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## **ABBREVIATIONS**

PEC:	Primary Eye Care
PRI:	Panchayati Raj Institutes
ASHA:	Accredited Social Health Activist
NRHM:	National Rural Health Mission
WHO:	World Health Organization
IAPB:	International Agency for Prevention of Blindness
NPCB:	National Programme for Control of Blindness
PMOA:	Paramedical Ophthalmic Assistant
RCH:	Reproductive and Child health
ORS:	Oral Rehydration Solution
AWW:	Anganwadi Worker
MMR:	Maternal Mortality rate
RAAB:	Rapid Assessment of Avoidable Blindness
ICMR:	Indian Council of Medical Research
MCH:	Maternal and Child Health
PHC	Primary Health Care

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## **ABSTRACT**

### **Background:**

Primary eye care services are essential for common ocular morbidities and elimination of avoidable blindness. Primary eye care is important in India due to a high population burden, lack of awareness and poor access to eye care services in rural areas. Government of India launched National Rural Health Mission, an integrated programme for health care in rural areas. Under this programme, village level health volunteer called “Accredited Social Health Activist” (ASHA) have been recruited for every thousand population. Around one million ASHAs are now involved in primary health care mainly in MCH care practices. Early detection and treatment of blinding eye conditions and ocular morbidity will facilitate a reduction in magnitude of blindness if these volunteers can also be utilized in primary eye care at the community level.

### **Aim and objectives:**

Primary objective of the current study was to develop a training curriculum for ASHA in “Primary Eye Care” and to assess the change in their knowledge and skills after the training.

### **Methods:**

The training curriculum and study tools were developed after interviewing the previously trained primary eye care volunteers who were already involved in delivering primary eye care. ASHA were assessed for their knowledge in Primary eye care using a semi-structured questionnaire. A total of 69 ASHA were trained and they were reassessed for their knowledge and skills after two weeks.

### **Results**

Training resulted in significant gain in the knowledge of ASHA in primary eye care (from mean score of 31.2 to 81.4). Most ASHA could satisfactorily perform the skills (mean score 72.4 out of 100) learnt in primary eye care. Some difficulties were reported in record maintenance. After training, ASHA participated in various primary eye care activities in their area.

### **Conclusions and recommendations**

ASHA can effectively participate in community level primary eye care if supported with availability of eye care service. Performance based incentives should be included for ASHAs in facilitating cataract surgery and providing spectacles. Government of India should take steps for training of ASHA in primary eye care all over the country.

## **1. INTRODUCTION AND OVERVIEW**

### **1. 1. Blindness and its burden**

#### **1.1.1 Global Burden of Blindness:**

It is estimated that globally there are 39 million blind people (presenting visual acuity (VA) < 3/60) (WHO) and another 246 million people have moderate to severe visual impairment (presenting VA < 6/18).<sup>1</sup>The South East Asian region including India is the worst affected, with 12 million blind and 90.5 million visually impaired people, 80% of which is avoidable.<sup>1</sup>It is estimated that cataract and glaucoma are major causes of blindness whereas uncorrected refractive error is the major cause of visual impairment in this region.<sup>1</sup>When compared to previous estimates of blindness by WHO,<sup>2</sup>the overall prevalence of blindness has reduced.

#### **1.1.2 Blindness in India**

In past 40 years four major national level surveys have been conducted in India. The prevalence of blindness has shown declining trends in last 20 years. (Table 1.1)

**Table 1.1 Prevalence of Blindness in India**

Year	Source	Prevalence (all age group)criteria
1971-74	ICMR <sup>3</sup>	1.38%
1986-89	NPCB and WHO. <sup>4</sup>	1.49%
1999-2001	National Blindness survey <sup>5</sup>	1.1%
2006-07	RAAB survey (2006-07) <sup>6</sup>	1.0

\* Blindness is defined as per NPCB criteria: visual acuity of < 6/60 in the better eye with available correction. <sup>7</sup>

#### **1.1.3. Causes of Blindness and Visual Impairment in India:**

RAAB survey (2006-07)<sup>6</sup> showed cataract was still the single most important cause of blindness being responsible for 72% of blindness in the country. Refractive error is one of the most common causes of visual impairment and the second leading cause of blindness in India (19.6%)<sup>5</sup>. 39.3 million people are visually impaired due to uncorrected refractive error in India.<sup>8</sup> Nearly 7% of children in the 5 to 15 years age group have myopia; most of them remain unrecognized and underserved.<sup>9</sup> The emerging scenario in the developing world suggests that diabetes and blindness secondary to diabetic retinopathy may soon be a major problem in this part of the world as well.<sup>10</sup> It is estimated that number of diabetics will increase from 19 million to 57 million from 1995 to 2025<sup>11</sup>. Glaucoma is another important emerging cause of blindness in

India responsible for around 5.8% of blindness.<sup>5</sup> In the Aravind Comprehensive Eye Diseases study in South India, the prevalence of glaucoma in 40+ was estimated to be 2.6% for primary open angle glaucoma and 1.7% for primary angle closure glaucoma.<sup>12</sup> Corneal blindness is another important cause of avoidable blindness with prevalence of at least one eye blindness of 0.66% in southern India.<sup>13</sup>

## **1.2 VISION 2020- Right to Sight**

Vision 2020 Right to Sight is a global initiative launched by WHO and IAPB envisaged for elimination of avoidable blindness. The key strategies are human resources development, strengthening of existing eye care infrastructure and control of conditions responsible for avoidable blindness. These were cataract, trachoma, onchocerciasis, childhood blindness, refractive error and low vision. India has also included elimination of blindness due to glaucoma and diabetic retinopathy under Vision2020 Right to Sight India plan.

## **1.3 Primary Health Care and Primary Eye care**

Primary health care (PHC) is defined as “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally acceptable to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-determination”.<sup>14</sup> There are eight key elements of PHC:

- Health education for preventing and controlling prevailing health problems.
- Promotion of food supply & proper nutrition.
- Adequate supply of safe water & basic sanitation.
- MCH care, including family planning.
- Immunization against infective diseases.
- Prevention and control of locally endemic diseases.
- Appropriate treatment of common diseases & injuries.
- Provision of essential drugs.

Primary Eye care (PEC) is an essential component of PHC. The principles and issues related to PHC apply to PEC as well. PEC is defined as “a ‘frontline’ activity, providing eye care and identifying disease before it becomes a serious medical issue”.<sup>15</sup> Primary level health workers/ volunteers can help in prevention and control of blindness by eye health promotion in the community, creating awareness on blinding conditions, identification of common eye conditions

and referral to the higher level eye care centres. The PEC activities that can be performed by community level volunteers are given in Table 1.2

**Table 1.2 Primary eye care at community level**

PROMOTIVE	PREVENTIVE	CURATIVE
<ul style="list-style-type: none"> <li>• Nutrition Education</li> <li>• Improved maternal and child nutrition</li> <li>• Health education</li> <li>• Face washing</li> <li>• Safe water</li> <li>• Improved environmental sanitation</li> </ul>	<ul style="list-style-type: none"> <li>• Ocular prophylaxis at birth</li> <li>• Vitamin A doses</li> <li>• Measles vaccine</li> <li>• Perinatal care</li> <li>• Avoid neonatal hypoxia at birth</li> <li>• Examine neonate's eyes</li> <li>• Nutrition supplementation</li> </ul>	<ul style="list-style-type: none"> <li>• Vision screening</li> <li>• Referral for surgery</li> <li>• Emergency management of ocular trauma</li> <li>• Prophylaxis for trachoma</li> <li>• Early referral for other common eye diseases</li> </ul>

PEC is aimed at eye care promotion through behavior change in the community, Community awareness and participation needs to be strengthened at the grass root level in order to identify and treat individuals with ocular morbidity within the community. PEC is helpful in establishing linkages with other health programmes and other sectors such as education, water resources and social welfare.

In the recently developed WHO action plan for the prevention of avoidable blindness and visual impairment for 2009 - 2013, it has been emphasized that it is necessary to strengthen PEC services for preventing avoidable blindness and visual impairment at the community level. Services for blindness control should be integrated with PHC and existing health programmes.<sup>16</sup>

**Fig 1.1: Conditions requiring primary eye care for prevention of blindness (WHO)**

**Prevent Blindness through primary eye care**

Injuries		Acute onset		Gradual onset	
Example	Condition/Treatment	Example	Condition/Treatment	Example	Condition/Treatment
	<b>Foreign body</b> 1. Remove foreign body gently 2. Apply antibiotic eye ointment 3. Check for following day 4. Refer if unable to remove		<b>Conjunctivitis with pain</b> 1. Wash eyes well 2. Apply antibiotic eye ointment 3 times per day for 7 days 3. Refer if no improvement in 3 days		<b>Trachoma</b> 1. Wash face daily 2. Apply tetracycline 1% eye ointment 4 times per day for 6 weeks and afterwards 2 weeks 3. Ensure all household members
	<b>Corneal scratch</b> 1. Apply antibiotic eye ointment 3 times per day for 3 days 2. Apply sterile dressing 3. Refer if no improvement in 3 days		<b>Conjunctivitis in newborn</b> 1. Stop eye from new family 2. Apply antibiotic eye ointment 4 times daily until improved 3. Use systemic antibiotics 4. Refer infant and parents to clinic		<b>Trichiasis due to trachoma</b> 1. Apply antibiotic eye ointment daily 2. Refer immediately to specialist
	<b>Blood inside the eyeball (hyphema)</b> 1. Wash both eyes 2. Do not rub for 3 days 3. Refer if not clear in 3 days		<b>Corneal ulcer</b> 1. Apply antibiotic eye ointment every hour 2. Use systemic antibiotics 3. Use oral steroids 100-150 mg per day 4. Refer immediately		<b>Pterygium</b> 1. Refer before cornea is involved
	<b>Lid laceration (involving lid edge)</b> 1. Check for other eye injuries 2. Apply sterile dressing and ointment 3. Use systemic antibiotics 4. Refer		<b>Blinding vitamin A deficiency</b> 1. Give oral vitamin A 200,000 IU for 2 consecutive days 2. Following this, give oral vitamin A 10,000 IU daily		<b>Vitamin A deficiency</b> 1. Give oral vitamin A 200,000 IU immediately and every 2 months 2. Informal sources of good diets should be encouraged
	<b>Burns (chemical or thermal)</b> 1. Immediately irrigate burned eye profusely with clean water 2. Apply antibiotic eye ointment 3. Refer immediately		<b>Painful red eye with visual loss</b> 4. Refer immediately		<b>Cataract</b> 1. Refer if patient unable to read beyond 6 meters of distance or less
	<b>Perforation of the eye</b> 1. Use 10% drops or ointment 2. Apply ointment 3. Use systemic antibiotics only 4. Refer immediately				

**Refer to the clinic all patients with vision worse than 6/18**      **Never use steroids in the eye unless prescribed**

#### 1.4 National Rural Health Mission (NRHM)

NRHM was launched in India in April 2005 with an objective to provide accessible, affordable, accountable, effective and reliable health care for the underserved rural population.<sup>17</sup>

The key strategies of NRHM were development of adequate infrastructure for health care

delivery in rural areas, human resource development for health care up to the village level, implementing Indian Public Health standards (IPHS) as minimum acceptable standards for the infrastructure, human resources, equipment, drugs and quality assurance.<sup>18</sup>

The five key approaches for improving health care delivery system emphasized in NRHM were communitization, flexible financing, improved management, monitoring based on specific standards and human resource management.<sup>19</sup>

NRHM emphasized district level decentralized planning so that each district could construct its own annual plan of action based on local needs and resources. The Mission also aimed to strengthen public-private partnerships to meet the deficiencies in the public health delivery system.<sup>20</sup>

#### **1.4.1 Critical appraisals about NRHM**

With the implementation of NRHM in India, there has been a positive change in decentralized planning and intersectoral convergence. The Hospital Development Committees promoted privatization in the rural areas. There have been active efforts under NRHM for involving the NGOs in programmes like immunization, Janani Suraksha Yojna for Maternal Health, training of ASHAs etc.<sup>19</sup>

The framework of NRHM was a conscious decision with innovative approaches in implementation of health services for safe motherhood, immunization and infant feeding, behavior change communication, gender mainstreaming, service delivery for RCH etc.<sup>21</sup> NRHM has played a key role in reduction of MMR, strengthening of community health centres (CHC) with availability of 24 hours quality services and recruitment of ASHA at village level.<sup>22</sup>

But it has been criticized that the programme remains limited to RCH and Family Welfare. The promised integration of communicable diseases has been left out from the mission. There has been significant strengthening of CHCs as First Referral Units (FRUs) but it has resulted in weakening of Primary Health Centres.<sup>20</sup> The implementation of NRHM largely depends on Panchayati Raj Institutions (PRIs) and state governments should take active efforts in building the capacity of PRIs.<sup>22</sup>

It has been suggested that the human resource should be made available at the community health centres. PRIs should take responsibility for availability of safe drinking water and adequate sanitation. ASHA should be trained at CHC with incentives to medical officers.<sup>23</sup>

#### **1.4.2 ASHAs in NRHM:**

One of the major initiatives of NRHM was recruitment of female health care volunteers called **Accredited Social Health Activist (ASHA)** for every 1000 population.<sup>24</sup> ASHA were posted to strengthen the community action for primary health care. ASHAs are entitled to performance-based incentives for different health care activities. ASHA are selected by local village Panchayat from the women resident of the village. She should be educated up to 8<sup>th</sup> standard, preferably in the age group of 25 to 45 years. The Government of India has recommended a training of 23 days in a year for ASHA. 5 manuals have been developed that cover training on different aspects of PHC. They are provided with a drug kit for imparting community level primary health care. The PHC activities assigned to ASHA in the community are summarized in Table 1.3.

**Table 1.3: Key Primary health care activities of ASHA<sup>24</sup>**

S.No	Activities
1	Awareness generation in the community on health and related nutrition, sanitation, hygiene practices
2	Motivating people for ante-natal care, safe institutional delivery, immunization, family planning and prevention of diseases
3	Depot holder for ORS, iron & folic acid tablets, delivery kit, oral contraceptive pills
4	To visit every household in her field area
5	To get orientation common prevalent diseases amongst the villagers
6	To work with the support of Anganwadi Worker, Village Health and Sanitation Committees.
7	ASHA mobilize population for the monthly village health camp- immunization, Vitamin A supplementation, antenatal/postnatal care etc.

The success of NRHM depends on the performance of ASHA and her linkage with the functional health system.<sup>25</sup> Every ASHA is expected to be familiar with the functional health facilities in their respective areas where she can refer or escort the patients for specific health related services.

The NRHM programme succeeded in increasing institutional deliveries mainly due to active efforts by ASHA in mobilizing women.<sup>20</sup> It has been observed that ASHA services are best utilized by young and educated recently delivered women with low parity.<sup>26</sup>

It is suggested that for effective utilization of ASHA, there is need for enhanced social and professional support from village panchayat and primary health centres.<sup>21</sup> The major challenges for implementing ASHA were observed as demand for full-fledged employment, overburdening workload and delay in payment of incentives.<sup>22</sup> Some limitations have been observed in ASHA programme like only outcome based payment structure, poor institutional support by primary health centres, and lack of participation at community level.<sup>27</sup>

A study in Faridabad district (Haryana, India) showed that ASHA could be effectively involved in providing care for the newborn with adequate skill development and practical experience. ASHAs were assessed for providing newborn care after one day training followed by two refresher trainings.<sup>28</sup>

### 1.5 Demographic profile of India, Haryana and Gurgaon

India is the world's second most populous country. It comprises of 28 states and 7 union territories. The demographic profile<sup>29</sup> of India, Haryana and Gurgaon is given in table 1.4.

**Table 1.4: Demographic profile of India, Haryana and Gurgaon<sup>29</sup>**

Details	India	Haryana	Gurgaon
Population (Millions)	1210.19	25.35	1.51
Population density (per KM)	382	573	1241
Rural population (%)	68.4	65.2	-
Literacy rate (%)	74.0	76.6	84.4
Sex ratio (Female:1000 males)	940	861	850



**Map of India**



**Map of Haryana**

## **2. RATIONALE, AIMS AND OBJECTIVES**

### **2.1 Rationale for the study**

There are more than 7 million blind people in India comprising one-fifth of the global blind population.<sup>5</sup> It is estimated that more than 80% of this blindness is either preventable or curable. One of the reasons for such high level of avoidable blindness in the country is poorly accessible eye care services to a large proportion of people in rural India. Nearly three-fourths of Indian population resides in rural areas but majority of eye care services are centered in urban areas. There is high level of poverty and illiteracy in the rural population that is responsible for poor awareness about prevention & treatment of eye diseases that in turn is responsible for under-utilization of available eye care services. It is essential that minimal PEC services should be available at the doorstep to the people in rural area, in order to reduce the burden of blindness in the country.

The Government of India launched “NRHM” in 2005 under which most of the vertical health programmes including NPCB were merged into a horizontal programme. One of the major initiatives in the programme was to post village level health volunteers “ASHA” for every 1000 population... More than 850,000volunteers<sup>19</sup> have already been recruited in India under this programme. This initiative has been highly admired in improving PHC in India.<sup>19,20,28</sup>

It is important that ASHA should also be involved in basic eye care in the community in order to strengthen the PEC services in the rural and underserved areas. The NPCB also issued guidelines that ASHA should be involved in the programme but there is need for training of ASHAs for effective involvement in the programme. Currently, there is no training curriculum in PEC for the ASHA in NRHM or NPCB.

The NPCB aimed to post one paramedical ophthalmic assistant (PMOA) at vision centre for every 50,000 population by the year 2020.<sup>30</sup> PMOA is responsible for primary level eye care services. Presently there is one PMOA for 100,000 population approximately and the target of one PMOA for every 50,000 population is difficult to achieve. It is important that even if we achieve this goal, there remains a wide gap in attaining PEC at the community level. This can only be achieved by the involvement of community level volunteers in the programme. ASHA may act like a bridge between the community and PMOA by actively participating in PEC activities at village level. They can be effectively utilized in eye health education and promotion against the harmful traditional practices and misconceptions, awareness about eye care

services, identification of common ocular morbidities and timely referral of all needy patients by working in close contact with the community.

The study aimed to assess the role of ASHA in PEC and to develop appropriate training curriculum for ASHA so that they can be involved in PEC similar to the trained volunteers already providing PEC under the vertical programmes.

## **2.2 Aims and Objectives**

**AIM:** To develop a training curriculum in “Primary Eye Care” for the village level volunteers (ASHA) in Northern India and assess its benefit

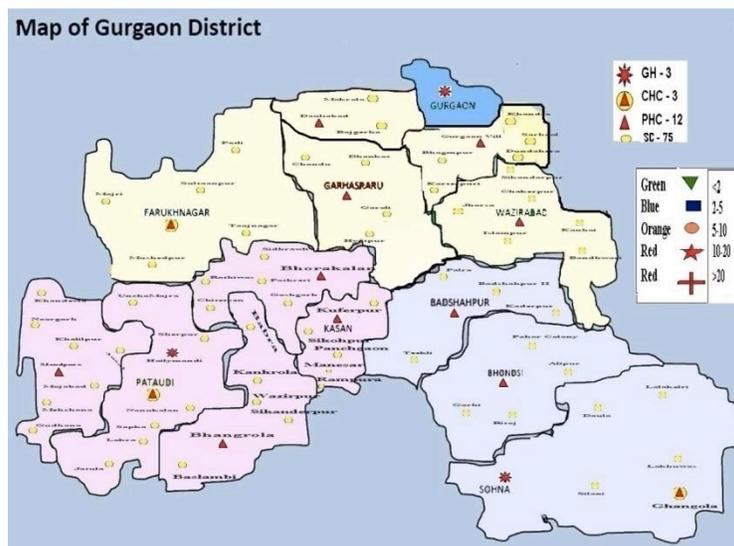
### **Objectives:**

1. To assess the current knowledge of ASHA in relevance to PEC for common eye problems for the prevention and control of avoidable blindness.
2. To assess training needs of ASHA based on the knowledge of other eye care volunteers already involved in vertical PEC programmes.
3. To train ASHA in community level basic PEC activities.
4. To evaluate the effect of training of these volunteers on their knowledge, skills and activities related to PEC.

### **3. MATERIAL AND METHODS**

#### **3.1. Study area**

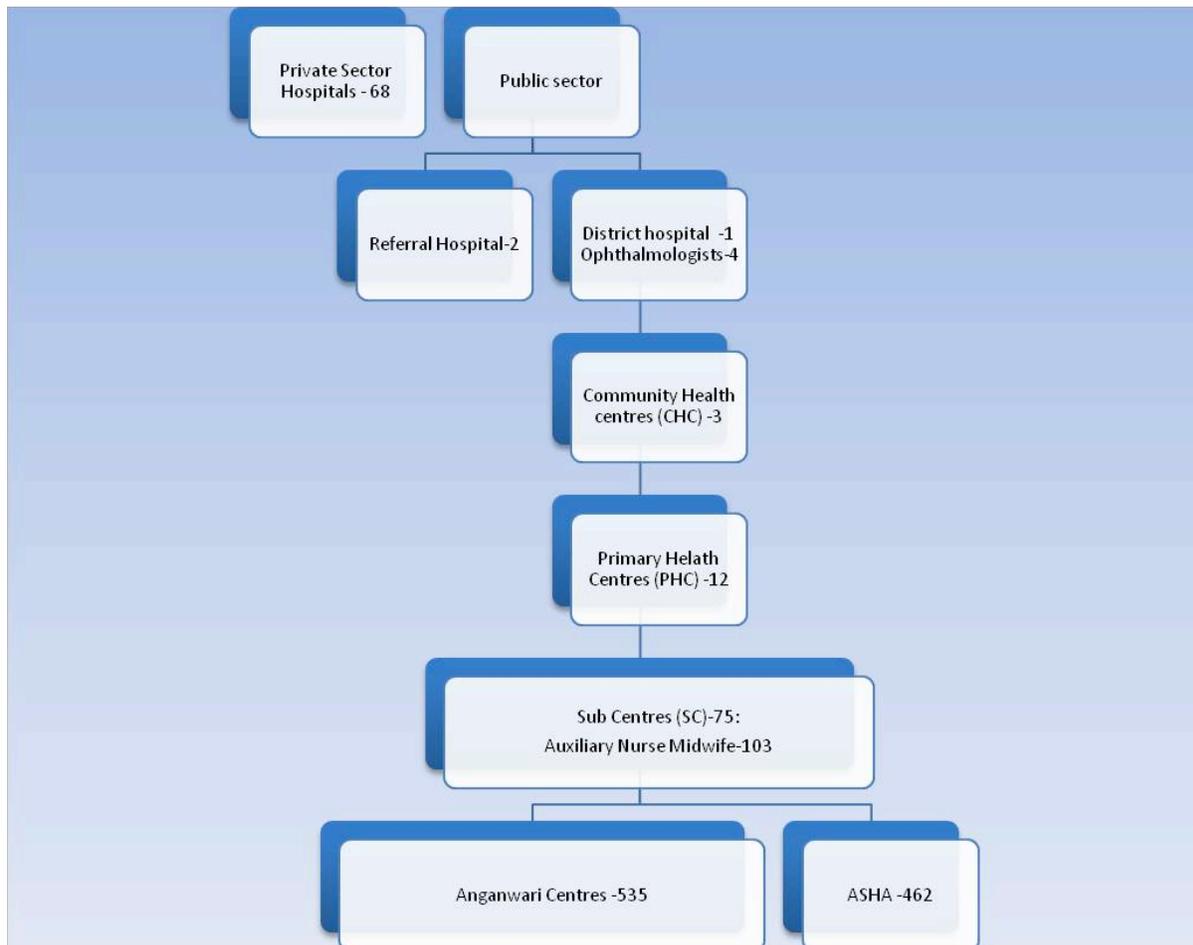
The study was conducted in Gurgaon district of Haryana state in North India. The population of Gurgaon district is 1.5 million with high decadal growth rate of 73.9% from 2001 to 2011 due to rapid urbanization<sup>29</sup>. The district has four blocks- Gurgaon, Sohna, Farrukhnagar and Pataudi and 266 villages.<sup>31</sup>



#### **3.1.1. Health care delivery in Gurgaon**

The Chief Medical Officer is head of the health services in the district. Primary level health care services are available through a network of 75 Sub Centres and 12 Primary Health Centres. A qualified medical practitioner is available at these centres in a population of around 30,000. Secondary level services are provided through "District hospital" and three CHCs.<sup>32</sup>

**Fig-3.2: Health services in district Gurgaon**



The NRHM programme has been implemented in the district since 2006. 462 ASHA have been recruited in 280 villages in the district up to June 2011. ASHA identify patients in the community and bring them to the nearest health centre for further management.

Most of ASHAs have been trained in various NRHM modules on PHC. There not been any module for training of ASHAs on PEC. A “self appraisal card” with information about health care activities is used for reporting the activities. (Appendix 7)

### **3.1.2 Status of Blindness Control Programme in District Gurgaon**

Specialist eye care is provided through District hospital and 5 other secondary level centres in the district. There are 4 ophthalmologists and 5 PMOA in the district.

Under the NRHM plan for blindness control in the district<sup>33</sup> the key objectives are reduction in the prevalence of blindness to 0.5 % by 2012. The key activities included were increasing the

number of ophthalmologists, training of paramedical staff and teachers, NGOs and AWW for screening of school children and IEC activities and supply of basic eye medicines for PEC.

### **3.2. Study Design**

The study was a pilot intervention study to assess benefit of training ASHA in facilitating PEC services. ASHA were trained and assessed for change in their knowledge and skills in PEC.

#### **3.2.1 Interview of trained primary eye care volunteers**

As the first step, already trained eye care volunteers involved in PEC were recruited and assessed for their knowledge in PEC in nearby districts. The knowledge of these volunteers was taken as a benchmark for developing study tools for ASHA. For integration of PEC with PHC services it is important that horizontal personnel like ASHAs should have knowledge and skills which are as good as the vertical eye care volunteers. The training modules and curriculum adopted for these eye care volunteers were reviewed for the development of curriculum and training module for ASHAs.

A total of 46 previously trained PEC volunteers were recruited from three different project areas from Delhi and Alwar district.

#### **3.2.2 Selection of ASHA:**

Permission was sought from the Civil Surgeon (Chief Medical Officer) of the district. The District Programme Manager provided the list of all ASHA recruited under the programme. 462 ASHAs were recruited in 281 villages in the entire district till June 2011. Ten villages were selected randomly from each block and all ASHAs from those villages were recruited for the study. Overall 70 ASHAs were selected from 40 villages in 4 blocks. ASHAs were contacted telephonically by the Block Extension Educator of the respective blocks and were informed about the pre-training visit, training venues, dates and time.

### **3.3 Study tools**

The questionnaire schedule (Appendix8) was divided into three Sections:

Questionnaire schedule 1 was for assessment of Knowledge about PEC. The questionnaire was initially used to assess the knowledge of trained eye care volunteers already involved in providing PEC.

Similar questionnaire was then used for assessing the knowledge of ASHAs before and after the training. Questions on PEC for different ocular conditions i.e. blindness, cataract, glaucoma, refractive error, diabetic retinopathy, injuries, conjunctivitis and vitamin A deficiency were

included. Specific scores were allotted for each question with the consultation of group of experts (Table 3.1). The number of questions and scores for each ocular condition was assigned based on their relative importance and magnitude in India. An answer guide was prepared for each question and ASHA were assessed by comparing their responses with the answer guide. All stated misconceptions to the disease conditions were also recorded.

Part II of the study tool was an observation schedule for the post training assessment of the skills of ASHA in PEC. Which was observed two weeks after training.

Part III of the study tool was a questionnaire schedule to identify the participation of ASHA in primary eye care activities in two weeks period after the training.

**Table 3.1: Knowledge scores for various ocular conditions in questionnaire schedule:**

Ocular conditions	Number of questions	Marks allocated
Blindness	3	10
Cataract	6	25
Glaucoma	2	10
Refractive errors	5	20
Diabetic retinopathy	3	10
Ocular Injuries	1	05
Conjunctivitis	3	15
Vitamin A deficiency	3	15

#### **3.4 Pre-training assessment of ASHA for knowledge on PEC:**

ASHAs were invited for the pre training assessment of their knowledge. One ASHA could not be contacted as she had shifted from the village. 69 ASHAs were finally recruited for the study and divided into four batches. The pre-training assessment was done one day before the training for each group. ASHAs were explained about the study and written consent was obtained from each of them before the study. They were interviewed using a semi structured questionnaire schedule (Questionnaire I). The assessment was done at the nearest CHCs where these ASHA regularly come for monthly meetings.

### **3.5 Training of ASHA:**

ASHA were trained on identification and referral of common eye conditions and community level PEC. Training was conducted in each of the 4 blocks in the district for 16-20 ASHA in each group. The Senior Medical Officer in-charge of the respective block supported the training programme. The training material used for the training was:

1. A film on “Primary eye care” (30 minutes duration), developed by Dr. R.P. Centre for Ophthalmic Sciences with the support of Sight savers International
2. Educational material on preventive eye health care on common eye conditions with appropriate photographs and illustrations for easy understanding of the key concepts
3. Vision screening card of 6/60 Snellen’soptotype for screening adults for visual impairment, blindness and cataract.
4. Vision screening card of 6/9 Snellen’soptotype for screening school aged children for refractive error.

The training programme was kept for one-day duration.( appendix 9) It included lectures/ demonstration and role-plays on identification, prevention and referral for common eye diseases like cataract, refractive errors, diabetic retinopathy, glaucoma, red eye, vitamin A deficiency and ocular injuries. ASHAs were trained for specific skills development for identification of blind (bilateral/unilateral) and suspected cataract, children of school aged group for suspected refractive errors, presbyopic people above 40 years based on their difficulties in performing near vision activities and referral of known diabetic patients in their practice area. PMOA posted in the local “Health Centres” were also involved in the training. ASHAs were given a kit after the training with vision screening cards for adults and children, measuring tape and a recording format.

### **3.6: Post training Assessment of ASHA:**

#### **Post training Knowledge Assessment:**

ASHA were invited to the CHC after two weeks of training. They were interviewed again using the same questionnaire schedule (Questionnaire 1) for knowledge on PEC.

#### **Post training Skills assessment:**

ASHA were also assessed for their skills related to selected PEC activities. Each ASHA was asked to perform five skills in the presence of the investigator. These were:

1. Visual acuity (VA) testing of the school aged children using 6/9 optotype of the vision-screening card.

2. Using Cataract card for identification of blindness/ unilateral blindness and cataract
3. Using eye vials and ointment tubes (checking their expiry date, applying them in eye and application within one month if the vial is already opened).
4. How to clean the eyes
5. Maintenance of register (blind, unilateral blind or cataract, children with suspected RE, presbyopes and diabetics)

Scores were allotted for each skill on the scale of 5 to 20. The maximum marks for performing all the skills were 100.

0= Volunteer could not perform and not even aware about the activity

5= Volunteer could not perform but aware about the activity

10= Volunteer partially performed the activity

15= satisfactorily performed but there was scope of improvement

20= Excellent skills

#### **Primary eye care activities by ASHA:**

ASHA were asked to identify cases of ocular conditions from their practice areas in 2 weeks period after the training. All ASHAs were asked to provide following details of the identified cases in a pre-designed sheet. (Appendix10).

1. School aged group children referred with visual impairment and suspected refractive errors
2. Blind or unilateral blind people identified and referred with suspected cataract or other ocular condition
3. People above 40 year of age referred with symptoms suggestive of presbyopia
4. Number of known diabetic patients referred

ASHAs were suggested to use the same method of contacting people as they practice for other diseases i.e. either house-to-house visit or inviting people to a common place. For identification of children with refractive errors, ASHAs conducted screening in their village schools with the help of school teachers.

During the post training assessment visit ASHA were interviewed whether they also observed other blinding conditions or cases during post training field visit like children with suspected vitamin A deficiency, blind children, known glaucoma cases, ocular injury or conjunctivitis cases.

### **3.7- Data Analysis**

All data was entered in MS Access based software and was analyzed using Stata 11. For assessing the effect of training on the knowledge of ASHA, the mean knowledge score for all the ocular conditions were calculated both for the pre and post training period. These scores were compared using the paired T test. The demographic characteristics of ASHA were also tabulated against the effect in their knowledge and skills using regression coefficient and one-sided Anova test.

### **3.8- Ethical approval**

Ethical approval was sought from Research and Ethics committee LSHTM, London and also from Ethics Committee, AIIMS, New Delhi. Permission was also taken from the district health authorities of Gurgaon. Written informed consent was taken from all participants.

### **3.9 Budget:**

The budget of 1500 £ was utilized mainly for travel, ASHA kits, Honorarium and refreshment for ASHA (Appendix 11)

## 4. RESULTS

### **4.1 Profile and knowledge score of already trained vertical eye care volunteers**

46 already trained vertical eye care volunteers were assessed for their knowledge about PEC. These volunteers were selected from three tertiary eye care hospitals from Delhi and Alwar where these hospitals have community based PEC projects. (Table 4.1.) The demographic profile of these volunteers is given in table 4.2. Table 4.3 shows their mean knowledge score about PEC.

***Table 4.1: Recruitment of already trained vertical eye care volunteers:***

Name of the training hospital/NGO	Venue	Number (N=46)
Dr. R.P.Centre for Ophthalmic Sciences	South Delhi	8
Dr. Shroff's Charitable eye hospital	Alwar, Rajasthan	16
Operation Eyesight Universal/VENU eye Institute	West Delhi	22

***Table 4.2: Demographic characteristics of already trained vertical eye care volunteers***

	Categories	N=46
Mean Age (years)		29 (SD 0.8)
Age groups	23-30	14
	31-35	12
	35 +	20
Education	Class $\leq$ 10	18
	> Class 10	28
Children under 5 years	None	8
	1-2	38
Duration of training	$\leq$ 1 year	32
	>1 year	14

**Table 4.3- Mean PEC knowledge score of the trained primary eye care volunteers**

	Mean knowledge score (SE) out of 100
Blindness	62.8 ( $\pm 3.40$ )
Cataract	57.04 ( $\pm 2.49$ )
Glaucoma	47.39 ( $\pm 5.62$ )
Refractive Error	59.46 ( $\pm 2.56$ )
Diabetic retinopathy	64.78 ( $\pm 5.09$ )
Injury	83.47 ( $\pm 3.00$ )
Conjunctivitis	74.78 ( $\pm 3.88$ )
Vitamin A Deficiency	68.84 ( $\pm 4.03$ )
<b>Overall Score</b>	<b>69.37 (<math>\pm 2.64</math>)</b>

#### **4.2 Demographic profile of ASHA:**

A total of 69 ASHA were recruited from the 4 blocks of Gurgaon district. Mean age of the participants was 32.97 years (range 23-48, SD 0.56). Three fourth (52 of 69) of the participants were educated up to 8<sup>th</sup> to 10<sup>th</sup> standard and the remaining possessed higher qualifications. All ASHA were married. Less than one-fifth (13 of 69) of ASHA had children below 5 years of age. The distance of their village to the nearest referral eye care centre ranged from one km to 20 km.

**Table 4.4: Demographic characteristics of ASHA**

	Categories	N=69
Mea Age (SD)	32.97 (0.56)	
Age	23-30	23 (33.33%)
	31-35	24 (34.78%)
	35 +	22 (31.88%)
Education	Class 8-10	52 (75.36%)
	> Class 10	17(24.64%)
Children under 5 years	None	56 (81.16%)
	1-2	13 (18.84%)
Type of family	Nuclear	29 (42.03%)
	Joint	40 (57.97%)
Village Distance from PHC (KM)	1 or less	26 (37.68%)
	2-5	23 (33.33%)
	6-20	20(28.99%)
Blocks	Gurgaon	16 (23.19%)
	Pataudi	16 (23.19%)
	Farrukhnagar	20 (28.99%)
	Sohna	17 (24.64%)

Of the 69 ASHA recruited, 56 (81.2%) could reach for the follow up post-training assessment for the eye care related knowledge and skills. Rest 13 (19.8 %) ASHA could not be covered for the follow up knowledge and skill assessment. They were contacted telephonically. 6(8.7%) participants could not turn up due to heavy rain in Sohna block. In Farrukhnagar and Gurgaon blocks participants were not available due to social commitments 4 (5.8%) and personal problems in the family 3(4.3%). There were no statistically significant differences between those who returned and those who did not return after two weeks (Table 4.5)

**Table 4.5: Demographic characteristics of respondent and non-respondent ASHA**

	Subgroup	Respondent N=56	Non Respondents N=13	Chi 2	P
Age (years)	24-30	17	6	1.43	0.49
	31-35	21	3		
	>35	18	4		
Education	8-10	40	12	2.48	0.12
	11-15	16	1		
Children below 5 years	0	44	12	1.30	0.25
	1-2	12	1		
Type of family	Nuclear	26	3	2.36	0.12
	Joint	30	10		
Village Distance from PHC	1	19	7	1.81	0.40
	2-5	20	3		
	6-20	17	3		
Blocks	Gurgaon	14	2	7.64	0.05 4
	Pataudi	16	0		
	Farrukhnagar	17	5		
	Sohna	11	6		

**4.3. Pre-training Knowledge of ASHA****4.3.1 Knowledge of ASHA about blindness:**

ASHA were not aware of WHO or NPCB definition of blindness. Before training, 68 ASHA (98.5%, mean score 0.04) believed blindness meant only absolute blindness. The mean score increased significantly to 2.84 ( $p < 0.001$ ) after training. There was significant gain in the knowledge about the causes of blindness and age group affected. Before training, misconceptions reported included that common causes of blindness could be allergy, chicken pox, conjunctivitis, pollution, hypertension, unhygienic environment and general weakness.

**Table 4.6: Pre and post training mean score for the knowledge of ASHA on blindness**

	Maximum score	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
Definition of blindness	3	.04(0.04)	2.84 (0.08)	<0. 001(2.6-2.97)
Age group commonly affected with blindness	2	1.52 (0.1)	1.96 (0.04)	<. 0001 (.22-.70)
Causes of blindness	5	1.28 (0.11)	3.57 (0.13)	<0.001 (1.84-2.66)

#### **4.3.2 Knowledge about Cataract**

Knowledge about the signs and symptoms of cataract gained significantly ( $P < 0.001$ ) after the training. Before training, 64(92.7 %) participants were not aware that the lens of the eye is affected in cataract. ASHA had misconceptions that risk factors for cataract could include eating spicy food, infections, lack of green vegetables in diet, watching television and generalized weakness etc. 42 ASHA (60.9 %) were aware before pre-training that the patient should be referred for surgery as soon as they are identified for cataract without waiting for blindness. 8 ASHA (11.6%) felt that patient should be first treated with medicines and referred for surgery if medicines were not effective. Before training, there were misconceptions about the seasonal preference for the cataract surgery. 40ASHA (58%) felt that cataract surgery should be done in winter season. But after the training, all ASHA were convinced that surgery could be done in any season. There was significant gain in the knowledge about the care to be taken after cataract surgery. Before training, 49 ASHA (71.1%) gave importance only to dietary precautions after surgery. After the training ASHA could collectthe precautions to be taken for the care of operated patients (Mean score 4.69).Table 4.7

**Table 4.7: Pre and post training mean score for the knowledge of ASHA - on Cataract**

	Maximum possible score	Pre-training Mean score (SE $\pm$ ) N=69	Post-training Mean score (SE $\pm$ ) N=56	P value (CI of mean difference of score)
Signs and symptoms in cataract	5	1.43 (0.1)	2.89 (0.13)	<0.001 (1.04-1.64)
Part of eye affected in cataract	2	0.14 (0.06)	1.78 (0.08)	<0.001 (1.46-1.90)
Risk Factors for cataract	5	0.22 (0.06)	0.73 (0.15)	<0.001 (0.28-0.85)
When to advise for cataract surgery	5	3.01 (0.25)	3.04 (0.19)	0.96 (-0.69-0.72)
Season preferable for cataract surgery	3	1.26 (0.18)	3 (0)	<0.001 (1.20-2.01)
Precautions after cataract surgery	5	2.04 (0.11)	4.69 (0.08)	<0.001 (2.44-3.03)

#### **4.3.3 Knowledge about Glaucoma:**

Before training, knowledge about glaucoma was negligible. Misconceptions were observed like that the eye turns to black in glaucoma. There was a statistically significant improvement noted in the knowledge about glaucoma after the training. (Mean score increased from 0.13 to 2.38) (Table 4.8)

**Table 4.8: Pre and post training mean score for the knowledge of ASHA - on Glaucoma**

	Max score	Pre-training Mean score (SE $\pm$ ) N=69	Post-training Mean score (SE $\pm$ ) N=56	P value (CI of mean difference of score)
Sign and symptoms of Glaucoma	5	0.04 (0.02)	4 (0.18)	<0.001 (3.60-4.33)
Risk factors for Glaucoma	5	0.13 (0.05)	2.38 (0.17)	<0.001 (1.88-2.55)

#### **4.3.4 Knowledge about refractive errors**

Before training, knowledge about type of refractive errors was poor. Knowledge improved significantly after training. There was a significant improvement in knowledge about common activities affected in presbyopia (Table4.9)

Participants were having misconceptions about common signs and symptoms of refractive error among school aged children like itching and pain in eyes, general weakness, allergy, and loss of blood may cause refractive errors. Before training, most of the participants were not aware of the concept of vision screening in school children but he knowledge increased significantly after the training. Before training, 65 ASHA (94.2%) were not aware of the difference between refractionist and ophthalmologist.

**Table 4.9: Pre and post training mean score for knowledge of ASHA on Refractive error**

	Max score	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
Types of refractive error	5	1.83 (0.18)	3.25 (0.09)	<0.001 (0.94-1.81)
Common problems if near vision is affected	3	1.90 (0.10)	2.95 (0.03)	<0.001 (0.79-1.28)
Sign/symptoms for refractive errors in school age children	5	1.49 (0.13)	3.05 (0.12)	<0.001 (1.18-1.92)
Identifying school age children for refractive error	5	1.17 (0.15)	4.41 (0.19)	<0.001 (2.65-3.60)
Right person for referral for refraction	2	0.93 (0.07)	1.5 (0.07)	<0.001 (0.35-0.76)

#### **4.3.5 Knowledge about Diabetic retinopathy (DR)**

Before the training, 42 participants (62.5%) were not aware that diabetes affects the eye. None of the participants were aware that diabetes mainly affects the retina and may cause blindness. Knowledge increased significantly after training. (Table 4.10)

**Table 4.10: Pre and post training mean score for the knowledge of ASHA - on DR**

	Max score	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
Diabetes can affect eye	2	0.75 (0.12)	2 (0)	<0.001 (0.99-1.51)
Part of eye affected in DR	3	0 (0)	2.27 (0.16)	<0.001 (1.94-2.59)
Prevention for DR	5	0.57 (0.12)	4.09 (0.12)	<0.001 (3.10-3.86)

#### **4.3.6 Knowledge about eye injury**

**Table 4.11: Pre and post training mean score for the knowledge of ASHA on eye Injury**

	Max score for The question	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
What should be done if something falls in the eye	5	2.41 (0.14)	4.63 (0.08)	<0.001 (1.89-2.57)

Misconceptions were reported that eye injuries could be treated with applying breast milk, butter, honey and any eye medicine available at home. Six (8.6%) respondents informed that particles should be removed with the help of tongue and they had observed the traditional healers doing this. Knowledge about correct practices of foreign body removal improved significantly after training (Table 4.11)

#### **4.3.7 Knowledge about conjunctivitis**

Participants were having some knowledge about the common symptoms of conjunctivitis (mean score 3.45) and preventive measures for conjunctivitis (mean score 2.65). But misconceptions were also reported about treatment of conjunctivitis like applying antibiotic eye applicaps, cold 'lassi' (prepared from yoghurt), rose water, using antibiotic tablets and injections, avoiding spicy food items etc. Thirteen participants (18.8%) suggested that eye vials might directly be taken from the chemist shop. Knowledge increased significantly after training. Before training, 56 (81.1%) participants were not aware that eye preparations should be used within one month after opening irrespective of the expiry date. Common misconception was that the opened eye vial can be used till the expiry date. Knowledge increased to 100% after the training programme. (Table 4.12)

**Table 4.12: Pre and post training mean score for the knowledge on conjunctivitis**

	Max score	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
Sign and symptoms	5	3.45 (0.1)	4.54 (0.09)	<0.001 (.70-1.22)
Advice to patient of conjunctivitis	5	2.65 (0.13)	4.70 (0.09)	<0.001 (1.68-2.32)
How long eye vial can be used after opening	5	.99 (0.23)	5 (0)	<0.001 (3.55-4.56)

#### **4.3.8 Knowledge about vitamin A deficiency and its primary prevention**

Though all ASHA were involved in immunization and vitamin A prophylaxis programme, 55 ASHA (79.7%) were not aware that vitamin A deficiency is commonly observed in children under 6 years of age. Knowledge about Vitamin A prophylaxis and dietary sources of vitamin A was also not satisfactory (Table 4.13) before training but increased significantly after training.

**Table 4.13: Pre and post training mean score for knowledge on Vitamin A deficiency**

	Max score	Pre-training Mean score (SE ±) N=69	Post-training Mean score (SE ±) N=56	P value (CI of mean difference of score)
Age group mainly affected with Vitamin A deficiency	5	1.04 (0.22)	4.32 (0.17)	<0.001 (2.56-3.73)
Vitamin A prophylaxis	5	2.72 (0.21)	4.82 (0.08)	<0.001 (1.74-2.62)
Dietary sources of Vitamin A	5	2.16 (0.16)	4.71 (0.09)	<0.001 (2.28-3.04)

**4.3.9 Effect of training on overall knowledge about eye diseases:**

Table 4.14 demonstrates the comparative mean knowledge scores before and after training. Training of ASHA resulted in significant gain in the knowledge on all eye diseases. Knowledge about Glaucoma and DR was very poor before the training and significant gain in knowledge was observed after training.

**Table 4.14 Pre and post training mean Knowledge score for respective eye diseases**

	Pre-training Mean score (SE)	Post-training Mean score (SE)	P value (CI of Mean difference of score)
Blindness	28.75 (1.89)	83.75 (1.72)	<0.001(49.02-60.98)
Cataract	32.86 (1.6)	64.57 (1.37)	<0.001 (27.36-36.06)
Glaucoma	1.96 (0.74)	63.75 (2.95)	<0.001 (55.74-67.83)
Refractive Error	37.59 (1.84)	75.80 (1.38)	<0.001 (33.78 –42.65)
Diabetic retinopathy	13.57 (2.43)	83.57 (2.49)	<0.001 (64.31-75.69)
Injury	47.86 (3.36)	92.5 (1.58)	<0.001 (37.87 – 51.42)
Conjunctivitis	48.09 (2.29)	94.88 (0.90)	<0.001 (42.12-51.44)
Vitamin A Deficiency	39.17 (3.11)	92.38 (1.52)	<0.001 (47.26 -59.16)
Total Score	31.23 (.98)	81.40 (1.06)	<0.001 (47.64 – 52.70)

#### **4.4. Assessment of the skills of ASHA**

ASHA were trained in 5 skills for PEC and asked to practice these skills in the 2 weeks following training. At the post-training meeting, ASHAs were observed for these skills. Each skill was graded from a score of 0-20.

Table 4.15 shows the mean score for 4 activities assessed. None of the ASHAs had scored zero in these four activities. However, they did not perform satisfactorily in record maintenance. Two ASHAs failed to bring the records on follow up day and were marked zero for record maintenance.

**Table 4.15: Assessment of the skills of ASHA in Primary eye care**

	Post-training Mean score (Max=20)	SE
Testing visual acuity for blindness/ unilateral blindness	15.00	0.67
Testing visual acuity of school age group children for refractive error	15.80	0.63
Applying eye vial/ointment with check on expiry and opening time.	16.79	0.50
Cleaning eye	15.63	0.57
Maintaining registers (blindness/ refractive error in school age group/presbyopia/diabetics)	8.84	0.70
Total mean score	72.05	2.02

**4.4.1 Participation of ASHA in eye care activities in their villages after the training programme**

All ASHAs were asked to participate in 4 key PEC activities in their own practice areas in the two weeks. ASHAs identified a large number of cases in just two-week duration. On an average each ASHA could identify and refer more than five cases each of school children for suspected refractive error, adult blind or unilateral blind with suspected cataract and presbyopia symptoms for near vision.(Table 4.16)

**Table 4.16: Participation in PEC activities after the training programme**

Primary eye care activities	ASHA involved (%)	Patients referred	No. Referred / ASHA
Screening for vision in school age group children	44 (78.57)	232	5.27
Screening for Adults for Visual acuity- blindness and cataract	48 (85.71)	308	6.41
Identification of presbyopic people	46(82.14)	352	7.65
Known Diabetic patients	48	113	2.35

When interviewed about other ocular cases observed during 2 weeks of the visits ASHA also identified and referred cases of Vitamin A deficiency (12), known glaucoma cases (16), conjunctivitis (17), blind children (4) and ocular injury(7).

A comprehensive eye camp was organized by R.P.Centre for Ophthalmic Sciences in the study area. ASHAs were informed to bring identified patients to the camp. Free cataract surgery and spectacles were arranged for the patients.

#### **4.5. Factors affecting knowledge and skills:**

##### **4.5.1 Factors affecting knowledge:**

Various demographic factors were assessed for association with the knowledge gain of ASHA. Regression analysis was done to assess the change in mean of the total score before and after the training. The different characteristics identified were age, education, distance of the village from the nearest referral centre, number of under 5 children and type of family of ASHA (Table 4.18). It was observed that only education of ASHAs was significantly associated with increase in mean scores after training. (regression coefficient 4.85, P value 0.03). The effect was significant even after adjusting for other factors.

**Table 4.17: Factors affecting Knowledge ASHA after training**

		N	Total mean score Before training (SE) Total score =110	Total mean score After training (SE) Total score =110	Linear regression		Adjusted	
					Regression coef. (SE)	P (CI)	Regression coef. (SE)	P (CI)
Age	24-30	17	34.47 (1.88)	88.59 (1.96)	0.65 (1.50)	0.66 (-2.29 to 3.59)	0.17 (1.47)	0.91 (-2.72 to 3.05)
	31-35	21	34.70 (1.99)	86.86 (1.67)				
	35 +	18	36.45 (1.85)	86.05 (2.07)				
Education	7-10	40	34.69 (1.07)	86.4 (1.39)	4.85 (2.30)	0.03 (0.35 to 0.37)	4.86 (2.41)	0.04 (0.14 to 9.57)
	11-15	16	36.71 (2.42)	88.94 (1.42)				
Distance from the PHC	<2km	18	37.38 (0.98)	87.61 (1.74)	-0.26 (1.42)	0.86 (-3.05 to 2.53)	-0.09 (1.34)	0.95 (-2.7 to 2.5)
	2-10 km	21	35.48 (2.17)	86.81 (1.99)				
	>10 km	17	32 (1.87)	87 (1.90)				
Number of under 5 children	Nil	44	35.41 (1.14)	86.63 (1.26)	2.53 (2.4)	0.29 (2.18 to 7.24)	2.95 (2.54)	0.25 (-2.03 to 7.92)
	1-2	12	34.23 (2.06)	88.92 (1.96)				
Type of family	Nuclear	26	35.59 (1.47)	86.84 (1.65)	-2.43 (2.21)	0.27 (-6.78 to 1.91)	-3.96 (2.86)	0.17 (-9.56 to 1.65)
	Joint	30	34.90 (1.36)	87.37 (1.44)				

#### **4.5.2 Factors affecting skills of ASHA:**

ASHAs were also assessed for the association of various demographic characteristics in attaining skills for primary eye care. One way Anova test was applied to assess the change in mean of the total score for the skills of the participants with respect to demographic characteristics. None of the factors showed significant association with skills.

**Table 4.18: Factors affecting Skills of ASHA post-training**

		N	Mean total score		F	P Value
Age	24-30	17	74.71 (3.61)	67.18-81.65	0.29	0.75
	31-35	21	70.95 (3.59)	63.74-78.16		
	35 +	18	71.11 (3.37)	64.35-77.87		
Education	7-10	40	70.5 (2.29)	65.90-75.09	1.49	0.23
	11-15	16	75.94 (4.11)	67.69-84.18		
Distance from the PHC	<2km	18	72.78 (3.86)	65.04-80.5	0.41	0.66
	2-10 km	21	69.76 (2.75)	64.25-75.27		
	>10 km	17	74.12 (4.14)	65.82-82.41		
Number of under 5 children	Nil	44	71.25 (2.34)	66.55-75.95	0.57	0.45
	1-2	12	75 (3.94)	67.10- 82.90		
Type of family	Nuclear	26	70.19 (3.38)	63.42-76.96	0.73	0.40
	Joint	30	73.67 (2.40)	68.86-78.47		

#### **4.6. Barriers faced by ASHAs in delivering primary eye care**

ASHAs were asked through in-depth interviews about the barriers faced by them in performing activities for identification of cases with ocular problems. 83.9% (47/56) ASHA mentioned at least one barrier in the community. The most common barrier faced by ASHA was the social factors they faced in examination of adult males (Table 4.20). In most of the villages, 'purdah system' is practiced and married females don't show their faces to elder male members in their community. Since ASHA are selected from their own community, they faced difficulty in examining males in the community.

**Table 4.19: Barriers faced by ASHAs in performing activities for identification of patients**

Barriers	Frequency (N=47)	%
Social reason (males not covered, death in village)	18	38.3
Family reason (child not well, shifting to new house, construction work)	9	19.1
Personal reason (not well)	8	17
Less Faith on ASHA	7	14.9
School refused	6	12.8
People not Satisfied	5	10.6
Services should be available	5	10.6
Busy in other hospital cases	5	10.6
Faced difficulty due to first time working	4	8.5
Rain	3	6.4
Vision card Lost/ Record lost	2	4.3

## **5.0 DISCUSSION**

India is the second most populous country with a population of more than 1.2 billion.<sup>29</sup> World Bank estimates that 41.6% of the Indian population falls below the poverty line of US\$ 1.25 a day.<sup>33</sup> Nearly 70% population resides in rural areas.<sup>35</sup> According to WHO estimates, one-fifth of the global blind population resides in India.<sup>8</sup> Common ocular morbidity in India include refractive errors, injuries, conjunctivitis and vitamin A deficiency diseases.<sup>5</sup>

The key reason for high prevalence of blindness and ocular morbidity in India is lack of awareness, poor accessibility and under utilization of eye care services, especially in the rural areas. There is a need for strengthening PEC services. The services for blindness control should be integrated with PHC to ensure successful utilization of health care services.<sup>16</sup>

The Government of India launched NRHM with the aim of integrating vertical health care programmes under the umbrella of a common horizontal programme so as to promote decentralization and planning at the peripheral level as per local community needs. ASHA formed the backbone of the programme. ASHA were posted to strengthen the community action for primary health care. They can be instrumental in prevention and control of avoidable blindness and visual impairment by imparting primary eye care. They can play an important role by eye health promotion in the community, creating awareness about the blinding conditions, identification of common eye conditions and referral to the higher-level eye care centres.

ASHA were selected to deliver primary eye care services in the present study as they are recruited at the local level, are well known in their community, have good communication skills and over time they have developed faith of majority of the local people. They are already involved in many PHC services.

Trained volunteers already involved in eye care activities were assessed for their knowledge. This was kept as benchmark for developing training curriculum for ASHA.

Post training assessment showed that the knowledge of ASHA was even better than the trained eye care volunteers already working with tertiary eye care hospitals. There was significant gain in the knowledge about all the major causes of blindness and ocular morbidity after training. Hence we feel that capacity building of ASHA is feasible in enhancing knowledge about PEC for common blinding conditions and ocular morbidities.

Most of ASHAs participated in the training programme with full enthusiasm. Investigator felt that one full day training curriculum was appropriate for the basic knowledge and skill development about PEC.

Considering the burden of cataract and refractive errors, more emphasis was given on training of ASHAs in specific skills development like assessment of visual acuity in adults & school aged children, identification of cataract blindness and referral for surgery. Courtright P et al <sup>36</sup> in sub-Saharan Africa concluded that the PEC could be implemented effectively only when there is clear defined scope of practice and clarification about the specific skills for health workers. In our study, post training assessment of skills showed overall satisfactory performance of ASHA in four of the five skills assessed. It was very satisfying to note that performance by some of the ASHAs was 100% scored on all skills. But overall performance in maintaining the records was not satisfactory. They were asked to provide records of patients' age and gender in a structured and pretested Performa. Many ASHA found difficulty in maintaining separate records for blind and unilateral blind patients. Some ASHA submitted the list of patients with their ocular complaints instead of providing actual information. It was felt that there is need for further orientation about record maintenance or this activity could be simplified further.

The association of different demographic characteristics of ASHA was assessed on gain in knowledge and skills of ASHA. Although education of ASHA had an effect on knowledge gained Since there was no significant impact on skills learnt. Since there was no significant association with other demographic factors, it is concluded that all ASHA could be involved in eye care training programme irrespective of their demographic characteristics.

The study also identified important barriers that were faced by ASHA at the community level care. Most ASHA wanted incentives for the identification and referral activities. The NRHM programme in the district has not involved eye care in training and incentives are not paid for eye care. It is essential that ASHA should be given incentives for at least two major activities i.e. surgery for cataract blind and spectacles for refractive errors in children. Government of India provides support for cataract surgery and spectacles for school aged children. Some proportion of this could be given to ASHA for their role in providing benefit to the needy people. NPCB in

India has issued guidelines for providing incentives to ASHAs for cataract surgery but it has not been implemented in Gurgaon district.

The most common barrier faced by ASHA was examination of adult males as they had to practice 'purdah system' (married females don't show their faces to elder male members in their community). One third of ASHA reported this barrier but they solved the problem themselves. ASHAs from two nearby villages worked together and ASHA of one village was more actively involved in examination of the male members of the other village. It was important that two third of ASHAs did not observe this barrier and it showed acceptance of ASHA among the older males in majority of the villages.

At present, ASHA are involved in MCH programmes like antenatal care, delivery, post natal care for mothers, registration of birth, immunization and contraception etc. Since the ANM and anganwadi workers in the village are also involved in the same activities, there is scope for ASHA to be involve in other health care programmes. This would also help them financially by enhancing their incentives.

The encouraging result of the pilot study proved that ASHA could play an effective role in PEC. One of the major reasons for such a good participation may be the availability of free of cost services by the team from R P Centre for Ophthalmic Sciences. Muller et al in Rawanda,<sup>37</sup> and Malhotra et al in New Delhi, India<sup>38</sup> reported similar results that availability of services motivates volunteers for better outputs.

There should be a strong service delivery system through vision centers and surgical services to support the referrals from these volunteers. The effective involvement of ASHA in identification and referral of patients can be seen as an alternative for conducting screening camps in rural and remote areas.

## **6.0 LIMITATIONS OF THE STUDY:**

The study duration was limited to 2 months. This short duration is insufficient to evaluate the long-term effect of a training programme. Initially it was planned to conduct post-training assessment after one month of training but due to bad weather conditions it was further restricted to two weeks only. Recall bias due to recent training may be the major reason for such significant improvement of knowledge among ASHAs. They have practiced the skills for just two weeks. They may forget the skills in absence of continuous training support. It is important that their field supervisors (female health worker) should also be trained in PEC for better implementation of the programme.

The questionnaire developed for assessing the knowledge was not a standard questionnaire. The scores given for the questions in the knowledge questionnaire were assigned based on experts' views only. The pilot study may have shown very good results as the study was limited to only 50 ASHAs and training was conducted in almost ideal conditions by the expert trainers from a tertiary eye care institute. Countrywide implementation requires high quality standards for the training programme for effective involvement of ASHAs. There is need for major policy initiatives at national government level for developing training programmes for around one million ASHAs in the country.

Due to shorter follow up period, the study was limited to post training knowledge assessment and skill development. Research should further continue to assess the outcomes of training in terms of activities like patient identified, referred and treated for eye problems. Knowledge and skills should be further assessed at appropriate intervals. Time series analysis may provide much better outcomes in this kind of research study. The role of ASHAs may be assessed further by evaluating the change in the awareness and practices among the community members.

## **7.0 CONCLUSIONS:**

1. Current knowledge of ASHA in PEC was poor and unsatisfactory. ASHA in the district were not trained in and do not have skills related to PEC.
2. ASHA can be trained effectively in providing basic community awareness about causes and prevention of avoidable blindness and skills like screening vision, cleaning of eyes, instilling eye vials and record maintenance. Post training assessment showed that knowledge of ASHA was even better than the trained eye care volunteers already working with tertiary eye care hospitals.
3. One day training is sufficient for enhancing knowledge about PEC and skill development for awareness about misconceptions, identification and referral of patients with ocular ailments and blinding conditions.
4. ASHA are interested in learning and practicing skills for PEC.
5. There are some barriers but there can be easily solved if ASHAs are motivated for the work. Availability of free services for the patients and incentives for work could be major motivating factors.

## **8.0 RECOMMENDATIONS:**

1. PEC services should be integrated with PHC and existing health programmes to ensure successful utilization of health care services by all. Female health care volunteers (ASHA) should be involved in eye health promotion, creating awareness about the blinding conditions, identification of common eye conditions and referral to the higher level eye care centres.
2. All ASHAs should be trained in PEC at community level. Training should include knowledge about PEC for major causes of avoidable blindness and ocular morbidity i.e. cataract, refractive error, glaucoma, diabetic retinopathy, conjunctivitis, injury and vitamin A deficiency. The important skills for training are vision screening for blindness in adults and visual impairment for refractive errors in school aged children. Other skills like cleaning eyes, checking vials for expiry dates, identification of presbyopes are also recommended to be part of the training programme.
3. One day training curriculum is appropriate for basic knowledge and skill development. The curriculum should include all modalities of training like lectures, demonstrations, and role-plays. Using film on primary eye care is recommended. Demonstration of skills through role-plays is also recommended.
4. More emphasis should be given on record maintenance during training.
5. A team of trainers for PEC should be developed in each district.
6. NRHM should start incentives for services in eye care in at least two major activities i.e. surgery for cataract blind and spectacles for refractive errors in children. The districts should implement the recommendations of NPCB for providing incentives to ASHAs for cataract surgery.
7. There should be effective and accessible eye care service delivery system through vision centers and surgical services to support the referrals from these volunteers.
8. Countrywide implementation of training and involvement of ASHA in community level eye care is recommended. The trained ASHAs may replace the screening camp approach for identification of blind and visually impaired. There is need for major policy initiatives at central government level for training of around one million ASHAs in the country.

9. Further research especially operational research is recommended to evaluate the role of ASHAs in PEC. The knowledge and skills of ASHAs should be further assessed at longer intervals. Time series analysis may provide better outcomes about involvement of ASHAs in various eye care activities. Assessment of awareness and practices among the community members could be another tool to evaluate the role of ASHAs in PEC in long term.

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**APPENDICES**

**Appendix 1: CARE Form**

<p><b>London School of Hygiene &amp; Tropical Medicine</b> (University of London)</p> <p><b>Combined Academic, Risk assessment and Ethics (CARE) approval form for MSc Project Reports</b></p>		
<p><i>*This form must be completed electronically. For detailed guidance, please refer to the <b>Project Handbook</b> for your course.</i></p>		
<p><b>SECTION 1 – STUDENT AND COURSE INFORMATION</b></p>		
<p><b>MSc DETAILS AND DEADLINES</b> (deadlines to be communicated by Course Director)</p>		
<b>Academic Year</b>	<b>2010-11</b>	
<b>MSc course</b> (and stream, where applicable)	<b>CEH</b>	
<b>Deadline for Supervisor approval</b>		
<b>Deadline for Course Director approval</b>		
<b>Deadline for submission to Ethics Committee</b>	<b>Monday 2<sup>nd</sup> May 2011</b>	
<b>Target for approved form to be passed to TSO</b>	<b>Friday 13 May 2011</b>	
<p><b>STUDENT AND SUPERVISOR DETAILS</b> (to be completed by student)</p>		
<b>Full name of student</b>	Praveen Vashist	
<b>Student email address</b>	Praveen.vashist@lshtm.ac.uk	
<b>Year of study</b> (part-time students only)	<input type="checkbox"/> First Year <input type="checkbox"/> Second Year	
<b>Supervisor name</b>	Dr. GVS Murthy	
<b>Supervisor email address</b>	Gvs.murthy@lshtm.ac.uk	
<b>Supervisor institution/organisation</b>	ICEH, LSHTM	
<b>Supervisor status</b> (at time of this	<input checked="" type="checkbox"/> Confirmed <input type="checkbox"/> Provisional <input type="checkbox"/> Still to be identified	

version of the form being completed)	
<b>Name of personal tutor</b> (where Supervisor is still to be identified)	
<b>SECTION 2 – APPROVAL AND SUBMISSION STATUS</b>	
<p><b>*Students please note:</b> It is a requirement of your LSHTM degree that you obtain all required approvals <u>before</u> beginning your project work. Your Supervisor and Course Director must specifically give Risk Assessment approval. Ethics approval must also be obtained where necessary (answers in Section 5 will help determine if this is required or not).</p>	
<b>STUDENT DECLARATION</b> (to be completed for all projects)	
<b>I agree to conduct my project on the basis set out in this form, and to consult staff (initially, my Supervisor) if making any subsequent changes – especially any that would affect the information given with respect to ethics approval.</b>	<input checked="" type="checkbox"/>
<b>I agree to comply with the relevant safety requirements, and will submit a separate request for LSHTM travel insurance where relevant.</b>	<input checked="" type="checkbox"/>
<p><i>*Where seeking ethics approval for a study involving human subjects, please also attach copies of any information sheets, consent forms, and other relevant documents.</i></p>	
<b>Date of declaration</b>	20.04.2011

**Please save the electronic file of this CARE form in the format**

**“[MSc title]\_[Year of Submission]\_[Surname]\_[Forename]\_CARE”**

You will also be required to submit a copy of this CARE form with your final written-up project. This should be anonymised, i.e. with your name and email address removed.

<b>STAFF APPROVAL</b>
<p><b>*Staff please note:</b> Sections 3 and 4 of the form should be completed by the student before you give approval. Rather than 'sign' this form, you should email the student and explicitly confirm approval, e.g. stating "In my role as supervisor, I approve the attached form". The student is then responsible for updating the form and passing it on to any other staff.</p> <p>However if you would answer 'no' to any of the 'Yes/No' questions below, or disagree with any of the statements given, or have any other concerns, then you should <b>not</b> give</p>

approval. Instead, please contact the student immediately to inform them of your concerns and discuss changes which they may need to make before you may be willing to give approval.

Please also be aware that in the exceptional case of a request to undertake a project in a country or region to which the Foreign & Commonwealth Office advise against travel, the student would need to fill out a separate form which will then need further School-level approval by the Safety Manager and Secretary & Registrar.

**SUPERVISOR'S APPROVAL** (required for all projects – this approval should be given first)

**Supervisor has agreed that Section 3 of this form is a reasonable summary of the proposed project.**  Yes  No

**Supervisor has agreed that responses in Section 4 of this form address the main risks connected with a project of this nature.**  Yes  No

**Name of Supervisor** (if not yet identified, personal tutor or Course Director should approve) Dr. GVS Murthy *G.V. Murthy*

**Date of approval** 23.04.2011

**COURSE DIRECTOR'S APPROVAL** (required for all projects – should follow Supervisor approval)

**Course Director has agreed that the proposed project's academic content, set out at Section 3 of this form, is suitable for this MSc.**  Yes  No

**Course Director has agreed that responses in Section 4 of this form address the main risks connected with a project of this nature.**  Yes  No

**Name of Course Director** (or nominee) Dr. Daksha Patel

**Date of approval** 27<sup>th</sup> April 2011

**FACULTY SAFETY SUPERVISOR'S APPROVAL** (only required if project involves working with pathogenic organisms, human blood or radiochemicals – should follow Supervisor approval)

**Faculty Safety Supervisor has agreed that the proposed project, as set out in this form and particularly Section 4, may proceed.**  Yes  No

**Name of Faculty Safety Supervisor** (or nominee) NA

**Date of approval**

<b>ETHICS APPROVAL</b> (required for all projects involving human subjects or human data, except for public domain data that cannot enable the identification of living people – NB that Supervisor approval <b>must</b> have been received before the application is submitted to the Ethics Committee)	
<b>The Ethics Committee has approved the project proposal set out on this form.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Date of approval</b>	
<b>Ethics Committee application number assigned</b>	
<b>SECTION 3 – APPLICATION FOR ACADEMIC APPROVAL</b>	
<i>*All students should complete all sub-sections (3.1, 3.2 and 3.3). If particular questions are not applicable to you then please write 'N/A'.</i>	
<b>3.1 PROJECT OUTLINE</b> (should not normally exceed 750 words total)	
<b>Proposed project title:</b> (should not normally exceed 20 words)	
<b>A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India”</b>	
<b>Proposed project type:</b>	
<i>*See course-specific section of Project Handbook for details of project types permitted for each MSc. Be aware that restrictions may apply for individual courses.</i>	
<b>A field based study on eye health volunteers</b>	
<b>Proposed project length:</b>	
<i>*For almost all students, this will be 'Standard'. Long and extended projects are only available for certain ITD courses; they have a different schedule and allow a slightly greater word count.</i>	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Long <input type="checkbox"/> Extended	
<b>Background:</b> (about 200 words)	
<i>*Indicate why this topic is of interest or relevance.</i>	
<i>*If the project involves work with a specific organisation please give details.</i>	
<i>*Please give any other details specifically relevant for consideration by the Ethics Committee, e.g. related to purpose.</i>	

There are more than 7 million blind people in India comprising one fifth of global blind population. It is essential that minimal primary eye care services should be available to the people in rural area. Government of India launched "National Rural Health Mission (NRHM)" in 2005 under which most of the vertical health programmes including Blindness Control Programme were merged into a horizontal programme. One of the major initiatives in the programme was to post the village level health volunteers for every 1000 population. Government of India has already recruited more than 800,000 ASHA volunteers under this programme. Though blindness control programme is also a part of NRHM but no specific guidelines have been issued at the national level for involving these ASHA volunteers in eye care programmes. It is important that ASHA volunteers should also be involved in basic eye care in the community in order to strengthen the primary eye care services in the rural areas.

These ASHA volunteers may act like a bridge between the community and Ophthalmic Assistants. They can be effectively utilized in awareness generation, identification of common ocular morbidities and timely referral by working in close contact of the community.

The present study aims at identifying the role of these ASHA volunteers in activities related to primary eye care in rural India.

**Hypothesis:** (about 30 words, where applicable)

The health volunteers under National Rural Health Mission in India can provide primary eye care services similar to the eye care volunteers in vertical programme.

**Overall aim of project:** (about 30 words)

To develop training curriculum in "Primary Eye Care" for the village level volunteers "ASHA" in Northern India and assess its benefit.

**Specific objectives of project:** (about 70 words)

1. To assess the current knowledge, skills and activities of ASHA volunteers in relevance to Primary Eye care for common eye problems for the prevention and control of avoidable blindness.
2. To assess training needs of ASHA in comparison to the other eye care volunteers already involved in vertical primary eye care programmes.
3. To train ASHA volunteers in community level basic primary eye care activities.
4. To evaluate the effect of training of these volunteers on their knowledge, skills and activities related to primary eye care.

**Proposed methods:** (about 200 words)

*\*Please summarise methods, and include **any relevant details for consideration by the Ethics Committee** such as numbers of participants and procedures to be performed.*

The study will be conducted in the Gurgaon district of Haryana in North India. A total of 50 ASHA volunteers working under the National Rural health Mission will be recruited for the study. Another 50 eye care volunteers who have already been trained and involved in the vertical programmes for community base primary eye care services in NCR region will be identified and recruited for the study.

ASHA volunteers and vertical eye care volunteers will be interviewed to assess their current knowledge and activities on primary eye care using a semi structured questionnaire schedule (Questionnaire 1). An observation schedule will be used to assess the skills of ASHA volunteers in identification of common eye problems and eye health practices.

A training manual will be developed for the training of volunteers in primary eye care based on the training needs. ASHA volunteers will be given one day training on primary eye care.

The ASHA volunteers will be assessed again using the same questionnaire schedule (Questionnaire 1) and observation schedule 15 days after the training.

The data will be analysed using Stata 11. Appropriate statistical tests of significance will be performed to compare the difference in knowledge among the ASHA before and after the training and other vertically trained eye care workers.

**References:** (max 150 words)

\*List any key references which will shape the project, including for methods to be used. It should not normally be necessary to quote more than 5 references.

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[http://mohfw.nic.in/eag/accredited\\_social\\_health\\_activis.htm](http://mohfw.nic.in/eag/accredited_social_health_activis.htm)

**Prior work:** (only where relevant; max 100 words)

*\*Indicate any previous work you have done related to this project topic, including student work, professional work, or publications.*

I have been involved in training of eye care volunteers in vertical primary eye care services in urban slums developed by Dr. R.P. Centre for Ophthalmic Sciences, New Delhi. The project was supported by Sight Savers International from 2003-2006 and then from 2007-2010. More than 400 volunteers were trained from 20 slum clusters under the project. I am also involved in training of health volunteers of an integrated eye care project developed by Operation Eye Sight Universal in Delhi.

**3.2 FEASIBILITY** (about 100 words total – but can write more or write less if appropriate)

**What could cause this project to fail, i.e. prevent you from achieving your objectives?**

*\*Please indicate any aspects of your proposed approach which could potentially experience difficulties, e.g. delays with permissions, data collection or storage problems, lack of sufficient comparable information, etc. You may also wish to mention any wider matters which could affect your project, e.g. civil unrest, natural disasters, transport availability.*

Since ASHA volunteers work under the health department, there may be some delay in

<p>getting permission from the local Health authorities.</p> <p>There are chances that some of the ASHA volunteers may be overloaded with other health services especially maternal and child health activities and may find difficulties in performing eye care activities.</p> <p>There may be some other priority health programme during that period eg pulse polio programme or some seasonal epidemic that may require involvement of ASHA during that period.</p>
<p><b>What alternative plans do you have in case you encounter any of the potential problems you have identified?</b></p>
<p>ASHA volunteers from other randomly selected areas can be trained and assessed.</p>
<p><b>3.3 INTELLECTUAL PROPERTY, COPYRIGHT AND OTHER PERMISSIONS</b></p>
<p><i>*Please also see Section 5.2 regarding any specific data rights limitations arising from local ethics or research governance requirements</i></p>
<p><b>If you expect to use existing data, how will you obtain it and what permissions will be required?</b></p>
<p>NA</p>
<p><b>Having considered whether intellectual property rights (IPR) or copyright issues may affect your project, will any specific agreements be required?</b></p> <p><i>*Please tick all boxes that apply, and attach copies of any forms/agreements (even if in draft).</i></p>
<p><input type="checkbox"/> No specific IPR, Copyright or permissions issues should apply to this project (student retains Copyright and related IPR by default, in line with LSHTM registration declaration)</p> <p><input checked="" type="checkbox"/> IPR to be retained by LSHTM (specific LSHTM form to be completed)</p> <p><input checked="" type="checkbox"/> Copyright to be transferred to LSHTM (specific LSHTM form to be completed)</p> <p><input type="checkbox"/> IPR, Copyright or other agreements/permissions required with external parties/organisations</p>
<p><b>Please give any further relevant details about IPR, copyright or other permissions.</b></p>
<p>NA</p>
<p><b>SECTION 4 – APPLICATION FOR RISK ASSESSMENT APPROVAL</b></p> <p><i>*All students should answer all questions in sub-section 4.1; this will make clear which of</i></p>

*the subsequent sub-sections you need to complete.*

**Ensuring safety during project work is the responsibility of each individual student, and not of LSHTM or LSHTM staff.** *\*Please see the Project Handbook for further guidance.*

**4.1 TYPE OF RISK** (to be completed by all students)

**Where will the project be carried out?** (please tick all that apply)

*\*Note that work away from LSHTM or outside the UK means any form of work for your project, not just primary data collection. Some courses may have specific restrictions on this.*

- All work will take place either at LSHTM, in libraries in the UK, or at my personal residence in the UK.** [If so, you do not need to complete either section 4.2 or section 4.3]
- Some work will take place in the UK that is away from LSHTM sites in London, is non-Library-based, and is not at my personal residence.** [If so, section 4.2 on 'Work away from LSHTM' must be completed]
- Some work will take place at my personal residence outside the UK** [If so, section 4.3 on 'Work outside the UK' must be completed]
- Some work will take place outside the UK that is not at my personal residence** [If so, both sections 4.2 and 4.3 on 'Work away from LSHTM' and 'Work outside the UK' must be completed]

**Will the project involve working with or handling any of the following materials?**

**Pathogenic organisms**       Yes     No

**Human blood**                       Yes     No

**Radiochemicals**                       Yes     No

[If 'Yes' to any of the above, Sections 4.4 and 4.5 must be completed]

**Are any other potentially hazardous activities likely to be carried out during the project?**

Yes     No

[If 'Yes', Section 4.5 must be completed]

**Do any special requirements (e.g. disability-related issues) or other concerns need to be taken into account for either you as a student, study participants or**

<b>colleagues?</b>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No [If 'Yes', Section 4.6 must be completed]	
<b>4.2 WORK AWAY FROM LSHTM</b> (to be completed if any work will be done away from LSHTM, other than at your home or at libraries elsewhere in the UK)	
<b>Will the project be based in an established hospital, college, research institute, NGO headquarters, field station or other institutional site?</b> If 'Yes', please give the name and location of the site(s); describe approximately what proportions of your project will be spent there; and state name and role of person who has confirmed willingness to support you at each site (indicating extent of correspondence, especially what they have confirmed in writing).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Will you have an 'external supervisor', co-supervisor or other main advisor, or be working with any specific organisation(s), during your work away from LSHTM?</b> If 'Yes', please indicate the name, role, contact details, and level of support that any such external advisors are expected to provide, and give details about any organisations you will be working with.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Will the project involve personal visits, interviews or interactions with people in their homes, workplaces, community settings or similar?</b> If 'Yes', please give details, including approximately what proportion of your project this will involve.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
The field work will include data collection from volunteers in North India about their knowledge, skills in Primary eye care. The data will be collected by community visits.	
<b>Will the project involve lone/isolated work or significant travel?</b> If 'Yes', please give details, including approximately what proportion of your project this will involve, and state how you can be contacted while working or travelling.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-	

<p><b>What arrangements are proposed for contact with your main supervisor while you are away from LSHTM?</b> Indicate expected ease and frequency of contact, and communication methods to be used.</p>	
<p>Daily/ whenever required on mobile and email</p>	
<p><b>Please tick to confirm:</b></p>	<p><input checked="" type="checkbox"/> I have read the <a href="#">LSHTM Code of Practice on off-site work</a>.</p>
<p><b>4.3 WORK OUTSIDE THE UK</b> (to be completed if any work will be done outside the UK)</p>	
<p><b>What form of project work will be undertaken outside the UK?</b> (please tick all that apply)</p>	
<p><input type="checkbox"/> Work at my family home or personal residence only</p> <p><input type="checkbox"/> Work at an established hospital, college, research institute, NGO headquarters, field station or other institutional site</p> <p><input checked="" type="checkbox"/> Work away from my personal residence or an established site</p> <p><i>*Note that for either the second or third options, you should also have completed Section 4.2.</i></p>	
<p><b>Name the country/countries and region(s) in which work will be undertaken:</b></p>	
<p><b>Country or countries:</b> India</p>	<p><b>Region(s) :</b> North Indian region</p>
<p><b>Do the Foreign &amp; Commonwealth Office's (FCO) Travel Advice Notices</b> (<a href="http://www.fco.gov.uk/en/travelling-and-living-overseas/travel-advice-by-country/">www.fco.gov.uk/en/travelling-and-living-overseas/travel-advice-by-country/</a>) <b>advise against travel to the regions(s), country or countries involved?</b></p> <p><i>*Note that if 'Yes', the School will not normally permit such travel for project work. In <b>exceptional circumstances only</b>, requests may be considered by the Safety Committee and require approval by the Safety Manager and Secretary &amp; Registrar.</i></p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><b>Please tick to confirm:</b></p>	<p><input checked="" type="checkbox"/> I understand that LSHTM travel insurance is required for any international travel as part of my project.</p> <p><i>*Travel insurance can be applied for using a separate form.</i></p>
<p><b>4.4 WORK WITH HAZARDOUS SUBSTANCES</b> (to be completed if the project involves any work with pathogenic organisms, human blood or radiochemicals – NB that this will require approval by the Faculty Safety Supervisor)</p>	

<b>Name the organism or organisms to be used:</b>	
NA	
<b>Identify all potential routes of infection:</b>	
NA	
<b>Name the radiochemical or radiochemicals to be used:</b>	
NA	
<b>List laboratories where work with pathogens or radioisotopes will be carried out:</b>	
NA	
<b>List disinfectants to be used, and describe arrangements for disposal of used material:</b>	
NA	
<b>Will or might Health Surveillance be required for you or any staff working with you? If 'Yes', please give details.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>4.5 PRECAUTIONS AGAINST HAZARDS</b> (to be completed if any potentially hazardous activities are likely to be carried out during the project. Refer to Project Handbook and School safety documentation for further information. Faculty Safety Supervisor's approval may be further requested where felt appropriate by project Supervisor.)	
<b>Indicate any procedures, activities or aspects of the proposed project which may entail hazards (including work with hazardous substances as per Section 4.4, or anything else relevant).</b> Please set distinct hazards out separately, in a numbered list.	
NA	
<b>Indicate the precautions you will take to prevent or mitigate such potential hazards.</b> Please number these to refer to the specific hazards identified in the preceding question.	
NA	
<b>4.6 SPECIAL REQUIREMENTS</b> (to be completed if the project involves any special requirements, e.g. disability-related issues, or other concerns that need to be taken into account for either you as a student, study participants or colleagues)	

<b>What special requirements or concerns need to be taken into account?</b>	
NA	
<b>Do these need to be considered in planning arrangements?</b> If 'Yes', please give details.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Do these impact on supervision arrangements?</b> If 'Yes', please give details.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Does the project location need to be considered in relation to these?</b> If 'Yes', please give details.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Do arrangements for access to specialist medical treatment need to be considered?</b> If 'Yes', please give details.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>SECTION 5 – APPLICATION FOR ETHICS APPROVAL</b>	
<p><i>*All students should <b>answer all questions in sub-sections 5.1 and 5.2</b>. Answers to 5.1 will make clear whether approval by the LSHTM Ethics Committee is necessary, and which later sub-sections you may need to complete. Section 5.2 covers any external approvals required.</i></p> <p><i>*Before completing this part of the form, please read the Ethics Approval Policy &amp; Procedure plus guidance notes at <a href="http://intra.lshtm.ac.uk/reference/forms/ethicsstuds.html">http://intra.lshtm.ac.uk/reference/forms/ethicsstuds.html</a> . This describes what to do next if formal LSHTM ethics approval is required. NB that supervisor approval must be obtained <b>before</b> an application is submitted to the Ethics Committee.</i></p>	
<b>5.1 SCOPE OF STUDY</b> (to be completed by all students)	
<b>Which of the following applies to your project?</b> (please tick one option only)	
<p><i>*Note – the term 'human data' includes any documentary data, datasets or biological samples.</i></p>	
<input type="checkbox"/> <b>Project does not involve any human subjects or any human data.</b> [If so, formal	

LSHTM ethics approval is not required and you do not need to complete Sections 5.3 or 5.4]

**Project involves human data, but all this human data is fully in the public domain.** [If so, formal LSHTM ethics approval is not required and you do not need to complete Sections 5.3 or 5.4]

*\*Public domain human data must be: available to any member of the public without special permission; to which access is not restricted in any way; and which does not enable the identification of living people, either directly or by linking to other data.*

**Project involves some non-public-domain human data, all of which was previously collected in another study or studies.** [If so, formal LSHTM ethics approval is required and Section 5.3 must be completed]

**Project involves some additional collection of data, further to an ongoing or previously completed study or studies.** [If so, formal LSHTM ethics approval is required and Section 5.4 must be completed]

**Project is a completely new study which will involve human subjects or human data.** [If so, formal LSHTM ethics approval is required and Section 5.4 must be completed]

## 5.2 LOCAL ETHICS APPROVAL OR RESEARCH GOVERNANCE APPROVAL (to be completed by all students)

*\* As well as approval from the LSHTM Ethics Committee, projects may require specific approval from other involved or responsible bodies. For example, in the UK you may need specific authorisation to work in an NHS facility, or to work with vulnerable groups such as patients or children. Outside the UK a wide range of requirements may apply e.g. from local or national Ethics Committees, government departments etc. **Students must investigate all potential local approval required for your project work. Failure to check or gain any necessary external approval may invalidate LSHTM approval.***

**Is local approval required for the work being done (whether this approval is still to be obtained, or has already been granted)?**

*\*This should include any forms of ethics approval, research governance approval or other specific permissions that may apply.*

Yes  No

**If 'Yes', give details of local approval to be obtained (this must be in place before commencing fieldwork) or which has already been granted.**

*\*Please name all bodies whose approval is required, or indicate where work is expected to take place using permissions already granted for a 'parent' project. Where approval has*

already been granted, quote approval reference numbers and if possible give web links to documents.

**If 'No', explain why formal local approval is not required, and describe any less formal permissions, invitations or support you are being given for this work.**

*\*If you will be working away from LSHTM with human subjects or human data, but cannot identify a local Ethics Committee or believe that no formal approval is required, then please give details and explain what you have done to check this. In such cases, if you do not have formal approval you should always demonstrate appropriate local support, such as correspondence with local government officials or an involved Non-Governmental Organisation.*

Applied for approval from Local ethics committee at All India Institute of Medical Sciences, New Delhi. The permission will be in place before commencing field work.

**For data to be used or collected in the project, will any specific data rights permissions be required or usage limitations apply?**

Yes  No

**5.3 PROJECTS USING ONLY PREVIOUSLY-COLLECTED HUMAN DATA** (to be completed if project involves non-public-domain human data, datasets or biological samples previously collected in another study or studies; if collecting any new data, complete Section 5.4 instead)

*\*Further guidance is given at <http://intra.lshtm.ac.uk/reference/forms/ethicsstuds.html>*

**Summary of purpose and methods of the original study or studies:** (max 100 words)

NA

**Give details of all approvals under which the original study or studies took place:**

*\*Please quote names of Ethics Committees and approval reference numbers (required if previous approval was from LSHTM); if possible give web link to original study application.*

NA

**Proposed study: Ensure that the project outline given in Section 3.1 states the purpose, methods and procedures of the new work to be done in your project, and describes how this builds on the previous study or studies (for which participants will already have been recruited, data or samples collected, and procedures**

<b>performed).</b> Do not reproduce here.	
<b>Will your analyses be for purposes <u>not covered by the original application detailed above</u>?</b> If 'Yes', indicate how you will obtain (i) permission to use the data from the principal investigator responsible for each original study; and (ii) retrospective consent, where appropriate, from the participants in each original study.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Does the project involve analysis of documentary information and/or data already collected from or about human subjects?</b> If 'Yes', specify analyses briefly.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Does the project involve laboratory analysis of human biological samples already collected, or new or additional analysis of stored samples?</b> If 'Yes', specify the laboratory analyses or tests to be performed.	<input type="checkbox"/> Yes <input type="checkbox"/> No
NA	
<b>Specify how confidentiality will be maintained. When small numbers are involved, indicate how possible identification of individuals will be avoided.</b>	
NA	
<b>5.4 PROJECTS COLLECTING ANY NEW HUMAN DATA</b> (to be completed if project involves collection of human data, datasets or human biological samples – either as a completely new study, or collecting additional data further to an ongoing or previously completed study) <i>*Further guidance is given at <a href="http://intra.lshtm.ac.uk/reference/forms/ethicsstuds.html">http://intra.lshtm.ac.uk/reference/forms/ethicsstuds.html</a></i>	
<b>Proposed study:</b> Ensure that the project outline given in Section 3.1 contains sufficient detail (inc. purpose, methods, procedures for both new data collection and any work building on previous studies), so as to allow the Ethics Committee to make an informed decision without reference to other documents. Do not reproduce here.	
<b>Is your project a randomised trial?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<p><b>Will any human biological samples be collected?</b> If 'Yes', specify details.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>NA</p>	
<p><b>Will any human biological material be stored at LSHTM for more than 24 hours?</b> If 'Yes', specify which samples and how they will be stored.</p> <p><i>*Further guidance is given at</i>  <a href="http://intra.lshtm.ac.uk/safety/safety_manual_appendix_3_human_tissue_act.pdf">http://intra.lshtm.ac.uk/safety/safety_manual_appendix_3_human_tissue_act.pdf</a></p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>NA</p>	
<p><b>Specify the number - with scientific justification for sample size – age, gender, source and method of recruiting subjects for the study.</b></p>	
<p>Feasible sample size has been taken according to the time limits and was approved in the ICEH project review meeting. 50 Randomly selected Health volunteers (ASHA) working in integrated health care will be trained for primary eye care and their pre and post training knowledge and skills will be compared. They will also be compared with 50 volunteers already trained and working in vertical primary eye care programmes.</p> <p>The participants will be recruited from the randomly selected vision centres in the study area.</p>	
<p><b>State the location and likely duration of new or additional human data collection, and the extent to which this will be carried out by you alone, or in collaboration with others, or by others.</b></p>	
<p>The data will be collected from Gurgaon and Delhi areas of North India. The data will be collected personally with some support from the local volunteers. The likely duration of fieldwork is 6 weeks.</p>	
<p><b>State the potential distress, discomfort or hazards, and their likelihood, to which research subjects may be exposed (these may include physical, biological and/or psychological hazards). What precautions are being taken to control and modify these hazards?</b></p>	
<p>None</p>	
<p><b>Specify how confidentiality will be maintained. When small numbers are involved,</b></p>	

<b>indicate how possible identification of individuals will be avoided.</b>	
Health care volunteers will be interviewed. It will be ensured ensure that there are never less than five individuals in a subgroup for analysis. The anonymity of the participants will be maintained.	
<b>State the manner in which consent will be obtained from subjects and <u>supply copies of the information sheet and consent form.</u></b>	
<ul style="list-style-type: none"> <li>- Written consent is normally required. Where not possible, explain why and confirm that a record of those giving verbal consent will be kept.</li> <li>- Where appropriate, please state if and how the information and consent form will be translated into local language(s).</li> </ul>	
Written consent will be obtained from the participants after giving them information about the study. One copy of the information sheet translated into local vernacular will be provided to all participants. The information sheet and consent form will be translated into the local language with help of professional translator.	
<b>As well as collecting new data, will your project also make use of any human data or biological samples collected in a previous study or studies?</b> If 'Yes', summarise the purpose and methods of the original study or studies – for which participants will already have been recruited, data or samples collected, and procedures performed. (max 100 words)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
NA	



## Appendix 3: Participants information sheet.



**INSTITUTE ETHICS COMMITTEE**  
**ALL INDIA INSTITUTE OF MEDICAL SCIENCES**  
**Room No 102, 1<sup>st</sup> Floor Old O.T. Block,**  
**ANSARI NAGAR, NEW DELHI 110029**  
**Tel.No.4579 (Internal),26594579 (Direct)**

Chairman

**Prof. J.P.Wali,**  
Former Prof  
Medicine,AIIMS

Members:

**Prof. Rani Kumar,**  
Basic Scientist  
Dean, AIIMS

**Prof. S.S. Siddhu**  
Clinician  
Ex-Prof. & Head,  
Dental Surgery, AIIMS

**Dr. D.R. Saini, Principal,**  
Lay Person  
Delhi Public School,  
R.K.Puram, New Delhi

**Dr. Vijay Kumar**  
Ethicist  
Scientist 'F'/DDG (Sr. Grade),  
ICMR

**Sh. Mukul Gupta,**  
Legal Person  
Sr. Advocate,  
Ex.SLC- AIIMS

**Dr. A.M. Khan,**  
Social Scientist  
Head,Department of Social  
Science, National Institute of  
Health and Family Welfare  
Munrika, New Delhi.

**Dr. Y.K. Gupta,**  
Pharmacologist/Basic Scientist  
Prof. & Head,  
Pharmacology, AIIMS

**Dr. A.B. Dey**  
Clinician  
Professor of Medicine, AIIMS

**Dr. Peush Sahni,**  
Clinician  
Professor of GI Surgery & Editor,  
National Medical  
Journal of India, AIIMS

**Dr. Praveen Aggarwal**  
Clinician  
Prof. of Emergency Medicine,  
AIIMS.

**Dr. Ravinder Kumar Batra**  
Clinician  
Prof. of Anaesthesiology, AIIMS

**Dr. Rakesh Yadav**  
Clinician  
Sub-Dean (Academic) &  
Additional Professor  
Cardiology, AIIMS

Member Secretary:

**Dr. Renu Saxena**  
Prof. & Head  
Hematology, AIIMS

August 18, 2011

Dr. Praveen Vashist  
Head & Additional Professor  
Dept of Community Ophthalmology  
R P Centre, AIIMS  
**(Ref. No.: IEC/NP-156/2011)**

**Sub:** A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India.

**Dear Dr. Vashist,**

This is with reference to your letter dated 09.08.11 regarding your above mentioned project, clarifying the queries raised by the Ethics Committee on 01.08.2011. The clarifications have been reviewed and documents are **"Approved from ethical angle prospectively w.e.f. 18.08.2011.**

The study is valid for the entire period of the conduct of study according to this protocol under the responsibility of **Dr. Praveen Vashist** Principal Investigator. It is confirmed that the Ethics Committee of AIIMS is composed of and functions as per ICH GCP and other applicable regulatory guidelines.

- No significant changes to the research protocol should be made and implemented without prior consent of the IEC and any changes/deviations from the protocol which increase the risk for the subjects should be submitted to the IEC and approved prior to implementation.
- IEC should be informed about all SAE's occurring in the study.
- The study progress report should be made available for the IEC review on every 6 months.
- It is hereby confirmed that neither you nor any of the study team members have participated in the voting/decision making procedures of the committee

With best regards

Yours sincerely,

(Dr. Renu Saxena)  
Member Secretary Ethics Committee

**Appendix 4: Permission from R.P.Centre**

DR. RAJENDRA PRASAD CENTRE FOR OPHTHALMIC SCIENCES  
ALL INDIA INSTITUTE OF MEDICAL SCIENCES

No.F.3-17/2003-RPC

Ansari Nagar, New Delhi-29  
Dated the

MEMORANDUM

14 JUN 2011

Subject:- Grant of permission to conduct the study for integrated primary eye care services under National Rural Health Mission in India..

#####

With reference to his application dated 13<sup>th</sup> April, 2011 on the subject cited above, Dr. Praveen Vashist, Additional Professor of Community Ophthalmology is informed that the Chief, Dr. Rajendra Prasad Centre for Ophthalmic Sciences has been pleased to permit him to conduct the research study titled "A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India" as a part of M.Sc. in Community Eye Health.

  
[ K. K. VAID ]  
SR. ADMN. OFFICER

✓ Dr. Praveen Vashist,  
Addl. Prof. of Community Ophthalmology,  
Dr. R. P. Centre.

Copy to:

4. P.S. to the Chief, Dr. RPC.

## **Appendix 5: Patient Information Sheet**

### **A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India”**

#### **Participants Information Sheet- Community**

I am Dr. Praveen Vashist. From Dr. R.P. Centre of Ophthalmic Sciences, AIIMS. We are conducting a study as a part of MSc in Community Eye Care at London School of Hygiene and Tropical medicine, London. We are trying to find out the role of ASHA, the village level health volunteers in providing primary eye care services in their own communities. We will initially interview ASHA volunteers and other eye care volunteers using a questionnaire schedule to assess their current knowledge and activities related to eye care. The interview of each participant will take about 30 minutes.

We will also observe their skills related to identification of common eye conditions and common primary eye care practices.

Based on training needs, ASHA volunteers will be trained in primary eye care in one-day training programme. The date of training will be communicated to you in advance. The training will be conducted with the permission of local health authorities. The trained volunteers will have to practice the primary eye care services in their community to identify the people who have eye problems. They will be interviewed and observed again after 15 days to assess the change in their knowledge and skills.

Free of cost refraction and cataract surgical services will be arranged to the referred patient at R.P. Centre for Ophthalmic Sciences, AIIMS New Delhi. Services for all other ocular problems will also be available as per the hospital norms.

All the information that you provide and your investigation results shall be kept confidential.

You don't need to talk about things you don't want to talk about. You are free to participate or withdraw from this research study at any time even without giving a reason for this. Your decision to participate or withdraw will not affect the eye care services in anyway. There is no risk involved to you in this study.

In case of any further information or clarification at any time, you are requested to contact the following:

Dr. Praveen Vashist: 9999975072

**Appendix 6: Consent form**

**Consent form**

Participant identification number for this trial: \_\_\_\_\_

**Title of project: A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India”**

Name of Principal Investigator: Dr. Praveen Vashist

Tel.Numbers: 9999975072

The contents of the information sheet that was provided have been read carefully by me / explained in detail to me, in a language that I comprehend, and I have fully understood the contents. I confirm that I have asked all the questions that I need to and I am happy with the answers you have given me.

The nature and purpose of the study and its potential risks / benefits and expected duration of the study, and other relevant details of the study have been explained to me in detail. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal right being affected.

I understand that the information collected about me from my participation in this research will be kept confidential. I give permission for these individuals to have access to my records. I understand that I can take a look at the draft report for this study if I want to.

I agree to take part in the above study.

-----

(Signatures / Left Thumb Impression)

Date:

Place:

Name of the Participant: \_\_\_\_\_

Son / Daughter / Spouse of: \_\_\_\_\_

Complete postal address: \_\_\_\_\_

This is to certify that the above consent has been obtained in my presence.

-----

Signatures of the Investigator

Date:

Place:



**Appendix 8: Study tools**

**A pilot study to involve village based volunteers in integrated primary eye care services under National Rural Health Mission in India”**

<b>Participant Group</b>	<input type="text"/>	1. ASHA before training 2. ASHA after training
<b>District</b>	<input type="text"/>	_____
<b>PHC</b>	<input type="text"/>	_____
<b>Name of the Village</b>	_____	
<b>Village distance from PHC (KM)</b>	<input type="text"/> <input type="text"/>	
<b>Study No.</b>	<input type="text"/> <input type="text"/> <input type="text"/>	
<b>Name</b>	_____	
<b>Age (Years)</b>	<input type="text"/> <input type="text"/>	
<b>Education</b>	<input type="text"/> <input type="text"/>	0=Illiterate, 1 to 12 <sup>th</sup> =No of class passed, Diploma =14, Graduate-15, Post Graduate -17, Professional Education 20, Just Read & Write-50
<b>Marital Status:</b>	<input type="text"/>	1. Married 2. Unmarried 3. Widow 4. Separated 5. others
<b>Total No. of children</b>	<input type="text"/> <input type="text"/>	
<b>Number of Under 5 Children</b>	<input type="text"/>	
<b>Type of family:</b>	<input type="text"/>	1. Nuclear 2. Joint
<b>Address:</b>	_____	

Telephone(Mobile) Number \_\_\_\_\_

**Part 1: Interview of the participants on knowledge about primary eye care**

S No.	Question	Response Also record the Misconceptions)	Marking Guide	Score Max	Score given
<b>A. Blindness</b>					
1.	What is blindness?		Any person who cannot count finger from distance of 6 meters or 20 feet by both eyes. (or Finger counting from 3 meter- WHO definition).	3	
2.	Which age group is more affected with blindness?		Above 50 age group	2	
3.	What are the common causes of blindness in India?		1. Cataract 2. Refractive error 3. Glaucoma 4. Diabetic retinopathy 5. Vitamin A deficiency 6. Corneal opacity	No. Right responses One-1 Two-2 Three=3 Four or more=5	
<b>B. Age related Cataract</b>					
4.	What are the Sign/symptoms of cataract in old age?		1. White opacity in eyes 2. Loss of vision in eyes 3. Gradual loss of vision 4. Painless loss of vision 5. Both eyes are involved in varying stages 6. Change in number of spectacle 7. Glare 8. Polyopia	No. Right responses One-1 Two-2 Three-3 Four-4 > than 4=5	
5.	Which part of eye is affected in cataract?		Lens	2	
6.	What are the associated risk factors responsible for cataract in old age?		1. Injuries 2. Diabetes 3. Smoking 4. Exposure to sunlight 5. Diet related (specific) 6. Indoor air pollution 7. Drugs (correct drugs like steroids)	No. Right responses One-1 Two-2 Three-3 Four-4 > than 4=5	
7.	When should a cataract patient be advised surgery?		1. When patient experiences difficulty in routine activities due to reduced vision in cataract 2. When patient develop very reduced vision/become blind due to cataract or when cataract is matured	Response: One-5 One+two-5 Two alone-2	

8.	As per your opinion, should surgery be preferred in a specific season?		In any season	3	
9.	What precautions should be taken after surgery?		<ol style="list-style-type: none"> <li>1. Protect eyes from bright sunlight, dust, smoke and injury</li> <li>2. Wear dark glasses</li> <li>3. Put eye drops /ointment as advised by the doctor</li> <li>4. Get follow up check up after one week</li> <li>5. Follow up after 6-8 weeks for spectacles requirement</li> <li>6. Avoid rubbing of eyes</li> </ol>	<b>No. Right responses</b> One-1 Two-2 Three-3 Four-4 > than four=5	
<b>C. Glaucoma</b>					
10.	What are the symptoms/signs in Glaucoma?		<ol style="list-style-type: none"> <li>1. Loss of side vision</li> <li>2. Coloured haloes in front of bulb/light</li> <li>3. Frequent change of glasses</li> <li>4. Irreversible loss of vision</li> </ol>	<b>No. Right responses</b> One-2 Two-4 > Two=5	
11.	Who is at risk of developing glaucoma?		<ol style="list-style-type: none"> <li>1. People above 40 Years of age</li> <li>2. Family history of glaucoma is positive</li> <li>3. Due to some medicines</li> <li>4. Injuries</li> <li>5. After surgery</li> <li>6. Phacomorphic</li> </ol>	<b>No. Right responses</b> One-2 Two-3 Three-4 > Three=5	
<b>D. Refractive errors</b>					
12.	What are common types of refractive errors?		<ol style="list-style-type: none"> <li>1. Near sightedness</li> <li>2. Farsightedness</li> <li>3. Presbyopia</li> </ol>	<b>No. Right responses</b> One-2 Two-3 Three-5	
13.	What are the common problems due to near vision in 45+ age group:		<ol style="list-style-type: none"> <li>1. Difficulty in reading</li> <li>2. Watching number in mobile phone</li> <li>3. Difficulty in threading the needle/ stitching</li> <li>4. Cleaning pulses/rice etc</li> <li>5. Any other right answer</li> </ol>	<b>No. Right responses</b> One=1 Two=2 Three or more=3	
14.	What are the common symptoms or sign of refractive errors in a child?		<ol style="list-style-type: none"> <li>1. Develop hazy vision without pain in eyes</li> <li>2. Complaints of headache while doing near work</li> <li>3. Squeezes eyes while watching the distant objects</li> <li>4. Child find difficulty in reading from the blackboard</li> <li>5. Child watch TV from close distance</li> </ol>	<b>No. Right responses</b> One-1 Two-2 Three-3 Four-4 > than 4=5	

15.	How can a health volunteer identify children with suspected refractive error?		1. By screening vision of all children in the school 2. Referring children presented with symptoms or by checking vision of symptomatic children	<b>responses</b> One-5 One with Two-5 Only two - 2	
16.	Who is the right person to conduct refraction and give number for spectacles?		1. Optometrist/ Eye technician 2. Ophthalmologist	<b>responses</b> One -2 One+Two-2 Only two-1	
<b>E. Diabetic Retinopathy</b>					
17.	Can diabetes affect eye?		Yes	2	
18.	Which part of eye is commonly affected in Diabetes?		1. Retina 2. Lens	<b>Responses</b> One-3 One and two=3 Only Two=1	
19.	How can we prevent blindness due to diabetes?		1. Regular check up and medication to keep blood sugar under control 2. All those who have diabetes must get their eyes-checked time to time for retinopathy 3. Proper dietary control 4. Control of BP 5. Control of weight	<b>No. Right responses</b> One-1 Two-3 Three and above-5	
<b>F. Eye injuries</b>					
20.	What should be done if something falls in the eye?		1. Should not rub the eye with hand 2. Wash with plenty of clean water 3. Some person can take out the particle with the help of a clean wet cloth 4. If the particle does not come out easily, consult an eye specialist.	<b>No. Right responses</b> One-2 Two-4 More than 2=5	
21.	What should be done immediately in case of blunt/perforating eye injury?		Should take the patient immediately to an eye specialist	5	
<b>G. Conjunctivitis</b>					
22.	What are symptoms of Conjunctivitis?		1. Red eye 2. Itching sensation 3. Sticky and swollen eyes with white/yellow discharge 4. Pain when see in sunlight 5. Affect both eyes 6. Vision is not affected usually	<b>No. Right responses</b> One-1 Two-3 Three-and above=5	

	What should be advised to a patient of conjunctivitis?		1. Frequent eye wash with clean water 2. Avoid sharing towel, handkerchief, bed linen 3. Refer to eye specialist if not resolved in 3 days	No. Right responses One-1 Two-3 More than 2=5	
	Generally how long a eye vial/ tube can be used after opening?		Only up to one month even if the expiry date is long.	5	
<b>H. Vitamin A Deficiency</b>					
23.	Which age group is commonly affected with Vitamin A Deficiency?		1. Young children less than 6 years 2. Pregnant women	Responses One=5 One or two =5 Only two-2	
24.	Vitamin A Prophylaxis is given as:		1. One ML orally before one year and 2 ML after one year 2. Total 5 doses at 6 month interval up to 3 year of age 3. First dose is given at 9 month with measles vaccine 4. Second dose at 18 months with DPT booster dose 5. Capsules are also available if syrup is not available 6. Overdose should not be given	No. Right responses One-1 Two-3 Three and above-5	
25.	Food rich in Vitamin A are:		1. Green leafy vegetable 2. Yellow fruits like papaya, mango, banana 3. Carrot 4. Milk 5. Egg yolk 6. Fish liver oil and meat 7. Any other right response	No. Right responses One-1 Two-2 Three-3 Four-4 > than 4=5	

**A pilot study to involve village based volunteers in integrated primary eye care services under  
National Rural Health Mission in India”**

**Part II: Observation for the skills related to Primary Eye Care**

All the volunteers will be observed for the following skills and assessed on scale of 0-20

**0= Volunteer could not perform and not even aware about the activity**

**5= Volunteer could not perform but aware about the activity**

**10= Volunteer partially performed the activity**

**15= Satisfactorily performed but there is scope of improvement**

**20= Excellent skills**

1. Visual acuity testing using vision screening card in school going children
  
2. Using Cataract card for identification of blindness and cataract in eye
  
3. How to use eye drops and eye ointment (checking expiry, applying them in eye)
  
4. How to wash and clean eyes
  
5. Maintenance of register (blind, unilateral blind or cataract, children with suspected RE, presbyopic people and diabetic patients)

**Part III- Primary eye care service outputs: to be observed after two week of the training**

Please provide us details about the following information for your village:

**I. Vitamin A prophylaxis:**

1. Are you involved in Vitamin A prophylaxis
  1. Yes 2. No
2. If yes how are you involved in Vitamin A prophylaxis
  1. In Immunization clinic
  2. House to house visit
  3. School visit
3. Have you seen any child with history of Night blindness or vitamin A deficiency in your village in last 15 days
  1. Yes (specify number of cases) 2. No

**II. Vision screening among School age group children**

4. Have you conducted or participated in vision screening programme for children  
1. Yes (observe for the procedure and card used) 2. No

5. If yes how you were involved in the programme?

1. Vision screening in school
2. House to house visit
3. By inviting in common place

6. How many children are referred for refraction services in last two weeks.(if correct method is used (ASHA should submit the list of these children)\_\_\_\_\_

### **III. 50+Adults screened for blindness and Cataract**

7. Have you conducted or participated in vision screening of adults in your village

1. Yes (observe for the procedure and card used) 2. No

8. If yes how you have participated in the programme?

1. By inviting in common place
2. House to house visit
3. In their home or Neighborhood only

9. How many blind/unilateral blind or cataract cases identified and referred in last two weeks if correct method is used (ASHA should submit the list of these people)\_\_\_\_\_

### **IV. Near vision screening for adults above 40 year**

10. Have you conducted or participated in near vision screening of adults in your village

1. Yes (observe for the procedure and card used) 2. No

11. If yes, how you have participated in the near vision screening of Adults?

1. By inviting in common place
2. House to house visit
3. In their home or Neighborhood only

12. How many people identified are identified and referred with near vision problem in last two weeks if correct method is used (ASHA should submit the list of these people)\_\_\_\_\_



## Appendix 9: Training schedule

### Training of ASHA on Primary Eye Care

By: All India Institute of Medical Sciences (AIIMS), New Delhi

Venue: CHC, Ghangola

Date: 11.07.2011

#### Training Schedule

<b>Time</b>	<b>Topic</b>	<b>Speaker</b>
9.30 A.M to 9.35 A.M	Welcome Address	Dr. S. S. Siroha S.M.O CHC, Ghangola
9.35 A.M to 9.40 A.M	Introduction about NRHM and ASHA Training in Gurgaon	Dr. Saryu Sharma Deputy C.M.O, Gurgaon
9.40 A.M to 9.50 A.M	Introduction of Participant	Mr. Amit Bhardwaj, MSW, AIIMS
9.50 A.M to 10.10 A.M	Objectives of the Training Programme	Dr. Praveen Vashist, Addl. Professor AIIMS
10.10 A.M to 10.20 A.M	Group Photograph	-
10.20 A.M to 10.30 A.M	<b>Tea</b>	
10.30 A.M to 12.00 Noon	Primary Eye Care	Noopur Gupta, Ophthalmologist AIIMS

12.00 Noon to 12.20 P.M	Vision Screening for Blind, Cataract & School going Children	Mr. Gopal Shah , Optometrist  AIIMS
12.20 P.M to 1.00 P.M	Visual Acuity Testing by ASHA	<b>ASHA and facilitators</b>
1.00 P.M to 1.30 P.M	<b>Lunch</b>	
1.30 P.M to 1.40 P.M	Recording Format	Amit Bhardwaj, AIIMS
1.40 P.M to 3.40 P.M	Role Play by ASHA	ASHA groups
3.40 P.M to 4.00 P.M	Feedback	-

## Appendix 10: Reporting format for ASHA

### RECORDING FORMAT

#### 1. **Blindness** (Those who are not able to read 'E' letter of Cataract Card from a distance of 6 meters )

S.No	Name	Age	Sex	Address	Cause of Referral to Doctor
1					
2					
3					
4					
5					

#### 2. **Cataract**

S.No	Name	Age	Sex	Address	Cause of Referral to Doctor
1					
2					
3					
4					
5					

#### 3. **Refractive Error** (Those children who are not able to read the 'E' letter in the School Vision Screening Card from a distance of 6 meters)

S.No	Name	Age	Sex	Address	Cause of Referral to Doctor
1					
2					
3					
4					
5					

#### 4. **Presbyopia** (Difficulty in near vision in people aged 40 years and above)

S.No	Name	Age	Sex	Address	Cause of Referral to Doctor
1					
2					
3					
4					
5					

#### 5. **Diabetes Mellitus**

S.No	Name	Age	Sex	Address	Cause of Referral to Doctor
1					
2					
3					
4					
5					

## Appendix 11: Budget sheet

	ITEM	QUANTITY	UNIT	TOTAL
<b>1</b>	<b>Personnel:</b>		<b>COST(£)</b>	<b>COST(£)</b>
1.1	Key Examiner (MSc Student)-Airfare (Return)	1	550	550
<b>2</b>	<b>Logistics</b>			
2.1	Training kit including training manuals for the volunteers	105	3	315
2.2	Refreshments during the training programme	80	1	80
2.3	Honorarium to trainees	60	2	120
2.4	Training venue	4 days	20	80
2.5	Stationery			
	Exercise books (@ £0.12 each)	60	0.12	7.2
	Pens ( @ £0.12 each)	60	0.12	7.2
	Markers (@ £3.59/pack)	2 packs	3.59	7.18
	Posters( £7 per pack of 24 posters)	2 packs	7	14
	Ream of papers (@ £4 per ream)	3	4	12
2.6	Communication mobile phone rental	1	25	30
2.7	Printing			
	Training manual	2	15	30

	Survey forms and information sheets	300 pages	0.1	30
2.8	Transportation: Diesel - for land cruiser jeep for four weeks	70 gals	2.5	175
3.	<b>Contingency (3%)</b>			43.7
	<b>Grand Total (GBP)</b>			1501.3

## Appendix 12: Vision screening card for school age children

**E**      **W**

**M**      **E**




**VISION SCREENING FOR SCHOOL CHILDREN**



The size of the E conforms to 6/9 on the Standard Snellen's E chart.

DANPCB-1997

### VISION SCREENING

**PURPOSE**  
Vision screening helps to find out if the child has normal vision or he needs further eye check-up



**PLACE**  
for Vision-screening should have  
\* Proper light;  
\* Adequate space;



**STEPS**  
\* Measure 20 feet distance  
\* Mark standing points



**DEMONSTRATE**  
how the children have to see the chart and point towards the open ends of 'E' with their arms

**TEST VISION**  
Ask the child to cover her right eye and point the direction of the open ends of 'E'  
Ask the child to cover her left eye and point the direction of 'E' again



**REPEAT**  
Rotate the chart and repeat the exercise  
If the child cannot make out, record your observations in the referral card.



**ADVISE**  
the child to show the referral card to her guardian and get her eyes checked by an Ophthalmic Assistant.

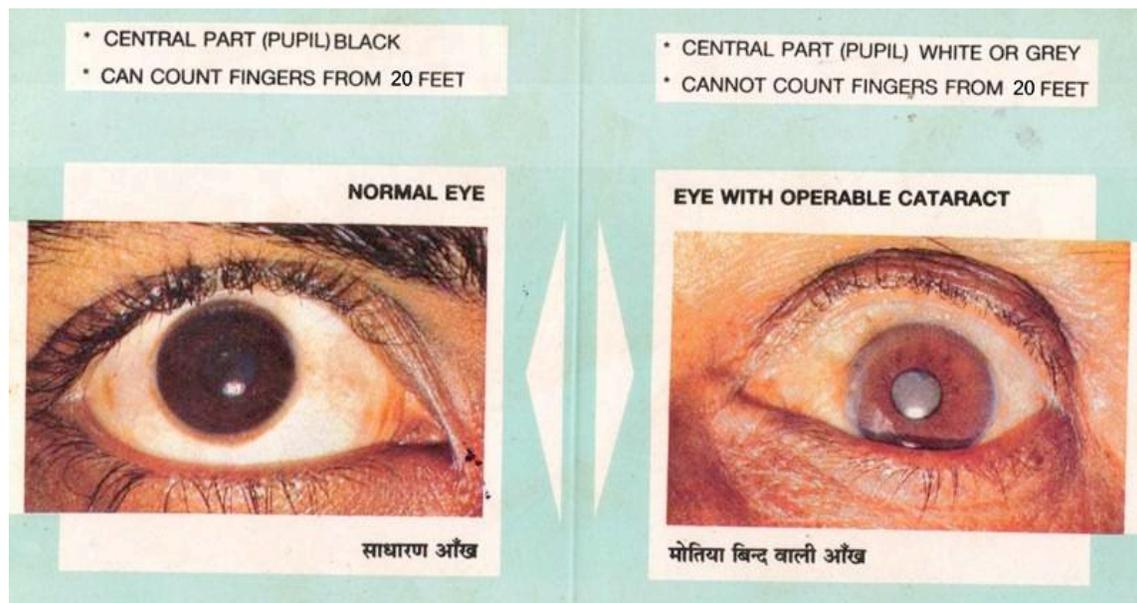
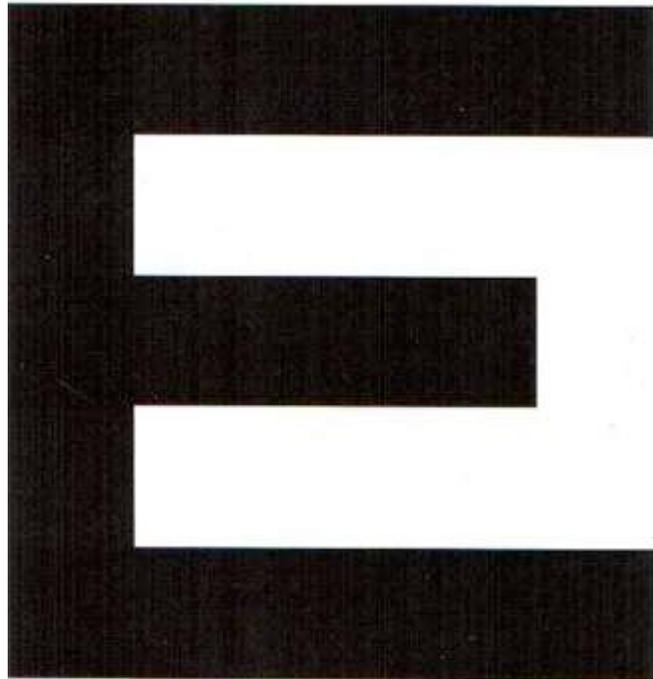


EYE LEVEL

20'(FEET)

DANPCB

## Appendix 13: Cataract screening card



## Appendix 14: Photographs



**Banner for the training of ASHA in Primary Eye Care**



**Dr. Vijay Singhal, IN-charge NRHM Gurgaon district with ASHA trainees and trainers**



Praveen Vashist, supervising a team of ASHA for role play



Identity card of an ASHA trained



**A Training session in Farrukhnagar CHC**



**ASHA in a training session in CHC Pataudi, Gurgaon**



**ASHAs and trainers with Dr. SaryuSharma, In-charge, ASHA programme, Gurgaon**



**ASHA brought a blind child during the follow up meeting at CHC Pataudi**



**Use of presbyopic spectacles**



**Boiled water. Cotton swab for cleaning eye**



**ASHA demonstrating a school vision screening card**