

# **Evaluation of eye care training for rural medical practitioners under Sunderbans Eye Health Service Strengthening Project: West Bengal, India**

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## **Study undertaken by:**

Sightsavers, East India Programme Team

Monitoring, Evaluation, Research, Learning (MERL) unit, Sightsavers India

## **Principal investigators:**

Dr Soumya Mohanty, Technical Specialist, Research (MERL) Sightsavers India

Emma Jolley, Global Technical Lead, Health and Disability Research, Sightsavers UK

## **Data collection and entry:**

Promancy Strategic Consulting, New Delhi, India

## **Data analysis and report writing:**

Promancy Strategic Consulting, New Delhi, India

Dr Soumya Mohanty, Technical Specialist, Research, MERL, Sightsavers India

Emma Jolley, Global Technical Lead, Health and Disability Research, Sightsavers UK

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## List of acronyms and abbreviations

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<b>ASHA</b>	Accredited Social Health Activists
<b>AWW</b>	Anganwadi Workers
<b>BPHCs</b>	Block Primary Health Centres
<b>GDP</b>	Gross Domestic Product
<b>MCI</b>	Medical Council of India
<b>NHM</b>	National Health Mission
<b>PHCs</b>	Primary Health Centres
<b>PIP</b>	Programme Implementation Plan
<b>REH</b>	Rural Eye Health
<b>RMPs</b>	Rural Medical Practitioners
<b>SCs</b>	Sub-Centres
<b>SHIS</b>	Southern Health Improvement Samity
<b>SiB</b>	Seeing is Believing
<b>SSDC</b>	Sunderbans Social Development Centre
<b>VMA</b>	Vivekanand Mission Ashram
<b>WHO</b>	World Health Organisation

# Executive Summary

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## Study context and objectives

India's overall growth trajectory is not commensurate with health sector spending (3-4% per annum), which paints a dismal picture with respect to the availability of healthcare providers in both rural and urban areas of the country. Although the number of health facilities has risen in the past decade, workforce shortages are substantial. The availability of eye healthcare providers is sub-optimal with one ophthalmologist for every 90,000 people and about one optometrist for every 25,000 population in the country. The situation in rural areas is starker with a severe shortage of the health workforce as healthcare providers are increasingly confined to urban areas and large cities in India.

Given this, a large majority of population in the country, especially in the rural areas, access health services from unqualified health service providers also known as quacks and Rural Medical Practitioners (RMPs). The quality of services provided by them is questionable as majority of the RMPs lack any form of training from the formal medical system. Despite legal prohibitions on their ability to practice, evidence suggests the presence of many times more informal providers compared to trained MBBS doctors in rural and urban areas of the country. Since the RMPs are providing some services in whatever form it is, even the National Health Mission (NHM) programme has felt the need to engage with them.

Standard Chartered Bank is supporting Sightsavers India in implementing the "Seeing is Believing" (SiB) initiative in the Sunderbans region of West Bengal. Training of Rural Medical Practitioners (RMPs) was one of the priorities under the programme, taking into consideration the accessibility of the terrain and the unavailability of qualified service providers in this difficult-to-reach area. A total of 1964 RMPs have been trained on basic screening and diagnostics with an aim to identifying people with eye problems and referring them to the nearest Vision Centre or base hospital. To understand how the interventions were translating into the screening of eye health problems and ensuring referrals to Vision Centres, this study was conceptualised.

The key objectives of the study were as follows:

1. To assess the knowledge and practice of Primary Eye Care among RMPs who are trained under the project.
2. To assess the referral practices to Vision Centres and Base Hospitals by RMPs trained under the project.
3. To identify gaps in training RMPs and propose recommendations to address them.

## Study approach and methodology

The study adopted a mixed-methods approach involving both quantitative and qualitative methods of research. The quantitative component involved the administration of a semi-structured questionnaire with the RMPs trained under the SiB programme and subsequently, qualitative in-depth interviews were carried out with a small subset of RMPs. For the quantitative component, a

single-stage sampling process was adopted for proper representation of RMPs in the geographical landscapes of the project. With 95% confidence and 5% margin of error, and 10% non-response, the sample size was estimated at 358. However, due to non-response, a total of 324 RMPs were covered during the quantitative survey. The list of trained RMPs was obtained from the state office of Sightsavers. In addition, in-depth interviews were carried out with 18 RMPs. The key findings from the study are summarised ahead.

## Key findings of the study

- **Socio-demographic characteristics of the respondents** Every three out of four respondents were Hindus (74 percent) and about one-third of the respondents belonged to SC/ST categories (35 percent). About 70 percent were of the age group of 30-49 years with a median age of 42 years. About half of the RMPs attained post-graduate and above levels of education. Forty-three percent of the respondents have been practicing for more than 15 years as RMPs and half of them were catering to more than 1000 population. A majority of them were reportedly motivated to practice as RMPs by observing other peers.
- **Awareness on eye health issues** The five most common eye diseases as reported by RMPs in the study area are cataract, eye redness, watering of eyes, conjunctivitis and allergies, and blurred vision. About 90 percent of the respondents reported cataract as the most common eye disease and more than 63 percent identified eye redness, watering of eyes, conjunctivitis and allergies among other common eye diseases in the study area. Main causes of eye diseases were stated as bathing in the pond, long working hours of separating rice from hay, and long hours working in the fields.
- **Training on eye health** Mostly the respondents have received training from NGO hospitals and NGOs working in the Sunderbans area. About 45 percent of the respondents received training from the Sunderbans Social Development Centre (SSDC), 38 percent received training from Southern Health Improvement Samity (SHIS) eye hospital and the remaining 16 percent received training from the Vivekanand Mission Ashram (VMA) eye hospital. About 93 percent of the respondents were able to recollect cataract as a topic covered during the training and 86 percent reported common eye problems as a training topic.
- **Feedback on the eye health training** Almost all the respondents (99 percent) were of the opinion that that the trainer was competent enough to clear any doubts during training and 95 percent were satisfied with the training methods and techniques used. Most of the respondents felt that the training provided to them was of a short duration and due to the short duration of the training, many issues were covered very briefly and a few considered it less effective due to this.
- **Knowledge about refractive error, cataract and abnormal eye** Myopia and Hypermetropia are the two major forms of refractive error and were reported by about 80 percent of the respondents. Poor nutrition was identified by 56 percent of respondents as the main cause of refractive error. According to 91 percent of the respondents, wearing of spectacles can correct refractive error. About 67 percent of the respondents know that cataract cannot spread from one eye to the other. About 75 percent of the respondents stated that “only older people can

develop cataract” is a myth. The respondents identified blurred vision (93 percent) and excessive watering of the eye (65 percent) as signs of an abnormal eye. About 30 percent of respondents mentioned red eye, discharge from the eye, abnormal eye movement and coloured vision as signs of abnormal eye.

- **Eye health treatment and referrals** About 67 percent referred their patients to various health facilities including Vision Centre (55 percent), NGO eye hospital (9 percent) and government hospital (3 percent) whereas about 25 percent of the respondents treated patients who came to them with symptoms of any eye disease or disorder with medicine. Of the respondents who treat patients at their clinics, 89 percent of them prescribed allopathic medicines for eye health related issues. Mostly, they treated only minor eye ailments and referred their patients to various health facilities for any major eye disease.
- **Motivation of RMPs in eye health projects** Various ideas on ways to encourage the RMPs to participate in any eye care projects included support to strengthen their knowledge/skills; certificates for RMPs to establish credibility; comprehensive training on eye care to improve capacities and post training support; and quality training to improve counseling skills for eye care. Organising eye care camps in different regions more frequently will help to increase the engagement of RMPs to provide information in the communities and to increase awareness related to eye care.
- **Challenges faced by RMPs in providing eye care services** Some of the challenges faced by RMPs as shared by the respondents are a lack of recognition of ability to provide eye care; lack of trust from communities on the capacity of RMPs to treat minor eye problems; lack of availability of equipment leading to inadequate diagnosis and services; limited networking with similar groups and provider networks; no referral systems (slips/forms) and poor maintenance of records for patients who visits RMPs or are referred to other health facilities.

## Recommendations

Based on the findings from the quantitative and qualitative assessments, it was clear that the RMPs benefited from the training provided to them. Most of the RMPs felt that the training was beneficial as they gained confidence to screen and refer people for eye problems in their locality. The following recommendations could be made for future programmes:

- Eye care training for RMPs should be made more comprehensive and of longer duration so that they can gain detailed knowledge on screening people with eye problems in rural areas.
- Post training follow-up support will help in converting knowledge into skills and addressing the knowledge gap in their practice.
- The trained RMPs should be utilised effectively to create a referral linkage between eye care hospitals and the rural community.
- RMPs should be trained and encouraged to maintain records of the patients so that an understating on health problems in the area can be developed taking into consideration its geographical diversity.

- A formal referral system should be established, and post-referral follow ups should be strengthened.
- Engaging RMPs to generate awareness in the community about various eye related problems, thus increasing the demand for services.
- Forging partnerships with local officials, health workers, private practitioners, NGOs, PRIs and the community to promote community participation and enhance credibility of RMPs in primary eye screening.

## Section I: Contextual section and methodology

### 1. Background and study objectives

#### 1.1 Background

India is one of the fastest growing economies of the world with a Gross Domestic Product (GDP) growth rate of around 7 percent. Despite the higher growth rate, GDP spending in the health sector averages around 3-4% per annum. As a result, there is a sharp contrast in the availability of health facilities and human resources for health, with a large majority of the health personnel living and practicing in rural areas. According to the Medical Council of India (MCI) there are around 9.29 lakh doctors registered in the Indian Medical Register of which around 80 percent are available (7.4 lakh doctors) for active service. MCI gives a doctor-patient ratio of 1:1674 or even 1:2000 against the World Health Organisation (WHO) norm of 1:1000, when every year around 55,000 doctors and 25,000 PG doctors are graduating from various colleges.

The situation in rural areas is starker with a severe shortage of the health workforce. Although the number of health facilities has risen in the past decade, workforce shortages are substantial. As of March 31<sup>st</sup> 2015, more than 8% of 25,300 primary health centres in the country were without a doctor, 38% were without a laboratory technician, and 22% had no pharmacist. In community health centres, the shortfall is huge - surgeons (83%), obstetricians and gynaecologists (76%), physicians (83%), and paediatricians (82%). Even in health facilities where doctors, specialists and paramedic staff have been posted, their availability remains in question because of high rates of absenteeism<sup>1</sup>.

The condition of eye health care is no better than general health care. There are about 12,000 ophthalmologists in India for its one billion-plus population, resulting in a ratio of one ophthalmologist for every 90,000 people. In rural India this ratio is 1:250,000. There also exists a skewed ratio of availability of qualified optometrists, which is approximately one for every 25,000 population (source: Vision2020).

Given this scenario, a large majority of the population, especially in rural areas, access health services from unqualified health service providers also known as quacks and Rural Medical Practitioners (RMPs). A quack is seen as a pretender, a fraud or a charlatan who is not well versed

<sup>1</sup> Sharma, C Dinesh, Lancet, December 12, 2015, India still struggles with rural doctor shortages

in medical sciences but pretends to be<sup>2</sup>. The quality of services provided by them is questionable as majority of the people are forced to depend and rely on this set of practitioners owing to a lack of access to formal health services. It is estimated that in rural India the percentage of RMPs ranges from 54% in West Bengal to 75% in states such as Rajasthan, Madhya Pradesh, Andhra Pradesh, and Uttarakhand.

Despite legal prohibitions on their ability to practice, a census of providers in rural Madhya Pradesh counted 12 times as many informal providers as trained doctors with MBBS degrees (the equivalent of the MD degree in the United States)<sup>3</sup>, and a census in rural West Bengal identified over 107,000 rural informal providers<sup>4</sup>.

In a study conducted in the Sunderbans region by the Indian Institute of Health Management Research among the RMPs it was found that 64% of the patients have approached RMPs for treatment, followed by private formal sector (22%), government (12%) and NGOs (2%). This shows the extent of penetration and coverage of the RMPs in the region due to the absence of the formal sector. Most of them are practicing Allopathic medicine even though they are not trained for it and it is illegal to do so. They have neither MBBS degrees nor a license to practice medicine, and yet a number of quacks are running their dispensaries sometimes without even minimum educational qualifications<sup>5</sup>.

Considering the huge gap in formal health service availability in the rural areas and the vast presence of these informal health service providers, identification, training and use of RMPs for patient identification and referral services is being undertaken under the National Health Mission (NHM) programme. The aim is to involve them in the mission and to ensure that the community is not subjected to the wrong treatment at the hands of the RMPs. Since the presence of RMPs is a reality, and since they are providing some service in whatever form it is, it is pertinent to engage with them, and provide them with some basic training which will be helpful for them to provide better quality of services rather than the poor quality of service that is being provided by them.

## 1.2 Sightsavers Sunderbans eye health project

The Sunderbans are in the extreme south of West Bengal, comprised of small remote islands where tidal rivers and estuaries make access very difficult. It is an area of extreme poverty, exacerbated by access difficulties. Almost half of the 4.7 million population (47%) belong to historically marginalised groups such as Scheduled Castes and Tribes. More than 40% of

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<sup>2</sup> Dutta Runi, The world of quacks: A parallel health care system in rural West Bengal, IOSR Journal of Humanities and social sciences (IOSR-JHSS), Volume 14, Issue 2 (July-Aug, 2013)

<sup>3</sup> Institute of Post Graduate Medical Education and Research, Seth Sukhlal Karnani Memorial Hospital

<sup>4</sup> Proportionally scaled up to all of India, this would imply a population of 1.6 million rural informal providers compared with just under 1 million M.B.B.S. doctors.

<sup>5</sup> Dutta Runi, The world of quacks: A parallel health care system in rural West Bengal, IOSR Journal of Humanities and social sciences (IOSR-JHSS), Volume 14, Issue 2 (July-Aug, 2013)

households live below the poverty line<sup>6</sup> and 13% are officially declared as the “poorest of the poor”.<sup>7</sup>

The public health care system in the Sunderbans delivers preventive and curative services at multiple levels of institutions and through outreach workers. The public facilities range from two sub-divisional hospitals with specialised physicians and in-patient services to about 800 small sub-centres (SC) at the village level, staffed by trained multi-purpose workers. Within this range, there exist 19 block level facilities (nine rural hospitals (RH) and ten block primary health centres (BPHCs) and 47 primary health centres (PHCs) – arranged in order of secondary to primary levels of care. The block level facility (BPHC/RH), in addition to playing a role of a referral unit, acts as a hub of all primary health care activities within a block.<sup>8</sup> Primary eye health services are thus only available at the BPHC level.

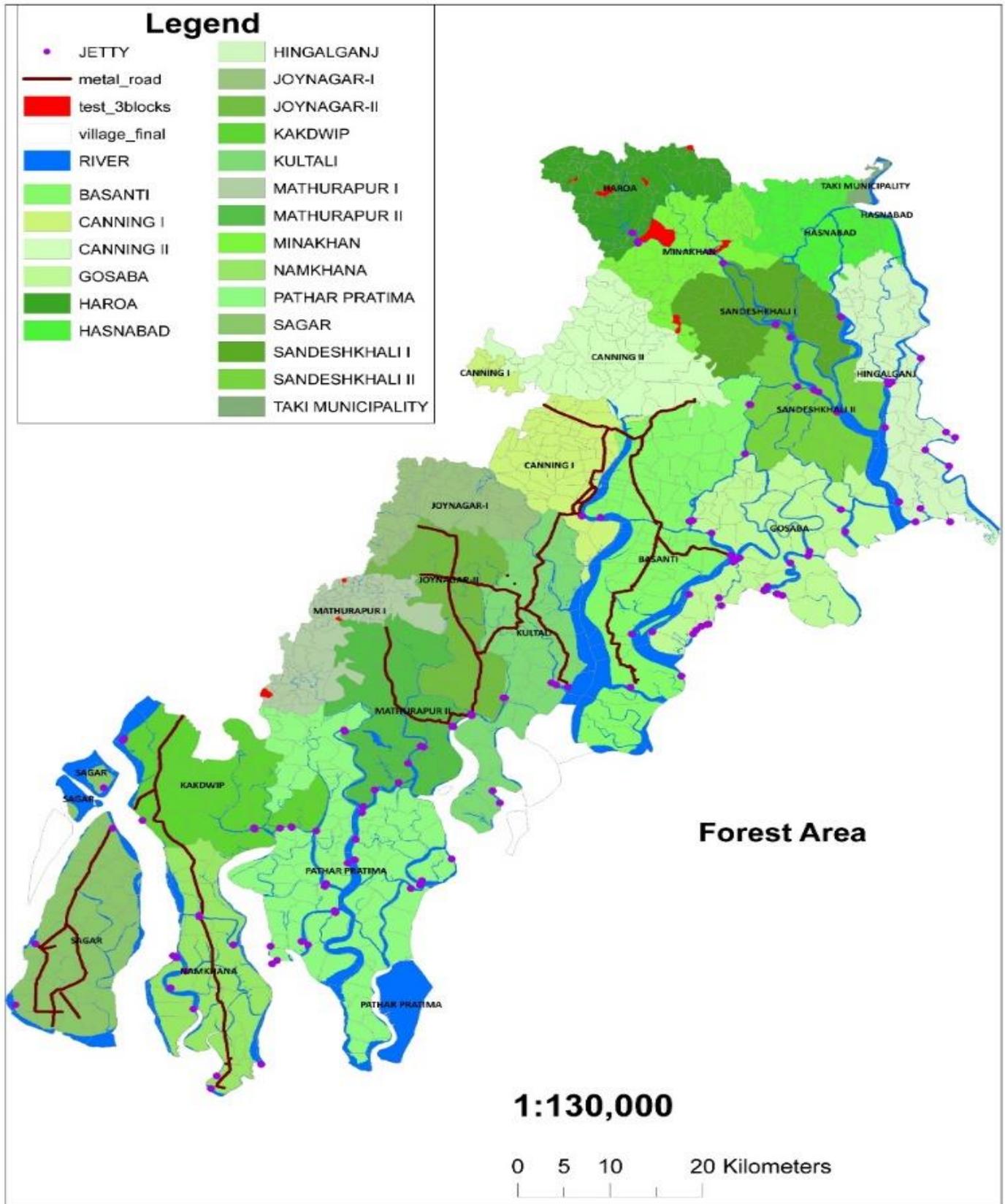
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<sup>6</sup> Below Poverty Line is an economic benchmark and poverty threshold used by the government of India to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid. The Planning Commission has a fixed poverty line at Rs.28.65 per capita daily consumption in cities and Rs.22.42 in rural areas

<sup>7</sup> Health Care in Sunderbans - Challenges and Plan for a better Future, Institute of Health Management and Research, Jan 2012

<sup>8</sup> Health Care in Sunderbans - Challenges and Plan for a better Future, Institute of Health Management and Research, Jan 2012

# Map of Sunderbans



### 1.3 About the project

Standard Chartered Bank, under the “Seeing is Believing” initiative, is supporting Sightsavers in India to strengthen eye care services in the Sunderbans region of West Bengal State in North-Eastern India. The objective of the five-year project (2013-2018) is to contribute to the elimination of avoidable blindness in the area.

The project responds to India’s National Eye Care Plan and Vision 2020 priorities, and also the state PIP (Project Implementation Plan) by ensuring trained staff are in place at primary, secondary and tertiary levels and that referral links are established from outreach activities held in the community. It also aims to reduce the backlog of cataracts and the growing problems of refractive error and childhood blindness; strengthen primary eye care services by establishing vision centres, holding outreach ophthalmic clinics and train community health workers and school teachers to identify basic eye conditions.

The project works within the three pillars of Vision 2020: human resource development, disease control and infrastructure with technological development. The activities are centred on the Vision 2020 priority conditions in India, which are cataract, refractive error, low vision and diabetic retinopathy.

### 1.4 Sightsavers intervention with RMPs

Training of Rural Medical Practitioners (RMPs) was one of the priorities under the programme. The prime reason for engaging with the RMPs was the inaccessibility of the terrain and the unavailability of qualified service providers located in the difficult-to-reach area. Since RMPs have a large presence in the target area and most of the population depends on them for most health-related issues, they were sensitised to screen patients with eye diseases alongside community health workers and engage them in referral services to the nearest facilities. The optometrists under the programme were providing the training. A total of 1,564 RMPs have been trained on basic screening and diagnostic training by the optometrist with an aim to identifying people with eye problems and referring them to the nearest vision centre or the base hospital.

### 1.5 Rationale for the study

Sightsavers - under its eye health strategy - has been working extensively to activate grassroots level health workers like Accredited Social Health Activists (ASHA), RMPs and Anganwadi Workers (AWW) and engage them in the basic identification and referral of patients requiring eye health services. By doing so, the Rural Eye Health (REH) programme of Sightsavers aimed to embed eye health into wider health programmes under the National Health Mission.

This intervention was important from the dimension of making the REH programme sustainable, wherein subsequently the reliance on outreach activities like those at camps could be reduced. In place, the community could be motivated to access eye health services by using the services of grassroots level health workers. Therefore, it was important to know how such interventions were translating into actual referrals to vision centres and base hospitals by training them. The Sunderbans project under REH had a strong component of working closely with RMPs, considering

their huge presence across the geographic area, therefore it was necessary to assess whether such training and interventions were translating into increased referrals by RMPs to base hospitals.

## 1.6 Research questions

The following are the key research questions under the study:

1. What kind of referrals (cataract/refractive error/other major or minor surgeries/trauma) are generally coming to VCs or base hospitals through RMPs?
2. What is the practice among RMPs who are trained under the project regarding treatment, referrals, after having received training?
3. What are the motivating factors for RMPs to participate in the project?
4. What are the challenges in mobilising RMPs to participate in the project?
5. What are the key recommendations for enhancing the referral linkages between RMPs and the project?

## 1.7 Aims and objectives

The overall aim of the research is ‘to explore the linkages between referrals to vision centres and base hospitals and training provided to RMPs’ under the Sunderbans project. Specific objectives of the study are:

1. To assess the knowledge and practice of primary eye care among RMPs who are trained under the project.
2. To assess the referral practices to vision centres and base hospitals by RMPs trained under the project.
3. To identify gaps in training RMPs and propose recommendations to address them.

## 2. Methodology: approach, sampling and survey methods

The study used a mixed-method design using both quantitative and qualitative methods. The study also used the project MIS data to assess the knowledge and practice of primary eye care and referrals by RMPs who were trained under the Sunderbans project.

Primary data: the details of primary data that will be collected as part of the study are discussed below.

Methods	Target group	Type of data collected	Tools
<b>Quantitative</b> <b>Selected RMPs</b> <b>spread across all</b>	Rural Medical Practitioners	- Background characteristics of RMPs trained under the project - Knowledge on eye diseases and treatment	RMP quantitative interview schedule

Methods	Target group	Type of data collected	Tools
the blocks. (refer sampling section)		<ul style="list-style-type: none"> <li>- Source of knowledge on eye disease and treatment</li> <li>- Effectiveness of training in terms of: <ul style="list-style-type: none"> <li>o Understanding eye health and an ability to recall key messages</li> <li>o Ability to identify patients requiring eye health treatment and surgical treatment and refer them</li> </ul> </li> <li>- Epidemiology of eye disease in Sunderbans</li> <li>- Type of eye diseases being treated by RMPs</li> <li>- Type of eye diseases being referred to various eye health service providers</li> <li>- Motivating factor for engaging in referral</li> <li>- Challenges in referring patients</li> </ul>	
Qualitative In-depth Interviews with RMPs	Rural Medical Practitioners	<ul style="list-style-type: none"> <li>Attitude and practices about eye health treatment in local context</li> <li>Motivating factors and barriers in practicing primary eye care</li> <li>Perception on quality of training given under the Sunderbans project</li> </ul>	In-depth interview checklist

## Sampling

**Quantitative survey** The project has collected the details of all RMPs trained during the project period and the details are available by name, age, sex, village, block, month and year in which he or she was trained. A total of 1,964 RMPs have been trained under the project by the three partners working under the project:

- Vivekanand Mission Ashram hospital – 1078
- Sunderbans Social Development Centre – 528
- Southern Health Improvement Samity – 358

The study adopted a single stage sampling process for proper representation of RMPs in the geographical landscapes of the project. The list of trained RMPs was obtained from the state office of Sightsavers.

Details of formula used to calculate the sample size is as follows:

$$n = \frac{z^2 * p * (1 - p)}{c^2}$$

Where:

- n = required sample size
- z = Z value (e.g. 1.96 for 95% confidence level)
- p = percentage of respondents picking a choice
- c = confidence interval, expressed as decimal

The estimated sample size of RMPs for the study is 322. By adding the 10% non-compliance, the sample size for the study is 358. A sampling interval will be calculated to ensure a number proportional to the size. In this case, the sampling interval 'k' will be calculated by dividing population size with desired sample size.

**Sample size** In total, 324 RMPs were interviewed through the quantitative survey and in-depth interviews were conducted with 18 RMPs. The non-response rate of 10% was due to refusals by some of the RMPs and other reasons including the incomplete, postponed interviews, and non-availability after three revisits.

Estimated sample	Sample size achieved	Response rate (%)
358	324	90%

### 3. Operationalise field work: training, team formation, team movement and duration of field work

#### 3.1 Study team

The principal investigators for the study were Dr. Soumya Mohanty and Emma Jolley. Dr. Elena Schmidt (Director SPIDER) provided technical support from Sightsavers headquarters for this study. The study team comprised of Soumya Mohanty, Sudipta Mohanty, Arundhati Bhattacharjee, Kamal Kumari Chakraborty and representatives from Promancy Strategic Consulting with knowledge of Bengali language to manage the data collection and analysis.

The study team structure was as follows:

- Principal investigators and co-investigators.
- Promancy Strategic Consulting as the independent consultant comprising of a field survey and research team.
- Each field data collection team of Promancy consisted of two investigators.

## 3.2 Training

The field work was conducted using independent trained field investigators who were provided training on overall eye health in terms of epidemiology, the Sunderbans programme, and training on using the tools - both quantitative and qualitative - using mobile tablets.

For the survey, data collectors were trained over two days. The training was completed in Kolkata, India. The extensive training session covered the study protocol, administering the tools, explaining the study background and objectives and obtaining the consent. The training was conducted in English and Bengali.

## 3.3 Data management

The tool was developed by Sightsavers. The quantitative data was collected using a pen and paper questionnaire. The tool was translated in Bengali with back translation and reviewed by Sightsavers, and pre-testing was carried out among eight RMPs as part of the field staff training to check the internal consistencies and skips in the tool and data validation mechanisms, thereby saving time on data entry and cleaning. Sightsavers provided feedback and supported the whole process of tool finalisation. Once the data had been collected, it was compiled using CS-Pro and analysed using SPSS. All in-depth interviews with RMPs were audio recorded by the study team. All audio recordings were translated in English for further analysis and use.

## 3.4 Ethical considerations

An ethics approval for conducting the study was obtained from Sewa Sadan Eye Hospital, Bhopal. Clearance to conduct the survey was also obtained from the local administrative authorities. Information on the study and its purpose was provided to all participants in their local language and an informed written consent obtained in all cases both for the quantitative and qualitative study; participation was voluntary; participants were provided with the choice to withdraw their consent at any point without any negative consequences for them. Data protection was a priority throughout the study and the necessary steps were taken to ensure that all information was anonymous and confidential and no one except the study team had access to the data. The interviewers did not discuss participants' answers with anyone, except the field supervisor/research team when clarification was needed.

## Section II: Profile of the respondents and post-training observations among trained RMPs

### 4. Profile of the respondents

Key findings from the quantitative survey and in-depth Interviews (IDIs) are discussed below. The quantitative survey covered 324 RMPs and in-depth interviews were conducted among 18 RMPs to understand various aspects of services being provided by the RMPs along with associated gaps and challenges. The duration of the IDIs with RMPs lasted for about one hour.

**Fig.1. Sample size distribution (n, %)**

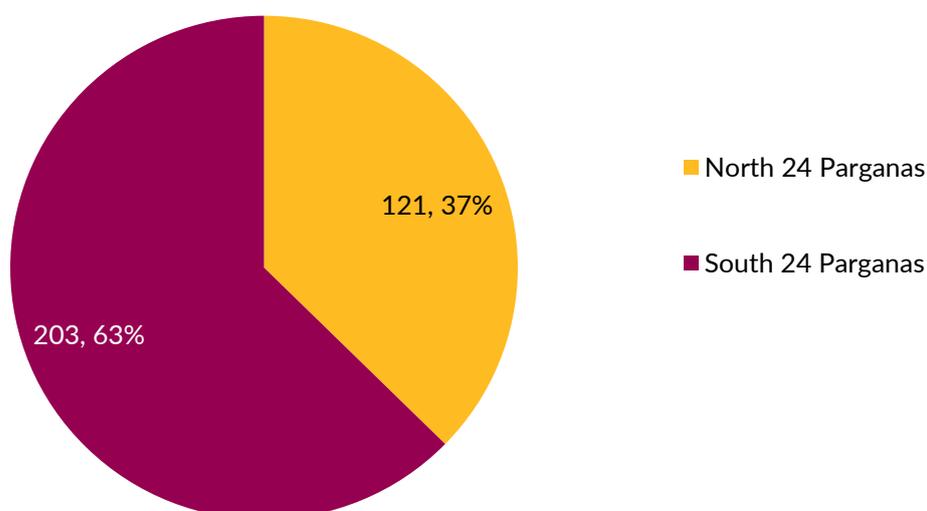


Table 1 provides the distribution of interviews conducted in different blocks in the two study districts. In South 24 Parganas, the number of interviews in different blocks ranges from two in Kulpi to 30 in Mathurapur-II block. In North 24 Parganas, the number of interviews ranges from five in Sandeskhali-II block to 54 in Hingalganj block.

**Table 1. Number of interviews by districts and blocks**

Districts	Blocks	Frequency
South 24 Parganas	Baruipur	3
	Basanti	7
	Canning-II	17
	Gosaba	9
	Joynagar-I	8
	Joynagar-II	16
	Kakdwip	22
	Kulpi	2
	Kultali	20
	Magrahat-II	6
	Mathurapur-I	8
	Mathurapur-II	30

	Namkhana	13
	Patharpratima	15
	Sagar	27
North 24 Parganas	Haroa	6
	Hasnabad	35
	Hingalganj	54
	Minakhan	10
	Sandeskhali-I	11
	Sandeskhali-II	5
<b>Total</b>		<b>324</b>

#### 4.1 Socio-demographic characteristics of the respondents

Most of the study respondents are male (98 percent). About 74 percent of the respondents are Hindus and the rest are Muslims. This corroborates with MIS data on RMPs trained under the project. A recent study on the health care system of the Indian Sundarbans conducted by Institute of Health Management Research (IHMHR)<sup>9</sup> mentioned that nearly 46% of the sample households in Sunderbans belonged to SC/ST, the traditionally marginalised groups in India. It was also observed from the present study that of all respondents, about 35 percent are from Schedule Caste/Schedule Tribe category (Table 1).

About 70 percent of the respondents are in the age group of 30-49 years and the median age is 42 years. About half (49 percent) of the respondents have post-graduate and above education, and 31 percent have studied up to higher secondary education.

Characteristics	N	%
<b>Gender</b>		
Male	317	97.8%
Female	7	2.2%
<b>Religion</b>		
Hindu	238	73.5%
Muslim	86	26.5%
<b>Caste</b>		
Schedule caste/Schedule tribe	114	35.2%
OBC	47	14.5%
Other	163	50.3%
<b>Age of the respondents</b>		
20-29 years	33	10.2%
30-39 years	99	30.6%
40-49 years	127	39.2%
50-59 years	49	15.1%
60+ years	16	4.9%
<i>Median age (in years)</i>		42
<b>Coverage by districts</b>		

<sup>9</sup> <https://assets.publishing.service.gov.uk/media/57a08b24ed915d3cfd000b68/sundarbans.pdf>

<b>Table 2: Socio-demographic characteristics of RMPs</b>		
North 24 Parganas	121	37.3%
South 24 Parganas	203	62.7%
<b>Educational qualifications</b>		
Up to secondary	53	16.4%
Up to higher secondary	100	30.9%
Up to graduation	12	3.7%
Post-graduation and above	159	49.1%
<b>Total (N)</b>	<b>324</b>	<b>100</b>

Information collected on the duration of their practice as RMPs shows that nearly one-third of the respondents reported that they had been practicing for the last 5-10 years, followed by one quarter (25 percent) of them who had been practicing for more than 20 years as a medical practitioner. About half of them are providing services to 1,000 and above population (Table 3).

<b>Table 3: Duration of practice and population coverage as reported by RMPs</b>		
<b>Characteristics</b>	<b>N</b>	<b>%</b>
<b>Number of years practicing as RMP</b>		
Less than 5 years	20	6.2%
5-10 years	99	30.6%
10-15 years	65	20.1%
16-20 years	59	18.2%
Above 20 years	81	25.0%
<i>Mean years of practice</i>	15.5	
<b>Population covered by RMPs</b>		
Up to 500	82	25.3%
501-1000	80	24.7%
1001-5000	120	37.0%
Above 5000	42	13.0%
<i>Mean coverage</i>	3129	
<b>Total (N)</b>	<b>324</b>	<b>100</b>

The major reasons for practicing as RMPs are varied. Some stated that they wanted to serve the people as rural health care provider. Many respondents were motivated by observing other RMPs and have prior experience of assisting medical Doctors/RMPs.

## 5. Training and awareness on health issues and eye care among RMPs

### 5.1 Health issues in the study area

There are several health issues prevalent in the study area as reported by the RMPs. About 39 percent of respondents reported malaria and 26 percent reported nutritional deficiencies as major health issues in the area. About 40 percent of the respondents shared various other health problems such as eye problems, depression, digestive disorders, skin disease etc. Lack of safe drinking water and physical environment are the two major sources of health issues as reported by more than 80 percent of the respondents.

<b>Table 4. Health issues in the study area as reported by RMPs</b>		
<b>Characteristics</b>	<b>N</b>	<b>%</b>
<b>Five major health issues in the study area</b>		
Lack of safe drinking water	281	86.7%
Physical environment	265	81.8%
Malaria and related problems	125	38.6%
Nutritional deficiencies	85	26.2%
Others	130	40.1%
<b>Five most common diseases that are prevalent in the study area</b>		
Fever	294	90.7%
Digestive disorders	283	87.3%
Diabetes	123	38.0%
Allergies and rashes	98	30.2%
Other	213	65.7%
<b>Total (N)</b>	<b>324</b>	

The most common diseases in the area identified by more than 87 percent of respondents are fever and digestive disorders. More than 30 percent of the respondents reported eye allergies and rashes and diabetes as two other common diseases found in the study area. About 67 percent of respondents shared various other diseases found in the study area including anemia, measles, typhoid, TB, cancer, skin diseases etc.

The IIMR (2010)<sup>10</sup> report concluded that the dual burden of communicable and non-communicable diseases is quite evident in Sunderbans and the impact of arsenic poisoning was quite visible in the blocks where groundwater is heavily contaminated with arsenic. The report also stressed that there are other chronic problems, such as vision problems (far-sightedness) which, despite their disproportionately high burden, remain largely unaddressed due to low perceived severity.

## 5.2 Eye care issues in the study area

The five most common eye diseases in the study area are cataract, eye redness, watering of eyes, conjunctivitis and allergies, and blurred vision. About 90 percent of the respondents reported cataract as the most common eye disease, more than 63 percent identified eye redness, watering of eyes, conjunctivitis and allergies among other common eye diseases in the study area and blurred vision was reported by 20 percent of the respondents (Table 5).

<b>Table 5. The five most common eye diseases prevalent in the study area as reported by RMPs (%)</b>		
<b>Characteristics</b>	<b>N</b>	<b>%</b>
Cataract	291	89.8%
Redness	219	67.6%
Watering of eyes	204	63.0%
Conjunctivitis, allergies	205	63.3%

<sup>10</sup> <https://assets.publishing.service.gov.uk/media/57a08b24ed915d3cfd000b68/sundarbans.pdf>

Blurred vision	67	20.7%
Others	46	14.2%
<b>Total (N)</b>	<b>324</b>	

About 98 percent of the respondents referred the cataract patients and about 68 percent referred people with blurred vision (Table 6).

**Table 6. The distribution of eye diseases and approach to treat them as reported by RMPs (%)**

Disease	I treat it myself	I refer the patient	Both	Total (N)
Cataract	0.0%	98.3%	1.7%	<b>292</b>
Redness	50.2%	21.9%	27.9%	<b>219</b>
Watering of eyes	44.6%	26.0%	29.4%	<b>204</b>
Conjunctivitis, allergies	57.7%	13.8%	28.5%	<b>253</b>
Blurred vision	2.8%	67.6%	29.6%	<b>71</b>
Others	22.4%	49.0%	28.6%	<b>49</b>

The RMPs covered under the study reported that they referred patients to various health facilities like Vivekanand Mission Ashram (VMA) eye hospital, Southern Health improvement Samity (SHIS) eye hospital, Sunderbans Social Development Centre (SSDC) and Other private/government hospitals. For other eye diseases like redness, watering of eyes, conjunctivitis and allergies, more than 70 percent of the respondents treat the patients by themselves (Table 7).

**Table 7. Reported eye diseases by the places as they are referred by RMPs (%)**

Disease	Vivekanand Mission Ashram (VMA) eye hospital	Southern Health improvement Samity (SHIS) eye hospital	Sunderbans Social Development Centre (SSDC)	Other Pvt./Govt. hospitals	Total (N)
<b>Cataract</b>	21.6%	31.8%	25.3%	21.2%	<b>292</b>
<b>Redness</b>	34.9%	28.4%	16.5%	20.2%	<b>109</b>
<b>Watering of eyes</b>	38.9%	22.1%	18.6%	20.4%	<b>113</b>
<b>Conjunctivitis, allergies</b>	33.0%	23.6%	16.0%	27.4%	<b>106</b>
<b>Blurred vision</b>	20.3%	21.7%	17.4%	40.6%	<b>69</b>
<b>Others</b>	39.5%	5.3%	26.3%	28.9%	<b>38</b>

The common eye diseases as reiterated by the RMPs through the in-depth interviews are reddening of eyes, watering of eyes, itching, allergy, cataract, blurred vision, and near and far sightedness.

*“There are lots of villagers coming with issues of itching and reddening of eyes/watering of eyes. Another common problem is cataract, especially among the elderly population.”*

(RMP, Mathurapur Block)

*“Patients come to me with issues like reddening of eyes, itching of eyes, pain in the eyes, swollen eye, and some patients come with blurred vision. Blurred vision means the patient has developed cataract.”*

(RMP, Canning II Block)

*“In rural areas, most of the people are engaged in separating rice from the hay and many times while working, hay dust may accidentally fall in the eye or at times insects from rice may enter the eye causing irritation and eye problems.”*

(RMP, Hasnabad Block)

Main causes of eye diseases were stated as bathing in the pond, long working hours of separating rice from hay and long hours of working in the fields. Unhealthy hand-washing practices also contributed to eye diseases in the community.

*“Most of the rural folk are fishermen or work on the field, so it is dust and salt in the water that causes eye problems. They take a bath in pond water and that is the place they get the eye infection rapidly.”*

(RMP, Mathurapur Block)

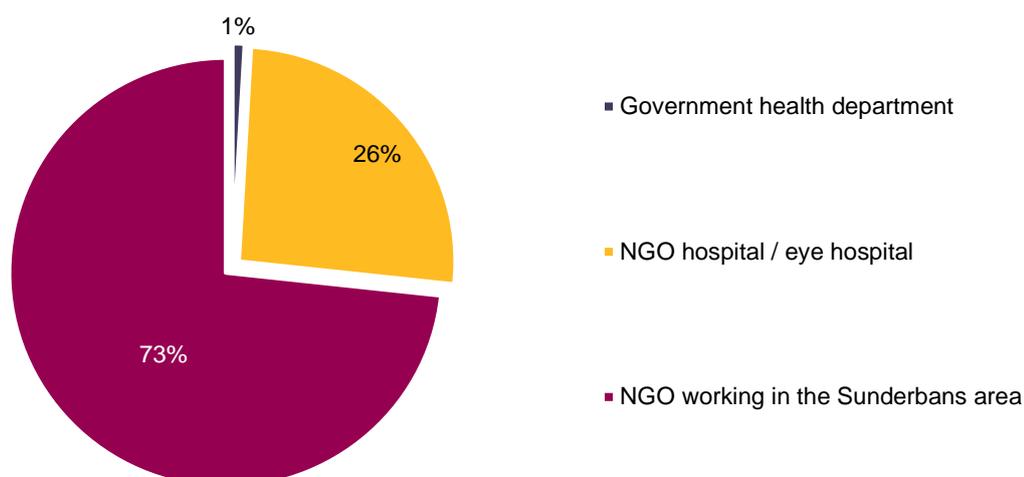
*“Eye problems are prevalent in both males and females. In our area, women also work in tandem with men as agriculture workers. Most of the cleaning of rice hay is done by middle-aged women and during work, accidentally hay may enter their eyes and they rub eyes to get a relief. This leads to eye injury.”*

(RMP, Basanti Block)

### 5.3 Training on eye health

Under the project, RMPs underwent a day’s training on the importance of the eye health programme, the anatomy and function of the eye, common eye problems, refractive errors, the need and importance of wearing glasses, visual acuity and its importance, visual acuity testing process for presbyopia, counselling process for patients and their roles in supporting the project. Therefore, in the present study, all selected RMPs were asked several questions about their training on eye health issues. About 98 percent of the respondents could recall that they have received training on eye health issues in the last three years and 73 percent of them have received training from NGOs working in the Sunderbans area (Fig. 3).

Fig. 3: Source of training on eye health (n=318)



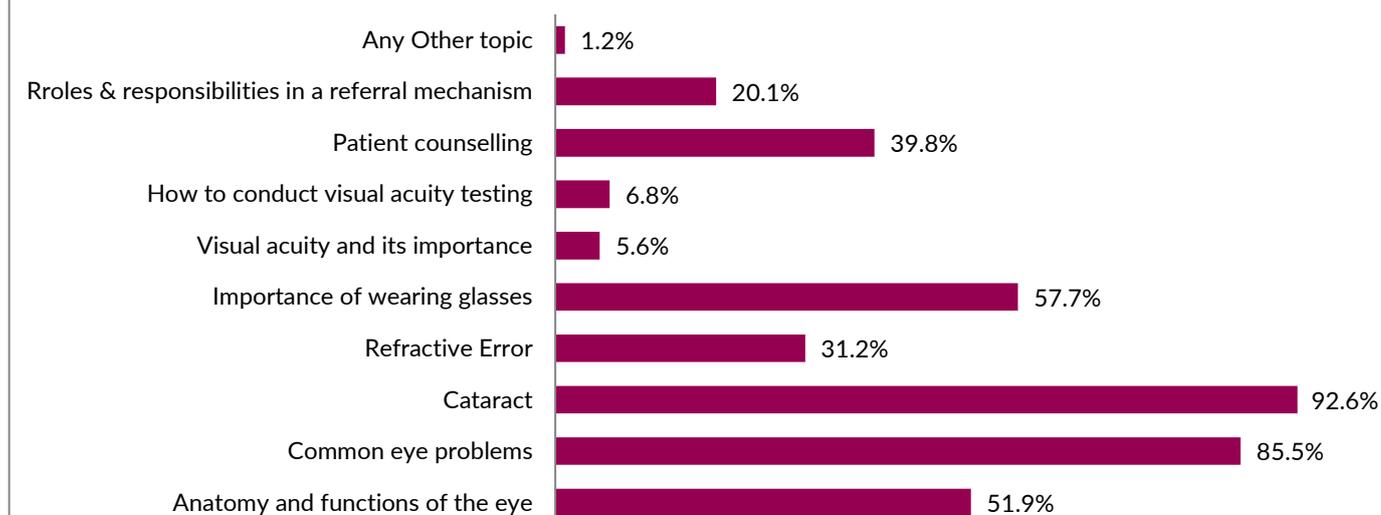
Findings presented in Table 8 clearly depict that RMPs have mostly received training from the project implementing hospital partners working in the region. It may be their understanding as presented in the previous graph, but when they were asked to name the place of the training, data shows that 45 percent of the respondents received training from the Sunderbans Social Development Centre (SSDC), 38 percent received training from Southern Health improvement Samity (SHIS) eye hospital and 16 percent received training from the Vivekanand Mission Ashram (VMA) eye hospital.

**Table 8. Place of receiving the training as reported by RMPs (%)**

Place of training	N	%
Vivekanand Mission Ashram (VMA) eye hospital	51	15.9%
Southern Health improvement Samity (SHIS) eye hospital	122	38.4%
Sunderbans Social Development Centre (SSDC)	144	45.4%
Don't remember/can't say	1	0.3%
<b>Total (N)</b>	<b>318</b>	<b>100</b>

About 93 percent of the respondents were able to recollect cataract as a topic covered during the training and 86 percent reported common eye problems as a training topic. Other topics covered through training were the anatomy and functions of the eye, the importance of wearing glasses, refractive error, patient counseling and roles and responsibilities in a referral mechanism. This suggests that the training imparted by partners under the project are useful for RMPs as they were able to remember the key components of the training.

**Fig. 4: Topics covered during eye health training**



About 54 percent of respondents who have received training were able to clarify all their doubts during the training. Almost all respondents (99 percent) believed that the trainer was competent enough to clear the doubts during training and 95 percent were satisfied with the training methods/techniques used. About 74 percent of respondents felt that the content of the training was appropriate, whereas 10 percent opined that the content was inadequate, and 15 percent felt the need for refresher training (Table 9).

**Table 9. Quality of training as reported by RMPs (%)**

Characteristics	N	%
<b>Comfortable clarifying the doubts</b>		
Yes, all doubts were clarified	171	53.8%
Yes, to some extent	147	46.2%
<b>Use of charts, diagrams and other teaching aids during training</b>		
Yes	272	85.5%
No	46	14.5%
<b>Satisfied with the training methods/techniques</b>		
Yes	303	95.3%
No	15	4.7%
<b>Opinion on content of the training</b>		
Inadequate	32	10.1%
Appropriate	235	73.9%
Excessive	4	1.3%
Need refresher training	47	14.8%
<b>Total (N)</b>	<b>318</b>	<b>100</b>

Most of the respondents felt that the training provided to them was of short duration (2-2.5 hours) and an overview on eye health and related issues was provided. Due to the short duration of the

training, many issues were covered very briefly, and this was considered to be less effective. The respondents felt that the training would have been more effective if it was planned for 2-3 days with senior expert doctors as trainers.

*“Improving training will require bringing in senior qualified doctors/eye specialists for conducting the training.”*

(RMP, Sandeshkhali Block)

*“In the training, examples of accidental injury in eyes were shown, like hay going into eyes and leading to eye problems. They had shown pictures of how we should take care of eyes, retina and glasses; what should be done by us when someone comes with eye problem – we were instructed to do basic treatment and refer the patients to them. These training are beneficial if done every year. I would suggest that training should happen more frequently.”*

(RMP, Canning 2 Block)

The RMPs shared that they did not receive any kind of supportive supervision for providing eye care services. Several respondents opined that coordination and collaboration with schools, SHGs, PRIs and other community level groups would help to increase the reach and coverage of eye care services through effective referrals.

## Section III: Level of knowledge regarding three eye problems, treatment and referral

### 6. Knowledge about refractive error, cataract and abnormal eye

#### 6.1 Knowledge on refractive error:

About 61 percent of the respondents agreed to the statement that “a refractive error is an eye disorder that occurs when the eye cannot clearly focus the images from the outside world or the shape of the eye does not bend the light correctly. The result of refractive error is blurred vision.” Nearly 35 percent of respondents said they agreed to some extent with the above statement.

Myopia and Hypermetropia are the two major forms of refractive error and were reported by about 80 percent and above respondents. More than 30 percent of the respondents identified Astigmatism and Presbyopia as forms of refractive error. Poor nutrition was identified by 56 percent respondents as the main cause of refractive error. Irregular shaped cornea, use of electronic devices (television, computers, mobile) and age related (due to the thickening and loss of flexibility of the lens) reasons are other causes of refractive error and each was reported by about 10 percent of respondents.

Headaches and/or eye strain, and difficulty seeing distant objects, are the two leading symptoms of refractive error reported by more than 81 percent of respondents. More than 57 percent of the respondents identified watery eyes and reddening of the eyes as other symptoms of refractive error.

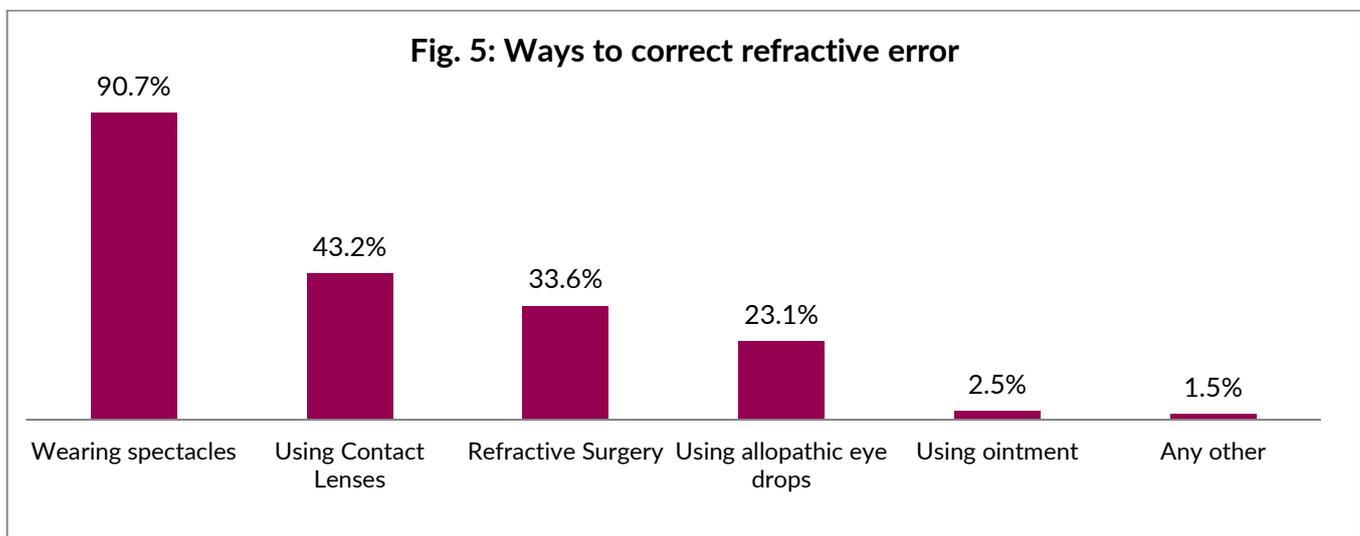
**Table 10. Various forms of refractive error, main causes and symptoms as reported by RMPs (%)**

Characteristics	N	%
<b>Various forms of refractive error</b>		
Myopia	276	85.2%
Hypermetropia	257	79.3%
Astigmatism	116	35.8%
Presbyopia	99	30.6%
Any other	5	1.5%
<b>Total (N)</b>	<b>324</b>	
<b>Main cause of refractive error</b>		
Poor nutrition	177	54.7%
Irregular shaped cornea	39	12.1%
Use of electronic devices (television, computers, mobile)	32	9.9%
Age related – due to thickening and loss of flexibility of lens	26	8.0%
Shorter length of eyeball	14	4.3%
Other	30	9.2%
Declined to answer	6	1.8%
<b>Total (N)</b>	<b>324</b>	<b>100</b>

**Table 10. Various forms of refractive error, main causes and symptoms as reported by RMPs (%)**

<b>Symptoms of refractive error</b>		
Headaches and/or strain on eyes	278	85.8%
Difficulty seeing distant objects	263	81.2%
Watery eyes	187	57.7%
Reddening of the eyes	200	61.7%
Droopy eyelid	36	11.1%
Squinting	53	16.4%
Other	5	1.5%
<b>Total (N)</b>	<b>324</b>	

All respondents were asked about various ways to treat refractive error in the study. According to 91 percent of the respondents, the wearing of spectacles can correct refractive error and 43 percent also reported that use of contact lenses could correct refractive error. One-third also said that refractive surgery could be carried out to correct refractive error (Fig 5).



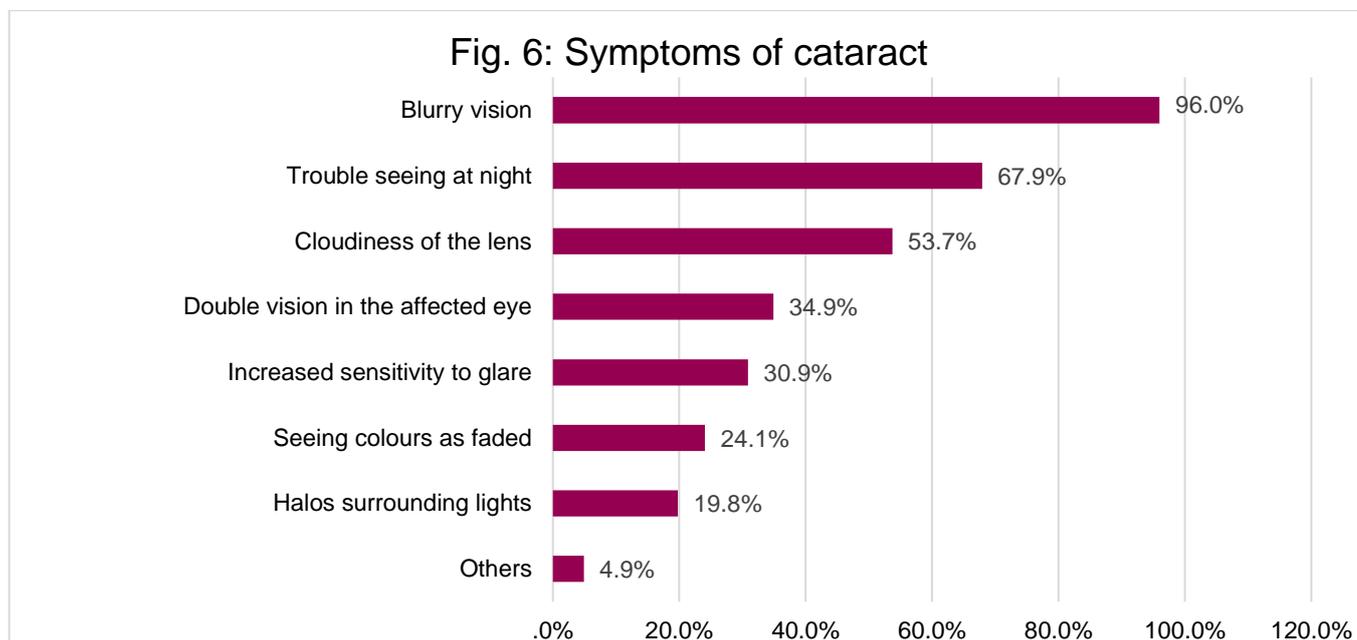
## 6.2 Knowledge on cataract

The present study tried to measure the level of knowledge among RMPs on cataract. The majority of the respondents (87%) were aware that cataract is a condition characterised by the clouding of the lens of the eye as they reported this as fact. Similarly, 77 percent reported that only older people developing cataract is a myth. However, about one-third of respondents had incorrect knowledge regarding the spreading of cataract from one eye to the other (Table 11).

**Table 11. Respondents' opinion on cataract (%)**

Statements (N=324)	Myth		Fact	
	N	%	N	%
Cataract is a condition characterised by the clouding of the lens of the eye	44	13.5%	280	86.5%
Only older people develop cataract	249	76.7%	75	23.3%
Cataracts cannot spread from one eye to the other	220	68.0%	104	32.0%

Information obtained about the respondents' knowledge on symptoms of cataract showed that blurry vision was identified by 96 percent as a symptom of cataract. More than 50 percent of the respondents mentioned that trouble seeing at night and cloudiness of the lens were symptoms of cataract (Fig 6).



More than 75 percent of the respondents identified diabetes and advancing age/aging as the risk factors/causes of cataract. Smoking (40 percent) and high BP (32 percent) are the two other risk factors mentioned by the respondents as risk factors or causes of cataract. Most of the respondents (98 percent) shared that surgery can cure cataract.

**Table 12. Risk factors/causes of cataract as reported by RMPs (%)**

Characteristics	N	%
Advancing age/ageing	257	79.3%
Diabetes	242	74.7%
Excessive exposure to sunlight	53	16.4%
Smoking	128	39.5%
Obesity	15	4.6%
High blood pressure	105	32.4%
Previous eye injury or inflammation	82	25.3%
Excessive alcohol consumption	27	8.3%
Other	25	7.7%
<b>Total (N)</b>	<b>324</b>	

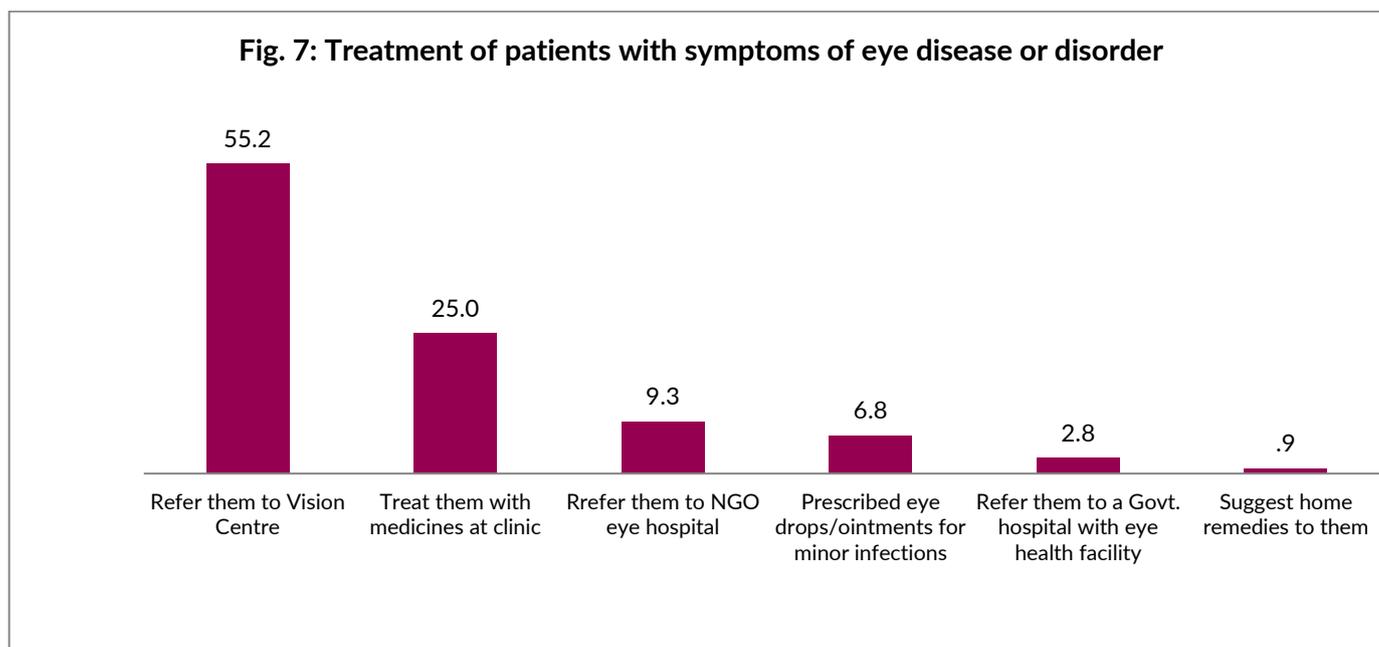
### 6.3 Knowledge on abnormal eye

Blurred vision (93 percent) and excessive watering of the eye (65 percent) were identified as the signs of an abnormal eye by the respondents. About 30 percent and above respondents mentioned red eye, discharge from the eye, abnormal eye movement and colour vision as signs of abnormal eye.

Table 13. Signs of an abnormal eye as reported by RMPs (%)		
Blurred vision	300	92.6%
Colour vision problem	96	29.6%
Abnormal eye movement	101	31.2%
Contrast sensitivity	31	9.6%
Excessive watering of the eye	212	65.4%
Discharge from the eye	113	34.9%
Red eye	120	37.0%
Droopy eyelids	42	13.0%
Holding or tilting head to one side to see objects	15	4.6%
Squinting	47	14.5%
Not aware/don't know	5	1.5%
<b>Total (N)</b>	<b>324</b>	

## 7. Eye health treatment and referrals

The training conducted under the project for RMPs focused on referring patients with eye problems to the nearest vision centres or hospitals so that they can receive quality eye care. Therefore, in the present study all respondents were asked “how do you mainly treat a person who comes to you with symptoms of any eye disease or disorder”. Analysis suggests that about 25 percent of respondents treat patients with medicines who come to them with symptoms of any eye disease or disorder, whereas about 67 percent refer their patients to various health facilities including vision centres (55 percent), NGO eye hospitals (9 percent) and government hospitals (3 percent) as presented in Fig 7. The NGO eye hospitals mostly referred by the respondents are SSDC, SHIS, Dayarampur and VMA.



Of those respondents who treat their patients at their clinics, 89 percent prescribed allopathic medicines and 11 percent give Ayurvedic/homeopathic medicines for eye health related issues. None of the respondents had facilities for eye examination and refraction in their clinics.

The respondents mostly provide eye care services to people from lower economic categories and it would be beneficial if medicines like eye drops etc. were made freely available to villagers through eye camps. Most of the respondents use torches to examine patients with eye issues. However, during IDIs the respondents shared that they were unable to provide adequate eye care services including following up referrals due to a lack of availability of equipment.

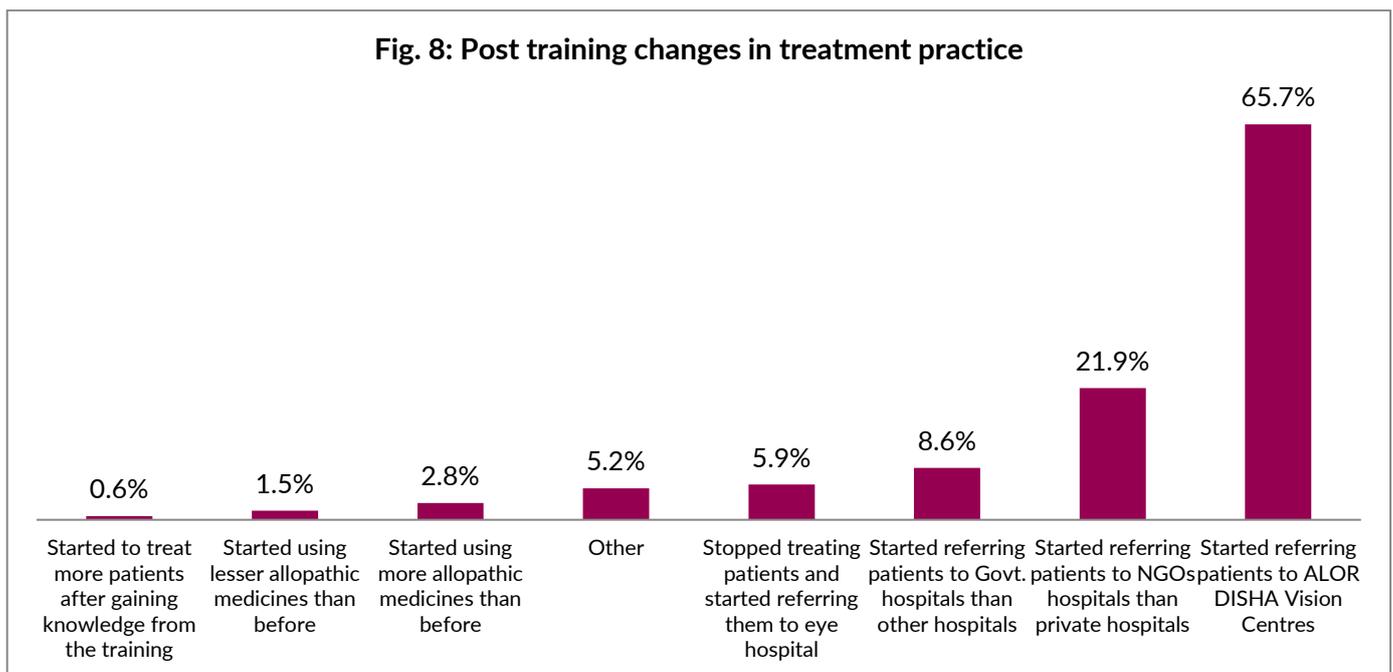
*“For blurred vision I give ciprofloxacin tablets and for reddening of eyes I give them ofloxacin eye drops. So we give primary treatment and then refer them to nearest health facility.”*

(RMP, Hasnabad Block)

Except for a few, most of the respondents don't keep any records of their patients. Mostly, they treat only minor eye ailments and refer their patients to various health facilities for any major eye diseases. For referrals, most of the respondents write the address of the health facility on blank paper and give it to the patient. Referral slips, if provided by the health facilities, would improve the monitoring and following-up of referral services.

## 8. Changes in eye health treatment practices post training

Most of the respondents reported that they had referred patients before receiving the training on eye health, but mainly to private practitioners or hospitals. After receiving the training, about 66 percent of the respondents started referring their patients to Alor Disha Vision Centres. About 22 percent respondents mentioned that they have started referring patients to NGO hospitals rather than private hospitals.



## 9. Motivation and challenges

### 9.1 Motivation of RMPs in eye care projects

The respondents shared various ideas on ways to involve the RMPs to participate in any eye care projects:

- Support to strengthen knowledge/skills of RMPs through training.
- Provide certificate of acknowledgement to RMPs for conducting eye screening at the community level when such training is conducted.
- Comprehensive training on eye care to improve capacities, and post-training support for those who are already trained in conducting eye screening.
- Quality training to improve counselling skills.
- Need-based training for RMPs would be beneficial as they are at different levels (knowledge, understanding, practise, experience etc).
- Training location at a centrally located convenient place (not far away).
- Organising eye care camps in different regions more frequently will help to increase the reach.
- RMPs should be engaged to provide information within the communities to increase awareness related to eye care.

### 9.2 Challenges faced by RMPs in providing eye care services

- Lack of recognition on ability to provide eye care.
- Lack of trust by the community on the capacity of RMPs to treat minor eye problems.
- Inadequate knowledge and skills of RMPs to provide eye care services.
- Lack of availability of equipment leads to inadequate diagnosis and eye screening.
- No/limited networking with similar groups.
- Many patients referred by RMPs do not visit health facilities due to financial constraints.
- In some instances, referred health facilities are far off and, considering the geographical landscape, lack of transportation facilities leads to low visits among referred cases.
- No referral systems followed.
- Poor maintenance of records for patients who visits RMPs or are referred to other health facilities.

## 10. Conclusion and recommendations

Based on the findings from the quantitative and qualitative assessments, it was clear that the RMPs benefited from the training provided to them. Most of the RMPs felt that the training was

beneficial and the majority of them were able to recollect the topics covered during the training. They also claimed to be confident in providing primary eye care and timely referrals.

As evident from the findings, the following recommendations could be made for future programmes:

- The training on eye care for RMPs should be made more comprehensive and given a longer duration to deliver effective primary eye care services in the rural areas.
- Post-training follow-up support or linkages with registered physicians will help in converting knowledge into skills and address the knowledge gap in their practice.
- The trained RMPs should be utilised to create a referral linkage between eye care hospitals and the rural community.
- RMPs should be trained and encouraged to maintain the records of the patients.
- A formal referral system should be established and post-referral follow-ups should be strengthened.
- Engaging RMPs to generate awareness in the community about various eye related problems and their possible remedies, thus increasing the demand for services.
- Forging partnerships with local officials, health workers, private practitioners, NGOs, PRIs and the community to promote community participation and enhance the credibility of RMPs.

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7. Health Care in Sunderbans: Challenges and Plan for a better Future, Institute of Health Management and Research, Jan 2012.

# Annexure II - Ethical approval



OUR MISSION - YOUR VISION

ESTD : 1987 Regd No. 8/B - 113/85-86

BLESSINGS: PARAMHANS SANT HIRDARAM SAHIB, GUIDANCE & MOTIVATION: REV. SIDDH BHAUJI

## सेवा सदन नेत्र चिकित्सालय (ट्रस्ट)

## SEWA SADAN EYE HOSPITAL (TRUST)

NABH Accredited Super Speciality Eye Hospital



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**Hospital Registration No :**  
NH/34/Dec. 07

**FCRA Registration No :**  
0631 60060  
(For Receiving Foreign Donation)

**PAN : AAATS4273R**

Donations are exempted U/S 80 (G) of Income Tax Act 1961

**SPECIALITY CLINICS:**

- Cataract
- Cornea
- Glaucoma
- Retina
- Squint & Paediatrics
- Oculoplasty
- Low Vision
- Contact Lens

**PHONE :** +(91)755-2641156  
+(91)755-2643581  
+(91)755-4244767  
+(91)755-4244768

**FAX :** +(91)755-2642369

**E-Mail :**  
sewasadaneyehospital@gmail.com

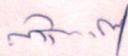
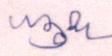
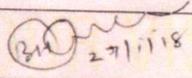
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Date 27.1.2018

### RESOLUTION ON CIRCULATION

Approval for study on Evaluation of Eye Care training for RMPs (Sunderbans eye health programme supported by Seeing is Believing in Sunderbans, India)

The Committee is in consensus and approve the protocol for conducting the above mentioned study.

S.NO	Member Name	Post	Signature
1.	MR. L.C. Janiyani	Managing Trustee	
2.	Mr. Suresh Awatramani	Trustee	
3.	Dr. Purna Uphadyaya	Medical Director	
4.	Mr. Bharat Chawla	Hospital Administrator	
5.	Mr. K.K.Kapadia	Administrative Officer	

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Behind Civil Hospital, Sant Hirdaram Nagar, Bhopal (M.P) INDIA-462 030  
Donate Eyes - Give Sight

# Annexure III – Interview schedule

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Form no:

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## Evaluation of Eye Care training for RMPs *Sunderbans eye health programme supported by Seeing is Believing*

### Consent Form for RMPs

My name is \_\_\_\_\_ and I am working for \_\_\_\_\_ organisation, which is carrying out an assessment to understand how effective has been the training that has been provided to medical practitioners in Sunderbans on eye health.

To give you a brief background, the Sunderbans eye health programme is being implemented in the Sunderbans region by 3 hospital (VMA, SSDC, SHIS) with financial and technical support from Seeing is Believing and Sightsavers. Under this programme we are undertaking eye health service delivery which includes screening, treatment, surgeries. The programme also has a strong components of developing grassroots level health work force amongst ASHAs, ANMs, etc. and also training of Rural based medical practitioners with an aim of enhancing the service provision and referral networks to the eye hospitals.

As part of the programme we have selected you for conducting an interview with you to know whether you have ever been trained by any eye hospital or organisation on eye health issues. We would like to ask you questions about the nature and content of the training to understand the impact it may have had on your current practice, both in terms of treatment and referrals Your responses will be very helpful for us in improving the training course and contents to make it more effective and also to enable in enhancing collaborative working between the hospitals and you.

I wish to also inform you that all the information that you will be sharing with me will be kept in the strictest confidence. The questionnaire with your responses will be kept in safe custody. I also assure you that your name will not be quoted or mentioned in any of the analysis or reports. You participation is purely voluntary and you can even withdraw from the interview if at any point of time you feel uncomfortable in any way.

If at a later date you wish to contact us for any reason pertaining to your participation in this study, you may contact the following person at the below mentioned address or phone number:

Name: \_\_\_\_\_ Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Mobile No: \_\_\_\_\_.

If you agree to participate in this study, I then request you to kindly provide your consent for participating in this study.

Name (in capitals): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Witness: \_\_\_\_\_ Name of witness: \_\_\_\_\_

## PART I – BASIC INFORMATION

Sl. No	Questions	Codes
Q 1.1	Name: _____	
Q 1.2	Gender: Male – 1, Female - 2, Transgender – 3	
Q1.3	Age in completed years:	
Q1.4	Name of District:	
Q1.5	Name of Block:	
Q1.6	Name of gram panchayat:	
Q1.7	Name of village:	
Q1.8	Contact No.: <input type="text"/>	
Q1.9	Highest Education in completed years: <input type="text"/> <input type="text"/>	
Q1.10	Number of years since practicing as a Medical Practitioner: (write in completed years; if less than a year write '00') <input type="text"/> <input type="text"/>	
Q1.11	Population size that you serve (in numbers): <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
Q1.12	What is your Religion? (write appropriate code) Hindu.....01 Muslim.....02 Christian.....03 Sikh.....04 Buddhist.....05 Jain.....06 No religion.....07 Other.....08	
Q1.13	What is your Caste? (write appropriate code) Schedule caste.....01 Schedule tribe.....02 OBC.....03 Others.....04 Don't know.....05	

## PART II: COMMON EYE PROBLEMS IN SUNDERBANS

Sl. No	Questions		
Q2.1	What are the 5 major health issues in your area? 1. .... 2. .... 3. .... 4. .... 5. ....		
Q2.2	What are the 5 most common diseases that are prevalent in your area? 1. .... 2. .... 3. .... 4. .... 5. ....		
Q2.3	What are the 5 most <b>common eye diseases</b> that are prevalent in your area? 1. .... 2. .... 3. .... 4. .... 5. ....		
Q2.4	How do you address these eye diseases? ( <i>copy the names of the diseases from Q2.3</i> )		
a. Name of the disease	b. I treat it myself ( <i>tick as appropriate</i> )	c. I refer the patient ( <i>tick as appropriate</i> )	d. I refer them to.... (mention name of the facility)
1			
2			
3			
4			
5			

## PART III: TRAINING AND KNOWLEDGE ON EYE HEALTH

Sl. No	Questions
Q3.1	<p>Have you ever received training on eye health issues during the past 3 years?</p> <p>Yes.....1</p> <p>No.....2</p> <p>Don't remember.....8</p> <p><b>Instruction: If No, skip to Q3.5</b></p>
Q3.2	<p>If yes, please tell the source from where you received the training on eye health?</p> <p>Government health department.....1</p> <p>Private hospital / eye hospital.....2</p> <p>NGO hospital / eye hospital.....3</p> <p>NGO working in the Sunderbans area.....4</p> <p>Others .....5</p> <p>Don't remember.....8</p> <p>No response.....9</p>
Q3.3	<p><b>Ask this question to those respondents who have given response 3 or 4 in Q3.2</b></p> <p>If it was an NGO hospital / eye hospital / NGO working in the Sunderbans, can you please tell the name of the hospital or organisation:</p> <p>Vivekanand Mission Ashram (VMA) eye hospital.....1</p> <p>Susrut Eye Hospital.....2</p> <p>Southern Health improvement Samity (SHIS) eye hospital.....3</p> <p>Sunderbans Social Development Centre (SSDC).....4</p> <p>Samarpan Foundation.....5</p> <p>Sunderbans Eye Hospital.....6</p> <p>Any other.....8</p> <p>Don't remember/Can't say.....9</p>
Q3.4	<p>What topics were covered during the training on eye health? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>Anatomy and functions of the eye.....A</p> <p>Common eye problems.....B</p> <p>Cataract.....C</p> <p>Refractive Error.....D</p> <p>Importance of wearing glasses.....E</p> <p>Visual acuity and its importance.....F</p> <p>How to conduct visual acuity testing.....G</p> <p>Patient counselling .....H</p> <p>Your roles and responsibilities in a referral mechanism.....I</p> <p>Any Other topic.....J</p> <p>Don't remember.....Y</p> <p>No response.....Z</p>
Q3.4A	<p>Were you comfortable clarifying your doubts?</p> <p>Yes, all doubts clarified.....1</p> <p>Yes, to some extent.....2</p> <p>No, not at all.....3</p> <p>Declined to answer.....9</p>

Sl. No	Questions
Q3.4B	In your opinion, was the trainer competent enough to clear your doubts? Yes.....1 No.....2 Declined to answer.....9
Q3.4C	Did the trainer use charts, diagrams and other teaching aids? Yes.....1 No.....2 Declined to answer.....9
Q3.4D	Were you satisfied with the training methods/techniques? Yes.....1 No.....2 Declined to answer.....9
Q3.4E	Did you think content of the training was: Inadequate.....1 Appropriate.....2 Excessive .....3 Need refresher training .....4 Declined to answer.....9
<p>Now I would like to ask you a few questions to see whether you are able to recall some of the key messages that were given to you during the training. Your response will help in strengthening our training programme and make it more effective in the future.</p>	
Q3.5	Please listen to following statement on 'Refractive Error' and tell me whether you agree/disagree/don't know/can't say this. <i>Statement: "A refractive error is an eye disorder that occurs when the eye cannot clearly focus the images from the outside world or the shape of the eye does not bend the light correctly. The result of refractive error is blurred vision."</i> Agree, to some extent.....1 Agree.....2 Disagree.....3 Don't know/can't say.....8 Declined to answer.....9
Q3.6	What are the various forms of refractive error? <i>(Instruction: Do not prompt. Let the respondent recollect and narrate)</i> Myopia.....A Hypermetropia.....B Astigmatism.....C Presbyopia.....D Any other.....E Don't know.....Y No response.....Z
Sl. No	Questions

Q3.7	<p>What is the <u>main</u> cause of Refractive Error?</p> <p>Shorter length of the eye ball.....1  Elongated eye ball.....2  Irregular shaped cornea.....3  Age related – due to thickening and loss of flexibility of lens...4  Poor nutrition.....5  Other diseases.....6  Professional hazards involving eye.....7  Use of electronic devices (Television, computers, mobile).....8  Exposure to excessive sunlight.....9  Punishment due to sins from past life.....10  Any other.....11  Don't know.....98  No response.....99</p>
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Q3.8	<p>What are the symptoms of Refractive Error?  <i>(Instruction: Do not prompt. Let the respondent recollect and narrate)</i></p> <p>Headaches and/or strain on eyes.....A  Difficulty in seeing distant objects.....B  Watery eyes.....C  Reddening of the eyes.....D  Droopy eyelid.....E  Holding or tilting head to one side to see objects.....F  Squinting.....G  Any other .....H  Don't know.....X  No response.....Z</p>
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Q3.9	<p>What are the ways in which refractive error can be corrected?  <i>(Instruction: Do not prompt. Let the respondent recollect and narrate)</i></p> <p>Wearing spectacles.....A  Using Contact Lenses.....B  Refractive Surgery.....C  Using allopathic eye drops .....D  Using ointment .....E  Home remedy .....F  Traditional methods .....G  Any other.....H  Don't know.....X  No response.....Z</p>
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**Section 2: Cataract**

Q3.10	<p><b>Consider all that you know about Cataract and tell me whether the following statements are “Myth” or “Fact”.</b></p> <p>(Note: please put ‘tick mark’ in appropriate Column)</p>		
	<b>Statements</b>	<b>Myth</b>	<b>Fact</b>
	a. Cataract is a condition characterized by clouding of the lens of the eye.		
	b. Only older people develop cataract.		
	c. Cataracts cannot spread from one eye to the other.		

<b>Sl. No</b>	<b>Questions</b>
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Q3.11	<p>What are the symptoms of cataract? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>Blurry vision.....A  Cloudiness of the lens.....B  Trouble seeing at night.....C  Seeing colours as faded.....D  Increased sensitivity to glare.....E  Halos surrounding lights.....F  Double vision in the affected eye.....G  A need for frequent changes in prescription glasses.....H  Any other.....I  Don't know.....X  No response.....Z</p>
Q3.12	<p>What are the risk factors/causes of cataract? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>Advancing age/aging.....A  Diabetes.....B  Excessive exposure to sunlight.....C  Smoking.....D  Obesity.....E  High Blood Pressure.....F  Previous eye injury or inflammation.....G  Excessive alcohol consumption.....H</p> <p>Any other specify ( _____ ).....I  Don't know.....X  No response.....Z</p>
Q3.13	<p>What are the ways in which cataract can be cured/treated? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>There is no cure for cataract.....A  Cataract surgery.....B  Traditional methods of cure.....C  Any other.....D  Don't know.....X  No response.....Z</p>
Q3.13a	<p><b>If response to Q3.13 is C, then ask:</b>  What type of traditional methods are used to cure cataract?</p> <p>1. _____  2. _____</p>

Sl. No	Questions
<b>Section 3: Abnormal eye</b>	
Q3.14	<p>What are the signs of an abnormal eye? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>Blurred vision.....A  Colour vision.....B  Abnormal eye movement .....C  Contrast sensitivity.....D  Excessive watering of the eye.....E  Discharge from the eye.....F  Red eye.....G  Droopy eyelids.....H  Holding or tilting head to one side to see objects.....I  Squint.....J  Any other .....K  Don't know.....X  No response.....Z</p>

## PART IV: EYE HEALTH TREATMENT PRACTICES AND REFERRALS

Sl. No	Questions
<i>Now I will like to ask you some questions on the medical treatment you provide to patients who come to you with symptoms of eye diseases.</i>	
Q4.1	<p>How do you <u>mainly</u> treat a person who comes to you with symptoms of any eye disease or disorder?</p> <p>I treat them with medicines at my clinic.....01  I refer them to a private eye hospital.....02  I refer them to an NGO eye hospital.....03  I refer them to a Government hospital with eye health facility.....04  I refer them to Vision Centre.....05  I conduct screening and refraction and provide them spectacles.....06  I suggest home remedies to them.....07  I prescribed eye drops/ointments for minor infections.....08  I don't do anything.....09  No response/Declined to answer.....10</p>
Q4.2	<p><b>If response to Q4.1 is 1, then ask:</b>  What kind of medicine do you <u>mainly</u> give at your clinic for eye health issues?</p> <p>Ayurvedic.....1  Homeopathic.....2  Allopathic.....3  Unnani .....4  Traditional medicines.....5  Suggest home remedies .....6  No response / refused to response.....9</p>
Q4.3	<p><b>If response to Q4.1 is 2, then ask:</b>  Which private eye hospital(s) do you usually refer them to? (mention name)</p> <p>_____</p> <p>_____</p>

Sl. No	Questions																								
Q4.4	<p><b>If response to Q4.1 is 3, then ask:</b> Which NGO eye hospital do you usually refer them to? (mention name)</p> <p>_____</p> <p>_____</p>																								
Q4.5	<p><b>If response to Q4.1 is 4, then ask:</b> Which Government hospital with eye health facility do you usually refer them to? (mention name)</p> <p>_____</p> <p>_____</p>																								
Q4.6	<p><b>If response to Q4.1 is 6, then ask:</b> Do you have facilities for eye examination and refraction in your clinic? (Tick on Yes or No as appropriate)</p> <table border="1"> <thead> <tr> <th>Name of equipment</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>(i) Snellen's chart / vision testing drum</td> <td></td> <td></td> </tr> <tr> <td>(ii) Torch</td> <td></td> <td></td> </tr> <tr> <td>(iii) Trial lens set</td> <td></td> <td></td> </tr> <tr> <td>(iv) Refraction chair</td> <td></td> <td></td> </tr> <tr> <td>(v) Slit lamp</td> <td></td> <td></td> </tr> <tr> <td>(vi) Lensometer</td> <td></td> <td></td> </tr> <tr> <td>(vii) Near vision testing drum</td> <td></td> <td></td> </tr> </tbody> </table>	Name of equipment	Yes	No	(i) Snellen's chart / vision testing drum			(ii) Torch			(iii) Trial lens set			(iv) Refraction chair			(v) Slit lamp			(vi) Lensometer			(vii) Near vision testing drum		
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<b>CHANGES IN EYE HEALTH TREATMENT PRACTICES POST TRAINING</b>																									
<p><b>Check Q3.1. End Interview for those who have said 'No/Don't remember' in Q3.1. Else, ask the following questions only to those who have said 'Yes' in Q3.1</b></p>																									
Q4.7	<p>Have you ever referred any patients before you received the training?</p> <p>Yes.....1</p> <p>No.....2</p> <p>Don't remember.....3</p> <p>No response.....4</p>																								
Q4.8	<p>You said that you have been trained on eye health issues. After the training what <u>changes in treatment</u> have you brought about in your daily practice? (Instruction: Do not prompt. Let the respondent recollect and narrate)</p> <p>I have stopped treating them and started referring patients to eye hospital.....A</p> <p>I have started referring them to NGOs hospitals than private hospitals.....B</p> <p>I have started referring them to Government hospitals than other hospitals.....C</p> <p>I have started referring them to ALOR DISHA Vision Centres.....D</p> <p>I have started to treat more patients after having gained knowledge from the training.....E</p> <p>I have started using more allopathic medicines than before.....F</p> <p>I have started using lesser allopathic medicines than before.....G</p> <p>I have stopped treating them at all on eye diseases.....H</p> <p>Other.....I</p> <p>No change at all.....J</p> <p>Declined to answer.....Z</p>																								
Sl. No	Questions																								

Q4.9	<p>After the training were you contacted by anyone from the hospital or organisation to find out whether the training has help you in any way?</p> <p>Yes.....1</p> <p>No.....2</p> <p>Don't remember.....3</p> <p>No response.....4</p>
Q4.1 0	<p>Did you get a booklet of Referral card Slips during the training or after the after training for referring patients to the hospital that provided you the training?</p> <p>Yes.....1</p> <p>No.....2</p> <p>Don't remember.....8</p> <p>No response.....9</p>
Q4.1 1	<p>If response to Q4.8 is A/B/C/D, then ask: After the training, are you referring more number of patients to hospitals/ clinics/ Vision centres?</p> <p>Yes.....1</p> <p>No.....2</p> <p>Declined to answer.....8</p> <p>No response.....9</p>

**THANK YOU FOR YOUR PARTICIPATION**