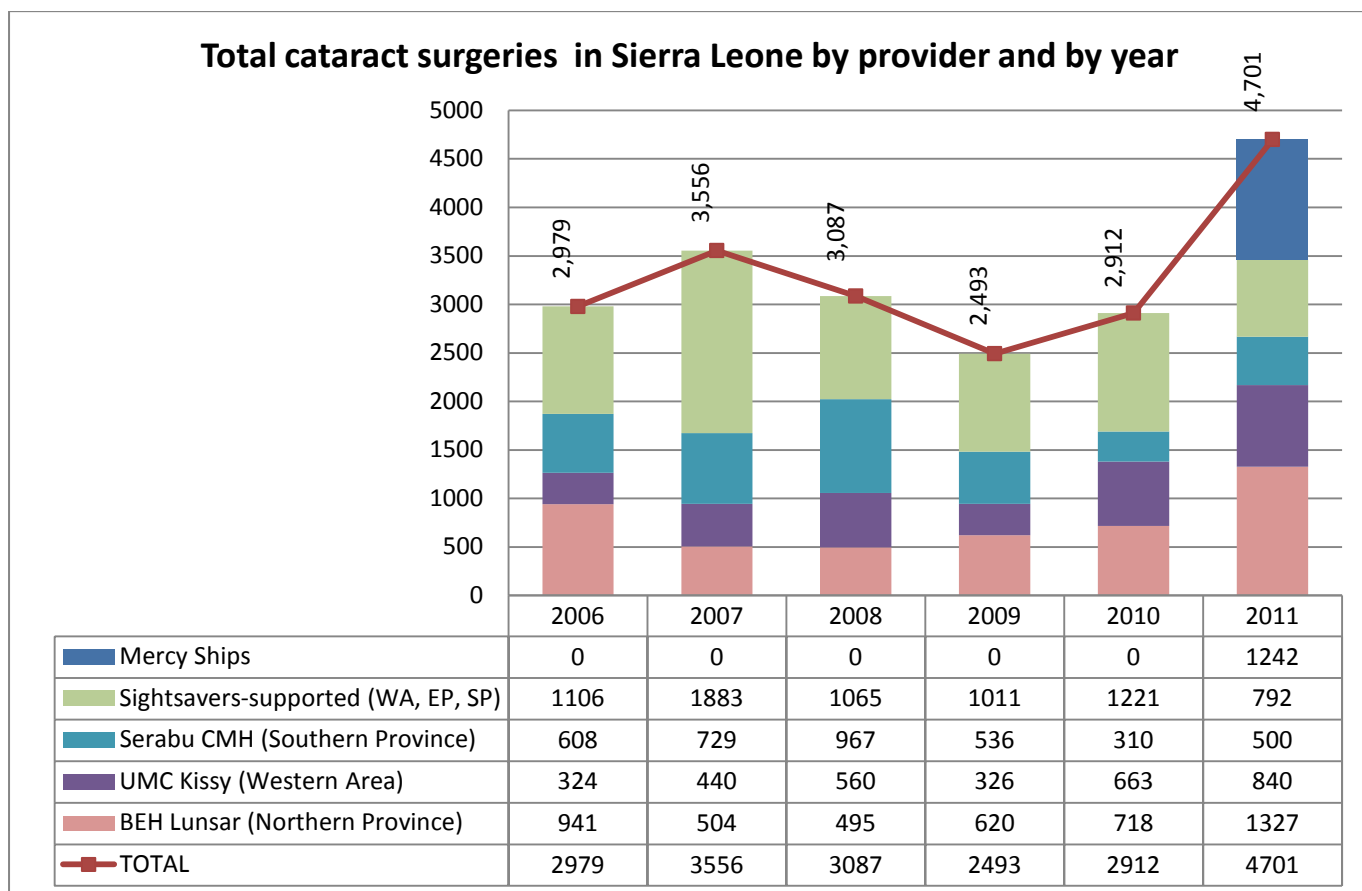
the surgeons in Sierra Leone will have an impact on maintenance of surgical quality. For instance, the Kenema surgeons are averaging less than 3 a week; whilst the cataract surgeon at Connaught performs around 10 a week, this is a minimum for maintaining quality.

Since 2006, the larger proportion of cataract surgeries in the country have been done by non-government facilities in all years apart from 2007 where it was about 50:50. Cataract surgeries undertaken in government facilities (“Sightsavers-supported” in Figure 12 below) usually make up around 40% of the total. The RAAB undertaken in 2010 reported that 41% of cataract surgery in the sample was done in government hospitals, 22% in private hospitals, 19% in NGO hospitals, 13% in eye camps and the remainder 5% by traditional couchers.²⁰

Regarding access to cataract surgery across Sierra Leone:

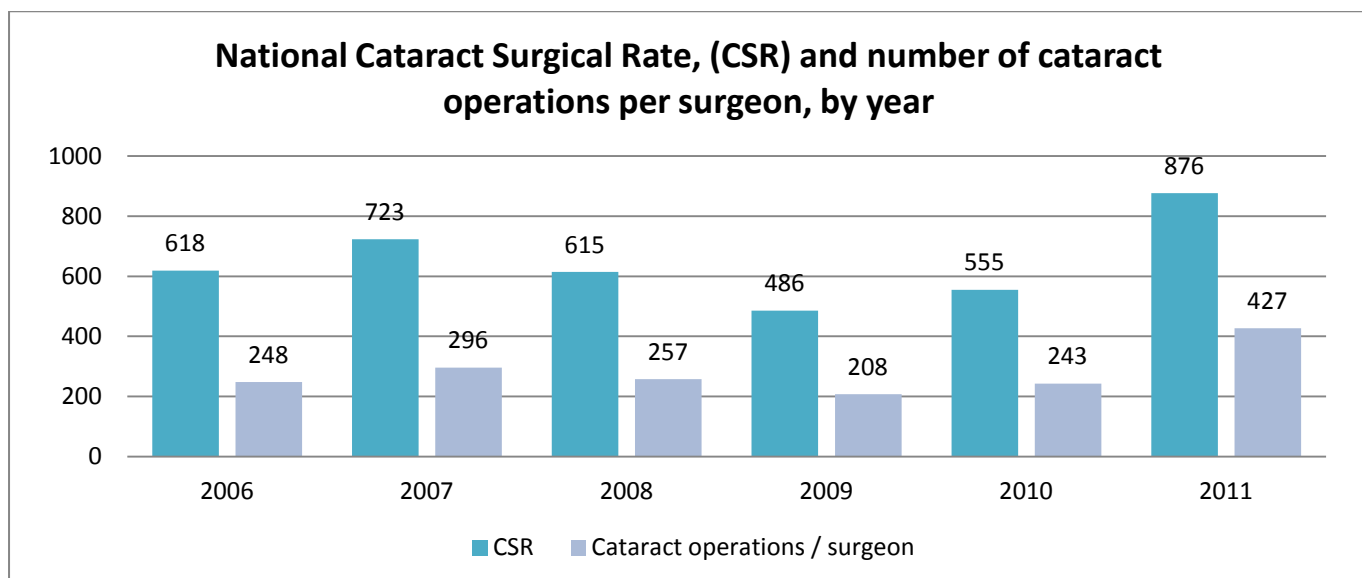
- The introduction of FHCI in 2010 does not seem to have had an impact on the number of cataract surgeries done in government facilities; the number of cataracts in fact decreased in 2011 (Figure 12), likely due to Sightsavers’ shift in model of service delivery away from eye camps towards promoting government clinic-based services. The fact that the FHCI does not cover FBOs may impact on financial access of children under five to *outpatient* services at eye clinics but not on surgeries, as none of the FBOs have sufficient anaesthetic facilities to operate on children: these cases would always be referred to Connaught government hospital.
- In the Northern Province, the only surgeries are undertaken by BEHL, apart from once a year when a team of Italian ophthalmologists come to do surgeries in Kabala (figures do not seem to be counted by the NEHP).
- At Serabu CMH in the Southern Province, there is no year-round provision of cataract surgery: surgeries are done twice a year by an American ophthalmologist who funds the hospital to collect cataract patients during the year and then flies in to do around 20 operations a day for 10 days in January and June, a total of around 400 a year. Although the hospital is in a relatively remote location, the surgeries are provided for free: there is suggestion that this may disempower Bo Government Hospital as patients may weigh up the cost and prefer to wait rather than have surgery at a government facility. The surgeries at Serabu are done by PHACO/SICS methods, which is more expensive but enables faster rehabilitation. The faster recovery and any perceptions about differences in quality may also impact on patient preference, but as neither quality of outcomes nor patient feedback is measured systematically, it is impossible to tell.

Figure 12: total number of cataract surgeries in Sierra Leone, by provider and by year (Source: data collated from reports from the NEHP, Sightsavers and Dr Buchan, the CBM-funded ophthalmologist at collected by Sightsavers and the NEHP for the RAAB, with updated data in 2013 from Sightsavers Reports and NEHP annual data)



N.B. “Sightsavers-supported” refers to the government eye clinics in Western, Eastern and Southern regions, funded by Sightsavers through the NEHP. The figure for Serabu for 2011 is estimated: the number of surgeries reported for Southern Province in 2011 was 706 but this includes activity in Sightsavers-supported government facilities projects *and* Serabu.

Figure 13: National Cataract Surgical Rate, and number of cataract operations per surgeon, by year (Source: as above)



N.B. The number of cataract surgeons used to calculate ‘operations per surgeon’ was n=12 for 2006-2010, but n=11 for 2011 as the government-funded ophthalmologist/NEHP Manager was known to be out of the country. However, as discussed, even when all 12 surgically-trained eye care staff are in the country, they may not all be actually operating, and where they are, some surgeons are doing over 1,000 a year where as others are doing less than 200.

Reasons for the low CSR include low population awareness of treatable eye conditions, productivity of surgical staff, and the intensity of case finding.²⁰

The approach to cataract surgery in government hospitals tends to be to treat patients who walk through the door, rather than to match service provision with levels of need. If the right eye care indicators are chosen the upcoming PBR mechanism may incentivise government-clinics to do more outreach and surgery, in a similar way that FBOs currently have more motivation to undertake outreach to obtain funds.

Despite the low CSR, there are a number of strategies that have been shown to be effective in increasing numbers, including radio messages, free cataract surgery and outreach. Interviewees reported that patients in Sierra Leone are generally afraid of healthcare, and present very late. Where there are concerns about quality (“you go to the hospital, they spoil your eyes”), this will have an impact on patient access. In addition to the fear factor, there is suggestion that low numbers of people attending for cataract surgery is also due to cost: when there is money for free surgery, government facilities are able to find enough patients to operate on.

Offering free cataract surgery is not a long term sustainable scheme, but it may be part of a strategy to increase the numbers of patients, particularly from targeted rural areas which are likely to have greatest unmet need. If they can then be assured of the quality, this will reduce the population fear of eye health services and increase access. However, there is a delicate balance: the numbers of surgeries undertaken in government facilities are currently low and so quality is unlikely to be high as surgeons are not doing enough surgeries to keep their quality up. It is important to boost numbers of cataract patients treated; however, as quality is currently poor, there must be a sensible strategy to increase quality at the same time as quantity.

Glaucoma

Glaucoma is the second leading cause of blindness in Sierra Leone, according to the RAAB, and is being diagnosed in all eye clinics. However, glaucoma surgery is not provided by any government facilities. Only UMC Kissy Hospital, Serabu and Choithram private hospital undertake any at all, and numbers are low. Outcomes are poor in the majority of cases and so neither staff nor patients are motivated to do it. There have been discussions about training cataract surgeons in glaucoma surgery, but until the quality of ongoing cataract surgery can be assured, it is not worth trying to provide this more complex surgery where outcomes tend to be poorer anyhow.

The new CBM-funded ophthalmologist who will be posted to UMC Kissy from March 2013 on a 2-year contract is reported to be a glaucoma specialist, so there may be opportunity to use his skills to lead a programme of training for glaucoma surgery, and to and mentor and/or supervise surgeons. The MOHS would have to sanction this training.

School screening

There is no district budget for school screening: all costs are met by Sightsavers and screening outreach is generally organised between the eye staff and their facilities. The NEHP aims to cover every school once a year but there are limitations, mainly staff numbers and transport.

Currently, there is no school screening outreach to the Northern Province.

The new EC/SCB proposal contain high targets for numbers to be screened, so this will need to be undertaken by eye care staff, and monitored, to meet targets.

Refraction and Low Vision Services

There are public sector refraction units in Bo and Connaught, both set up through the support of Vision Aid Overseas, and a full optical unit is being set up in Kenema in 2013 through Vision Aid Overseas funding. Services in government facilities are often constrained by lack of lenses and supply of frames that people want, and clients often decide to go to Freetown instead. There are optical units in each of the faith-based hospitals providing eye care services.

Ideally, the NEHP Plan sets out that there should be one refractionist for every 100,000 population, working at the secondary level (district hospital) alongside an Ophthalmic Nurse, to provide refraction/optical services at the clinic as well as local schools within the catchment area.²¹ However, there are only refraction and low vision staff in 4/14 health districts: Western Area Urban (at both Connaught and UMC Kissy); Port Loko; Kenema and Bo (at both the government hospital and at Serabu CMH).

It was reported by some interviewees that as well as a lack of comprehensive coverage, there are also issues with community perception regarding the use of spectacles.

The private clinics in Freetown do refraction and sell glasses and contact lenses. There are also reports that they treat some eye conditions which is not within their remit or expertise. The NEHP should advocate for this to be regulated by the Sierra Leone Medical and Dental Council.

Other eye programmes

- **Onchocerciasis programme**

The Onchocerciasis programme comes under the Neglected Tropical Diseases (NTD) programme, under the Directorate of Disease Prevention and Control at the MOHS. The NTD Programme Manager coordinates with districts where Onchocerciasis is endemic, and the DHMTs are responsible for implementing integrated¹⁵ drug distribution activities. Collaboration and coordination with the NEHP has strengthened over the past few years:

¹⁵ Ivermectin and Albendazole, for Lymphatic Filariasis together with Onchocerciasis

the NEHP Manager has been involved in training PHU staff in basic eye care (how to recognise red eye and conjunctivitis, and refer where necessary), alongside NTD training to act as Community Directed Distributors (CDDs). HKI evaluations highlight that the programme is effective, and that whilst some do not take the drugs, it is not a problem of logistics (the drugs are there, even in the remote areas of Bonthe) but rather of awareness and compliance. The NTD programme is highly donor-dependent, with funding and drugs from Sightsavers, HKI, and WHO APOC. However, it appears well-integrated within the structures of the national, district and local health services, using structures and staff already in place.

- **Vitamin A programmes**

The Vitamin A distribution programme has run since 2006 and is funded by HKI and other partners such as UNICEF. It involves twice-yearly mass supplementation which is reaching >85% of the target population. However, the programme now plans to move away from national bi-annual campaigns, towards encouraging the government to integrate the programme within general Maternal and Child Health services, for sustainability.

- **Community Based Rehabilitation (CBR)**

There are a number of CBR programmes in Sierra Leone. BEHL run a CBR project in collaboration with the Sierra Leone Association of the Blind includes training in farming activities and handicrafts for about 30-60 clients each year. The CBR project does not generate income for BEHL: money has to be allocated each year to the programme from internally-generated hospital funds, and the CBR programme is run on a much smaller scale than before the war.

Sightsavers also partners with SLAB to provide education centres for the blind in the four regional centres, as well as training for CBR staff in advocacy, and Special Educational Needs training for the Ministry of Education. Sightsavers is advocating for the CBR work to be absorbed within the MOSW programmes.

Sightsavers and HKI work with SLUDI, Handicap International, Leonard Cheshire and Plan International on a programme to empower disabled people's organisations to advocate for the rights of their members, particularly with regards to social inclusion. Sightsavers is now working with Plan, the Ministry of Education and other partners to advocate for and promote inclusive education for disabled children.

Integration of eye care with other health services

In general, there is insufficient focus on prevention of poor eye health, from community level such as increasing population awareness of eye health and available services, through to national policies, for instance on work place health and safety.

Primary Health Care

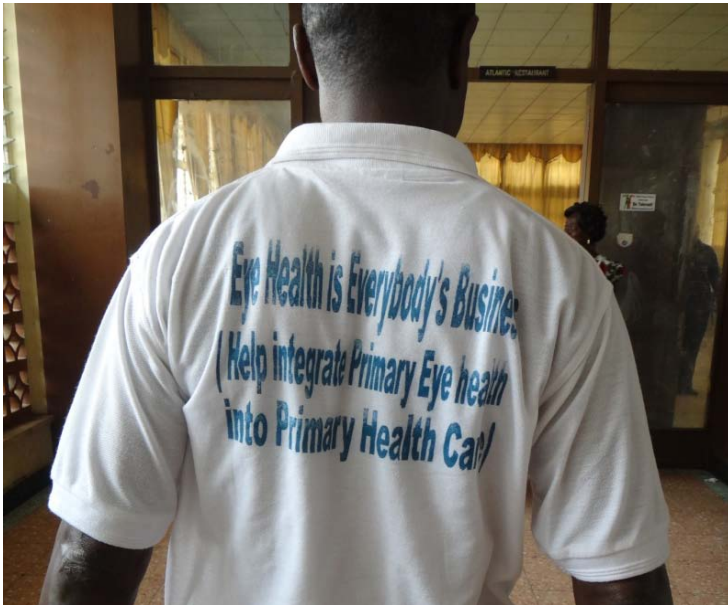
The structure of the Sierra Leone primary health system should support early detection, basic treatment and referral of eye health problems as each health centre is staffed by health care workers with some basic information about eye diseases. However, although the network of PHUs with staff trained in basic eye care theoretically provides a good referral system, in practice, the referral rate is generally poor.

There has been a programme of training a cohort of Community Health Workers from all provinces in basic eye conditions over the past 3 years, 40 per years per province. This has been supported financially by Sightsavers and HKI, with support from DHMTs who have chosen the facilities to target, and the facilities then choose the individuals to receive training.

Some areas have run specific training for the local Community Health Officers from PHUs, with the aim to increase referrals into the eye units. For instance, UMC Kissy ran a week's residential training for CHS in the Western Area (within 2 miles of the hospital), providing textbooks and basic diagnostic equipment such as torches, as well as putting in place financial incentives for referrals (10,000 Le per patient). However, when auditing their 13,000 annual outpatients to see where they came from, the vast majority were self-referrals: only one or two were referred from CHOs/PHUs, which suggests that although the structures and staff are in place, the referral system is dysfunctional. Some suggestions for why this might be include a loss of perceived power or of income to the CHOs if patients are treated elsewhere. Reasons for low referral from PHUs into eye care services should be explored, and investigation into areas where it was reported to be working better (e.g. Kabala), in order to maximise the potential for an effective bottom-up referral system. It may be that 1 week is not sufficient, and that a more structured programme, such as the new programme to enable CHOs to specialise in ophthalmology, is necessary.

There are a number of opportunities to strengthen the inclusion of PEC in PHC, through effectively using the network of PHUs across Sierra Leone to recognise, filter and refer patients appropriately. There are also Community Directed Distributors in every village who are already used to support NTD programme, and distribute anti-malarials. They could be used to increase eye health sensitisation at community level, or trained to identify cataract patients.

Picture 3: T-shirt with the theme of World Health Day 2012: Eye Health is Everybody's Business



Other specialities

There is a lack of standard referral protocols between eye care and other specialities, for instance diabetes. Although there may be referrals within facilities, other specialities tend not to be proactively check for eye conditions and only refer once symptoms are detected.

The separate funding mechanisms for drugs and consumables used by Sightsavers-supported government-run clinics in the Western Area, Eastern and Southern Provinces is useful as a mechanism to improve stock control, but hinders integration of eye services into general health services. For instance, eye care staff reported hospital administration saying “you keep saying that the eye unit is part of the hospital but we have no control over them or their money, and their pharmacy is physically separate from the main pharmacy”.

Quality and Quality Assurance

National standards

There is no evidence of a standard quality assurance policy and quality monitoring, either nationally for the whole health service, or for eye health specifically. However, the NEHP has recently adopted the IAPB standard list (2010/2011) as the new national standard for procurement of evaluated eye care products and equipment for primary and secondary level eye care units.

Continuity of care

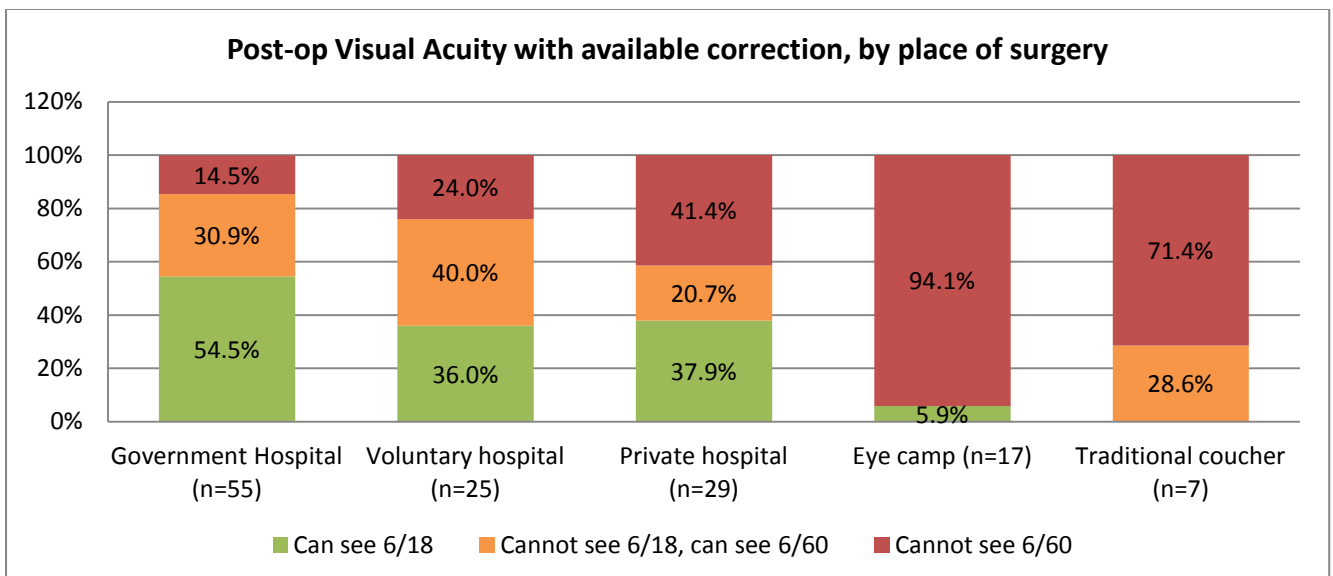
Where eye surgery is done for free by faith-based hospitals, there can be a low follow up rate. This has been reported as a problem particularly for Serabu hospital where surgery is only done twice a year, and patients do not tend to attend for follow ups there, but at other providers such as Bo. There needs to be a shared responsibility, a whole sector approach to continuity of care.

Outcomes and monitoring

Data on quality of eye care service delivery, for instance cataract surgical outcomes, is not generally available. The 2010 RAAB did report on visual outcomes in the sample of those aged 50+ after cataract surgery: 35.3% of the operated eyes could not see 6/60; with pinhole this reduced to 25.6% while the proportion that could see 6/18 increased from 38.3% to 57.9%. The visual outcome with couching and non-IOL surgery was much worse compared to IOL surgery.

Interestingly it found that the cataract surgeries done in government hospitals had better results in terms of post-op Visual Acuity compared to the other surgical facilities (private, faith based, eye camp or traditional), although the numbers were small, and the reasons for poor outcome included inadequate optical correction, possibly due to limited optical services, see Figure 14. The proportion of surgical complications was found to be relatively low but there is room for improvement.²⁰

Figure 14: Post-op Visual Acuity with available correction, by place of surgery (Source: RAAB 2010)²⁰



Although tools are available online and paper-based materials have been made available to all institutions undertaking cataract surgery in Sierra Leone, surgical outcomes are not recorded systematically, or audited. It should be a mandatory requirement for all eye health professionals undertaking surgery to produce regular audit figures, to monitor their own results over time and measure the quality of their work, in order to modify procedures and improve future outcomes (NOT to compare results of individual surgeons or eye units). This must come from the MOHS, and could be tied to financial incentives. For instance, CBM will not release the next tranche of funds to UMC Kissy unless they report their cataract surgical outcomes; the same could be implemented for Sightsavers/NEHP-supported facilities. The NEHP Manager plans to include a requirement to monitor cataract surgical outcomes into the new National Eye Policy.

Where the loss-to-follow up ratio is relatively high, it is more challenging to follow up cataract surgical outcome. This may be more of a problem for FBOs undertaking surgical outreach in rural areas away from the main facility.

Cataract surgical outcomes monitoring must be standardised and compulsory for everyone who operates. Until quality can be assured, through monitoring and supervision, it may not be wise to focus on an increase in cataract numbers.

HUMAN RESOURCES FOR EYE HEALTH

Key Findings

Strengths

- General health care staff working in primary care are trained in basics of eye care.
- Key eye care staff (Certificate and Diploma Ophthalmic Nurses, and Ophthalmic Community Health Officers) can now be trained in country due to available funds and training courses.
- Consortium EC/SCB funding is available to address some of the key gaps in eye care staff.
- MOHS recognises the need for eye care staff, and strategic HRH planning includes eye care.
- Eye care staff salaries have so far been absorbed into the MOHS payroll.
- Where local councils and DMOs are engaged, they have pushed for eye services and training of eye care staff to be included in district budgets.

Weaknesses

- Significant gaps in numbers of eye care staff, and inequitable distribution compared to the population distribution, particularly in the Northern Province and outside urban areas.
- Cataract surgeons cannot be trained in Sierra Leone.
- Nurses and doctors are not attracted to specialise in ophthalmology.
- The pool of staff eligible to train as Cataract Surgeons is limited, and current delays in training Ophthalmic Nurses impacts on the throughput required to train Cataract Surgeons in the future.
- Training costs met by Sightsavers rather than MOHS.
- Lack of systematic refresher training for eye care staff.
- The skill shortage and HR shortage in eye health in Sierra Leone represent constraints on effective supervision.

HReH: numbers and distribution

There are gaps in both numbers and distribution of eye care staff. There are not enough staff to cover all the districts, but the distribution of HReH is also inequitable between provinces and particularly compared to the population distribution. Five out of the 13 districts have no eye care personnel at all. This is a particular issue in the north, where three of five districts have no eye care staff. Comparing Figure 15 with Figure 17 highlights that the Inverse Care Law ("the availability of good medical care tends to vary inversely with the need for it in the population served")²⁴ is evident in the provision of eye health services in Sierra Leone. At a province level, there is a mismatch between population density (concentrated in Northern Province) and eye care staff (mostly in Western Area). Although the WA Urban District does have the highest proportion of the population compared to other districts (16%, Figure 15) it has *disproportionately* more of the HReH, with between 40-70% of the total of each of the cadres of eye health staff (Figure 17). See also Table 6 and Figure 7 earlier in the Report.

Figure 15: Distribution of population in Sierra Leone, by Province or Area (Source: Census 2004)

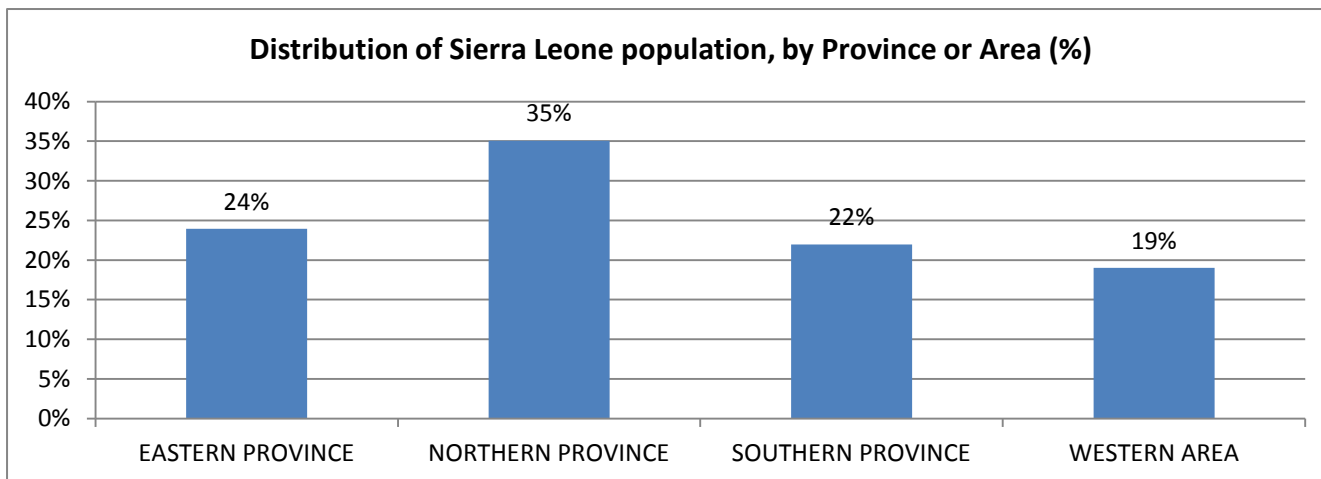


Figure 16: Distribution of population in Sierra Leone, by District (Source: Census 2004)

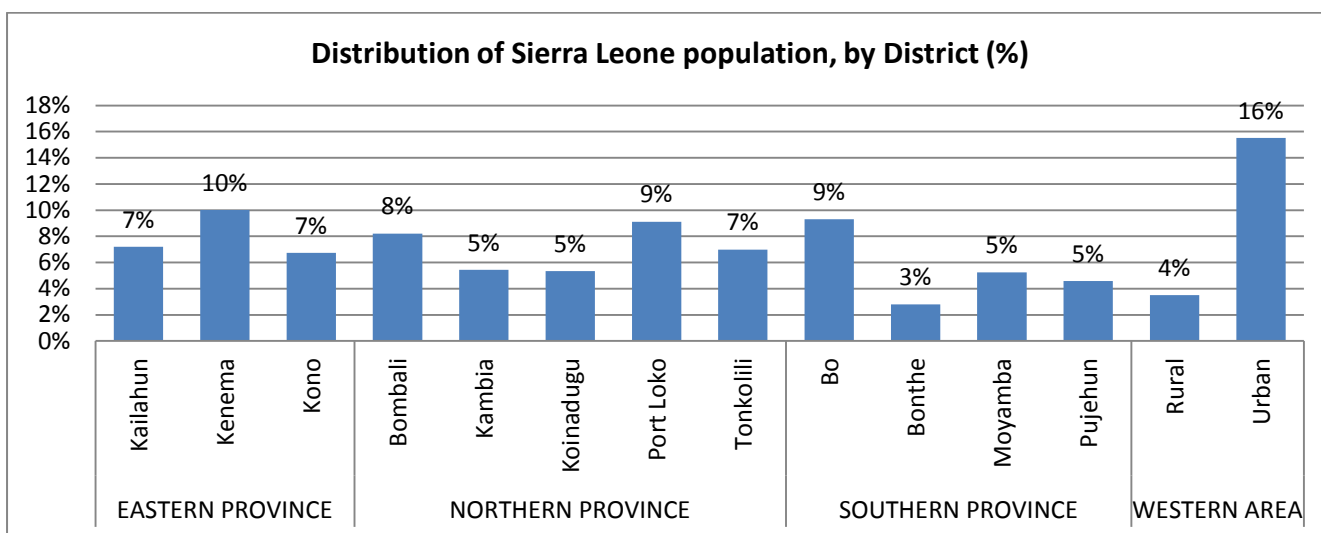
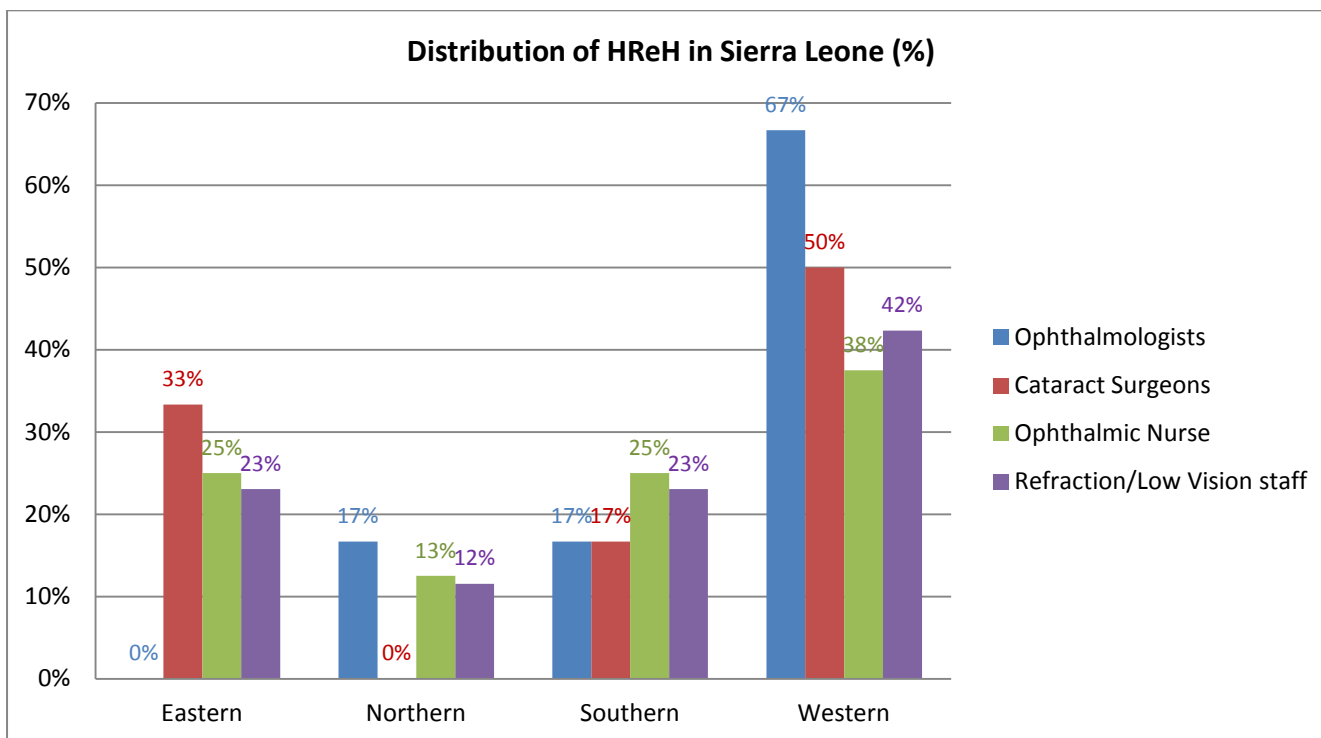


Figure 17: Distribution of HReH in Sierra Leone, percentage (Source: National Eye Health Programme)



Reasons for inequitable distribution include both historical and current service and funding arrangements (government vs. Sightsavers vs. FBO), as well as the challenges of getting staff to work in remote areas, and of engaging districts to support specialist training for personnel from their facilities. The distribution also masks differences in productivity, for instance of surgeons.

In the longer term, funding through the EC/SCB programme should increase the number of eye care staff available and improve distribution particularly of ONs within the next 2-4 years, and Cataract Surgeons within the next 4-6 years. In the meantime, there are opportunities to move existing staff around to improve the distribution, based on size of population rather than historic arrangements.

Training of Sierra Leone eye care staff

Specialist eye staff trained internally in Sierra Leone include State Enrolled Community Health Nurses (SECHNs) trained in ophthalmology in Freetown (designated Community or Certificate ONs, CONs), and more recently, CHOs specialising in Ophthalmology (OCHOs), who can now be trained in Njala University, Bo. From early 2013, State-Registered Nurses (SRNs) will be able to access specialist training in ophthalmology in Freetown to become Diploma Ophthalmic Nurses, DONs (a cadre that is then eligible to train as Cataract Surgeons).

The EC/SCB project aims to train 6 of each of these new cadres of eye staff (DONs and OCHOs) per year, for 4 years (24 total), with the plan that the training costs will be absorbed within the MOHS in the future. The capacity of the MOHS to absorb training costs of eye care staff into mainstream funding after 2016 is a potential threat to monitor. All other eye care cadres (ophthalmologists, optometrists) are trained outside of Sierra Leone, for instance in The Gambia, Ghana or Malawi.

There are plans underway to standardise the curriculum for all community health cadres across countries in West Africa. There is an opportunity to advocate to those involved in this process from the Sierra Leone MOHS or training institutions to make sure that basic eye care is included in all curricula.

Specialist training does not lead to an increase in salary, and ophthalmology is not seen as a lucrative career choice: this impacts on numbers choosing to enter specialist training (CHOs, DONs, CONs).

Specific findings for different cadres of eye care staff in Sierra Leone

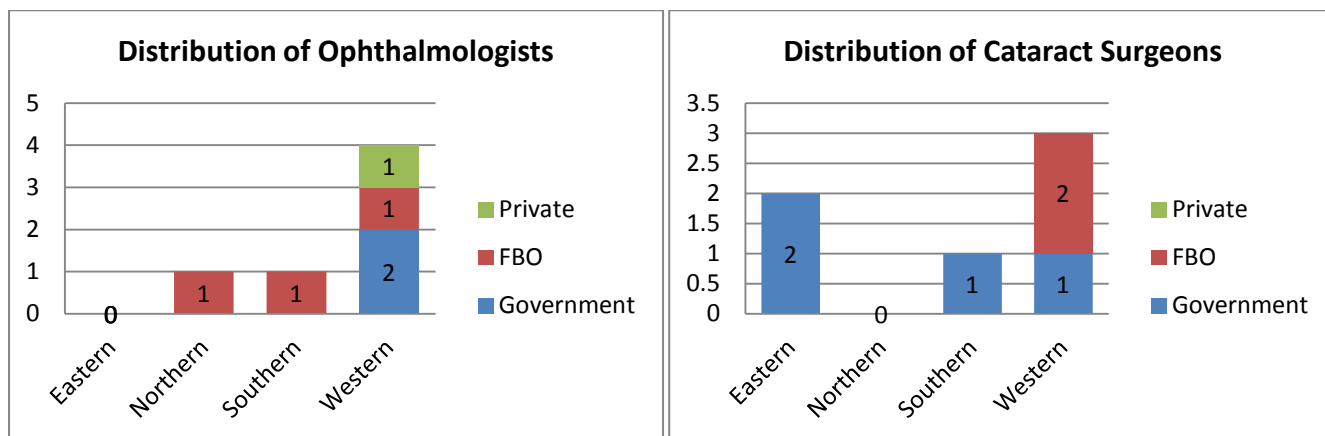
Ophthalmologists

The figures below show the general distribution of ophthalmologists and cataract surgeons across Sierra Leone, although as discussed, productivity also needs to be taken into account as a significant proportion are doing little

or no cataract surgery (Choithram, Kingharman Road), or only for 2 weeks in a year (Serabu). Although there are nominally six ophthalmologists in Sierra Leone, there is only one active government-funded ophthalmologist undertaking cataract surgery for a country of nearly 6 million, and he is also the NEHP Manager and so is mainly administrative; the only other active full time ophthalmologists are the CBM-funded doctors at UMC Kissy (currently not in post) and BEHL.

The VISION2020 target ratio is at least one ophthalmologist per 250,000 population. Using an estimated population of 5.4 million, Sierra Leone needs about 22 active ophthalmologists (and/or alternatives, such as Cataract Surgeons), although population growth should also be taken into account. The EC/CBM project includes funding for 6 ophthalmologists (and 8 Cataract Surgeons, discussed below). However, interviewees reported that the intake of ophthalmologists is low as doctors do not look at ophthalmology as a lucrative career. Intake into specialist medical training for eye care must be addressed.

Figure 18: Distribution of staff able to perform cataract surgery: Ophthalmologists and Cataract Surgeons (Source: NEHP)



N.B. one of the two “Government” ophthalmologists is the NEHP Manager, the other is Chinese ophthalmologist working at the Kingharman Road Hospital.

Cataract Surgeons

Cataract Surgeons are ONs with an SRN or Ophthalmic Medical Officer (OMA) background who have had further training in surgery. The distribution of the six Cataract Surgeons is slightly more equitable than that of ophthalmologists, although there are none in the Northern Province.

Eight additional Cataract Surgeons are due to be trained under the EC project. However, training is not available in Sierra Leone, and there are some concerns about the quality of training available in The Gambia. This should be reviewed by the EC/SCB Consortium prior to funding any training. In addition, whilst in training, ONs will be taken out of the pool of practicing eye care staff in Sierra Leone.

A risk to the EC/SCB training plans is that currently there are no government-funded eye health staff who are eligible to be trained as Cataract Surgeons, although there are plans in place to train both DONs and OCHOs.

However, there are delays to the SRN ophthalmology training programme due to start in early 2013 which may limit the pool of available staff to train as surgeons by 2016. As there are many more SECHN-background ophthalmic nurses than SRNs but Ophthalmic SECHNs are not eligible to train as Cataract Surgeons, it might be possible to develop a one year course to upgrade Ophthalmic SECHNs to Ophthalmic SRNs in order to get around this problem.

If all the proposed ophthalmologists and cataract surgeons are trained, Sierra Leone will nominally meet the VISION2020 targets for ophthalmologists/equivalent by 2020. However, this assumes that

- a) none of the existing cohort or newly trained staff leave the country, or retire (in general the cohort of Cataract Surgeons in Sierra Leone are older, and there is need for a younger cohort of surgeons to be trained),
- b) that funding via CBM/FBOs for the salaries of two ophthalmologists and two Cataract Surgeons continues,
- c) that all are fully active in patient care, including surgery.

Discussions are underway with the MOHS to clarify the status of cataract surgeons and mid-level eye care staff, through the updates to the national HR Scheme of Service.

Ophthalmic Nurses

The NEHP V2020 plan 2008-2013²¹ set out an aim that “Each SECHN Ophthalmic should ideally be responsible for a 30-50,000 population” but recognising that this cannot be achieved in the five year period, set a more realistic target of 100,000 (the VISION2020 target) by 2013. Based on a national population of 5.4 million, the first target equates to between 108-180 Ophthalmic Nurses (or equivalent mid-level personnel such as OCHOs); the second, to 54 SECHN Ophthalmic Nurses

Neither of these targets have yet been reached: there are currently 41 ONs in Sierra Leone. This is a ratio of 0.8 per 100,000 population. The majority (40/41) of ONs in Sierra Leone are Community Ophthalmic Nurses, who can treat simple eye conditions, then refer, but are not eligible to train further as Cataract Surgeons. There is one ON with an SRN background (apart from the 6 Ophthalmic Nurses who are already trained as Cataract Surgeons).

The EC/SCB project plans to train 24 ONs and 24 OCHOs by 2016.

Specialist training:

- **Community ONs, or CONs:** State Enrolled Community Health Nurses train in ophthalmology at the College of Medicine and Allied Health Sciences in Freetown, part of the government-run University of Sierra Leone (12 months of specialist training followed by a 6 month placement). Training is highly dependent on external

funding from Sightsavers: for instance no nurses were trained in 2012 (Table 10) due to lack of external funding.

- **Diploma ONs, or DONs:** a course is about to start in early 2013 for more State Registered Nurses to specialise in ophthalmology (12 months training, 6 months placement). DONs can treat simple cases as well as diagnose and treat more complex cases than CONs. Only these SRN-background ONs can become Cataract Surgeons.

Table 10: *Numbers graduating as Community Ophthalmic Nurses (Source: NEHP)*

Year	Number graduating
2010	13
2011	9
2012	0
2013	6

Nurses for specialist training are recruited from the districts so they return to their respective districts after training. A criterion for staff chosen for specialist training in eye care (e.g. CHOs, DONs and CONs) is that they are already on a government-salary. This ensures that once training has finished, there are no problems absorbing the new eye care staff into the government workforce, particularly since specialist training does not lead to an increase in salary. However, nurses often volunteer for a few years prior to being absorbed onto the government payroll, sustaining themselves through informal income streams, so the pool of nurses available to undertake specialist training may be relatively small.

In Sierra Leone, the government-funded salary of a nurse may only make a proportion of their total income, as there has historically been a culture of charging patients additional fees and selling drugs direct to patients. This is likely to still be the case to some extent, despite the increases in salaries of health care workers through the introduction of the FHCI. This may impact on the desire of nurses to specialise in ophthalmology as their government salary will not increase but their informal income may be affected. If this is the case, this needs to be taken into account in attracting nurses to specialise in eye care, and may be a risk to the delivery of the EC/SCB programme to train 24 Diploma Nurses by 2016 (and subsequently to train enough Cataract Surgeons).

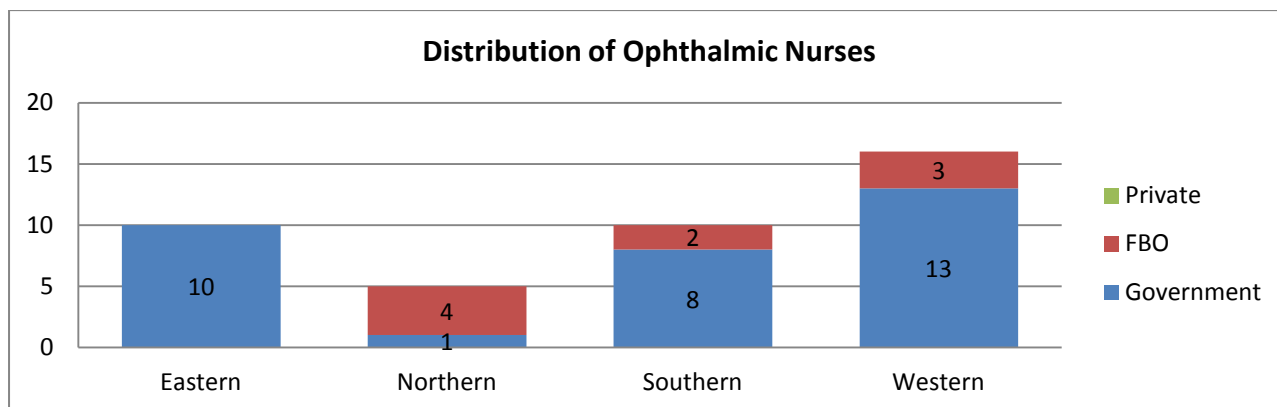
There are 32 government-funded ONs (excluding Cataract Surgeons), which is enough for 2 per district (although this does not take into account the different needs of district vs. regional hospitals). However, the distribution of ONs is inequitable. For instance, Connaught Hospital has 13 ONs as the Regional Hospital in Makeni has none.

The NEHP has already redistributed some staff, for instance two of the four FBO-based ONs in the Northern Region (see Figure 19) are on the government payroll. The NEHP also plans to redistribute others, for instance, to send two ONs to the Kingharman Road Hospital in Freetown, to move two ONs from Kenema to Kailahun and Kono (also in Eastern), move one ON from Bo to Bonthe (also in Southern), and to move one from Connaught in Western Area to Kenema (Eastern). This has been requested by the NEHP but needs to be agreed by the HRH Director. However, these plans mainly involve redistribution of ONs within provinces, and whilst positive, this does not address the inequitable distribution across the country, seen in Figure 19.

Part of the challenge is that nurses are supported for training from within their regions, so in the longer term, districts need to be encouraged to send nurses for specialist ophthalmology training. At a local level, where local councils and DMOs are engaged, they have pushed for eye services and training of eye care staff. The NEHP Manager reported that they have put a hold on DMOs in the Southern and Eastern Provinces sending nurses for ON training, and have encouraged DMOs in the Northern Province to send SRNs for training.

There may be opportunity for the NEHP to source other funds, for instance, two nurse assistants from Kabala are currently in training at BEHL, funded by Italian funds, and will return to Kabala. There may be available funds from the same source in the future for more training.

Figure 19: Distribution of Ophthalmic Nurses (Source: NEHP)



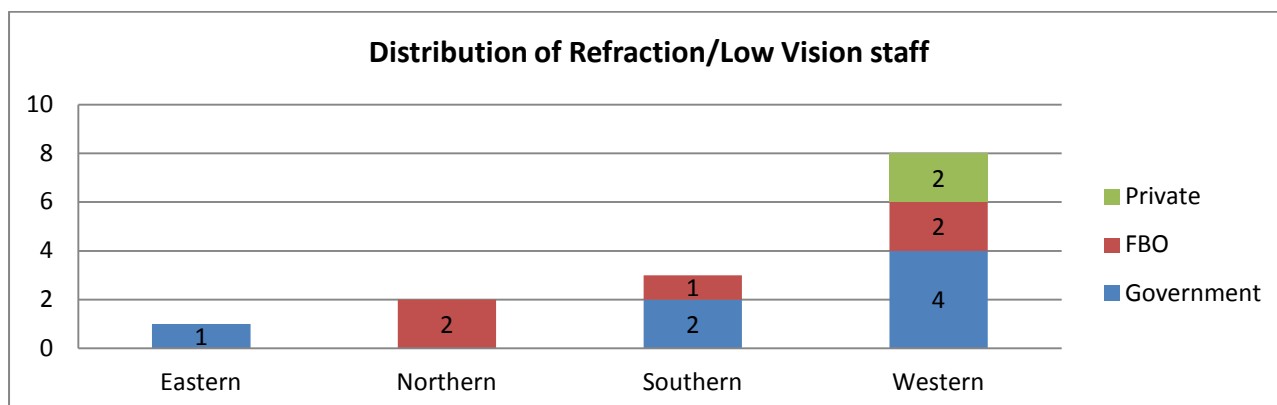
A cataract surgeon in each of the Western, Eastern and Southern regions has been designated as the area Eye Health Programme Manager. There is no additional salary associated with this position. There is no Programme Manager for the Northern Province: as soon as more government-funded eye care staff are transferred to this region, one should be appointed, to further build relationships with FBOs in the area, and supervise staff.

Refraction and Low Vision staff

The figure below highlights that the distribution of refraction and low vision staff is also inequitable.

There is currently a government optometrist in training in Malawi, who will be based at Connaught hospital but with travel around the country.

Figure 20: Distribution of all Refraction/Low Vision staff: Refractionist, Optometrist, Optometrist Technician, and Optical Technician (Source: NEHP)



Other staff supporting delivery of eye care

In September 2012 a group of 6 CHOs have begun to specialise in ophthalmology, with 1 year specialist training at Njala University in Bo, and will be known as OCHOs. There are also plans to train CHOs in Paediatrics, Mental Health and other sub-specialities. The first OCHOs to graduate in 2013 will be posted to district hospitals where there are currently no eye care staff, with the longer term plan that they will work at PHU level to strengthen the integration of Primary Eye Care into Primary Health Care. Once trained, and following 2 years’ work experience, OCHOs will be eligible to apply for training as Cataract Surgeons.

The staffing of PHUs in Sierra Leone theoretically supports delivery of Primary Eye Care, as each CHC is staffed by a Community Health Officer with some training in diagnosing and treating basic eye conditions, and all SRNs and SECHNs have a short rotation through an ophthalmology department during training. However, in practice, there are very different rates of referrals from PHUs to eye care units: it was reported to be working relatively well in some areas, such as Kabala, where as others reported next to no referrals despite additional training.

Each part of the NEHP (Eastern, Southern, Western areas) has been training at least 40 people from PHU staff in the basics of eye care each year for the past 3 years. In addition, the Western area has been responsible for training 40 staff from parts of the Northern Province. This has been done in collaboration with the DMOs.

To date this has been sponsored by Sightsavers and HKI; in the new EC/SCB project plan, the training of primary eye care workers at PHUs has been delegated to CBM in the north and Eye Health Programme Managers in the other regions.

National Policies and strategic workforce planning

The FHCI programme has improved the salaries of government-funded health workers, including eye health staff (although has also led to increased demand and pressure on staff).

A national Scheme of Service was developed by the MOHS in 2012 to cover salary, qualifications, key duties and reporting structures for all cadres of health workers in Sierra Leone, including eye care workers. Prior to this, eye care staff were included in the national Scheme of Service under general categories of nurses and doctors. The NEHP and Sightsavers were involved and the section covering ophthalmology includes the following eye health cadres: Optical Technician, Optometric Technician, Optometrist, Ophthalmic Nurse (Diploma), Ophthalmic Surgical Nurse (commonly known as cataract surgeons), Ophthalmic Community Health Officers.

The Sierra Leone Strategic HRH Plan 2012-2016 developed by the MOHS¹⁹ includes the following output indicators under the 'Increasing output through training' heading (deadline of December 2016):

- *Training 30 ophthalmic nurses at 6 per year*
- *Sponsor 22 doctors to undertake specialist training in Ophthalmology @ intake of 5 per year*

The NEHP V2020 plan 2008-2013 includes a detailed Human Resource Development analysis plan for each of the 4 Regions,²¹ and the EC/SCB programme 2012-2016 is based on a strategic analysis of key gaps in HReH in Sierra Leone.

The new national HR Database which will be rolled out over the next few years will include all eye care staff employed in government facilities (although not FBOs or the private sector), and provides the opportunity for the NEHP to analyse HReH and use the data to plan strategically, for instance to look at age distribution and anticipate HReH gaps due to retirement. It will capture information about training and refresher courses so could be used to track training requirements.

Curriculum development and relationships with training institutions

To date, Sightsavers has provided funding for the training of all existing government eye health workers, included funding for lecturers, curriculum development, and stipends to students. The number of students on each course is pegged to the amount of funding available. Relationship between the NEHP, the funders, and the training institutions appears relatively collaborative.

The curriculum, for instance for the Community Ophthalmic Nursing course, is reviewed every 2 years, with feedback from students, service providers and partners regarding whether it is relevant.

Continuing Professional Development (refresher training)

There is a lack of systematic refresher training for eye care staff. Some regular training is provided by senior eye care staff in some facilities, for instance regular in-service training at Connaught Hospital (Picture 4) and sessions provided by the CBM-funded ophthalmologist at BEHL for ophthalmic nurses.

There is some ad hoc national training, for instance Serabu organised a national eye health update day for all eye health staff in Sierra Leone, as a one-off and paid for by the American ophthalmologist; UMC Kissy provided training in SICS surgery for eye care staff in Sierra Leone, including staff from the NEHP working in Eastern and Southern provinces with funding from CBM. Otherwise there is no national budget for these type of events. Some staff missed out on all training opportunities, for instance the ON in Kabala, Northern Province, did not receive any training in 2011 or 2012.

Theoretically health staff registered with professional bodies such as the Nursing and Midwifery Board need evidence of continued education to maintain their standing, but in reality there is a lack of continued training and it does not appear to be closely regulated by the professional bodies. Some government facilities where the eye care department is supported by Sightsavers reported that refresher training was available in subjects such as post-operative management, but that eye care staff were not included on the training. In general, refresher training is reliant on including any training plans within District Plans, and this is often lacking for eye care. The MOHS is currently developing a study leave plan: NEHP should make sure to be involved in these discussions.

Picture 4: Timetable of regular eye health teaching sessions for all staff working in the Connaught Hospital Eye Clinic

DEPARTMENT OF OPHTHALMOLOGY
CONNAUGHT HOSPITAL
FREETOWN
REVISION CLASSES
NOVEMBER/DECEMBER 2012

NO.	DATE	TOPIC	FACILITATOR	SUPERVISOR
1.	7/11/12	History Taken	Saffiatu Kamara	Dr. M.J. Vandy
2.	9/11/12	Basic Eye Examination	Selina Cole	Dr. M.J. Vandy
3.	12/11/12	Conjunctivitis	Hawa Conteh	A.S.Koroma
4.	14/11/12	Keratitis	Melissa Kargbo	A.S.Koroma
5.	16/11/12	Blepharitis	Miatta Moiwalleh	A.S.Koroma
6.	19/11/12	Scleritis & Episcleritis	Musu Seisay	Dr. M.J. Vandy
7.	21/11/12	Uveitis	John Junisa	Dr. M.J. Vandy
8.	23/11/12	Cataract	Sammy Conteh	A.S.Koroma
9.	26/11/12	Glaucoma	Gibrilla Sesay	Dr.M.J. Vandy
10.	28/11/12	Refractive Error	Tamba Lebbie	
11.	30/11/12	Spectacle Inter rolance	Mabel Kamara	Tamba Lebbie
12.	3/12/12	Endophthalmitis	Isata Keita	A.S.Koroma
13.	5/12/12	Vision 2020	Willie Koroma	Dr. M.J. Vandy
14.	7/12/12	Health Systems	Alex Yokie	Dr. M.J. Vandy
15.	11/12/12	Primary Eye Care	Willie Koroma	A.S.Koroma

Prepared By: _____ Date: 5th November, 2012

Dr. M. J. Vandy

Reporting, Monitoring and Supervision

There does not appear to be a clear supervision system defining responsibilities at each level for eye health. There is little supervision of eye care services by the NEHP in the Northern Province, and no standardised supervision structures/formats/protocols.

In general in the health system in Sierra Leone, supervision seemed to be defined by interviewees more as the occurrence of quarterly visits to facilities to check basic aspects such as cleanliness of facilities, presence of water or electricity, and staff punctuality and attendance, rather than to mentor or support staff to effectively carry out their clinical work, or look at specific clinical indicators of quality. Supervision visits are often hampered by lack of vehicles.

The NEHP is officially responsible for clinical supervision. The NEHP Manager supervises eye care staff and services in the Western Area, Eastern Province and Southern Province on a quarterly basis. The NEHP has not conducted any clinical supervision in the Northern Province in 2012.

These visits are called 'supportive supervision' and in practice, this means the NEHP visiting all eye care providers (including private clinics) at least once a year, along with the relevant regional Eye Health Managers, to undertake the following:

- Technical support
- Provide supplies e.g. drugs
- Participate/observe
- Provide support e.g. to the facility to advocate to DMOs regarding nurses to be sent for training etc.

The NEHP Manager writes a report afterwards, and reports back on visits at the VISION2020 meetings. He does not report back to the facility, but would expect the accompanying regional Eye Health Programme Manager to report back.

The three Eye Health Programme Managers aim to visit all units in the region monthly. Typical activities include going through the hospital log, asking questions about diagnosis/treatment plans, and sitting in the clinic with the nurse. There Northern Province appears removed from the national programme: there is no Eye Health Programme Manager and the ON in Kabala receives no clinical supervision at all. In addition, Serabu in Southern Province seems totally detached from the NEHP, and there appears to be a feeling that as they provide free services outside the government's programme, they do not want to be supervised.

Day-to-day clinical supervision is often missing, particularly outside regional hospitals where there are few eye care workers and especially few senior eye care staff. At facility-level, the medical superintendent is theoretically

responsible for all the health workers in that facility, but although they can monitor activities, they may not be able to effectively clinically supervise a health worker in a different specialty such as eye care. As a result of the lack of senior eye care staff, supervision through the facility management structures tends to be more managerial rather than directly clinical.

There needs to be a shift in the culture of self-assessment and supervision amongst cataract surgeons, towards a willingness to share what is not working as well as the good results of surgery.

MEDICINES, PRODUCTS AND EQUIPMENT FOR EYE HEALTH

Key findings

Strengths

- Health regulations are applied to eye care in the same way as to other health services.
- The National Essential Medicines List and the Basic Package of Essential Health Services drug list include key eye care drugs.
- Separate funding and procurement mechanisms in government-run Sightsavers-funded eye clinics helps to maintain the supply of eye drugs and consumables.

Weaknesses

- Some key eye drugs are missing from the National Essential Medicines List.
- FHCI drugs are sometimes not always available.
- FBOs are not included in FHCI so are not reimbursed for drug spend on children or pregnant/lactating women.
- Specialised eye care drugs are not always available in government hospitals in the Northern Province that are not supported by Sightsavers.
- Separate funding and procurement of drugs and consumables in government-run Sightsavers-funded clinics has a negative impact on integration of eye services into the rest of the hospital.
- Lack of accurate data at national level on eye care medicines and products e.g. financing, prescribing.
- Lack of accurate data at national level on the amount and state of eye care equipment by facility.

Expenditure on eye care medicines and equipment

Eye care drugs and consumables such as eye ointments, gauzes and syringes make up a very small proportion of the total government budget for drugs and consumables, around US\$10-20,000 of the US\$22 million. This included both specialist and primary care drugs. The government does not purchase specific eye care consumables such as cataract lenses, or eye care equipment.

The majority of drugs and equipment come from donors such as Sightsavers (government-facilities) and CBM (BEHL and UMC Kissy), or from cost-recovery mechanisms run by the facilities.

There is a lack of accurate data on financing for eye care medicines at either national or facility level.

Eye Care Drugs

Pharmaceutical policies

Although no eye care personnel are listed as being part of the National Medicines Committee (NMC) to develop the National Medicines Policy, the Sierra Leone National Formulary specifically states that it was developed “*through consultation with the major health program managements, such as Malaria, HIV/AIDS, TB and Leprosy, a number of specialists in the fields of surgery, **ophthalmology**, Dental and Oral Health, Paediatrics, Ear Nose and Throat, Anaesthesia, Obstetrics and Gynaecology, Mental Health on their treatment plans for some of the major health conditions.*”, although the eye care specialist listed was from the ‘Department of Ophthalmology’ rather than the National Eye Health Programme.

The National Formulary includes the National Essential Medicines List (NEML), which does include some eye care drugs (see Table 11), and Chapter Ten of the National Formulary gives detail on doses, drug interactions, potential adverse reactions, precautions, storage requirements, necessary assessments required, and patient or family education necessary for three glaucoma drugs: Acetazolamide, Pilocarpine and Timolol.

However, some key drugs are missing from the National Essential Medicines List, for instance artificial tears and other dry eyes treatments (e.g. Methylcellulose Eye Drops or Rose Bengal Minims), and any anti-allergic treatments for irritated eyes (e.g. Lodoxamide eye drops or Sodium Cromoglycate eye drops). This is important as these preparations are used to treat common eye conditions such as conjunctivitis or red eye, and should be available in primary care facilities if CHOs and Community Health Nurses are expected to treat basic eye conditions. Where these drugs are not available, antibiotics tend to be given which is inappropriate and will contribute to drug resistance.

In addition, liquid paraffin eye ointment (Lacrilube) is missing from the list of ophthalmic diagnostic agents and any combination drugs for glaucoma are missing. Combination glaucoma drugs are more expensive but also are more effective, and some may only need to be used once per day which would increase compliance, a recognised problem with glaucoma treatment. However, relatively little glaucoma surgery is being undertaken in Sierra Leone, but this should be taken into account in future iterations of the NEML.

The National Essential Medicines List also gives a list of Basic Instrument Sets/Equipment for all PHUs which includes a “Minor Surgical Eye Instrument Set”, but no other basic eye care equipment such as Snellen Charts or torches.

Table 11: Ophthalmological Medicines included in the Sierra Leone Essential Medicines List, 2012

THERAPEUTIC CLASS		PHARMACEUTICAL LIST OF THERAPEUTIC CATEGORIES	Category by Prescriber	Category by Dispenser
DIAGNOSTIC AGENTS	OPHTHALMIC DRUGS	Fluorescein, Diagnostic Eye Strips	B	POM
		Tropicamide Eye Drops, 1 %	B	POM
OPHTHALMIC PREPARATIONS	ANTI-INFECTIVE DRUGS	Acyclovir Eye Ointment, 3%	B	POM
		Chloramphenicol Eye Drops, 0.5 %	A	POM
		Chloramphenicol Eye Drops, 1 %	A	POM
		Gentamicin Eye Drops, 0.3 %	A	POM
		Tetracycline Eye Ointment, 1 %	A	POM
	MYDRIATICS	Atropine Eye Drops, 1 %	B	POM
		Cyclopentolate Eye Drops, 1 %	B	POM
		Tropicamide eye drops, 1%	B	POM
	ANTI-INFLAMMATORY DRUGS	Prednisolone eye drops, 0.5%	B	POM
	MIOTICS AND ANTI-GLAUCOMA DRUGS	Acetazolamide Tablet, 250 mg	C	POM
		Pilocarpine Eye Drops, 2 %	C	POM
		Timolol Eye Drops, 0.5 %	C	POM
		Timolol Eye Drops, 0.25%	C	POM
	LOCAL ANAESTHETICS	Ethanol Absolute 99.5% injection	B	POM
		Amethocaine (Tetracycline) eye drops, 1%	B	POM

KEY	MEDICINES CATEGORY BY PRESCRIBER	MEDICINES CATEGORY FOR DISPENSING
	Category A Medicines: Primary Level Prescribers	OTC - Over the Counter (General Stores Item)
	Category B Medicines : Medical Officer/Community Health Officer	POM - Prescription Only Medicines
	Category C Medicines: Senior Medical Officer	
	Category D Medicines: Specialist/ Consultant	
	Category E Hospital Drug and Therapeutic Committee	

The ‘Standard Treatment Guidelines for Primary Level Prescribers’ or the ‘Primary Level Prescribers Formulary’ were developed in 2012, with the aim to improve the effective and rational prescribing, dispensing and use of medicines at the PHU level, taking into account the fact that a large proportion of the prescribers at this level are not adequately trained for the task of prescribing.

Again, the document acknowledges the input of someone from the Department of Ophthalmology, but not specifically the NEHP.

With respect to eye care, it covers the following, and gives a basic treatment plan and contraindications:

- **Baby born with Ophthalmia Neonatorum (neonatal conjunctivitis):** Chloramphenicol 0.5% Eye drops; Tetracycline Eye Ointment 1%
- **Child with Measles:** Chloramphenicol 1% Eye Ointment; Vitamin A
- **Conjunctivitis** Chloramphenicol 0.5% Eye drops; Tetracycline Eye Ointment 1%

The Basic Package of Essential Health Services for Sierra Leone (2010) gives the following list of ophthalmologic preparations, and which tiers of service delivery should stock and prescribe each:

Table 12: *Ophthalmologic preparations listed as Essential Drugs for the BPEHS, 2010*

DRUG		FORM	MCHP	CHP	CHC	HOSPITAL
Anti-infective agents	Tetracycline 1% eye drops	Bottle	Y	Y	Y	Y
	Tetracycline 1% eye ointment	Tubes	Y	Y	Y	Y
	Chloramphenicol 1% eye drops	Bottle	Y	Y	Y	Y
	Chloramphenicol 1% eye ointment	Tubes	Y	Y	Y	Y
	Gentamycin 0.03% eye drops	Bottle	Y	Y	Y	Y
	Timolol Maleate eye drops 0.25%	Bottle		Y	Y	Y
	Timolol Maleate eye drops 0.5%	Bottle		Y	Y	Y
	Hydrocortisone eye drops	Bottle		Y	Y	Y
	Dexamethasone eye drops	Bottle		Y	Y	Y

There are discrepancies between this list and that in the National Essential Medicines List: the NEML does not mention the anti-inflammatory drugs Hydrocortisone eye drops or Dexamethasone eye drops, or the anti-infective Chloramphenicol eye ointment, only the eye drops, and vice versa for the Tetracycline, only listing the Tetracycline eye ointment not the eye drops. The BPEHS also gives a different strength of Gentamycin eye drops (0.3% vs 0.03%). Additionally, there are eye drugs listed on the NEML that are not included on this BPEHS, such as other glaucoma drugs, or any mydriatics for eye examination which whilst not for use at PHU level, may well be necessary at district hospitals.

All facilities should be clear what the minimum range of eye drugs that they should stock is, and the eye examinations and treatments that staff at each level are expected to be competent in carrying out. If there are key eye drugs missing from either the BPEHS or the NEML, the NEHP should advocate for their inclusion, particularly prior to the advent of any health insurance scheme to ensure that vital eye care drugs are not missed for inclusion under any insurance plans.

Procurement, budgeting and stock control of medicines and products

Each year, the NEHP submits an amount to the MOHS for specialist eye drugs: however, allocations are dependent on other priorities such as the FHCI. There is some evidence of inflexibility in procurement and, at least historically, a lack of involvement of eye care professionals in advising on procurement of drugs at the national level – see Case Study 2.

Case Study 2: Procurement of eye care drugs

It was reported that at the national level, those involved in the procurement of the FHCI drugs did not consult with eye care staff, and as a result, the FHCI drugs procured for government facilities included a large quantity of Timolol for glaucoma. This is not a drug usually required in the target population of the FHCI scheme (pregnant and lactating women and children under five), and had specific storage conditions and a short shelf life.

However, eye units were not allowed to sell the drugs to other patients, and so as they could not be used up through the FHCI scheme, the majority of the drugs expired and were wasted.

A similar issue was experienced with another of the drugs supplied through the FHCI: Tetracycline was procured in concentrations of 1% rather than 0.5%, which is not suitable dose for children, but at least this could be given as half a drop so less was wasted.

However, lessons have been learned and the NEHP Manager has since been involved in discussions about eye drugs to include on the FHCI list.

All Primary Health Care drugs are distributed via DHMT, and specialist drugs distributed via NEHP Manager. FHCI drugs (for children, pregnant women and breastfeeding women) are not always available: for instance, they were out of stock in Kabala. It is also often difficult to get access to specialised drugs through hospital pharmacies. For this reason, Sightsavers supplies drugs and other consumables directly to government eye units in Eastern and Southern Provinces and in Western Area. However, interviewees reported that timely procurement can still be a problem, with reports of facilities running out of basic items such as stitches, viscoelastic and lenses. There needs to be improved accountability for proactive, planned stock control.

Drugs are procured separately from the rest of the hospital's drug procurement, from Central Medical Stores or from local wholesale pharmacies. Patients then buy their eye drugs from an outlet in the eye unit, separate from the main hospital pharmacy. Any funds generated by these Sightsavers-supported government eye units are put into a separate bank account, and this revolving fund is used to buy equipment, IOLs, glasses, lenses etc. For consumables, the NEHP has subscribed to the IAPB standard list. The WAEHP is now ordering glasses for themselves, in a supported move towards sustainability and ownership.

Non-government eye facilities procure their own drugs and equipment. For instance, in BEHL and UMC Kissy, there are some funds each year for basic drugs and supplies, and any additional supplies needed are purchased

out of the income generated by user-fees. Interviewees from one of the FBOs reported that they occasionally received drugs from the NEHP but that in general drugs tended to be distributed via the DHMTs, and not to FBOs. They also reported that it was difficult to get hold of anti-fungals in Sierra Leone, and they are expensive. This is a concern as a significant proportion of eye infections are caused by vegetative matter.

A few eye facilities such as BEHL undertake local production of specialised eye care drugs (dilating drops, steroid drops), Bo hospital used to produce drops and other facilities are considering setting up production. There is the potential for the NEHP to purchase eye drops from these facilities at a lower price than in pharmacies, although interviewees were unclear as to whether the drops were actually more or less expensive than from private pharmacies. The NEHP needs to review the local production of eye drops in Sierra Leone, in collaboration with the MOHS Directorate of Drugs & Supplies and the Pharmacy Board who monitor production, to decide whether economies of scale mean that it is better to limit production to one or a few high quality drug producing units, and to set standards for local production and pricing of eye drops. There is a local eye drop technician in Bo whose services are not currently being used: this capacity is under-utilised and skills are likely to be out of date.

There was some suggestion that government nurses may generate personal income on top of government salaries through buying drugs direct from pharmacies and then selling on to patients, with the result that the government hospitals lose drug-related income. If this practice is occurring in government-funded eye care units, it must be stopped as it has a detrimental impact on sustainability.

Pharmaco-vigilance is carried out by the Pharmacy Board, covering drugs sold in both the public and private sectors. Counterfeit drugs are a large problem in Sierra Leone, especially since nearly 100% of drugs are imported as there is very little local manufacturing. There is a recognised problem with street hawkers selling unregulated eye drops. The fines are low and do not deter sellers. The Pharmacy & Drugs Act is currently awaiting ratification, to strengthen regulatory authority and punishments for selling counterfeit medicines.

The government plans to centralise procurement may have both positive and negative impacts on eye health: there is a potential risk to the control that individual organisations have over procurement of essential drugs but a potential benefit in streamlining procurement in the country and reducing the prevalence of counterfeit drugs. As part of this plan to centralise procurement, there may be scope to set up a not-for-profit (or for-profit as the number of surgeries increases) eye health resource centre; an in-country store for lenses, viscoelastics and stitches, with an electronic system of stock keeping which could be monitored remotely by the NEHP or by donors. The life expectancy on these types of products is long so this would be feasible. This would be a resource to both government and non-government facilities, but would need a competent and accountable manager.

Appropriate use

In general, there is a lack of standard protocols for utilisation of medicines, and lack of appropriate training. The National Formulary (for specialist hospital-level care) and the Standard Treatment Guidelines for Primary Level Prescribers (for PHU-level care) were only produced in 2012 so they are not yet well known, and only cover some aspects of eye care. There are plans to distribute the National Formulary via Districts and if funding is available, to train every health centre and hospital prescriber/dispenser how to use it. Eye nurses would be included in any training if it goes ahead.

As far as the assessment team could investigate, there are no guidelines or clinical protocols available for eye care in districts. There may be local facility guidelines or clinical protocols but they are not standard. The Medical Superintendent would be responsible for ensuring the implementation of protocols.

The new national medicine's management information system will in the future be a very useful tool to support effective and timely procurement of eye care drugs, as well as to monitor appropriate prescribing at facility level against an agreed standard. The system is not yet fully functional, and eye health management has not yet been included in the programme to build capacity of staff to use the system: the Directorate of Drugs & Medical Supplies has plans to train some staff from the NEHP to use the database, and a pharmacist has been deployed to support the NEHP.

Eye Care Equipment

The Directorate of Drugs & Medical Supplies confirmed that there has been no central government financial support for purchase of eye care equipment. The MOHS is occasionally involved in managing where donations of equipment or other hospital supplies are sent, for instance a couple of years ago a slit lamp was donated from Cuba to Connaught hospital, and donated beds and mattresses were distributed according to need across eye care and other specialties in Bo, Kenema and Connaught hospitals.

Hospital superintendents reported that the budget allocated by district councils was often not enough to purchase eye care equipment at facility level, so external funding from donors was required. However, this was not a problem limited to eye care equipment: sufficient funding for equipment is a problem across specialties. When equipment is donated from external sources hospitals do not add it into their account books and record the value of the donation, so they do not take on responsibility for training staff to use it or for maintenance.

The NEHP V2020 plan 2008-2013 includes a detailed Infrastructure analysis and plan for each of the 4 Regions, but the focus is on buildings rather than on equipment²¹

The Joint Programme of Work and Funding lists a number of items of eye care equipment to be procured over 2012-2014. It is a sign that the NEHP through Sightsavers has been effective in advocating for eye care to be included in national strategic plans: eye care equipment makes up the majority of the list of equipment to be procured.

Some facilities lack equipment that would enable them to more effectively monitor surgical outcomes, for instance whilst both Bo and Kenema have an A-scan and a Retinal Scope, Connaught hospital does not, despite it being the main government teaching hospital.

HEALTH INFORMATION SYSTEMS FOR EYE HEALTH

Key findings

Strengths

- A standardised Health Information System is used by all PHUs and government hospitals; the system has the capability to add more eye care-specific indicators in the future.
- Activity reports are generally sent from eye health staff within hospitals to the DHMT, hospital management and the National Eye Health Programme.
- Sightsavers has developed a reporting format that could be adapted and used by all providers.

Weaknesses

- Reporting on the number of eye infections seen in PHUs does not provide enough information to make decisions at the local, district or national level.
- There is lack of sufficient data to effectively monitor services, or assess whether particular groups are under-represented.
- No standardised NEHP reporting formats for eye care data, and some eye care activity may not be captured, for instance ad hoc donor-funded cataract surgery, or data on school screening.
- Data is not routinely collected or reported on quality e.g. cataract surgical outcomes.
- Facilities often do not receive any feedback from the NEHP about their performance.
- Lack of research evidence base/data.

Indicators and Data Sources

Peripheral Health Units

Every PHU facility is supposed to collect morbidity and mortality data, as well as staff attendance, and submit a report to the District Health Management Team. This data is compiled into Weekly Epidemiological Reports by the DHMT. However, reporting is not complete: as an example from the Western Area (Picture 5) only 24/45 PHUs have provided data (60%). There is work ongoing to improve the reporting, through MOUs with all PHUs in a DHMT's locality, to agree to supply data and agree to supervision visits.

Additionally, the indicators reported by PHUs tend to be relatively non-specific, such as 'U5 Mortality', rather than detail around the causes of mortality and morbidity. Whilst PHUs collect data on "eye infections, all eye activity is collated in the DHMT reports under "Others" (the last column in Picture 4), constituting 35% of all activity in this example from the Western Area. This lack of detail reflects the fact that indicators are donor-

driven, and the focus of data collection and reporting is on diseases or activity relevant to groups covered by the FHCI: U5 consultations, ante-and post-natal care, deliveries, maternal and child deaths, and EPI.

The National Eye Health Programme is advocating for additional indicators to be included in the basic data collection at PHUs, to include cataract, dim vision and eye infections.

Picture 5: Weekly Epidemiological Report from the Western Area DHMT

Table 1: Integrated Disease Surveillance and Response (IDSR) Priority Diseases Reported from PHUs in Week 24: 10th - 16th /04/2012

zone	No. of PHUs	No. of PHUs reporting	% of PHUs reporting on time	App	Suspected Measles	Suspected Yellow fever	Cholera	Diarrhoea and vomiting	Meningitis	Diarrhoea with blood	Dengue	Malaria Fever		Chikungunya	Still Birth	Tetanus	Diphtheria	Adolescents	U5		
												Sus.	Con.								
WESTERN AREA RURAL																					
Waterloo	7	6	100	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	40	56
HASTINGS	8	2	100	0	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0	8	23
LUMPA	2	2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	9
REGENT	2	1	100	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	11	2
LECEISTER	3	2	100	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NEWTON	7	5	100	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	16	29
SONGO	3	1	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOMBO	3	1	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2
GODERICH	3	2	100	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	1
LAKA	4	3	100	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
YORK	2	2	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BANANA	1	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	45	27			0	1	0	36	0	0	0	0	0	0	0	0	0	0	0	106	133

The monitoring is on the following: people five years old or above but do not exhibit any signs of pregnancy - IDSR (Table 1 & Fig. 1), those under five years old - U5 (Table 2 & Fig. 2) and those that are classified as maternal conditions (Table 3, Fig. 3). Each of these groups is monitored under Western Area Rural District Council (WARD C or Rural) and Freetown City Council (FCC or Urban). Cumulative for all these are in table 4. The trends for some maternal conditions as reported are also monitored in fig. 4.

Hospitals

Hospital reporting to DHMTs is less strong than PHU reporting. At hospital level, different data collection templates are used depending on whether the facility is run by government or FBOs. Minimum data that tends to be recorded covers number of cases seen, by broad condition, and whether the patient was adult or child. Sometimes treatment given is recorded, but the data may not be split by whether the patient was male/female, whether the attendance was a new or a follow up visit, or whether they were seen in the facility clinic or during outreach which is important for making sense of eye care activity.

Outpatient statistics may be unreliable as record keeping at facility level can be poor, with registration forms not completed or not filed: activity is only recorded for patients who register. Anecdotally, for a lower informal fee,

staff may 'save' patients the registration fee and walk them around the registration desk. As well as implications on data completeness, this has consequences for income generation of the hospital.

Although eye care data may be recorded by facilities, it may not be reported to the DMHT for analysis or reporting. The NTD programme reported that Onchocerciasis morbidity data is recorded by facilities but does not tend to be analysed.

Regarding eye care specific indicators useful to the National Eye Health Programme, UMC Kissy and BEH Lunsar tend to collect and report more detailed eye health data than government eye care facilities, including diagnosis (uveitis, cataract, trachoma) and cataract surgical outcomes, as they also required to report to donors such as CBM. However, Serabu only gives the number of patient seen or surgeries done, and does not split into outreach vs. clinic-based activity.

Government eye facilities tend to report the following: number of patients seen (by gender, age group, outreach vs. facility-based) and number of surgeries (cataract; other). Eye units may collect more detailed data within the clinic, such as diagnosis, but it is recorded in the paper-based facility registration books rather than reported to the NEHP.

All eye units are asked to report data quarterly to the NEHP Manager. Some facilities do not send their data in a timely way. However, a list of core eye care indicators is not provided by the NEHP, and the NEHP Manager has to collate responses on different templates from each eye care facility (see Picture 6 and Picture 7).

School screening data is often not recorded or reported to the NEHP.

Data on cataract surgeries is provided by the surgeons directly to the NEHP Manager, quarterly. Again, there is no standardised format, and the data does not appear to be broken down by age, sex or area from which the patient comes from, or analysed at this level to see if particular groups are under-represented. Cataract surgical outcomes are often not recorded or reported. The data is actually compiled by the Sightsavers Country Office on behalf of the NEHP, every 6 months.

When organisations or individuals come and do ad hoc cataract surgeries, for example, the Italian ophthalmologist who visits Kabala annually to do cataract surgeries, this data may not be captured. This means that a true picture of the number of cataract surgeries done in Sierra Leone each year may not be reported.

Picture 6: Example of different non-standardised formats for reporting by Sightsavers-funded eye care units (Source: meeting minutes of the NEHP Steering Committee, Sept 2011)

1. UPDATE FROM WESTERN AREA EYE CARE PROJECT							
STATISTICS CAL RETURN OF EYE PATIENTS SEEN FOR SEPT. 2011							
PATIENTS	male	female	male- chi	female- chi	Total- adults	Total- chi	Totals
TOTAL NO. OF PATIENTS SEEN: NEW CASES	537	468	129	199	1005	328	1333
RETURNING CASES	488	518	214	283	1006	497	1503
DISEASES STATISTICS							
Normal Eye	200	207	121	136	407	257	664
Refractive Error	153	162	171	114	315	285	600
Conjunctivitis	267	198	111	142	465	253	718
Trachoma and its effects	1	2	0	0	3	0	3
Diseases of the cornea (including scars)	191	178	35	29	369	64	433
Cataract (all types)	160	112	8	4	272	12	284
Glaucoma (all types)	188	157	0	0	345	0	345
Leprosy lesion of the eye	4	7	0	0	11	0	11
Onchocercal lesion of the eye	20	17	0	0	37	0	37
Uveitis (all types)	182	119	4	7	301	11	312
Xerophthalmia (nutritional)	9	12	0	0	21	0	21
Diseases of the retina and optic nerve	40	45	19	10	85	29	112
Strabismus (squint) and its results	1	3	5	5	4	10	14
Diseases of eyelids and Lacrymal system	4	2	0	0	6	0	6
Foreign body in the eye	85	78	12	15	163	27	193
Injuries (all types) of traumatic lesions	189	200	19	15	389	34	423
All other causes	93	89	49	56	182	105	287
BLIND EYES (VA less than 3/60)	99	85	10	16	184	26	210

2. UPDATE ON EYE CARE SERVICE ACTIVITIES – JULY AND AUGUST 2011 FROM THE EASTERN PROVINCE EYE CARE PROJECT	
<p>The effect of the rainy season on our road network in the Eastern Province has reduced our outreach mobile eye clinic for the past two months.</p> <p>The base activities include daily clinic and surgeries in both Kenema and Kailahun were on course.</p> <p>A total of 4 (Four) communities were visited and no school screening done as schools were closed for holidays.</p> <p>Total Number of Patients Seen = 2,093</p> <p>Adult Males = 784 Adult Females = 732 Children: Males = 292 Females = 285</p> <p>Total Number of Patients Treated = 1,968</p> <p>Adult Males = 777 Adult Females = 717 Children: Males = 199 Females = 275</p> <p>OPERATIONS:</p> <p>Total number of Cataract Surgeries = 33 Other Operations = 10</p> <p>56 Patients were refracted and referred to Bo for issuance of spectacle as the optical section of the eye unit in Kenema is not yet equipped and functional.</p> <p>A total of 11 new patients were screened and commenced on medical treatment for Glaucoma.</p>	

3. UPDATE OF 3 RD QUARTER REPORT JANUARY-AUGUST 2011 FROM THE SOUTHERN REGION BO, PUJEHUN AND SERABU	
<p>The Southern Eye Care is located within the Bo Government Hospital in Bo Town City, the second largest capital in Sierra Leone with a population of 1,292,123, Pujehun Government Hospital and Serabu Town.</p> <p>Through these departments, Sightsavers, Irish Aid and the Catholic Diocese are working in partnership with Government to provide comprehensive Eye Care Services that are affordable and Accessible to the people of the Southern Province.</p> <p>Sensitization, Advocacy and Awareness Raising campaigns on avoidable blindness were a key part of our activities.</p> <p>Through meetings with the communities the target beneficiaries were involved in planning the outreach services conducted by the Eye Care. The following achievements were recorded for the period under review:-</p> <ul style="list-style-type: none"> - A total of 28,517 patients were examined of which 17,486 (61.3%) were treated for various eye conditions. - A total of 630 successful eye operations were performed of which 85.5% were cataract surgeries with intra ocular lens implant. - 36 community locations in the four districts were served with outreach activities with 1,223 people screened for various eye conditions. 35% were treated, 17.2% referred to the base hospital for further examination and treatment. - Screening was conducted in 26 schools with 6,345 pupils screened. A total of 122 (1.9%) had refractive error for which glasses were prescribed. - A total of 1,344 patients were refracted for glasses. 922 glasses were dispensed. 	

Picture 7 Example of reporting formats used by Baptist Eye Hospital, Lunsar (Source: meeting minutes of the NEHP Steering Committee, Sept 2011)

4. UPDATE FROM BAPTIST EYE HOSPITAL, LUN SAR

STATISTICAL RETURN OF EYE PATIENTS SEEN FROM JANUARY TO DECEMBER 2011

PATIENTS	MAIN CENTRE PER MONTH												Totals
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Total number of patients seen : New cases	537	921	955	336	570	522	438	370					4,849
Returning Cases	255	335	364	317	267	245	282	189					2,254
Normal Eyes	184	232	139	66	86	83	64	82					935
Refractive Errors	94	84	97	59	49	55	63	47					548
Eye Diseases	1,167	1,698	1,959	1,148	1,213	1,039	1,009	739					9,972
Number supplied with glasses	38	28	40	23	15	19	25	16					204
Number of bottles of eye drops dispensed	2,018	2,120	1,418	1,506	1,837	1,663	1,610	1,173					13,345
OPERATIONS													
Sight restoring(e.g. cataract with IOL)	83	197	225	79	66	38	45	34					767
Sight restoring(e.g. cataract without IOL)	0	0	0	0	0	0	0	0					0
Sight Saving(e.g. Glaucoma)	5	4	0	3	3	5	4	3					27
All other operations	27	24	14	15	19	14	19	8					140
TOTAL OPERATIONS PERFORMED	115	225	239	97	88	57	68	45					934
DISEASES STATISTICS													
Normal Eyes	183	232	139	66	86	83	64	82					935
Refractive Error	94	84	97	59	49	55	63	47					548
Conjunctivitis	183	243	349	286	302	285	236	209					2,095
Trachoma and its effects	0	0	0	0	0	0	0	0					0
Diseases of the cornea (including scars)	71	125	158	78	70	61	70	55					688
Cataract (all types)	236	572	631	340	363	261	276	155					2,834
Glaucoma (all types)	72	191	196	115	116	97	124	75					986
Leprosy lesion of the eye	7	0	0	0	0	0	0	0					7
Onchocercarial lesion of the eye	4	14	20	12	6	4	2	4					66
Uveitis (all types)	59	143	153	82	94	97	109	74					811
Xerophthalmia (nutritional eye lesions)	45	2	0	0	0	0	0	0					47
Diseases of the retina and optic nerve	204	64	126	75	91	66	44	38					708
Strabismus (Squint) and its results	45	0	0	0	0	0	0	0					45
Diseases of Eyelids and Lacrymal system	10	14	7	2	4	2	7	1					47
Foreign Body in the eye	7	16	16	16	19	16	10	8					108
Injuries (all types) of traumatic lesions	46	0	0	0	0	0	0	0					46
All other causes	117	136	174	96	114	109	98	78					922
Blind Eyes (VA less than 3/60)	59	178	129	46	34	41	33	42					562

STATISTICAL RETURN OF EYE PATIENTS SEEN FROM JANUARY TO DECEMBER 2011

PATIENTS	MAIN CENTRE PER MONTH												Totals
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Total number of patients seen : New cases	520	343	187	300	238	415	-	-					2,003
Returning Cases	91	47	67	104	53	59	-	-					421
Normal Eyes	185	36	97	195	115	85	-	-					713
Refractive Errors	53	60	89	108	91	55	-	-					456
Eye Diseases	1,480	932	1,019	1,346	1,185	1,349	-	-					7,311
Number supplied with glasses	-	-	-	-	-	-	-	-					-
Number of bottles of eye drops dispensed	658	433	396	651	550	549	-	-					3,237
OPERATIONS													
Sight restoring(e.g. cataract with IOL)	-	-	-	-	-	-	-	-					-
Sight restoring(e.g. cataract without IOL)	-	-	-	-	-	-	-	-					-
Sight Saving(e.g. Glaucoma)	-	-	-	-	-	-	-	-					-
All other operations	-	-	-	-	-	-	-	-					-
TOTAL OPERATIONS PERFORMED	-	-	-	-	-	-	-	-					-
DISEASES STATISTICS													
Normal Eyes	185	36	97	195	115	85	-	-					713
Refractive Error	53	60	89	108	91	55	-	-					456
Conjunctivitis	200	198	218	241	192	285	-	-					1,334
Trachoma and its effects	14	7	24	42	8	9	-	-					104
Diseases of the cornea (including scars)	138	63	66	82	102	106	-	-					557
Cataract (all types)	313	173	168	176	220	132	-	-					1,182
Glaucoma (all types)	51	125	46	39	64	81	-	-					406
Leprosy lesion of the eye	5	0	0	6	5	62	-	-					78
Onchocercarial lesion of the eye	127	30	61	127	52	39	-	-					436
Uveitis (all types)	38	9	26	13	13	18	-	-					117
Xerophthalmia (nutritional eye lesions)	21	8	0	6	0	0	-	-					35
Diseases of the retina and optic nerve	21	29	20	17	14	29	-	-					130
Strabismus (Squint) and its results	15	0	8	26	10	12	-	-					71
Diseases of Eyelids and Lacrymal system	54	14	27	57	43	46	-	-					241
Foreign Body in the eye	8	6	5	12	7	8	-	-					46
Injuries (all types) of traumatic lesions	49	9	8	52	39	22	-	-					179
All other causes	112	122	95	155	129	168	-	-					781
Blind Eyes (VA less than 3/60)	314	139	247	295	287	332	-	-					1,614

BAPTIST EYE HOSPITAL SURGERIES 2011 – DR JOHN MATTIA

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CATARACT	AM	17	102	118	35	29	18	17	25					
	AF	19	95	107	44	37	20	9	9					
	NC	0	0	0	0	0	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		36	197	225	79	66	38	26	34					
TRABEC	AM	0	1	0	2	2	3	2	3					
	AF	0	3	0	1	1	2	1	0					
	MC	0	0	0	0	0	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		0	4	0	3	3	5	4	3					
PTERYGIUM	AM	1	4	2	0	2	2	1	0					
	AF	1	3	0	3	2	2	1	2					
	MC	0	0	0	0	0	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		2	7	2	3	4	4	2	2					
EVISERATION	AM	4	2	0	3	3	5	1	1					
	AF	1	0	0	3	1	1	1	3					
	MC	0	0	0	0	0	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		5	2	0	6	4	6	2	0					
TRP	AM	1	0	0	0	0	0	2	0					
	AF	0	0	0	0	0	0	0	0					
	MC	0	0	0	0	0	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		1	0	0	0	0	0	2	0					
OTHERS	AM	0	7	7	4	4	2	1	1					
	AF	1	8	5	2	6	2	4	1					
	MC	0	0	0	0	1	0	0	0					
	FC	0	0	0	0	0	0	0	0					
SUB-TOTAL		1	15	12	6	11	4	5	2					

Information products

General quarterly reports are collated on morbidity, mortality and health service activity by DHMTs and sent to the MOHS and to partners such as WHO or UNICEF, but prioritise maternal and child health indicators. Eye care data is not included.

Eye care units send a report to the NEHP, and sometimes to the hospital administration and to the local DHMT. Theoretically these reports are shared at the VISION2020 or national coordination meetings but as these did not happen for a number of years, the members of the V2020 group would informally email reports around the group. The regularity and format of any reports is not standardised throughout the country which makes collation and meaningful interpretation of data difficult. Picture 6 and Picture 7 show how reports vary in detail from area to area, and that the FBOs tend to report much more detail than the government facilities, often because subsequent tranches of funding are tied to reporting.

Data management, dissemination and use

In general, the monitoring systems for eye care are weak, especially outcomes monitoring. As a result, despite the importance of eye health, information about eye health is not effectively disseminated or used, and so is not available for advocacy. As one of the interviewees said, “The eye is at the front, so eye health should be at the front. It sees the issues but it doesn’t speak, so no one hears!”

Facilities

Some facilities’ administrators reported a desire to analyse their own facility data more regularly, and to display data on the wards or in units. Some facilities produce annual reports which are sent to the local council and the MOHS which includes activity and recommendations, and data is often used by facilities to plan for next year; eye care it is not included separately.

Feedback is important for staff motivation, monitoring service performance and planning to improve services, but facilities often do not receive any feedback from the NEHP about their performance in eye care. Interviewees reported a lack of understanding about what the eye care data they collected was used for: “We just collect it and send it to them [donors/NEHP], we don’t know how it is used”; “The forms keep changing, and it’s not a high priority”; “No one chases us up if we forget to send it.”

No national reports are sent to facilities, and any data reported is not detailed enough to help people understand the situation. Since the data collected by PHUs and hospitals is often not recorded by specific age (only binary data by adult/children), or by location (facility-based visit or outreach), this limits the usefulness of

the data for monitoring performance, profiling those who access services to better identify unmet need and target services.

Some of the FBOs are required by donors to collect and report data on cataract surgical outcomes; there is no requirement in government facilities, even where there is appropriate equipment such as A-scan and Retinal Scope.

District

In terms of data analysis, the DHMTs look at the trends in data reported from PHUs and hospitals, compare to the previous year and look for key problems. The priority is analysis of FCHI data, and any other high profile disease programmes. As eye diseases are amalgamated under “other”, it is difficult to extract the data or analyse it. Although facilities are beginning to be rated into a league table by DHMTs according to performance, and districts by the MOHS, eye care performance does not form part of this ranking.

DMOs did report that they sometimes provided feedback on the data collected to PHUs at a monthly meeting, looking at which areas were doing well and benchmarking to other units, but this focused on key indicators such as EPI and maternal and child health rather than eye care. There are also internal DHMT meetings to discuss local figures, but that although Onchocerciasis was occasionally discussed, general eye care was never a topic for discussion.

DMOs admitted that monitoring of the quality of services, include eye health, is not a priority for DHMTs.

NEHP

The NEHP has no administrator to collate reports: data collection tends to be done by the Sightsavers Sierra Leone Country Office. Collated data is sent back to the three Programme Managers, but it is not recorded what happens to it then and how it is used. Cataract data is collated to calculate the CSR but does not appear to be methodically analysed by area or by surgeon to look at activity.

If sufficient data on eye health is not routinely collected and reported, there is a lack of data for advocacy, and priority will not be given for eye health services at national, district or facility level in terms of staff or financial resources.

In addition to weak monitoring data for eye health, there is a lack of economic analysis or quantification of the economic benefits of providing eye services. For instance, quantifying the economic benefits of preventing Vitamin A blindness in a 4 year old in Sierra Leone, or Onchocerciasis in a 35 year old compared to other

interventions, or the income generating potential of cataract surgery may help to advocate for more resources locally and nationally.

Health information system resources

As the District Health Information System (DHIS) is often not accessible remotely, this limits who can access the data. The new PBF system is due to be rolled out to hospitals which may impact on data quality across the health information system, although not specifically for eye health, particularly given that few eye health specific indicators are currently captured.

INGOs do not seem to be funding health information systems for eye care, although Sightsavers supports the NEHP Manager to collate data. At a minimum, the NEHP, Sightsavers and the FBOs providing eye care should standardise their data collection systems. In addition, there is a lack of funding available for economic analysis, research and social marketing. There is a lack of evidence-base around questions such as why uptake may be poor, why compliance is low, how schools screening benefits children in terms of educational achievement, and return on investment: investment in these type of studies by INGOs would support advocacy efforts of the NEHP.

5. Summary of Findings

Overview of the eye health system

Strengths

- The MOHS is engaged and eye care is integrated into government policies.
- The National Eye Health Programme has good relationships with donors such as Sightsavers and Helen Keller International, and there is good coordination between eye care providers in the country.
- During the last five years, service coverage and quality of eye care services has increased.
- FBOs make services available in areas where there are no government facilities, often provide free cataract surgery, and undertake two thirds of the cataract surgeries in Sierra Leone.
- The RAAB study provides a baseline for prevalence of blindness and low vision.
- There are plans to train significant numbers of new eye care staff by 2016.
- Significant refurbishment of some eye health service infrastructure over the last 15 years.

Weaknesses

- NEHP Manager is also the government's only ophthalmologist: much of his clinical time is taken up by administrative duties.
- The public budget for eye care is inadequate.
- Public funding is not available to cover eye care services provided by FBOs or private clinics, and there is no health insurance scheme.
- Inequitable distribution of government eye facilities and staff, particularly in the north.
- The integration of eye care services into general hospital administration varies between facilities.
- Low Cataract Surgical Rates.
- Limited provision of refraction and low vision services.
- Limited private sector involvement in eye care, and all private facilities located in the capital.
- Weak monitoring systems for patient feedback, eye care activity or outcomes. The information system focuses on outputs (consultations and number of cataract surgeries) and there is no data on quality.

Governance of the eye health system

Strengths

- The NEHP Manager is part of the MOHS senior management team and has a good relationship with relevant Directorates (e.g. HRH, Finance, Planning).
- Eye care is included in core health services in Sierra Leone, and health regulations and policies are applied to eye care.

- In areas where there are government-managed eye care staff and facilities, they tend to be well linked to traditional chiefs, the DHMT and any local Schools for the Blind (for instance, in Kabala).
- Active Association of the Blind (SLAB) in a number of districts, working through existing Province/District/Chiefdom structures and with national government and NGO partners.
- Recent enactment of legislation regarding Disability, and setting up of a Commission, give a framework for disability rights in Sierra Leone.

Weaknesses

- The national VISION 2020 Committee has not met regularly in the past, to the detriment of national coordination.
- Inclusion of eye care in government plans and disbursement of funds appears to be dependent on regular contact and personal relationships more than systematically embedded structures.
- The government is not responsive to the eye health needs of the population in the north.
- District administrations in areas where there are no eye care staff are not proactive in requesting eye care services.
- DPOs and other CSOs have limited opportunity to be involved in the planning of eye health services.
- Limited feedback or complaint mechanisms to enable service users to have a voice.

Eye health financing

Strengths

- Introduction of the FHCI in 2010 means eye care services (where available) are free to all under fives, pregnant or lactating women.
- NEHP Manager is involved in MOHS budget negotiations.
- District councils often meet transport costs for eye health outreach in their District.
- Government started to provide financial support to eye health FBOs, for instance the transfer of two government-payroll Ophthalmic Nurses to BEHL.
- FBOs are often able to provide free surgery, which positively impacts on cataract surgical rates.

Weaknesses

- MOHS budget for eye care is inadequate, and mainly covers administration rather than service delivery.
- The FHCI does not extend to non-governmental organisations, and does not cover vulnerable groups such as the elderly or the disabled.
- Whilst FHCI has increased access for the groups it covers, it has limited the MOHS funds available for other services or population groups.
- There are no budgets for eye care at district level which limits integration of eye care services.

- The Performance-based Financing system currently does not provide any incentives for eye health.
- Prices for eye health services are not standardised.
- Government eye units are often perceived as separate from the rest of the hospital, as funding for drugs and consumables comes directly from NEHP or from Sightsavers.

Eye health service delivery

Strengths

- There is a comprehensive network of PHUs covering Sierra Leone, staffed with health care workers who have some training in recognising and treating basic eye conditions: this provides a strong foundation for an effective referral system.
- Eye care services are included in the Basic Package of Essential Health Services for Sierra Leone.
- Free health care is available for target populations (pregnant/lactating women, and children under five), and this includes eye care.
- Work underway to integrate Vitamin A supplementation into Maternal and Child Health services.
- The number of people accessing eye care services has increased, through a combination of increased awareness, increased service provision, and reduced financial barriers through the free healthcare initiative.

Weaknesses

- Inequitable distribution and access to eye health services. This affects the Northern Province particularly, and remote areas of other Provinces.
- Although the network of PHUs with staff trained in basic eye care theoretically provides a good referral system, in practice, the referral rate is poor.
- Eye care outreach is constrained in government facilities by lack of vehicles and staff.
- The CSR is too low to deal with the incidence and prevalence of blindness due to cataract.
- Productivity of ophthalmologists and cataract surgeons varies widely by individual.
- Where cataract surgical output is low, there is an impact on maintenance of surgical quality, but quality is not measured.
- Lack of services for glaucoma and inadequate services for refraction and low vision.
- Lack of clear supervision system defining responsibilities at each level for eye health.

Human resources for eye health

Strengths

- General health care staff working in primary care are trained in basics of eye care.

- Key eye care staff (Certificate and Diploma Ophthalmic Nurses, and Ophthalmic Community Health Officers) can now be trained in country due to available funds and training courses.
- Consortium EC/SCB funding is available to address some of the key gaps in eye care staff.
- MOHS recognises the need for eye care staff, and strategic HRH planning includes eye care.
- Eye care staff salaries have so far been absorbed into the MOHS payroll.
- Where local councils and DMOs are engaged, they have pushed for eye services and training of eye care staff to be included in district budgets.

Weaknesses

- Significant gaps in numbers of eye care staff, and inequitable distribution compared to the population distribution, particularly in the Northern Province and outside urban areas.
- Cataract surgeons cannot be trained in Sierra Leone.
- Nurses and doctors are not attracted to specialise in ophthalmology.
- The pool of staff eligible to train as Cataract Surgeons is limited, and current delays in training Ophthalmic Nurses impacts on the throughput required to train Cataract Surgeons in the future.
- Training costs met by Sightsavers rather than MOHS.
- Lack of systematic refresher training for eye care staff.
- The skill shortage and HR shortage in eye health in Sierra Leone represent constraints on effective supervision.

Medicines, products and equipment for eye health

Strengths

- Health regulations are applied to eye care in the same way as to other health services.
- The National Essential Medicines List and the Basic Package of Essential Health Services drug list include key eye care drugs.
- Separate funding and procurement mechanisms in government-run Sightsavers-funded eye clinics helps to maintain the supply of eye drugs and consumables.

Weaknesses

- Some key eye drugs are missing from the National Essential Medicines List.
- FHCI drugs are not always available.
- FBOs are not included in FHCI so are not reimbursed for drug spend on children or pregnant/lactating women.
- Specialised eye care drugs are not always available in government hospitals in the Northern Province that are not supported by Sightsavers.

- Separate funding and procurement of drugs and consumables in government-run Sightsavers-funded clinics has a negative impact on integration of eye services into the rest of the hospital.
- Lack of accurate data on eye care medicines and products e.g. financing, prescribing.
- Lack of accurate data on the amount and state of eye care equipment by facility.

Health information systems for eye health

Strengths

- A standardised Health Information System is used by all PHUs and government hospitals; the system has the capability to add more eye care-specific indicators in the future.
- Activity reports are generally sent from eye health staff within hospitals to the DHMT, hospital management and the National Eye Health Programme.

Weaknesses

- Reporting on the number of eye infections seen in PHUs does not provide enough information to make decisions at the local, district or national level.
- There is lack of sufficient data to effectively monitor services, or assess whether particular groups are under-represented.
- No standardised NEHP reporting formats for eye care data, and some eye care activity may not be captured, for instance ad hoc donor-funded cataract surgery, or data on school screening.
- Data is not routinely collected or reported on quality e.g. cataract surgical outcomes.
- Facilities often do not receive any feedback from the NEHP about their performance.
- Lack of research evidence base/data.

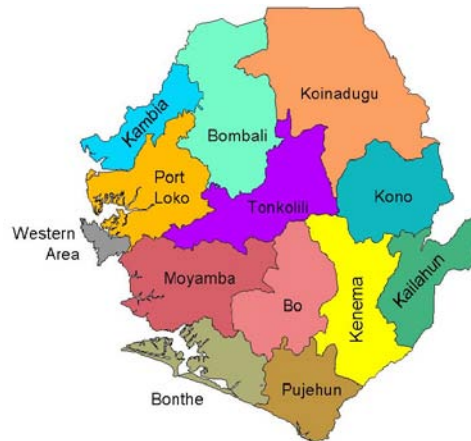
Annex A: Map of Sierra Leone: Provinces and Districts



Provinces:



Districts:



Annex B: Eye Health System Assessment Team

Contact name	Title and organisation	Team role
Dr. Matthew J. Vandy	Manager, National Eye Health Programme, Sierra Leone Ministry of Health and Sanitation	Team Leader
Dr. Karl Blanchet	Lecturer and Health Systems Researcher, International Centre for Eye Health, London School of Hygiene & Tropical Medicine	Technical Support
Mrs. Amy Potter	Public Health Specialty Registrar / Health Systems Researcher, International Centre for Eye Health, London School of Hygiene & Tropical Medicine	Technical Support
Mr. Edward Sandy	Southern Province Eye Health Programme (SPEHP) Manager, and Cataract Surgeon	Team member (data collection and analysis)
Mr. Ernest Challey	Eastern Province Eye Health Programme (EAEHP) Manager, and Cataract Surgeon	Team member (data collection and analysis)
Mr. Sheku Koroma	Western Area Eye Health Programme (WAEHP) Manager, and Cataract Surgeon	Team member (data collection and analysis)
Mrs. Emerica King	Programme Manager, Sightsavers, Sierra Leone Country Office	Team member (data collection and analysis)
Mr. Alpha Bangura	Project Manager, Sightsavers, Sierra Leone Country Office	Team member (data collection and analysis)

Annex C: Sierra Leone EHSA Schedule: 08-18 January 2013

	Date	Activity
WEEK 1	Tues 08 Jan	EHSA team meeting: <ul style="list-style-type: none"> • Introduce the EHSA concept and the EHSA modules • Schedule and logistics for the 2 week EHS Assessment • Team roles and expectations (data collection, analysis and report-writing) • Practical aspects of interviewing (protocol, consent) • Discuss plans for data collection (interviews, document review) and analysis • Introduce the EHSA probing questions and practice interviews
	Wed 09 Jan Thurs 10 Jan Fri 11 Jan	Data collection: <ul style="list-style-type: none"> • Freetown: document review and interviews with national stakeholders • Northern Province: interviews with Regional and District stakeholders • Southern Province: interviews with Regional and District stakeholders
	Sat 12 Jan	Data collection: <ul style="list-style-type: none"> • Northern Province: interviews with Regional and District stakeholders • Southern Province: interviews with Regional and District stakeholders
	Sun 13 Jan	Field teams travel back to Freetown
WEEK 2	Mon 14 Jan	EHSA team meeting to summarise findings and analyse data: <ul style="list-style-type: none"> • Summary of data collection so far and what data still needs to be collected • EHSA team members present findings by module • summarise findings as a group, using SWOT Analysis • consider impact on health system performance <p>Continue data collection in Freetown Gaps in data collection filled via interviews and document review</p>
	Tues 15 Jan Wed 16 Jan	Ongoing data collection and analysis: <ul style="list-style-type: none"> • Document review • Interviews with stakeholders <p>Report writing:</p> <ul style="list-style-type: none"> • EHSA team members write up their findings <p>Final EHSA team meeting:</p> <ul style="list-style-type: none"> • Summarise data analysis and discuss next steps (including stakeholder workshop) • Ensure all draft report chapters, interview notes/transcripts collated
	Thurs 17 Jan Fri 18 Jan	Report writing: <ul style="list-style-type: none"> • Technical expert collates all data so far • Start to draft EHSA report • Final meeting with Head of National Eye Health Programme

Annex D: List of Interviews conducted and sites visited

Contact name	Title (role)	Organisation
NATIONAL		
Dr. Alhassan Seisay	Director, Primary Health Care/Deputy Chief Medical Officer	MOHS
Mr Prince Cole	Director, Human Resources	MOHS
Mr Emile Koroma	Human Resource Manager	MOHS
Dr Michael M Amara	Principle Health Economist	MOHS
Mr Bassie Turay	Director of Drugs & Medical Supplies, and Chairman of the Pharmacy Board	MOHS
Dr Duramani Conteh	Director, Hospital & Laboratory Services, and Deputy Chief Medical Officer	MOHS
Magnus Gborie	Director, Planning & Information	MOHS
Bernard Thomas Momoh Dugbah	Planning Coordinator, Directorate of Planning & Information	MOHS
Dominga Sogie-Thomas	Deputy Chief Nursing Officer	MOHS
Dr Matthew Vandy	National Eye Care Programme Manager, Directorate of Primary Health Care	MOHS
Dr Santigie Sesay	Programme Manager, NTD Programme	MOHS
Florence Max-MacCarthy	Public Health Sister, NTD Programme	MOHS
Mrs. Nancy Smart	Country Director	Sightsavers
Dr Mary Hodges	Country Director	Helen Keller International
Emma Parker	Director	Sierra Leone Association of the Blind (SLAB)
Mr Thomas Lebbie	President	SLAB
Mr H Tucker	Principal, Vocational Centre	SLAB
Pastor A Kabba	Member	SLAB
Mr Dyan Turay	Ex-President	SLAB
Charles Mambu	Director	Health for All Coalition-Sierra Leone
Hawanatu Rahman-Cole	Advocacy & Communications Assistant	Health for All Coalition-Sierra Leone
Brima K Muana	Advocacy & Communication Officer	Health for All Coalition-Sierra Leone
Dr. Joseph Edem-Notah	Dean	College of Nursing and Applied Sciences
Abu Conteh	Head of Department, Community Health & Clinical Sciences, and Chief Community Health Officer (CHO)	Njala University (Bo Campus)
WESTERN AREA (URBAN)		
Dr Joseph Kandeh	District Medical Officer, Western Area	MOHS
Mr Ibrahim R Conteh	Administrator	Lowell and Ruth Gess UMC Eye Hospital, Kissy, Freetown
Dr John Buchan	CBM Ophthalmologist and Medical Director	Lowell and Ruth Gess UMC Eye Hospital, Kissy, Freetown [left December 2012]
NORTHERN PROVINCE		
PORT LOKO DISTRICT		
Dr John Mattia	Medical Director (ophthalmologist)	Baptist Eye Hospital, Lunsar
Thomas S. Kamara	Assistant Administrator	Baptist Eye Hospital, Lunsar
John B. Kabba	Mobile Clinic Coordinator	Baptist Eye Hospital, Lunsar
Paul Lamin Kamara	Pharmacist / In-charge	Drop Making Unit, Baptist Eye Hospital, Lunsar
Esther Turay	Asst. Pharmacist	Drop Making Unit, Baptist Eye Hospital, Lunsar

Alfred A. Kamara	Ophthalmic Nurse / Ward Supervisor	Baptist Eye Hospital, Lunsar
BOMBALI DISTRICT		
Dr Yakuba Madina Bah	District Medical Officer (based in Makeni)	MOHS
Modupeh Wilson	Medical Superintendent	Regional Hospital, Makeni
Patricia Serry-Kamal	Asst. District Matron	Regional Hospital, Makeni
Marie F. Conteh	District Matron	Regional Hospital, Makeni
Mohamed Conteh	District Social Mobilization Coordinator	Regional Hospital, Makeni
Warrancy Conteh	Births and Death Registrar	Regional Hospital, Makeni
Lansana S. Mansaray	District Operations Officer	Regional Hospital, Makeni
Bundu Conteh	Human Resource Officer	Regional Hospital, Makeni
Christiana W. Sannoh	District Health Sister 2	Regional Hospital, Makeni
Ansu O. Kallon	Nutrition Focal Point	Regional Hospital, Makeni
KOINADUGU DISTRICT		
Frances Pearce	District Matron	Kabala Government Hospital, Kabala
Jatu Bernadette Sellu	District Health Sister 1	Kabala Government Hospital, Kabala
Edith Abioseh Fewry	Ophthalmic Nurse	Kabala Government Hospital, Kabala
Alpha Koroma	Teacher	Kabala School for the Blind, Kabala
Sando Koroma	Community Health Officer (CHO)	Musaia Community Health Centre (CHC), Musaia, Kabala
Peter Bayuku Conteh	Former District Council Chairman	Kabala
EASTERN PROVINCE		
Ernest Challey	Cataract Surgeon / Project Manager	Eastern Eye Care Project, Kenema
SOUTHERN PROVINCE		
MOYAMBA DISTRICT		
Dr Sandy Jibao	District Medical Officer, Moyamba District	MOHS
BO DISTRICT		
Dr Foday Sesay	Medical Superintendent	Regional Hospital, Bo
Simeon M Abu	Ophthalmic Nurse (Certificate)	Regional Hospital, Bo
Julianna Demby	Ophthalmic Nurse (Certificate)	Regional Hospital, Bo
Mary Wonneh	Ophthalmic Nurse (Certificate)	Regional Hospital, Bo
Mamgella Massaquoi	Ophthalmic Nurse (Certificate)	Regional Hospital, Bo
Ansu Mardi Luseni	Refractionist	Regional Hospital, Bo
Patrick Edwards	Student Optometrist (training in Malawi)	Regional Hospital, Bo
Francis Kabba	Local Eye Drop Production Technician	Regional Hospital, Bo
Manjia Sesay	Cataract Patient	Regional Hospital, Bo
Sheku Kanneh	Cataract Patient	Regional Hospital, Bo
Soko Amara	Cataract Patient	Regional Hospital, Bo
Mohamed Kombay	Cataract Patient	Regional Hospital, Bo
Mohamed S Conteh	Head Teacher	Bo School For the Blind
Tom Lewis	Executive Director, SECC (Southern Eye Care, Serabu)	Serabu Catholic Hospital
Mohamed Rogers	Clinical Director	Serabu Catholic Hospital
Dr Cathy Schanzer	Ophthalmologist	Serabu Catholic Hospital
Sister Linda Kamarah	Ophthalmic Nurse (Diploma)	Serabu Catholic Hospital
Momodu Kamara	Refractionist	Serabu Catholic Hospital
PUJEHN DISTRICT		
Thomas Kain	Ophthalmic Nurse	Pujehun Hospital

Annex E: List of documents consulted

<p>Government of Sierra Leone</p> <ul style="list-style-type: none"> • Census data 2004
<p>Ministry of Health & Sanitation</p> <ul style="list-style-type: none"> • Government of Sierra Leone, <i>Health Compact</i>. 2011. • Government of Sierra Leone, Free healthcare services for pregnant and lactating women and young children in Sierra Leone, 2009 • MOHS, National Health Sector Strategic Plan 2010-2015 • MOHS, Basic Package of Essential Health Services (BPEHS) for Sierra Leone, March 2010 • MOHS, National Health Sector Strategic Plan 2010-2015: JOINT PROGRAMME OF WORK AND FUNDING (JPWF) 2012-2014, January 2012 • MOHS, Results and Accountability Framework 2010-2015, January 2012 • Government of Sierra Leone. SIERRA LEONE SIMPLE PERFORMANCE-BASED FINANCING SCHEME FOR PRIMARY HEALTHCARE - OPERATIONAL MANUAL. March 2011 • ILO, Preliminary Assessment of Health Insurance Options for Sierra Leone • MOHS, HRH Department, Schemes of Service for Health Professionals in Sierra Leone, 2012 update • MOHS HRH Department, SIERRA LEONE HUMAN RESOURCES FOR HEALTH STRATEGIC PLAN 2012-2016. Final Draft 7/10/2012 • Government of Sierra Leone, MOHS, Human Resources for Health Policy: “Motivated Health Workforce contributing to National Development”. November 2011. • National Medicines Policy, 2012 • National Essential Medicines List, 2012 • Standard Treatment Guidelines for Primary Level Prescribers, 2012 • Sierra Leone National Formulary, 2012
<p>National Eye Health Programme documents</p> <ul style="list-style-type: none"> • Terms of Reference, Sierra Leone Eye Health Policy Formulation (developed by the National Eye Health Programme Manager, and submitted to the MOHS) • MINUTES OF STEERING COMMITTEE MEETING OF THE NATIONAL EYE CARE PROGRAMME HELD ON 21ST SEPTEMBER 2011 • Monitoring data <ul style="list-style-type: none"> ○ Annual Report to the NEHP from the Lowell and Ruth Gess UMC Eye Hospital, Kissy – January 2012 ○ Statistics from the BEHL Lunsar for 2012 ○ Sightsavers Annual Reports for WAEHP, SPEHP, NPEHP 2009-2011 ○ Sightsavers output statistics 2011
<p>Sightsavers documents</p> <ul style="list-style-type: none"> • Sightsavers (2010) End of Cycle Evaluation of the Sierra Leone Eye Care Programme (Supported by Sightsavers and Irish Aid), July 2010 • Sightsavers, Rapid Assessment of Avoidable Blindness (RAAB) in Sierra Leone. 2011. • EC and SCB Proposal documents
<p>Other</p> <ul style="list-style-type: none"> • ICEH, <i>Human Resources for Eye Health Study (funded by CBM): Sierra Leone data</i>. 2012, International Centre for Eye Health: London (unpublished) • Health for All Coalition – Sierra Leone. Press Release (3/1/2013): Budget Allocation to the Health Sector Increased.

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