



Evaluation of the Ophthalmic Community Health Officer (OCHO) training programme in Sierra Leone

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Abbreviations

Aids	Acquired Immune Deficiency Syndrome
CBRW	Community Based Rehabilitation Workers
CDD	Community Drug Distributor
CHO	Community Health Officer
CHW	Community Health Workers
CSR	Cataract Surgical Rate
DHMT	District Health Management Team
DMO	District Medical Officer
DPHC	Directorate of Primary Health Care
EHSA	Eye Health System Assessment
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HRH	Human Resources for Health
HReH	Human Resources for Eye Health
HoD	Head of Department
HR	Human Resources
HW	Health Workers
IAPB	International Agency for the Prevention of Blindness
IDI	In Depth Interview
LMIC	Low Middle Income Countries
MDA	Mass Drug Administration
MoHS	Ministry of Health and Sanitation
NEHC	National Eye Health Coordinator
NEHP	National Eye Health Programme
NEML	National Essential Medicines List
NGO	Non-Governmental Organisation
ON	Ophthalmic Nurse
OCHO	Ophthalmic Community Health Officer
PEC	Primary Eye Care
PHC	Primary Health Care
PHU	Primary Health Unit
RAAB	Rapid Assessment for Avoidable Blindness
SDG	Sustainable Development Goal
SiB	Seeing is Believing
SOW	Scope of Work
TBA	Traditional Birth Assistant
UHC	Universal Health Coverage
VI	Visual Impaired
WHO	World Health Organisation

1. Introduction

It is estimated that 253 million people globally are visually impaired (VI), including 36 million who are blind and 217 million who live with low vision (1). Around 89% of VI is found in low and middle income countries, largely among older people aged 50 years and above, and around 75% of VI is either preventable or treatable (1). There are challenges in meeting population health needs in African countries, including human (2) and financial resource constraints. For example, a study in 21 African countries found that the average Cataract Surgical Rate (CSR) was only a quarter of the recommended target (2000 per million population per year); while the average number of surgeons (ophthalmologists and cataract surgeons) was 2.9 per million, well below the recommended target of 4 per million (2).

In 2014, the World Health Organisation (WHO) launched a Global Action Plan (2014–2019) to address the problem of community eye health access. The plan aims to reduce avoidable visual impairment globally by 25% by the end of 2019 with increased emphasis on a health systems approach and integration of eye care into the general health system (3). Recently, primary eye care (PEC) has been promoted as a strategy to address the burden of visual impairment in Sub Saharan Africa countries (3, 4). PEC has been defined as an integrated, participatory and inclusive approach to the eye health component of primary health care (PHC), consisting of promotive, preventive, curative and rehabilitative services (5). The aim is to change the pattern of eye care services, currently often limited to central hospitals and eye units in the cities, to countrywide blindness prevention programmes (6).

In order to realise this and achieve the Sustainable Development Goals (SDGs), especially in relation to goal 3: good health and well-being, many African countries rely on lay people, often referred to as Community Health Workers (CHWs), to assist in delivering PHC services to populations with limited access to the formal health system. There is unanimity in the literature that CHW cadres and programmes have enormous potential to strengthen health and community systems at the interface that is now increasingly identified as community health systems (7). CHWs have emerged as critical human resources able to extend health systems and basic services directly to communities and households (8). In many developing countries, there are insufficient trained staff, and eye care services must be provided too widely and often to sparsely scattered populations. An ophthalmologist in such a setting becomes overwhelmed with the demands that require their attention (6). To compensate for the shortages in eye health personnel, a task shifting or sharing approach can be used in which CHWs contribute to the work of the eye team.

2. Country context

2.1. Overview

Sierra Leone is a country with a population of seven million people spread across five provinces, 17 districts and 149 chiefdoms (9). Four in ten people are less than 15 years and 3.5 percent are 65 years and above (10). People of working age (15-64 years) account for 55.6 percent of the population. Sierra Leone is among the least developed countries with a GDP of 521 US dollar per capita (11). The country has a double burden of disease with high morbidity and mortality from communicable diseases. For example, malaria and tuberculosis mortality rates are 406 per 1000 population at risk and 310 per 100,000 population respectively (12). Despite significant gains in health outcomes since the end of the civil war in 2002, the country has some of the worst health indicators in the world (see table 1) and ranks among the lowest globally for density of skilled birth attendants relative to the population (12).

Table 1: Key health indicators in Sierra Leone, 2017

Indicator	Value
Life expectancy at birth (men)	49.3 years
	50.8 years in women
Maternal mortality ratio (per 100,000 population)	1,165
Infant mortality rate (per 1,000 population)	87
Under five mortality rate (per 1,000 population)	120
HIV/Aids prevalence	1.3%

Source: Human resources for health strategy 2017-2021 (12)

2.2. Sierra Leone Eye Health context

Sierra Leone, like many other African countries, has a high number of blind people. Blindness remains a public health concern and a driver of poverty. According to a Rapid Assessment of Avoidable Blindness (RAAB) conducted between 2010 and 2011, the prevalence of blindness was 5.9% in the population aged 50 years and above. In the overall population, with extrapolation, the general prevalence of blindness across all ages was estimated to be 0.7% (13, 14). Of all causes of blindness, 91.5% was regarded to be avoidable and 58.2% was treatable. Some estimates suggest that up to 12.4% of blindness could be prevented with effective primary health care services in place (13). In

the RAAB¹, cataract was the major cause of blindness (54.2%) followed by glaucoma (17.5%) and other posterior segment diseases (6.8%) and non-trachomatous corneal opacities (6.2%) (13). The cataract surgical coverage was low (44.1%) (13) and the data on the national CSR shows that the country is still far from attaining the IAPB recommended target for Africa of 2,000 surgeries/million population per year.

The Sierra Leone Eye Health System Assessment (EHSA) conducted in 2013 revealed that eye care is included in core health services and integrated into government policies, and there were plans to train significant numbers of new eye care staff by 2016 (13). However, inadequate public budget for eye care, inequitable distribution of government eye facilities and staff, limited provision of refraction and low vision services were some identified weaknesses in the system. Furthermore, while eye care is well linked at national and regional levels and to some extent with the District Health Management Teams (DHMT), the integration of eye care services into general hospital administration varies between facilities and also at district and other lower levels. Some significant human resource gaps in numbers of eye care staff, and inequitable distribution, particularly in the Northern Province and outside urban areas were also noted, and that nurses and doctors are not attracted to specialise in ophthalmology (13). Many people at the peripheral level do not have access to eye health, and at the time of the assessment the country had just five ophthalmologists, three of whom were expatriates (12). A detailed description of eye health service delivery is provided in Box 1 (Appendix 1).

2.3. Study rationale

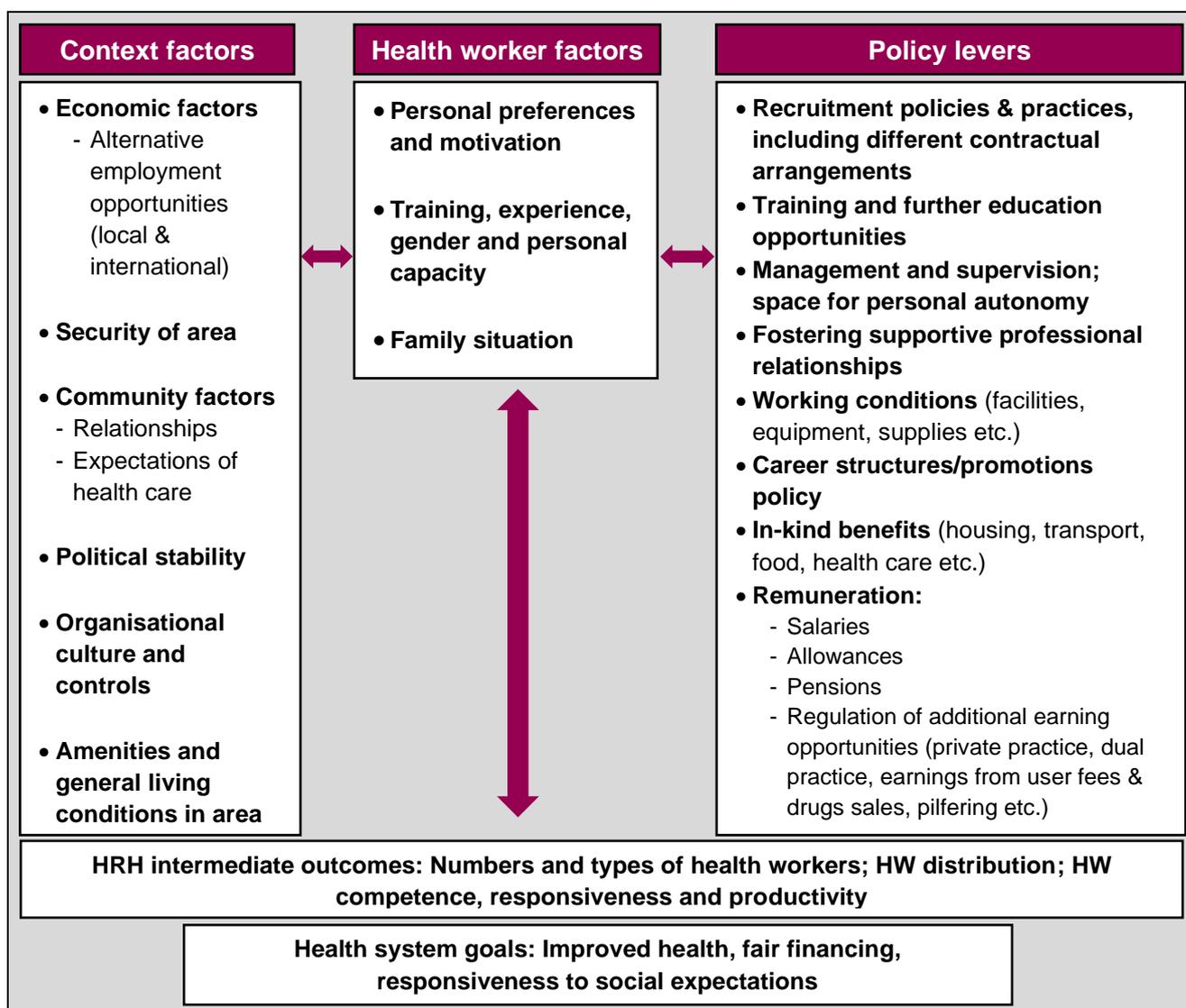
To solve the problem of accessibility of eye health at the periphery, the Ministry of Health and Sanitation of Sierra Leone (MoHS) and partners initiated the integration of PEC into PHC where qualified community health officers (CHOs) were already practicing. The use of community health personnel in PEC is not unusual in low income and resource-constrained countries where there is a shortage of qualified eye health staff. In Zambia for example, traditional birth attendants (TBAs) and community based rehabilitation workers (CBRWs) were trained to understand how to prevent blindness (6). In Sierra Leone, there are over 400 CHOs providing public health services within the PHC system who could potentially deliver PEC. The country's CHW policy allows adding additional tasks to the scope of work (SOW) of CHOs in response to a localised disease burden, or a pilot study to test the feasibility, effectiveness, and/or effect of a proposed intervention (15).

As part of Vision 2020: The Right To Sight, Sightsavers in collaboration with the MoHS, Njala University and other eye health stakeholders, with funding from Irish Aid, European Commission and Standard Chartered Bank, developed an intervention programme inclusive of a plan to train at least six CHOs as Ophthalmic Community Health Officers (OCHOs) annually (16) who will contribute to the improvement of eye health provision in the country.

¹ RAAB: Rapid Assessment of Avoidable Blindness conducted in Sierra Leone in 2011

This study, initiated by the MoHS and Sightsavers, provides critical insights into the design, delivery and effectiveness of the OCHO programme. Drawing from a health worker conceptual framework to analyse OCHO attraction, retention and productivity (see figure 1 below), it examines what worked well, what did not, and what factors enabled or constrained the effectiveness of the programme. The research will provide guidance for potential scale-up and replication of the OCHO cadre across the country. The findings will further be relevant to other West African countries who may want to consider implementing a similar approach and will provide evidence to inform wider discussions around expanding the implementation of OCHO programmes.

Figure 1: Conceptual framework for analysing OCHO attraction, retention and productivity



Source: Adapted from Wurie et al 2014 (17)

3. Study goals and objectives

3.1. Goal

To build the evidence base on approaches that seek to strengthen the eye health system and enable its integration with the general health system.

3.2. Aim

The overall aim of the study was to evaluate an 18-month training programme for Ophthalmology Community Health Officers (OCHOs) in Sierra Leone in order to ascertain whether the OCHO cadre is operating as planned.

3.3. Objectives

In relation to the aim, the specific objectives of this study were to:

1. Map the distribution of OCHOs;
2. Describe how OCHOs currently operate within the eye health system;
3. Describe the roles and job competencies of the various cadres providing ophthalmic care (OCHOs, ophthalmic nurses, ophthalmic specialists and community health workers) to understand how they operate, and how they are perceived and perceive each other to operate;
4. Ascertain whether the deployment and activities of the OCHOs is in line with the objectives set out for the cadre within the framework of competencies and roles for human resources for eye health in Sierra Leone and to identify areas where there may be divergence from those plans;
5. Describe how OCHOs interact with the local community, with regards to eye diseases and community prevention.

4. Methodology

4.1. Study setting

The study took place in four provinces of Sierra Leone (Western, Northern, Eastern and Southern provinces), in 11 districts where the OCHO programme was delivered: Koinadugu, Kono, Kenema, Kambia, Port-loko, Bombali, Pujehun, Bonthe, Moyamba, Bo and Kailahun districts.

4.2. Study design

A mixed-methods design, combining qualitative and quantitative methods, was used. In-depth interviews (IDIs) with key informants and a structured task analysis (18, 19) were employed to investigate how OCHOs operate and work in conjunction with their Ophthalmic and general eye health colleagues, and their responsibilities, knowledge and skills regarding the tasks they perform on a day-to-day basis in their work settings. We also reviewed and extracted anonymised information from the health management information system, e.g. Primary health unit (PHU) registers, to understand the services being provided by OCHOs and the types of ophthalmic care being accessed at the facilities where they work.

4.3. Study population

The study participants comprised OCHOs, other ophthalmic cadres (ophthalmic nurses (ONs), cataract surgeons, ophthalmologists), CHWs, health managers at different levels (Chief CHO, District Medical Officer (DMO)). We also interviewed the National Eye Health Coordinator (NEHC), the Director of Primary Health Care (DPHC), human resources staff from the MoHS, the coordinator of the OCHO programme at Njala University, and community leaders.

4.4. Study sample

Participants were purposively selected using a maximum variation approach in order to obtain a diverse sample across sex, work role and years of experience. A total of 52 interviews were conducted and included 13 of the 16 OCHOs who were operational (the remaining three did not respond). The number of interviews at each study location and the roles of the participants are shown in tables 2 and 3.

Table 2: Number of interviews conducted in each area

Province	District	Number of interviews
Western	Central level of the MoHS	3
Northern	Lunsar	1
	Makeni	4
	Koinadugu	5
	Kambia	2
	Port-Loko	0
	Bombali	2
	Kenema	5
Eastern	Kono	6
Southern	Bo	10
	Pujehun	4
	Bonthe	1
	Moyamba	3
	Kailahun	6
Total		52

Table 3: Number of interviews conducted by participant role

Role	Number of interviews
Eye health professional	
Ophthalmic community health officer	13
Ophthalmic nurse	10
Cataract surgeon	4
Ophthalmologist	1
Optician	2
Administrative staff	
District medical officer	6
Human resource director	0
Primary health care director	1
Chief community health officer	1
Eye care manager	0
Training staff	
Dean, School of Health Sciences, Njala University	1
Head of Department, Clinical Sciences, Njala University	1
OCHO Coordinator, Njala University	1
SP eye care manager	1
Community	
CHW	4
Community leader	6
Total	52

4.5. Data collection

Information was collected through a document review, interviews and a task analysis.

Document review

MoHS documents were reviewed for information on the number and distribution of OCHOs and the legal framework of ONs, CHWs and OCHOs. Information on the type of eye health indicators collected by each cadre in the field was also retrieved.

In-depth interviews

In-depth interviews were conducted in quiet locations at the participant's workplace or nearby to minimise disruption to their routine. The interviews lasted about 40 – 60 minutes and used a topic guide prepared by the study team. Discussion themes were informed by the objectives of the study and the wider existing evidence on OCHOs and community eye health in Sierra Leone (appendices 1 and 2). All interviews were audio recorded with the consent of participants and fully transcribed.

Task analysis

A task analysis questionnaire (appendix 3), was developed based on the scope of work and tasks described in the OCHO training programme, national CHO policy and other relevant documents. The questions were appropriately worded to the country context and the OCHOs were requested to assess themselves on the defined tasks. Self-assessment was done in four areas:

1. Frequency – how often the task performed;
2. Criticality – how important performance of the task was to the outcome for the patient or client;
3. Location – when and where the OCHO was educated/trained to perform the task; and
4. Performance – the level of competence to perform the task.

Fieldwork was undertaken in April 2018.

4.6. Data management and analysis

Qualitative data

The data was analysed with NVIVO using a combined process of deductive (framework approach) and inductive (data-driven) thematic analysis. Analysis involved the following steps: transcribing the interviews, familiarisation of the transcripts and the audio recordings, producing a coding framework, coding and identifying key themes from individual transcripts, merging themes, searching for key findings under each theme, comparing and finding associations, and providing explanations for the findings.

Interviews were transcribed verbatim by the researchers and the transcripts read several times to get an overall picture from which recurring themes were identified. A coding framework was generated and agreed upon between team members in Sierra Leone and Sightsavers. The codes were iteratively defined through the use of constant comparison within and between codes to ensure that they accurately reflected the raw data. Individual themes were summarised, and findings were then synthesised across the main themes, noting patterns in the data.

Quantitative data

Quantitative data on the number of OCHOs and the task analysis was reported on an Excel sheet. Descriptive statistics were computed to show the proportion of responses to each task statement and represented in the form of frequency tables and graphs. The tasks data was cross-tabulated in terms of Criticality-Frequency and Criticality-Performance (tables 4 and 5). The interpretation of the findings was based on the Jhpiego task analysis model (18).

Table 4: Cross tabulation analysis table: Criticality-Frequency matrix - ranked from 1 (highest priority) to 9 (lowest priority)

	Frequency		
Criticality	Daily/ Weekly	Monthly	Rarely/Never
High	High criticality + high frequency (6)	High criticality + moderate frequency (2)	High criticality + low frequency (1)
Moderate	Moderate criticality + high frequency (5)	Moderate criticality + moderate frequency (4)	Moderate criticality + low frequency (3)
Low	Low criticality + high frequency (8)	Low criticality + moderate frequency (7)	Low criticality + low frequency (7)

Table 5: Cross tabulation analysis table: Criticality-Performance matrix - ranked from 1 (highest priority) to 9 (lowest priority)

	Performance		
Criticality	Non capable (NC)	Capable (C)	Proficient (P)
High	High criticality + NC (1)	High criticality + C (4)	High criticality + P (7)
Moderate	Moderate criticality + NC (2)	Moderate criticality + C (5)	Moderate criticality + P (8)
Low	Low criticality + NC (3)	Low criticality + C (6)	Low criticality + P (9)

Legend:

- Red = Urgent attention
- Yellow = Moderate attention
- Green = no attention or removal of task

4.7. Research ethics

Ethical approval was obtained from the Sierra Leone Scientific and Ethics Committee prior to starting the study (appendix 4). Informed consent was sought from all participants, assuring of confidentiality and anonymity of the information collected. A study information sheet was also given to all participants.

4.8. Study limitations

A major constraint of the study was the inability to interview some key senior health professionals, especially at the Human Resources department of the MoHS, who could offer high-level insights into the health system issues that influenced the programme. In addition, the directors of Human Resources and Primary Health Care were newly appointed and had limited information about the OCHO programme. However, we were able to interview the immediate past director of Primary Health Care. Also, even though we interviewed almost all the OCHOs, the small size of the group meant that we could only generate descriptive information from the results of the task analysis.

5. Results

5.1. Profile and distribution of OCHOs

Thirteen of the 16 actively deployed OCHOs were interviewed (three could not be reached). The median age was 38 years and the majority were men (11/13). All OCHOs held an ordinary level secondary school educational qualification and had spent an average of six years (range: 2 – 10 years) working as CHOs before training as OCHOs; confirming that the selection criterion requiring a minimum of two years of professional experience as a CHO had been adhered to. Eight OCHOs were based in PHUs while five were deployed to district hospitals. As expected, the OCHOs also worked as CHOs at their base locations except for two members of the group who were ONs.

Table 6: OCHO profile

		Frequency n (%)
Age* (n=10)	Median [IQR]	38 [36-45]
Sex	Male	11 (84.6)
	Female	2 (15.4)
District of operation	Bo	3 (23.1)
	Bombali	2 (15.4)
	Kailanhun	2 (15.4)
	Kambia	1 (7.7)
	Koinadugu	1 (7.7)
	Kono	2 (15.4)
	Moyamba	1 (7.7)
	Pujehun	1 (7.7)
	Western area	0 (0)
	Port Loko	0 (0)
	Community location* (n=12)	Bo
Kabala		1 (9.1)
Kailanhun		2 (18.2)
Kangama		1 (9.1)

	Magbema	1(9.1)
	Masongbo	1 (9.1)
	Moyamba	1 (9.1)
	Pujehun	1 (9.1)
	Tombodou	1 (9.1)
	Tonkolili	1 (9.1)
Place of work (Health unit)	PHU	8 (61.5)
	District Hospital	5 (38.5)
Number of years of work as OCHO* (n=12)	≤ 2	4 (33.3)
	3 - 4	4 (33.3)
	≥ 5	4 (33.3)
Number of years of work as CHO* (n=12)	≤ 2	1 (8.3)
	3 - 4	3 (25.0)
	≥ 5	8 (66.7)

* Missing data

5.2. Recruitment

Motivation to join the programme

For individuals, choosing the right career progression pathway is important in ensuring that they are motivated and productive. The decision is influenced by various factors extrinsic, intrinsic or a combination of both. From the service organisation perspective, understanding the needs and the motivations of potential candidates so that the right people are selected for training is important in order to avoid failure and drop-out during training. Factors that influenced participants to join the OCHO programme were related to a sense of responsibility toward the community in terms of eye diseases prevention; desire to help the community and personal motivation or self-caring. Similar numbers of respondents reported each of these factors.

Sense of responsibility toward the community

The critical shortages of experienced eye health staff in remote areas influenced the desire of participants to join the OCHO programme. Many expressed a sense of responsibility toward the community regarding eye care prevention. The importance of the eye and inability to help people that were blind or had other eye problems that were preventable or

controllable at an early stage was also mentioned as motivating factors. One participant noted:

“I went to the training to get good insight of ophthalmology because the eye is a special organ that is important in the existence of any human being. Because most of the eye conditions are preventable and controllable at the early stage, I will have the opportunity to tell them the different precautions to take to avoid blindness.” **Male OCHO 5**

“What made me decide to become an OCHO was because of the eye condition cases within our country increasing. Because of this I decided to go for training so that I will be able to help prevent these conditions.” **Male OCHO 2**

Participants also reported that they sought to be trained because of the absence of an organised plan for eye care within the government and private facilities, which had impacted on referral because sometimes patients do not go to referral but use native herbs. Because of this situation, some participants felt obliged to do the training in order to be able to provide care for minor eye conditions and refer severe conditions to the appropriate place:

“Well looking at the district there is no organised plan for eye treatment both at government level or private health care level. That is why when the opportunity came to do the training, I felt obliged to do the course so that I will come back in the community and help to prevent blindness.” **Male OCHO 6**

“The reason why I became so interested in the program was because during (CHO) training we do not have much learning, especially about eye care. So, most of the cases we used to refer elsewhere, but sometimes those cases we refer, do not go for referral and they use native herbs instead. So that made me interested so I can take care of minor ones and refer them to their appropriate place.” **Male OCHO 11**

Desire to help the community

Some participants were influenced by the fact that community members had no opportunity to access eye care. One participant highlighted the absence of an ophthalmic nurse in the district. Already working in their community as a CHO by providing basic health services, they saw the training as an opportunity to provide eye care to members of their community:

“When the opportunity came I opted to go because I saw the need to do the training and come back in the community to help the people, because in the entire district there is no ophthalmic nurse - that is why I developed interest in the training.” **Male OCHO 6**

Self-development

Interest in the OCHO programme was also influenced by a desire for self-development both personally and professionally. Most OCHOs had spent an average of six years

working as CHOs and saw in the OCHO programme an opportunity to improve themselves and advance professionally.

“Well I was practicing as CHO, but I wanted to do a further course so that I can upgrade myself and I was interested in the eye service.” **Male OCHO 12**

The desire to improve themselves was also linked with a strong interest in eye care. In their previous practice as CHOs, they had come across many eye conditions and realised that if they had appropriate skills, they could treat them in good time and prevent the conditions from getting worse.

“Well I have passion for the field, that is why I started as an ophthalmic nurse in Kenema; and after seeing the importance of treating eye conditions I decided to go for the advanced training which is the OCHO program so that I can return and help in the community.” **Male OCHO 3**

Family is one of the extrinsic factors that can shape our perceptions and different employment options. If you provide in-home care to an elderly or ailing relative, you may be attracted to positions that offer care. Continually changing family obligations in terms of health care can subtly or dramatically affect your professional choices throughout your career. A participant expressed that his interest in the OCHO training was motivated by the health situation of a family member who is blind:

“Oh yes, I have an aunt who is totally blind, due to the glaucoma and she is suffering. We, her family members are supporting her, but it is difficult for us. She feels alone and for anything she wants or needs, she is unable to do herself and needs to call somebody for help, and that person attend to her timely as well as buying drugs for her. You might find yourself in that position, so that is what actually motivated me to learn more about the eye.” **Female OCHO 9**

Selection process

The selection criteria for OCHOs were clearly defined in the training manual: candidates should be at least 35 years old, qualified as CHOs, be already employed by the MoHS, and must pass an interview. Most participants fulfilled the criteria (table 6); although two of them were formerly ophthalmic nurses rather than CHOs. The selection process was managed by the DMOs and involved advertising the opportunity on notice boards, at meetings or by word of mouth. In some instances, potential candidates were purposefully identified and nominated by the DMO.

“I was called by the former DMO who told me that there is training for eye condition and upon arrival, I was selected as per arrangement with the DMO to go for the training. That was how I came to know about the training of ophthalmic community health officers.” **Male OCHO 1**

The DMOs noted that in selecting people to be trained, they considered factors such as the person's interest, ability and links to the community. In some cases, there were inputs from the DHMT.

“My DMO ask me if am going to live in this place for years and I said yes, and he recommended me.” **Male OCHO 11**

“The process was explained during our DHMT meeting. The DMO explained that there was a programme to train OCHOs. All my colleagues selected me.” **Male OCHO 2**

5.3. Integration with the health system

Legal framework and policy documentation

Policy documents and legal frameworks are important components of the development of a cadre or a profession. They outline specific competencies by job classification, adopt a payment system structure, and provide a link between performance and career advancement. The OCHO programme represents a task shifting approach; each role and job description must be defined in a document highlighting the competencies (tasks and processes) to be performed by each staff member with a specified degree. The document should be made available at central and peripheral administrative levels.

Two informants from the MoHS indicated that the OCHO Framework document is available and documented at the ministry level but had limited information about its content or where it could be accessed. However, the general understanding was that the documentation (scheme of service of health cadre) was developed by integrating some aspects of the OCHO cadre with the CHO scheme of work; but there was no specific ministry documentation outlining the qualifications, duties and responsibilities, salary grade and career progression pathway for the OCHO cadre. Other than the curriculum for postgraduate diploma ophthalmology for CHOs available at the Njala University, we found few government documents providing a description of the OCHO cadre and linkages with other HR processes.

“Yes, the functions are aligned with the health system because the planning was done in the ministry of health. They all met, made suggestions and recommendations were made. They are doing the same work [as ON and ophthalmic surgeons] but if they have difficulty, they refer cases to the ophthalmic surgeon. The OCHO works in communities and the PHU, but he makes referrals to the hospital when he faces difficulties.” **Key informant 1 PHC-MoHS**

“We are having problem with the human resource, as this OCHO is not defined in the HR department in governance, so they can't receive salary based on that cadre. They should address that issue.” **Key informant 4 District level**

Officers at the district level felt that the absence of a specific document establishing the OCHO cadre meant that the boundaries of their responsibilities were not clearly delineated. This posed the risk of OCHOs operating outside the limits of their role.

“That [OCHO policy document] needs to be developed because even the cadre itself has challenges as far as the policies are concerned in Sierra Leone. That needs to be thoroughly developed but on a broader perspective, they know what they should do. They went through the training both theoretical and practical and in that area, they have been taught what to do. So, in general we as clinicians normally engage them during our in-charges meetings and discuss challenges and proffer solutions. Some tend to be enthusiastic and go beyond their limits, but that needs constant engagement – to give those defined roles and responsibilities in the facility.” **Key informant 5 district level**

Status and power within the health system

Perceptions of the status and power of OCHOs within the health system were generally negative. This was experienced by the OCHOs in three main ways - lack of formal recognition of the cadre, absence of a cadre-specific pay scale and disrespect and distrust by colleagues.

Non-recognition of the cadre

Giving lower cadre workers more responsibilities, (the essence of task shifting) is unlikely to be sustainable without commensurate recognition and remuneration. They have to be fully integrated within the health system and be supported by the MoHS. Formal recognition by the hierarchy is essential, and the reluctance of professional bodies to support the process has been recognised as a barrier to task shifting. Participants felt that, despite the advanced training they had received, they were still viewed as CHOs by the MoHS.

“I told you earlier that we are not well paid or supported by the ministry to execute our duties properly, and our cadre is not recognised in the ministry because we still receive the same salary as any CHO. In summary, we are marginalised by the ministry. Even the motor bike I am using is getting old and they don’t even supply me with fuel or equipment.” **Male OCHO 5**

“We are marginalised or unrecognised because it is only the partners that are talking to us directly. The government is still treating us as CHOs.” **Male OCHO 6**

The chief CHO at the central level also acknowledged the non-recognition of the OCHO cadre. He attributed the problem to bureaucracy within the system but held out hope that the situation would change.

“But the problem is that the policy has not been affected because there are a lot of protocols to go through before their status is regularised. However, we are still working on it to see that it materialises.” **Key informant 2 MoHS**

Absence of pay scale

According to the government scheme of services document, OCHOs should be promoted from grade 5 (CHO) to 7 on completion of their training. All 13 OCHOs reported that they had not been promoted or upgraded after the training. They felt that they were underpaid, and this had a negative impact on their commitment to work. Many expressed that they were disheartened and demotivated.

“[Taken into account by the MoHS] I don’t think so, otherwise they should have promoted me to another level. The programme manager is supposed to take our case to the ministry to upgrade our status, but I don’t think he is working to fulfil our dreams.”

Male OCHO 1

“I have filled in forms since 2016 and submitted them to the ministry for possible promotion and increment of salary, but up until now I have not got any feedback, and this demotivates me in service delivery.” **Male OCHO 3**

The chief CHO confirmed the salary issues. He acknowledged that qualifying as an OCHO represented a change of status from grade 5 to grade 7, which should rightly attract a higher pay. He also noted the adverse impact this could have on recruiting new applicants.

“There is a gap in terms of recruitment and payment of salaries for the work they are doing now because it is a change of status from CHO to OCHO. The documents signed include an increment of salaries and promotion of their cadre because they have done a specialised course, in addition to the previous one they did as CHOs. As far as I am concerned there is absolutely not enough support for the ophthalmic nurses and this has created a scenario wherein most of the trained OCHOs are becoming disinterested in that area because they are not paid according to their cadre, no equipment is provided and the salary is low compared to the work they do in the communities.” **Key informant 2 MoHS**

“The only obstacle we face with them is some have left and got another job, thereby abandoning their PHUs making the problem of eradicating blindness in the communities more alarming.” **Key informant 2 MoHS**

Disrespect and distrust

Recognition builds the confidence of staff members and contributes towards feeling valued and included. However, the OCHOs observed that this was not the situation in their case. They highlighted examples of other health workers not trusting their abilities or being reluctant to take instruction from them.

“They always feel that OCHO cannot do other tasks in the clinic except that of eye care. Secondly, the nurse does not allow me to have access to the drugs supplied at the hospital, especially those having to do with eye care. Our presence is sometimes not felt by these nurses who feel we shouldn’t work as one.” **Male OCHO 5**

Integration of programme in health system planning

The National Eye Health Programme is responsible for facilitating the integration of the OCHO programme within the general health system in Sierra Leone. It provides the leadership and coordination of eye health service delivery at district and national levels. Responses by participants highlighted the lack of financial support to the OCHO programme. They saw this as the reason for a lack of equipment and supplies and continued dependence on external partners for programme funding.

Specific programme support

Financing is a key element of health system functioning. In low and middle-income countries (LMICs) confronted with numerous health challenges, weak economies and large sections of the population living in poverty, sustainable health financing is a major challenge. The issue is not just how much money to allocate, but also how it should be distributed across competing priorities to obtain the best value for money. In sub Saharan African countries generally, the MoH budget for eye care is inadequate and mainly covers administration rather than service delivery. In Sierra Leone, there had been discussions about OCHO programme financial support within the national eye care programme, but no definitive agreement had been reached. Rigidity and bureaucracy at the level of the MoHS was blamed for this situation during the interviews.

“In the beginning I attended a meeting where such discussion [supporting the OCHO programme] came up, but now everything has changed and there should be a review of the entire programme.” **Key informant 1 PHC-MoHS**

“The challenge we have is too much protocol to get support from the ministry and is that why I keep praising Sightsavers for helping the ministry in this direction.” **Key informant 2 MoHS**

At the district level, there is no budget for eye care, which limits the integration of eye care services. Two DMOs reported that there was no disaggregated budget with a specific line for eye care at the district level. They further observed that the actual allocations are not timely and insufficient even for service areas considered to be a greater priority than eye care.

“[Concerning resources], that is a major challenge because in the district allocations they are not timely and not sufficient, so it is really difficult. At the moment, there is no budget line, but we are considering it because apart from eye health there are also mental health issues in the community to address and we plan to factor these issues in this year’s budget planning.” **Key informant 5 district level**

“No specific budget [for the OCHO deployment] except [as part of the] integrated [budget]. We have not received any money from the council for the integration of eye care services into the activities of the DHMT. We need more resource put into the public health awareness part of eye issues.” **Key informant 6 district level**

Donor support

In LMICs, international donors and NGO partners play a very important role in eye health financing and service delivery at the district level. They usually support the training and operational costs, such as equipment, consumables and outreach activities. The CHO chief at the central level reported that funding for the OCHO programme relied on partners with no government support.

“Well the ministry has not provided funding for this, but the partners are doing a lot to ensure the training becomes successful. The challenge we have in the field is on the tools [equipment] that were to be supplied to them after training but have still not been made available to them.” **Key informant 2 MoHS**

At the district level, a similar view was expressed. Participants from the university added that the government did not fulfil its promises to provide equipment and materials after the training.

“There is no support from the government, but they are being supported by Sightsavers and other partners. After the training, they give them the tools. There is no [support from our office] because we are constrained by budget. We do help them with fuel if they need to go for training or outreaches, but not buying equipment.” **Key informant 4 District level**

“There is an issue with materials for them to do the work and the Ministry has not played their role in providing the materials needed for them to do the job well. Although the curriculum actually says they should be provided equipment.” **Key informant 3 Njala University**

Resources for the role

In LMICs, deteriorating infrastructure and lack of equipment are major challenges for eye care service delivery. The delivery of ophthalmic services at all levels is highly dependent on equipment: from the simple torch light to the more sophisticated equipment used for diagnosis and treatment. However, it is not enough to have the right equipment available at all levels of service delivery; there has to be a good maintenance and repair support service. These all help to create an enabling environment, which ensures optimum staff productivity.

Equipment is central to service delivery and quality and is closely linked with the motivation of eye care personnel to do their job. Complaints about the lack of equipment, and especially drugs, featured prominently in the interviews. Informants noted that the materials available at the PHU were in poor condition, which prevented them from adequately performing their duties:

“The equipment I am using at the clinic was given to me during the training in the form of a toolbox and this equipment was very archaic and not good for any purpose. To be honest, the clinic is totally without eye equipment and this to some extent slows down the work in the facility.” **Male OCHO 4**

“I cannot perform my duties accordingly because I am not equipped or given the required drugs to do my work diligently. The ophthalmoscope and tonometer I am using are almost getting out of use and these are the basic tools needed to do ophthalmic nursing.” **Male OCHO 1**

Among the many challenges faced by the eye care system is that of technical resources. Eye equipment, medicines and supplies are not readily available through the existing public procurement system; and there are stock-outs of essential eye medicines and supplies in most health facilities. Some OCHOs had resorted to purchasing eye care drugs from the pharmacy with personal funds with the intention of selling them to patients and recovering their money. This situation is typical in African countries because some key eye drugs are not included in the national Essential Medicines List (EML) and are not reimbursed by the National Health Insurance Scheme. Even in the contexts where they are in the national EMLs, the resources allocated to purchase medicines and supplies are usually extremely limited and the property is given to other products on the list.

“[...] all other resources are not supplied to me. The drugs supplied are not enough, so I had to buy in the pharmacies, bring to the clinic and manage them. But sincerely we have constraints with drugs in the facility.” **Male OCHO 6**

“Even when we get supply from the free health care there are no drugs included for eye conditions and most times I had to buy from pharmacies and bring to the clinic to treat patients.” **Male OCHO 4**

5.4. Training and development

In health care, the quality and training of health personnel greatly influences outcomes for individuals and the community. Improving the quality of eye care human resources can be established by understanding the different roles within the eye team, selecting the right people to train for each role, training them appropriately and providing on-going training as needed. There were generally positive comments by the OCHOs and other respondents about the design and delivery of their training programme in terms of the duration, content and scope of the curriculum, and quality of teaching. These were however overshadowed by frustration and dissatisfaction with the certification received, lack of opportunities for further training and uncertainty about career progression.

Training-certification mismatch

The OCHOs had enrolled on the programme with the understanding that they were to receive training at the level of a higher diploma programme. Instead, they were awarded an ordinary diploma, which they felt did not reflect the level of knowledge and skills they had acquired:

“Yes [the certification was given to us], but it was an ordinary diploma and it was embarrassing for us; that was not what we were expecting. They gave us an identification card from the union, which showed higher diploma and an acceptance

letter that was written with higher diploma; only that when the result came, it was only ordinary diploma. Many of us felt that we were not graded according to our performance, they just wrote ordinary pass.” **Male OCHO 12**

“Yes, it has not yet. Dr Vandi says they have spoken with the university to change it. Even the original one was still ordinary diploma. Imagine you went for a course for higher diploma and at the end you only receive an ordinary diploma. It is not a progression at all. We were all dissatisfied with it.” **Male OCHO 12**

“And again, in the curriculum it was written there, higher diploma in ophthalmology, but after the training at the end we all received an ordinary diploma. That is what discouraged most of our colleagues.” **Male OCHO 13**

Lack of refresher training

Refresher training enables health care professionals to set and achieve personal goals, maintain their professional registration, and develop their skills and careers. It is a vital component of their professional development; it allows them to stay abreast of changes in a dynamic field and contributes to producing motivated workers and improving retention rates. Continuous training of health personnel is generally a neglected component of the majority of training programmes and is often not taken into account when planning different activities and budgets. It was clear from the views of respondents that this was an area that they felt the OCHO programme had failed to address.

“No [I feel I don't have the adequate technical capacity] [...] in eye cases, you need in-service training because after our training we were faced with the Ebola [epidemic] and that prevented us from using our skills.” **Male OCHO 2**

Different informants noted that in the initial planning of the programme, continuous training was promised, but since the inception of the programme, nothing had been put in place.

“Currently to my knowledge there is no in-service training going on; but according to the initial planning it was stated that continuous training is supposed to be done.” **Key informant 1 PHC-MoHS**

“This has not yet been developed in the country and it is a major gap because they are supposed to do further training to capacitate their knowledge in the area of eye health.” **Key informant 2 MoHS**

“It is actually stated in the curriculum that we held such training, but we have not actually held any such training. They are most involved in workshops organised by Sightsavers and meeting held in their districts.” **Key informant 3 Njala University**

Weak central supervision

Participants expressed that they did not receive sufficient oversight of their role. They felt that better supervision would have identified at an earlier stage the challenges they faced in carrying out their role and the wider issues around recognition by the health system,

training and career progression. At the central level, the inadequate supervision of the OCHO cadre was acknowledged:

“As somebody representing government, I am supposed to do quarterly or annually supervisions in the field but since I took over, I have not been to where they are working.” **Key informant 2 MoHS**

Uncertain career progression

The OCHO curriculum highlights pathways for further development after completing training, such as training in specific fields based on competency (Community Eye Health, Masters in Public Health in country, Tutorship Health Education and Health Management). Significantly, it omitted mention of professional development in eye surgery. This was the area most OCHOs showed an interest in and many expressed fears about credible opportunities for further professional development. A participant described his experience of applying for training in cataract surgery:

“There is no career path and we need people who are trained. Well, like in 2016 when they called us to go and fill in a form to interview for the course in Gambia, we went and spent time, spent our resources [but] at the end the programme [application] died out. So, for some of us, it has reached to a point where we have already lost interest in this area.” **Male OCHO 7**

A key informant involved in delivering the training explained that OCHOs who wish to continue their study in the sub-region universities face many difficulties because of the non-recognition of their diploma at sub-regional level. The certificate they received (Post Graduate Diploma in Ophthalmology for Community Health Officers) is an in-country qualification for a workforce cadre specific to Sierra Leone and not recognised by other countries in the sub-region.

“Yes, there are challenges in eye health care as this OCHO course is a national course and eye health care courses are usually being done out of the country. So, some are facing challenges to further their studies outside of the country, as some institutions do not recognise the OCHO certificate as it is a national programme.” **Key informant 3 Njala University**

5.5. Functioning in the role

Role definition

To compensate for the shortage of human resources in the eye health sector, many countries have adopted a task shifting or sharing approach. Task shifting involves the rational redistribution of tasks among health workforce teams. Specific tasks are moved where appropriate, from highly qualified health workers to health workers with shorter training and lower level qualifications in order to make more efficient use of the available human resources for health. Decentralisation of health services through a task shifting

approach can help to address the current shortages of health workers and limited access to health care within the community. For task shifting to work, each role must be clearly defined by a job description, which lists the set of competencies (tasks and processes) which the person with a specific qualification is required to perform.

According to informants at the district level and the training centre, the OCHO training curriculum is clear about their role and competencies, the tasks they can perform and the cases they should refer to the secondary level.

“Well the functions of the OCHO’s makes them administratively in charge of their PHU’s, if they cannot handle the case, they make a referral to a specialist. Well, they actually see first-hand cases in the communities.” **Key informant 3 Njala University**

Key informants were supportive of the concept of using trained workers to fill the gap in eye health services at the community level and facilitate the integration of eye health care services with the general public health service

“Well looking at the enormous problems faced in treating eye conditions in the community where there are no trained persons to work in the remote parts of the country, the OCHOs were trained to fill those gaps in treating minor cases at the rural community. And after the training they are deployed in the same communities to assist in preventing blindness.” **Key informant 5 district level**

“It aims at integrating eye health care services in the general public health services we provide in the district. For integration to take place effectively one needs to build the capacity of the staffs and OCHO are fit to play that role since they are already in these communities working with the people. The training really is good, and we identified CHO’s who have interest in the training.” **Key informant 4 District level**

Deployment

It is known that rural areas attract fewer health workers even though eye health needs tend to be much greater in rural communities than urban ones. So, even though some districts like Port Loko had no OCHO, it was encouraging to observe that of the 13 OCHOs interviewed, eight were based in PHUs in their local communities as intended by the programme.

“They are taken from a particular community or facility to do training and after training they are redeployed in the same community or facility since that is their deployment area. That is to say, when a CHO leaves a facility for training; he/she is redeployed to the same facility after the training.” **Key informant 1 PHC-MoHS**

Of the five working in district hospitals, informants justified their deployment there on the grounds of critical workforce shortages in the hospitals. They expressed that it was illogical to deploy an OCHO to a PHU when the district hospital itself lacked a cataract surgeon or ophthalmic nurse.

Another explanation was that the deployment of some OCHOs to secondary health facilities indicated poor coordination between the MoHS and the training institution. An informant commented:

“Actually, we do the training, but the Ministry has their own way of transferring their staff and we do not have much control over that as the link we have but [which is] not that much established is the Chief CHO, as that is the office coordinating their deployment. The [Chief] CHO should be able to manage their deployment as he is also an associate lecturer in this University and is always part of the decision-making. Well we have come to realise that they have asked some of them to serve in the hospitals.” **Key informant 3 Njala University**

Deviation from role

We identified OCHOs that were working in areas outside the definition of their job role as described in the OCHO curriculum. Some were working at the district level as disease surveillance officers and others had taken on active roles in their DHMTs.

“So, after the outbreak they say I’m going to stay here and be a surveillance officer and I was receiving back-up from the hospital. They would call me to work together, and I also helped in the nursing training programme. Sometimes, I would end up deviating away from the hospital, because due to your knowledge and performance they will be giving you more work to do; and due to the administrative responsibility, I only sat down and talked. I am part of the programme because they make plans with me when there is an outreach.” **Male OCHO 12**

DMOs admitted awareness of the situation but also noted the workforce shortages in other parts of the health service that encouraged this.

“They are coming from PHU’s so they should return to the PHU, like for Pujehun hospital that is not having eye specialist, the CHO there was trained and was brought to the DHMT to serve as an eye focal person, as he goes out on outreaches and prepares presentations for delivery in the form of reports to the DHMT.” **Key informant 4 District level**

“To answer that, let us go back the original purpose and roles. They were supposed to be in clinics and to give feedback to DHMT. I think they should be in the clinic. The one I met here, he is not practicing as an OCHO, so I will talk to Mrs. Smart [Sightsavers country director].” **Key informant 6 district level**

Drop-out

Retention of health workers is a key aspect of sustainability of a programme. Various informants observed that OCHOs had dropped out of the programme, attributing it to a range of factors including a lack of promotion opportunities, low salaries, demotivation, lack of supervision and lack of proper equipment. The OCHOs universally expressed disappointment in their current situation and felt that many more would leave their post if no remedial action was taken by the government.

“In fact, many of my colleagues have stopped practicing as ophthalmic nurses because of the same complaints and if nothing is done immediately, others will desert the profession and look for greener pastures.” **Male OCHO 3**

Retention measures ideally should be planned, documented and include financial and/or non-financial incentives. Examples of strategies to improve retention include housing allowances, lunch allowances, car loans, childcare facilities, recognition, supportive supervision, good and safe working conditions, professional development, and respect of workers' rights. The absence of a strategy for health worker retention and motivation will lead to dropouts with consequences for service delivery. The CHO chief and DMOs reported that OCHO retention was considered a serious obstacle:

“The only obstacle we face with them is some have left and got another job thereby abandoning their PHUs making the problem of eradicating blindness in the communities become more alarming.” **Key informant 2 MoHS.**

“I don't want to say retention will be a problem but what I want to say is that motivation should be prioritised for the current OCHOs, so that others will join the OCHO training and specialise to serve their different communities. If those already trained are motivated and given the correct cadre, I assure you that many others will follow suit to do the course.” **Key informant 2 MoHS**

Migration of health workers is commonly interpreted as being from national to international and from rural to urban. Migration, however, also takes place when professionals move from the public to the private sector, from primary to tertiary care levels, from government to NGOs and from the health sector to other sectors. This is typically driven by the attraction of better pay and job conditions. One participant at the district level reported that many NGOs are looking for trained eye care staff:

“Yes, retention is a big problem for OCHOs. Because we have an influx of NGOs who are looking for trained ophthalmic nurses, if they can provide a good salary and other incentives, then definitely the OCHOs will leave for greener pastures. I am not saying it will happen, but it is a concern.” **Key informant 5 district level**

The success of a training programme is usually based on the selection process. When selecting candidates, we should consider their expectations would be once they qualify. Selection criteria must be clearly explained before inviting candidates to apply in order to avoid dropouts. During this study, we have noticed that candidates were simply

recommended and sent to the training without a proper discussion on the selection criteria and the candidate expectations, resulting in the abandonment of the role by some candidates. Key informants from the district reported that some OCHOs have stopped the training or never completed the post- training practice and never came back to the district. One informant explained:

“There was one here; not that he was not good, but after the training he didn’t even come to complete his post-basic practical and they gave him all the equipment, but we couldn’t see him. I don’t know why he failed to come. I actually recommended him, and he was even in the PHU, but we had to replace him with a lady who is really interested in the training and she is doing the course right now.” **Key informant 4 District level**

5.6. OCHOs in the Primary Health Unit

General working relationship with other primary health workers

Working as part of a team is highly motivating. This requires first that the organisation or the system genuinely values teamwork and ensures that everyone in the team clearly understands, accepts and values their own and each other’s roles. A few participants placed in primary care units noted tensions between them and other health workers:

“They see you as a specialist in curing eye issues and they become jealous of you and sometimes they become reluctant when I delegate a particular task to them. Sometimes I have to talk to them to work hard, so that they can also be OCHO in the future if they are interested.” **Male OCHO 3**

“Others [health workers] are disrespectful to me, especially those that are older than me, and do not take my instruction in the facility.” **Male OCHO 1**

However, most OCHOs reported good relationships with other health workers at the PHU or district level, particularly expressing the sense of worth it gave them.

“The link is always cordial because as you can see here, I am not working alone. We have other health staff, the CHWs and other health volunteers in the community. Whenever we want to have meetings in the community, it is the CHWs and health volunteers that we link with to facilitate messages for meetings, sensitisations or mobilisation.” **Male OCHO 3**

“Well they are appreciative of the fact that I always bring them new ideas concerning eye conditions, and today some of them [CHW] can handle cases at the primary level and make referrals to me of cases above their understanding. During our meetings we discuss issues like the side effects of drugs and when and how to administer such drugs to patients, so they generally appreciate me.” **Male OCHO 1**

Collaboration on eye case management

The OCHOs noted good collaboration with other workers on eye case management. They received eye cases from other health workers as well as referring difficult cases to the government hospital and reported no problems with these processes.

“All other health workers refer cases to me that have to do with eye health and the community, knowing well that I am the only ophthalmic nurse. They also tell people having problems with their eyes to see me for advice or treatment.” **Male OCHO 1**

“We meet very often [with other health workers]. I refer cases that I cannot handle in the clinic to the government hospital and sometimes we meet and discuss on how to handle cases of eye conditions and the medication to administer depending on a reported case.” **Male OCHO 1**

“The CHWs are a link between us and the community, so whenever we have messages to be disseminated, it is they who do that on our behalf. They are also there as surveillance officers because recently they got training wherein they were taught how to identify common eye conditions and when to refer difficult cases to the clinic, that were above their knowledge.” **Male OCHO 4**

Leadership

The training the OCHOs had received gave them a leading role in eye care. Their position of leadership was further strengthened by the fact that they at the same time continued to function as CHOs, a role in which they are the designated leaders of the primary health care team.

“But sometimes when we are interacting, they will say if I see a case like this, what should I do? Then, I will say, you see it is very much important to do a quality examination. If a patient says I am sick, and the eye is the problem [...] they will call us and say: I have this, what should I do? I will tell them to me send the case so I can assess, and if it is beyond me, I will refer it elsewhere.” **Male OCHO 11**

“Well, I am the only trained ophthalmic nurse in the community and at the facility, that is why I am totally different from the other health workers and because I can do the work of CHO and OCHO at the same time.” **Male OCHO 1**

5.7. Referrals

Good communication including referrals, feedback and information sharing are important in any integrated clinical pathway. Participants felt that referral was important and part of the overall treatment process. They described the referral process as straightforward and noted that issues mostly arose because of the patient’s inability to pay for further care:

“The only problem we have with the referrals is that some people cannot afford money to pay and access the big hospital for further treatment and therefore tend to stay at

home, thereby exacerbating the problem. Some of them also face difficulty in getting lodging in the big towns when they are referred there to get treatment, and most of them are not comfortable with the environment in big towns and to me this is another problem of the referral.” **Male OCHO 3**

5.8. Interacting with the local community

Links between the community and OCHOs

Shortages of skilled health workers means that many LMICs rely on CHWs in order to maintain the link between the community and the health service. Using community members is important for the provision of certain basic health services to the communities. OCHOs saw the CHWs as their main link to the community and relied on them to spread sensitisation messages within the community:

“Presently I am interacting frequently with the CHWs because that is where our focus is for now. We need them to sensitise the masses about the importance of keeping their eyes safe at all times. As you can see, we only have one ophthalmic doctor in the entire district, and this is a cause for concern in the district” **Male OCHO 4**

“Yes, we get information from CHWs and other stakeholders who give us information concerning eye health conditions in the community. When the CHWs see certain conditions of eye problems they usually call me and notify me through phone calls. I normally tell them to refer the patient to me or in some cases, I move to see the patient at community level.” **Male OCHO 6**

Importance of community interaction

Participants raised two issues concerning interactions with the community - improved access to care and facilitation of work. OCHOs observed that previously, traditional healers in the community were the main providers of eye care. The arrival of OCHOs meant people were able to access qualified eye care in the community:

“Before my arrival, almost all the people in the community used traditional herbs to cure their eyes and this caused untold suffering in the community. But my arrival in the community with a background in eye conditions meant that I was able to proffer solutions for most of their complaints. I am impressed with the turn-out at the clinic since my arrival.” **Male OCHO 1**

The OCHOs felt that if they failed to interact with the community, it would make their work more difficult and prevent them from achieving their objectives. Being able to interact with the community could prevent people from resorting to untrained traditional healers for eye problems.

“If an OCHO fails to interact with the community then it will be difficult for them to achieve their aims. The community are always there and the interaction of OCHO with them will motivate them to desist from using traditional herbs to cure their eyes. The OCHOs are in those communities to change their lives and exchange ideas so that they can know what to do if an emergency occurs and where to report.” **Male OCHO 3**

5.9. Challenges to community interaction

Key factors that hindered the OCHOs’ engagement with their local communities involved financial difficulties of community members to get referrals, resistance of traditional healers or herbalists, and cultural norms.

Financial access

Participants identified financial difficulties as a barrier to accessing health care. They reported that inability to pay user fees and the absence of transport-limited people’s access to medicines and health units or hospitals. They also felt that the health insurance scheme was not helpful as it was limited to a category of services, which did not include eye care.

“The financial issues are that most patients who go to the PHU, do not have anything. Some of the ophthalmology drugs are not available at the PHU and most people can’t afford to purchase them.” **Male OCHO 2**

“The biggest challenge was when the free health care was introduced. Many people coming to the clinic refused to pay for certain drugs because according to them, the government has launched the free health care initiative. They didn’t even know that the free health care caters for certain class of people so for them everything at the clinic should be free.” **Male OCHO 4**

Traditional healers and herbalists

Traditional medicine remains the most widely accessible form of health care in Africa. The services of traditional healers are usually simple, acceptable and affordable to their patients. Evidence supporting the efficacy of traditional treatments remains scant and some interventions have been demonstrated to be harmful. Participants reported that, concerning eye health, traditional healers were the first point of contact in the community and this posed a big challenge to OCHOs. They felt that the situation required community sensitisation:

“The main constraint we have with the community is that they still hold on to their traditional beliefs that when they face problems with their eyes the first point of contact is the traditional healers and this cause a lot of difficulties for us as OCHO in most communities. This requires a lot of sensitisation and mobilisation in all the communities, to let them know that the health clinic is the only way to reduce blindness.” **Male OCHO 6**

Cultural norms

The influence of culture on health is vast. It affects perceptions of health, illness and beliefs about causes of disease. It also affects how illness and pain are experienced and expressed, where patients seek help, and the types of treatment patients prefer. Participants felt that community members had strong traditional beliefs, which led them to disregard simple hygiene rules:

“One of the challenges is that the community finds it difficult to change from their traditional practices to the modern way of life. You can tell them one thing, and, in your presence, they will answer, but as you leave them, they do the contrary and to me this is a challenge. For example, if you tell them to put drinking water in a bucket and boil it before drinking, they will agree to do it, but after you’ve left, they will not continue to implement your suggestion.” **Male OCHO 3**

5.10. Information system

A Health Management Information System (HMIS) is designed to generate information on the status of ongoing health-related activities in order to facilitate evidence-based decision-making and effective management of health care at all levels. In order to achieve this, the presence of a reporting tool with all the main indicators should be available at the level of all facilities. Participants noted that there was only a single eye health indicator that they were currently able to report. They expressed that it conveyed an incomplete picture of the full range of eye problems they handled. It was however noted that an updated reporting tool was being developed by the MoHS, which would capture disaggregated eye disease information.

“The main indicator for now is eye infection, because all the causes are blended into one with no specification for now. I understand in the new document there are eight indicators but that has not been rolled out, so everything is recorded as eye infection for now.” **Male OCHO 6**

“For eye care in particular, we guided them on key tools of the health information system regarding indicators they should look for and report on a daily basis, so that this information can then be quantified and the numbers can be reported for conjunctivitis, red eye, and foreign bodies. The tools we have are not detailed to be able to get comprehensive information on eye health for action to be taken, because the tools are biased in favour of general health conditions.” **Key informant 2 MoHS**

5.11. Task analysis

OCHO activities were captured in a self-reported questionnaire, which assessed 75 core tasks that defined the scope of their work. For each given task, responses were analysed in terms of how critical the task was, how frequently it was carried out, how competently

the task was performed, and where the training for the task took place. The findings are summarised below with full details of the results available in Appendix 5.

Frequency of implementation of tasks

Of the 13 OCHOs who responded, nine had never performed minor eye surgery. The most frequently performed tasks were managing common eye conditions and prescribing and dispensing simple ophthalmic medicines and antibiotics on a daily/weekly basis (10/13) and writing and sending monthly reports (7/13). Five of the 13 OCHOs had never or rarely planned for eye care programmes at the health unit and its catchment areas or organised and implemented eye care outreach programmes.

Criticality of task

Five participants identified managing health information systems as highly critical for the community. Managing common eye conditions, planning for eye care programs at the health unit and its catchment areas, and prevention of blindness through health education were seen as moderately critical. Eight participants considered performing minor eye surgery as not critical.

Competence in performing task

The majority of OCHOs considered themselves competent to perform the tasks involved in the role. However, seven participants did not feel capable of performing minor eye surgery. The finding is not surprising given that most of them had not actually performed minor eye surgery before.

Training location

The majority of the participants reported that they had received formal training before beginning work as OCHOs. This means that the bulk of training came from the course they attended to qualify as OCHOs but received no refresher training since then.

Cross tabulation analysis

Criticality-frequency matrix

We compared how critical a task was with how frequently it was performed, to understand whether the OCHOs regularly performed the most critical tasks. Four tasks (**plan for eye care programmes at the health unit and its catchment areas, prevent blindness through health education, perform minor eye surgery, write and disseminate reports**) were considered as critical for the community, but performed only monthly. These tasks were deemed to need urgent attention.

Criticality-performance matrix

Next, we compared how critical a task was with the performance of OCHOs, to understand whether they were competent in performing the most critical tasks. We observed that most OCHOs were competent or proficient in the majority of tasks evaluated, but identified certain tasks that needed urgent attention: (establish eye health services in their health unit, receive/make referrals and give feedback, organise and implement eye care outreach programmes, perform minor eye surgery and write and disseminate reports).

6. Discussion

The key challenges to achieving accessible and equitable eye health services in Sierra Leone include an acute shortage of trained health professionals and a large disparity in the available human resources for health in rural health facilities compared to urban facilities, especially among professional cadres (12, 20, 21). The Ministry of Health and Sanitation (MOHS) has made significant achievements in developing the eye health workforce in Sierra Leone by setting up a new training programme in eye health, especially to deliver eye care in the communities.

In this section, the key themes that emerged from this study will be discussed in order to elucidate the interrelationship between the selection process, the legal framework, the overall perception of the training and the cadre itself, the OCHO work conditions and their influence on the development of the OCHO programme. In addition, recommendations for the retention of deployed OCHOs will be proposed in relation to the conceptual framework.

Motivation and selection

During this study, we found that the factors which attracted CHOs to train as OCHOs were a sense of responsibility toward the community in terms of eye disease prevention, a desire to help the community and personal motivation. These factors have been highlighted in other studies among nurses, CHWs and volunteers, which found that self-validation and a desire to help the community were key motivating factors (22-24). To better maintain or increase motivation among health workers, particularly in Sub-Saharan African countries, it may be useful to consider sources of their motivation in the programme planning and management structures. (23)

Literature on human resource development identifies the selection process as a key component in order to ensure a smooth pipeline for human resources for health. When selecting candidates to train, selection criteria must be clearly explained before inviting candidates to apply (25, 26). Selection must be non-biased and designed to find the best candidate. It can be done based on candidates' curriculum vitae, simple written or practical exercises to identify existing knowledge and skills (e.g. testing visual acuity), and observation of the candidate to assess their attitude (26).

The presence of OCHOs who had joined the training programme as ophthalmic nurses rather than CHOs indicated that the selection criteria were not strictly applied. DMOs played a key role in identifying potential candidates and we found that in some cases, personal knowledge of an applicant was a key factor guiding selection. It is possible that this may have biased the selection process and could have influenced the selection of candidates who later dropped out. Nevertheless, among the OCHOs we interviewed, many displayed personal attributes that would be considered right for the role.

OCHOs and the health system

The first point of attention was the legal framework of the cadre within the health system. We found a lack of clarity in MOHS human resource policy, which may have contributed to inconsistent implementation of the programme in the field. While the OCHO framework document was said to be available and documented at the ministry, key MOHS informants could provide little detail of the content. Policy documents and legal framework are a core and important component of the development of a cadre or a profession. The framework provides a link between an officer's performance and career advancement adopts the payment system structure and provides specific competencies by job classification. This is not a new weakness of Sub-Saharan African health systems as previous studies have reported the issue (27). Narayan et al., further added that in other cases, there was an official policy position at high levels in the MOHS, but it had not been disseminated to the key national or district officials involved in implementation (27).

Several OCHOs complained of the absence of an *Act* (which is a Governance/Regulations document related to HRH) specific to OCHOs. However, there is the Community Health Professionals Act, which takes into account all community workers including OCHOs. According to some authors, there is the need for policy definition to harmonise the issues relating to health cadres in general (28). Many challenges faced by OCHOs can be addressed through appropriate national policy articulation.

Furthermore, given that the OCHO cadre is a new role developed using a task shifting approach, formal recognition by the health system is essential. Typically, such cadre operate within a country-specific health setting and may not be considered appropriate or accepted in other country health systems. Indeed, the reluctance of professional bodies to accept the new roles created by task shifting has been recognised as one of the main barriers to the approach (29). Within health systems in general, the literature acknowledges "recognition" as one of the important motivation factors of health workers (30, 31). Lack of recognition can lead to workers feeling devalued, demotivated and discouraged, and cause them to quit their job in search of better conditions elsewhere. This was clearly demonstrated by the findings of this study.

Many studies have also identified dissatisfaction with salary as one of the major causes of health worker demotivation (32-34). Salary increase reflecting the higher qualification is important for health worker retention (34). In this study, we found that financial barriers to successful implementation of the OCHO programme acted at three levels – at the individual level in the form of job dissatisfaction and demotivation arising from non-implementation of the higher salary grade of the OCHO role; at the service level in the form of inadequate provision of equipment and supplies to perform the job; and finally at the system level in the non-integration of the OCHO programme within the health budget and planning of the national Eye Care Programme.

Studies suggest that the process of integrating policies, practices, and activities into the remit of other organisations can facilitate the continuity of health service delivery (35).

However, bureaucracy and procedures need to be simplified to facilitate smooth transition. Consistent with the findings of other studies (36, 37), we identified excessive bureaucracy as a barrier to integrating the OCHO programme with the national Eye Care Programme.

OCHO training and development

While the scope and delivery of the OCHO training programme was positively rated, the certification of training, in terms of the diploma awarded, was a major obstacle to successful implementation of the programme. In a training programme, there should be an equivalence between the level of the curriculum provided and the level of certification to reflect the knowledge, skills and competences of the graduates. A mismatch between these leads to dissatisfaction and a sense of frustration. Similar findings were reported in other studies. A study in Cameroon, for example, highlighted the negative impact of inadequate recognition of health workers' education (diploma) on their incomes, job satisfaction, social status, career identity and life plans more broadly (38).

Another point of dissatisfaction was the absence of continuous training and career progression. It has been recognised that refresher training enables health care professionals to set and achieve personal goals, to retain their professional registration, develop their skills and careers; all of which motivate them and improve their willingness to remain in post (39). Similar findings were reported in a qualitative study of health workers in Ghana which found disadvantages in career development as a major disincentive to accepting postings to rural areas (40).

OCHO role

Several factors affected the performance of OCHOs trained to date in Sierra Leone - their professional recognition and certification; their salary and opportunities for career development. These factors, individually and in combination, devalued the OCHO status as a cadre and led to their poor motivation and job dissatisfaction. There is a large body of evidence in the literature showing the association between worker motivation and productivity (41-43) and between financial and non-financial incentives and retention (44, 45).

The relationship between OCHOs and other health workers was good at the PHU level where OCHOs were already established as leaders of the primary health care team by virtue of their concurrent role as CHOs. At district level however, the picture was more mixed. Although there were good interpersonal relationships with other health colleagues, professional relationships were influenced, mostly negatively, by the effect of the system barriers the OCHOs faced which made them more 'invisible' within the system and blurred the boundaries of their role that distinguished them from other health workers.

Referrals

From a provider perspective, the study found the referral process simple and straightforward. Most problems with referrals identified by the study were due to patients' inability to pay for further care. This involved both the direct costs of treatment and the indirect costs of transport. The issue is not new in health; financial barriers and inability to travel have been reported in many studies (46-48). It is therefore clear that although the OCHO role was important in providing health information or basic eye care services to patient with minor illnesses, it could not improve the access to treatment for more complex conditions, such as cataract, which require secondary health facilities. This study reiterates evidence from other research, which suggests that both direct and indirect costs of conditions such as cataract surgery, can be very high and unaffordable for many patients irrespective of whether they know of where to get care or not (49).

OCHOs and the community

Our study highlighted that community engagement was an area where the OCHOs had the most impact and felt most valued. We observed that CHWs were the main link between OCHOs and the community. Shortages of health workers, particularly in underserved areas, have been identified as a key facet of the growing human resource crisis. In LMIC, many countries rely on CHWs to maintain the link between community and health workers. Using community members is important to make basic health services available to the communities. Relationships of trust between CHWs, community members and the personnel at facilities in the health system are vital for improving service delivery and uptake of services (50). Relationship-driven and community-focused approaches to engaging service users have become central to meeting diverse patient needs (51, 52). Our study also confirmed the findings of other research which showed that community-based public health interventions are not merely about service delivery, but also involve contextual factors and building relationships with community members (50).

7. Conclusion

Development of human resources for eye health (HReH) is a major focus of the Global Action Plan 2014 – 2019, which aims to reduce the prevalence of avoidable visual impairment by 25%, by the year 2019 (41-43). The eye health workforce in Sub-Saharan Africa is more limited than in many other parts of the world (21). To compensate for the shortage of human resources in eye health, many countries including Sierra Leone have adopted the task shifting or sharing approach. This approach is in line with the VISION 2020 HReH strategy, which recommends that sub-Saharan African countries develop a new intermediate cadre of non-physician health workers to compensate for the shortage and the unequal distribution of ophthalmologists in urban and rural areas (21, 42). Global policies also call for countries to develop and test innovative recruitment and retention solutions to improve universal eye health coverage in LMICs (21).

The overall aim of this study was to evaluate an 18-month training programme for Ophthalmology Community Health Officers (OCHOs) in Sierra Leone in order to ascertain whether the OCHO cadre is operating as planned. We have focused on whether the OCHO programme worked, what worked well, what did not, and what factors enabled or constrained its effectiveness. The focus on implementation is appropriate at this stage because the programme is not yet operating at scale. Our initial aim was also to assess the impact of the programme on eye health. However, given a small scale of the OCHO programme at present, this is a much longer-term goal, which will first require that sufficient numbers of OCHOs are operating in the field.

The study has generated a detailed picture of the OCHO cadre and the health system context in which it operates. Across the major components of the programme – selection, training, deployment, integration, support and development - the evaluation highlighted the key strengths and weaknesses of the approach and how it has been implemented. We found that successful implementation of this innovative approach has been affected by several challenges experienced by the broader health system of Sierra Leone. The majority of newly trained OCHOs were highly motivated to take up their new role and help their local communities. They were adequately trained and welcome in their local facilities, However the graduates rapidly became demotivated and dissatisfied with their new jobs due to i) professional non-recognition, ii) the lack of financial stimuli, iii) the lack of system support; iv) inadequate equipment and medical supplies; and v) inability of patients to take up referrals due to financial constraints.

The findings indicate a need to rethink numerous issues at both programme and system levels. While there are several enabling processes and areas in which the programme was implemented as planned, strong evidence was found around systemic barriers that undermined successful implementation and effectiveness of this initiative.

Efforts to build capacity in primary eye care through task shifting approaches such as the training of OCHOs need to take into account the following considerations:

- Where new workforce cadres or roles are created, processes such as clear legal frameworks, appropriate level of certification and salary grading are important to facilitate recognition of the roles by the health system and integration within the wider workforce.
- Deployment of the newly trained cadre strictly at the primary level as intended may not be possible, as continuing workforce shortages will mean that DMOs will be under pressure to use trained eye health workers to fill shortages at the secondary level.
- Programmes do not operate in isolation but have a reciprocal relationship with the broader health context. Accordingly, they are most effective and sustainable when: a) the programme is designed to be responsive to real local need and sensitive to the wider context; and b) when the context provides an environment that enables the programme to achieve its objectives.
- Where there are major weaknesses in the health system, as is clearly the case in Sierra Leone, system-level issues should be anticipated to exert major constraints on programme effectiveness. At an early stage therefore, careful attention should be given not only to planning the programme itself, but identifying and mitigating the macro-programme risks posed by system barriers.
- Constraints within the secondary and tertiary eye care levels in Sierra Leone also mean that although OCHOs are an important cadre to provide eye health information and basic management of minor eye illnesses, access to treatment of more serious conditions causing visual impairment and blindness is likely to be limited or unavailable for large numbers of people, who live too far from any secondary facility or unable to pay for further care.
- Finally, although the study findings cannot be generalised to other health worker cadres, it is clear that many of the health system issues identified are not OCHO-specific. The use of task shifting approaches in other areas of health service delivery, especially where new roles are created, are likely to face similar challenges and need to be better understood.

To conclude; while the OCHO programme shows promise, it also has visible shortcomings. These have resulted from a failure of implementation and health system constraints, rather than an intrinsic flaw in the conceptual design of the programme. The task shifting approach employed to improve access to primary eye care has good support in the evidence base and arguably can be effective if properly implemented, integrated with, and enabled by the wider health system.

For development partners, a central message is that the issues with a newly introduced programme cannot be solved simply by providing more funding, training and other technical resources. As the OCHO programme so clearly demonstrates, in resource-poor and struggling health systems, the barriers to programme effectiveness are formidable and not quickly overcome. Strong and sustained action and commitment will be needed by all partners, external and local, and should be directed both at the level of the programme and the health system.

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9. Appendices

Appendix 1

Box 1: Eye health service delivery in Sierra Leone

In Sierra Leone, eye health services start at the community level where community health workers (CHW) identify and refer patients with eye diseases to the Primary Health Unit (PHU). The PHU is where Ophthalmic Community Health Officers, who are the primary eye care focal point in the community, are based. Preventive services including immunisation and Vitamin A supplementation are provided at peripheral health units and through outreach services. Simple eye diseases are also treated at this level. Secondary eye care services are provided at district hospitals by ophthalmic nurses (ON), opticians and in some cases cataract surgeons who will perform screening and treatment of simple eye diseases. More complex cases are referred – tertiary services, which include surgery, are offered at referral hospitals and NGO Eye hospitals by ophthalmologists. According to the 2013 Eye Health Systems Assessment² eye health had been integrated into the health sector, coverage and quality of care had increased over the five years preceding the assessment, faith-based organisations who provided free cataract surgery had contributed immensely to access to care, and the sub-sector had plans to train eye care workers to fill skills gaps (14).

Description of the National eye health policy in Sierra Leone (14)

The rationale for this policy is based on gaps in delivery of comprehensive eye health services especially preventive, promotive, curative, rehabilitative and palliative, that reaches all people of Sierra Leone. It is also based on the need for the Government to fulfil its commitment to the people based on global and local commitments. This policy seeks to address the following objectives:

- Strengthen leadership and coordination of eye health service delivery at district and national levels.
- Promote access to comprehensive, integrated, affordable and quality, eye health services at community, school, workplace and health facility levels.
- Promote human resource for eye health that is skilled, motivated and equitably distributed.
- Ensure availability of appropriate infrastructure, functional equipment, essential medicines, diagnostics, assistive devices and health technologies at all levels.
- Promote use of management information systems and research for evidence-based planning, advocacy and improvement of eye health services.
- Ensure access to affordable quality eye care services for the people of Sierra Leone.

Eye health human resource and production in Sierra Leone

¹ Eye Health Systems Assessment: Sierra Leone Country Report, 2013;

According to the Sierra Leone National Eye Health Policy, the number and skills mix of eye health workers is inadequate and their distribution skewed to urban centres affecting rural service delivery. The Northern, the Eastern and the Southern Province are the worst affected by the shortage of eye care workers. The country has only four ophthalmologists (53) and five mid-level personnel per 10,000 population (12) and six Ophthalmic clinical officers (OCO)/nurses per million population (21). In addition, opportunity for further training for ophthalmologist and mid-level eye-health workers are inadequately developed which affects the quality and reach of service as well as possibility for professional career development.

OCHO programme in Sierra Leone (16)

The OCHO programme in Sierra is a collaborative project, which includes Sightsavers, the MoHS, Njala University and other eye health stakeholders. Irish Aid, European Commission and Standard Chartered Bank funded this project and a 4-year strategic plan (2012-2016) was developed. The plan targets to train at least six Community Health Officers (CHOs), as Ophthalmic Community Health Officer annually. Training some of the CHOs in eye health and posting them back to the PHC level to provide eye health as part of their normal polyvalent duties will help bridge the gap in eye health delivery.

This strategy provides a curriculum, with an emphasis on community eye health training, with specific tasks and skills. The strategy seeks to address the following objectives:

- Produce competent, well trained OCHOs who will contribute to the improvement of Eye Health provision in the country.

Specifically, it aims to:

- Diagnose and manage common eye conditions.
- Organise and manage static and outreach eye service
- Accurately document clinical statistics and generate informed reports.
- Conduct regular monitoring and evaluation (internal and external) of eye health services for all stakeholders
- Develop networks and strategies with other multi-disciplinary sectors

The curriculum also provides the OCHO job description, career development and opportunities, admission requirements, programme duration and the general academic programme.

Roles and job competencies of the main cadres in eye care in Sierra Leone

Generally, each specific grade in the public service has a prescribed document call scheme of service, which includes the qualification requirements and job competencies. The scheme of service is a legal document prescribed in accordance with regulations of the Service Commissions. It specifies the qualifications, duties, competencies, skills and experience required of the prospective jobholder as well as the duties and responsibilities of a job. It also specifies the mode of recruitment/appointment and the salary attached to the grade.

The scheme of service is of vital importance in the management of human resource functions such as recruitment, promotion, performance management, training and development, job evaluation, design of pay structures, organisation design; and therefore the design or amendment to a scheme of service needs to be done with utmost care and in a timely manner. Delays in the prescription of schemes of service inevitably cause prejudice to the organisation, the employees concerned and disrupt the service delivery.

In Sierra Leone, the MoHS through the HR department have elaborated the scheme of service for health professionals. This document was updated in 2017 with scheme of service of optometrists, ophthalmic nurses, ophthalmic surgical nurses/cataract surgeons and ophthalmic community health officers. The document provide a brief criteria and the qualification of each post, the salary grade and the duties (54).

Appendix 2: In depth interview tools

INTERVIEW GUIDE FOR OCHOs

Province		Gender	Age
Locality		Education	
Interviewee ID		Year of graduation as CHO	
Interview date		Year of graduation as OCHO	

I. Role and selection

- ❖ **Can you tell me what made you decide become an OCHO?**
 - How long have you been working at the primary health care level as an OCHO?
 - How did you hear about the role of OCHO?
 - Can you describe the CHO / OCHO selection process?
 - Who was involved in the selection? Did other Eye Care health workers play a role?
- ❖ **Can you describe the activities you do?**
 - Do you see many patients with eye or vision problems?
 - What are the commonest eye or vision complaints people present with?
 - Which activity takes the most time?

II. Training

- ❖ **Please describe the training that you attended**
 - How long ago did you attend the eye care training course?
 - Have you had any other previous eye care training?
 - Can you tell me how long the training lasted and if you felt this was an appropriate length?
 - Can you remember what the training course covered?
 - Were the Primary Eye Care manual and other training materials provided?
 - Were you given any equipment? If yes, what were you given? Do you still have it, and is it still working?
 - Did the training include an assessment of the skills you had been taught?
 - Are you confident that you still have those skills?
 - Do you still have the Primary Eye Care manual? If not, why not?
 - Do you use the manual? If yes, in what way?
 - Did you receive any guidance on communicating with patients? Or other members of the community?

III. Community Relations:

- ❖ **How important is it for OCHOs to interact with the community? (general health advice, treatment and referral)**
 - How often do you meet community members?
 - What kinds of places do you meet them (in the farm, market, home, street)
 - How willing are the people to speak with you?
- ❖ **Can you describe the types of activities that you carry out in the community?**
 - Do you conduct outreach campaigns? Eye health prevention and education campaigns?

- What challenges or difficulties have you experienced with the community?
 - What are the positive points of working with the community?
- ❖ **How do you think OCHOs are perceived by the community? (Do they see them as public health workers, Medical Doctors, etc)**
- What part of your functions are considered and most appreciated by the community?
 - What are the links between you and community groups, including health committees?
 - Do you receive any support from the community (such as feedback and solving problems)?

IV. OCHOs in the Primary Health Unit

- ❖ **Which health workers do you interact most with? (Ophthalmic Nurses, specialist on ophthalmology)**
- How often do you meet these health workers? Is it sufficient?
 - For what reason do you interact with them? (screening, awareness, training, campaign, etc ...)
- ❖ **How would you describe the professional relationship between OCHOs and other health workers?**
- Do health workers always involve OCHOs in community activities?
 - Do health workers always inform you in case of difficulties?
 - What are the challenges when working with health workers?
 - What are the positive points of working with health workers?
- ❖ **Can you tell me how you manage Eye Care resources in your area of activity?**
- ❖ **Can you explain how you manage a patient who has a particularly difficult eye problem, when you are perhaps unsure about diagnosis and treatment?**
- What is the protocol for referring patients to more specialised management?
 - In reality, what is the process like to refer a patient to secondary care?
 - Are referrals easy/straight forward/lots of work?
 - Do any of these have any impact on whether or not you refer the patient on?
- ❖ **Can you describe the type of eye health indicators that are being collected by OCHOs?**

V. Equipment and supplies

- ❖ **Can you describe the type of equipment that is available in your facility for eye care services?**
- Does this require training to use?
 - How are they procured? (Is it the same system as other supplies? Are they paid for from the same budget?)
 - Do you need any other equipment and supplies to deliver and treat the services?
- ❖ **What are your impressions of all the means you have at your disposal to carry out your work?**
- Do you think you have all that you need to achieve them (technical capacity, material means, and access to the community? Why?)

VI. Information systems

- ❖ **How do OCHOs record visits, how does data flow to the health system and back to the community, and how it is used for service improvement?**
- When people present with eye problems what data do you record and where? Is this the same as for other conditions?

- Did the training provide any guidance on recording information of eye problems?
- What is the data used for? By who?
- Do patients have to pay for services? Which ones and how is the price determined? (Insurance scheme?)

VII. Follow-up and supervision

- ❖ **How can you describe your status in the health system?**
 - Do you feel sufficiently taken into account by the MoHS? Is there any improvement to be made on the OCHO management? What for example?
- ❖ **Is there a system for coordinating OCHOs activities? Who takes part? Do you take part?**
- ❖ **Do you conduct supervision activities? How do you conduct supervision activity in your catchment areas?**
 - What type of information is collected?
 - Which activity takes the most time?
- ❖ **Do you produce and disseminate the supervision and monitoring report? These reports are sent to who? Do you take part in Eye Health coordination meetings?**
- ❖ **Do you think you have all the means to carry out these activities of supervision (technical capacity, material means and access to the community)? Why?**

Are there any further aspects of the OCHO program you would like to discuss?

Thank you for your time today.

Interview guide for HR staff, DMO, CHO Coordinator and OCHO programme coordinator

Province		Gender	
Locality		Age	
Interviewee title		Education	
Interviewee ID		Date of Interview	

I. Selection and characteristics:

1. Can you describe how and from where OCHOs were selected and assigned to a community?

- What criteria were used?
- Who decided/set them?
- What role did the community play?

2. Can you describe some of the characteristics of OCHOs (e.g, gender, educational level, prior experience) and describe why they are important?

II. Function:

1. Can you explain how the function and role of OCHOs aligns with or diverges from the health system?

- What are the functions of OCHOs? (Have they been clearly defined and documented?)
- How do they fit with public health policies?
- Is there overlap with other professions such as ophthalmic nurses and ophthalmic specialists (are the roles and tasks of each other clearly defined?)

2. Can you explain how OCHOs are deployed after training? Both in the community or in health centres.

III. Training:

1. How does the OCHO training prepare them for their role in service delivery and ensure that he/she has the necessary skills to provide safe and effective care?

- What do think on the content of the training of OCHOs
- What do think of the duration of the training
- How many OCHOs are trained each time?
- Are the OCHOs assessed following their training?

2. What sort of continuous training is available to OCHOs to reinforce their initial training and ensure that they are practicing their skills?

- How often is refresher training provided?
- What do you think about the content and duration of OCHO training?

3. What resources do you put into the training of newly recruited OCHOs each year?

- Is there a budget provided by the MoHS to support the training of OCHOs?

IV. Materials and equipment:

1. What is your impression of the equipment and supplies available to OCHOs to deliver PEC in the community?

- Do you think they have the right equipment, and is it in working condition?
- Do health facility takes account of OCHOs needs when ordering their supplies?
- Are supplies checked and updated regularly to verify expiration dates, quality, and inventory?

V. Supervision:

1. How is the supervision of OCHOs carried out?

- Is it regular (for example each month or each three month)?
- Is there feedback, coaching, problem solving, skill development and data review?

VI. Incentives methods

1. Are there any cases of OCHOs dropping out or leaving their posts to go and work in another facility or role?

- What do you think are the main reasons for dropping out or abandoning their posts?
- Do you think retention is a problem for OCHOs? Why?

2. Please, can you explain what measures are in place to retain OCHOs?

- What are these measures?
- Have they been consulted about these measures?
- Were they planned?
- How do they work together?

VII. Interaction between community and OCHOs

1. What is the status of OCHOs in the community?

- Are they perceived as public health workers, medical doctors or other cadre of health professional?
- What functions of OCHOs do you think are the most appreciated by the community?
- What are the links between OCHOs and community groups, including health committees?

2. Can you explain how the OCHOs are linked to the larger health system?

- Where do they fit in?

3. To what extent has the Ministry of Health integrated the OCHO cadre in health system planning?

- Budgeted for local/district/national financial support;
- Provided logistical support (e.g. supervision, supplies) to sustain OCHO programs at the district, regional and/or national levels

Is there anything else about the OCHO program you would like to discuss?

Interview guide for Community Health Workers and specialized staff (Ophthalmologist, Cataract surgeon, Ophthalmic Nurse, Optician)

Province		Gender	
Locality		Age	
Interviewee title		Education	
Interviewee ID		Date of Interview	

1. Do you know who OCHOs are?
2. Did you take part in their selection process? If yes can you describe your role?
3. Can you describe the responsibilities of OCHOs in the community and at the PHU?
4. Can you give some examples of the activities they conduct?
5. Can you describe how you work with OCHOs?
 - Do you work together with OCHOs on any activities (e.g. outreach and eye health education campaigns)?
 - Do they inform you in case of any difficulties they face in their work?
 - What do you see as the challenges of working with OCHOs?
 - What are the positives points of working with OCHOs?
6. Please can you describe how the referral process works between you and OCHOs? Are there any problems or ways it could be improved?
7. How do you rate the level of competence of OCHOs at the PHU and in the community?
 - Do you think they receive enough training to perform their job satisfactorily?
8. Can you describe how you get information concerning eye health in your locality or nationally?
 - What type of data or indicators on eye health are collected in your clinic?
 - Have you ever received the supervision/monitoring reports done by OCHOs?
 - How do you receive eye health information (data/ statistics or policies/ guidelines) from the National Eye Health Department?
9. What can you suggest in order to improve the OCHOs program in Sierra Leone?

Is there anything else about the OCHO program you would like to discuss?

Interview guide for community leaders

Province		Gender	
Locality		Age	
Interviewee title		Education	
Interviewee ID		Date of Interview	

1. Do you know what an OCHO is?
2. Is there an OCHO in your community? If not, what health care provider deals with eye health problems here?
3. Can you describe the different situations where you may meet OCHOs, or other eye care providers? (e.g. at the PHU, during outreach campaign, during Eye Health Education)
4. Do you have any idea of the different services provided by OCHOs, or other eye care providers, in the community?
 - Do they provide sensitization?
 - Screening? or
 - Treatment?
5. What are the OCHO services, or services of other eye health providers, frequently used by the community?
6. How would you rate the availability of OCHOs in the community (number of OCHOs in the community, availability and ease of access to them)?
7. Does the OCHO, or other eye health care provider, provide advice on ocular health in the community?
8. Can you describe the type of message and advice provided by OCHOs, or other eye health care provider?
 - Do you considered this advice and message appropriate for your community in term of language, images etc...
9. In case of eye problems in your community to whom do you turn first (family member, traditional healer, Ophthalmologist, ophthalmic nurses, optician or OCHO)?
 - Why is that?
10. Do you have any particular difficulties or challenges when you want to meet OCHO, or other eye health care provider, at the PHU?
 - Can you described those difficulties?
 - How could they be overcome?
11. Have you seen any changes in behavioural in your community since the OCHO arrived?
12. What can you suggest in order to improve the OCHOs program in your community?
13. What can you suggest in order to improve the way the communities are able to look after the health of their eyes in Sierra Leone?

Is there anything else about the OCHO program you would like to discuss?

Appendix 3: Task analysis tool

Ophthalmic Community Health Officer Task Analysis Questionnaire

This self-completed questionnaire consists of a list of all the tasks OCHOs perform as part of their work as OCHOs and CHOs.¹ The tasks are assessed in four areas:

1. **FREQUENCY** - how often a task is performed
2. **CRITICALITY** – how important timely and effective performance of a task is for patient and/or community health outcomes
3. **PERFORMANCE** – level of competence in performing a task
4. **LOCATION** - when and where participant learned to perform a task

The OCHOs assess themselves against each listed task by choosing one option from a number of fixed responses in each of the four assessment areas. The possible responses are as follows:

Frequency

<input type="checkbox"/> Daily	Completed task at least once per day
<input type="checkbox"/> Weekly	Completed task less often than daily, but at least once per week
<input type="checkbox"/> Monthly	Completed task less often than weekly, but at least once per month
<input type="checkbox"/> Rarely	Completed task less often than monthly
<input type="checkbox"/> Never	Did not have the opportunity or capability to perform the task

Criticality

<input type="checkbox"/> Low	Failure to complete task correctly or in a timely manner will have minimal impact on patient or community health
<input type="checkbox"/> Moderate	Failure to complete task correctly or in a timely manner may lead to serious patient discomfort, short-term disability, or moderate impact on community health
<input type="checkbox"/> High	Failure to complete task correctly or in a timely manner will lead to patient death, permanent disability, or major impact on community health

Performance

<input type="checkbox"/> Proficient	Expert at a task or can perform a task so well that s/he feels comfortable supervising others
<input type="checkbox"/> Competent	Capable of performing a task safely, although may ask for supervision from a more experienced colleague or supervisor
<input type="checkbox"/> Not capable	Not comfortable performing task; may cause harm if task is performed without supervision

Location

<input type="checkbox"/> Pre-service	Received formal training before beginning work as an OCHO
<input type="checkbox"/> In-service	Received formal training at some point after beginning work as an OCHO
<input type="checkbox"/> On the job	Received informal training from co-workers or supervisor once began working
<input type="checkbox"/> Not trained	Received no formal or informal training for task

¹ The task list was developed from the following documents:

- a. Curriculum for Post Graduate Diploma in Ophthalmology for Community Health Officers (CHOs)
- b. National Community Health Workers Policy 2016-2020 (Annex 1: CHW Scope of Work)

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
Task #	Task statement	Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained
	OCHO duties															
1.	Manage common eye conditions															
2.	Prescribe and dispense simple ophthalmic drugs and antibiotics															
3.	Establish eye <u>health services</u> in their health unit															
4.	Plan for eye care programs at the health unit and its catchment areas															
5.	Receive/make referrals and give feedback															
6.	Organize and implement eye care outreach programs															
7.	Prevent blindness through health education															
8.	Perform minor eye surgery, e.g. incision & curettage of chalazion, lid rotation for trichiasis															
9.	Manage eye care resources															
10.	Manage health information systems															
11.	Write and disseminate reports															
	CHO duties															
	Administration															
12.	Assigning responsibilities to and directing and supervising the activities of all Health Workers (HWs) in all the Primary Health Units (PHUs) i.e. Community Health Centre (CHC), Community Health Posts (CHPs), and Maternal & Child Health Posts (MCHPs).															
13.	Maintaining punctuality and discipline among the PHU staff.															
14.	Overseeing the PHU hygiene, including the surroundings, the latrines and the compound.															
15.	Setting up the system for regular inspection of all PHUs in the chiefdom and ensuring that defects or damage are identified and promptly <u>repaired</u> .															

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
Task #	Task statement	Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained
16.	Ordering, or supervising the ordering, storing and issuing of drugs and equipment, and ensuring the maintenance of inventories and stock registers.															
17.	Monitoring and carrying out preventive maintenance of medical equipment in all PHUs in the area.															
18.	Making schedules and timetables for home visits, (outreaches and static) clinics, vaccination programmes and health education projects.															
19.	Ensuring that accurate records, registers and letter files are <u>kept</u> and all reports compiled regularly.															
20.	Holding and chairing regular staff meetings to plan and monitor the implementation of services.															
21.	Establishing weekly continuing and order forms of education services for all HWs in the chiefdom.															
	Community Health Functions															
22.	Prepare or procure a map of his/her target area with all its health facilities identified.															
23.	Know the population structure of each village and community under his/her care.															
24.	<u>Analyze</u> health data to make a community diagnosis.															
25.	Plan intervention based on the community diagnosis.															
26.	Identify community leaders, both formal and informal; solicit and cultivate their support.															
27.	Supervise and support the MCH Aide and the VHW to institute Village/Area Development Committees (VIADC) in all villages in the chiefdom and participate in their deliberations.															

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
Task #	Task statement	Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained

	Lead the entire chiefdom team to participate actively in and integrate the activities of national campaigns in the work of the chiefdom <u>in particular the:</u>															
28.	• Follow-up of leprosy patients.															
29.	• Screening of suspected TB patient and the <u>long term</u> follow-up of TB patients under treatment.															
30.	• Preparation and use of ORS by the community.															
31.	• Prevention and treatment of endemic diseases e.g. Schistosomiasis, Guinea worm, Malaria and Onchocerciasis.															
32.	• Ensure that all children within the chiefdom are fully immunized.															
33.	Establish liaisons with other Government Departments related to Health, particularly Education, Agriculture and Social Welfare.															
34.	Establish and supervise Primary School Health Services.															
35.	Lead the Chiefdom Health Team to promote health activities within the chiefdom administration.															
36.	Plan and supervise health education (HE) <u>talks</u> in schools, clinics and clubs. Promote sanitary measures such as:															
37.	• Cleaning of the markets and the roadways.															
38.	• Building compost fences.															
39.	• Building and maintenance of VIP latrines.															
40.	• Provision and protection of water sources.															

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
Task #	Task statement	Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained

<i>Maternal and Child Care</i>																
41.	Ensure that MCHAs and TBAs identify all pregnant women at risk and take appropriate action.															
42.	Ensure that regular antenatal clinics are conducted at all levels of PHC: CHC, CHPs and MCHPs.															
	Promote preventive maternal care by:															
43.	• Screening for anaemia															
44.	• Screening for pre-eclamptic toxemia															
45.	• Giving routine malaria prophylaxis and tetanus toxoid.															
46.	• Establish effective referral procedures for complicated <u>pregnancy and</u> labour cases.															
47.	• Regularly improve the HWs skills in the chiefdom through continuing educational sessions.															
48.	• Establish the national approved system to identify and keep records of maternal deaths and still- births throughout the chiefdom assisted by the M & E Officer.															
	Establish and supervise and/or conduct Under Fives Clinics which will among others:															
49.	• Identify <u>undernourished and</u> at risk children															
50.	• Ensure that all children are fully immunized															
51.	• Diagnose, treat or refer common childhood illnesses.															
52.	• Give health education as appropriate to individual groups and communities															
53.	• Ensure at home visiting by the CH Aide is supervised															

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
Task #	Task statement	Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained

<i>Clinical Functions</i>																
54.	Diagnosis and treatment of common diseases at all levels of PHC according to standing orders.															
55.	Repair and treatment of minor surgical conditions.															
56.	Treatment and referral of medical, surgical and obstetric emergencies according to standing orders.															
57.	Organization of follow-up clinics for tuberculosis and leprosy patients.															
58.	Aftercare of chronic illness referred home from hospital: heart disease, hemiplegia, diabetes and hypertension.															
59.	Rational use of drugs according to agreed protocol: Essential Drugs Manual for CHWs.															
60.	Operation of a Cost recovery system: Requisition, storing and issuing of drugs.															
	<i>Disease prevention and control</i>															
	Community-based surveillance and reporting of any events related to the following diseases/conditions based on community-level case definitions for:															
61.	• Acute flaccid paralysis (polio)															
62.	• Acute watery diarrhoea (cholera)															
63.	• Clustered deaths															
64.	• Guinea worm															
65.	• Maternal death															
66.	• Measles															

Ophthalmic Community Health Officer Task Analysis Questionnaire		FREQUENCY					CRITICALITY			PERFORMANCE			LOCATION			
		Never	Rarely	Monthly	Weekly	Daily	Low	Moderate	High	Not capable	Capable	Proficient	Pre-service	In-service	On the job	Not trained
Task #	Task statement															
67.	• Neonatal tetanus															
68.	• Neonatal death															
69.	• Suspected Ebola															
70.	• Yellow fever															
71.	• Cataract															
72.	• Glaucoma															
73.	• Onchocerciasis															
74.	• Childhood blindness															
75.	• Refractive error															

Appendix 4: Ethical approval


GOVERNMENT OF SIERRA LEONE
Office of the Sierra Leone Ethics and Scientific Review Committee
Directorate of Policy Planning and Information
5th Floor, Youyi Building Brokfields, Freetown
Ministry of Health and Sanitation

19th April, 2018

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Study Title: Evaluation of the Ophthalmic Community Health Officer (OCHO) training programme in Sierra Leone

Version: 27 March, 2018

Collaborating Agencies: MoHS and Sight Savers

Submission Type: First protocol version submitted for Review

Committee Action: Expedited Review

Approval Date: 18 April, 2018

For further enquiries please contact: efoday@health.gov.sl



GOVERNMENT OF SIERRA LEONE
Office of the Sierra Leone Ethics and Scientific Review Committee
Directorate of Policy Planning and Information
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Ministry of Health and Sanitation

The Sierra Leone Ethics and Scientific Review Committee (SLESRC) having conducted an expedited review of the above study protocol and determined that it presents minimal risk to subjects, **hereby grants ethical and scientific approval for it to be conducted in Sierra Leone.** The approval is valid for the period, **18 April, 2018 – 17 October, 2018.** It is your responsibility to obtain re-approval/extension for any on-going research prior to its expiration date. The request for re-approval/extension must be supported by a progress report.

Review Comments:

- **Amendments:** Intended changes to the approved protocol such as the informed consent documents, study design, recruitment of participants and key study personnel, must be submitted for approval by the SLESRC prior to implementation.
- **Termination of the study:** When study procedures and data analyses are fully complete, please inform the SLESRC that you are terminating the study and submit a brief report covering the protocol activities. Individual identifying information should be destroyed unless there is sufficient justification to retain, approved by the SLESRC. All findings should be based on de-identified aggregate data and all published results in aggregate or group form. A copy of any publication be submitted to the SLESRC for its archive.
- Submit a copy of this approval letter in support of sub-studies under Aims 3.26 and/3.2c



Professor Hector G. Morgan
Chair

For further enquiries please contact: efoday@health.gov.sl

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