Vision Centre Based Model for Eliminating Avoidable Blindness

Vijay K Sarvepally
Head Academics – Optometry & Vision Science
Director – Community Eye Care Services
Pushpagiri Eye Institute
Secunderabad
Basic Terminology

• **Blindness**: VA < 3/60 and/or Field of View < 20° in better Eye (WHO Definition of Legal Blindness).

• **Absolute Blindness**: No perception of Light.

• **Economic Blindness**: Inability of a person to count figures from a distance of 6 meter or 20 feet.

• **Curable Blindness**: Stage of Blindness where the damage is reversible. Eg: Cataract.

• **Preventable Blindness**: Loss of Vision which can be prevented by institution of effective preventive or Prophylactic measures. Eg: Xerophthalmia, Trachoma.

• **Avoidable Blindness**: The Sum total of Preventable and Curable Blindness. In India 75-80% Blindness is Avoidable.
Statistics about blindness

- ~40 Million blind - Globally
- India owns 15 million
- Visually impaired in world 133 million
- India owns 52 million

Poverty & blindness encourage each other

Source - WHO report 2013
Causes of Blindness (Globally)

- Refractive error: 18% (8m)
- Cataract: 39% (17.6m)
- Glaucoma: 10% (4.5m)
-AMD: 7% (3.2m)
-Corneal scar: 4% (1.9m)
-Diab. retinopathy: 4% (1.8m)
-Childhood: 3% (1.4m)
-Trachoma: 3% (1.3m)
-Oncho.: 0.7% (0.3m)
-Other causes: 11% (4.8m)
Blindness – India

<table>
<thead>
<tr>
<th>Indicator</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness Prevalence rate (per 1000)</td>
<td>10</td>
</tr>
<tr>
<td>Diabetes Prevalence rate (per 1000)</td>
<td>~60</td>
</tr>
<tr>
<td>Ophthalmologist to Population Ratio</td>
<td>1:83,000</td>
</tr>
<tr>
<td>Doctor to Population Ratio</td>
<td>1:2000</td>
</tr>
</tbody>
</table>
Economic Impact of Blindness & VI in India

Yearly GDP Impact of VI & Blindness

<table>
<thead>
<tr>
<th>Year</th>
<th>Blindness</th>
<th>Visual Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>9.3</td>
<td>5.8</td>
</tr>
<tr>
<td>2012</td>
<td>10.2</td>
<td>6.3</td>
</tr>
<tr>
<td>2014</td>
<td>11</td>
<td>6.8</td>
</tr>
<tr>
<td>2016</td>
<td>13</td>
<td>7.4</td>
</tr>
<tr>
<td>2018</td>
<td>15.5</td>
<td>9.5</td>
</tr>
<tr>
<td>2020</td>
<td>20</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Figures in USD
Vision impairment and blindness from eye disease impose not only lost quality of life and wellbeing for individuals affected, but also a significant economic burden on society.

With today’s knowledge and technology, the World Health Organization (WHO) estimates that around 80% of global blindness is avoidable using cost-effective interventions (WHO, 2010).
PVRI adapted Model for eliminating avoidable Blindness

1. Hospital Based Community Eye Health Programme (HBCEHP)

2. Vision Centre Based Community Eye Health Programme (VCBCEHP).

Supported by
Hospital Based Community Eye Health Programme (HBCEHP)

Objectives

• To assess the role of cluster based community eye health planning in eliminating avoidable blinding causes with the help of a secondary level hospital.
• To improve eye health seeking behavior of the target population
• To strengthen primary health services
• To integrate primary eye care services with primary health care services

• Improved utilization of eye care services leading to elimination of avoidable blindness
Target Area Selection

☑ Majority of population is economically and socially vulnerable.

☑ Existence of a well established secondary eye care center. (Base Hospital)

☑ Accessibility to hospital – Tertiary Care Centre within the radius of 50 -100 kms.

☑ Potential to increase walk-in patients from the area to the base hospital
About Project Area

• HBCEHP started in 2014

• Hafiz Baba Nagar – Oldest Slum at the heart of the city of Hyderabad.

• Population base around 140,000

• Most of the population (around 98 %) from minority Muslim community.

• General economic strata of poor and lower middle
Secondary Eye Care Centre
Managed by PVRI

Centre of Excellence
Pushpagiri Eye Institute

Vision Centre

Project Area

5 – 7 Kms

15 – 20 Kms

30 – 40 Kms
Cluster formation

- Division of clusters:
  - Each cluster has 20,000-22,000 population
  - Geographical area
  - Population distribution

- Field staff trainees selection
  - 2 trainees per cluster
  - Priority to women candidates
  - Previous experience
  - Good communication skills
  - Local people to given preference
PHASE I

1. Target Area Selection/Delineation of Clusters
2. Recruitment of Project Coordinator & Cluster Based Field Workers
3. 1st Module Training for Project Staff
4. Door to Door Survey in all Clusters
5. 2nd Module Training
6. Selection of Staff for Phase II

PHASE II

1. Annual actiona plan for each cluster
2. Implementation of project activities
3. Monitoring and Reporting
4. Evaluation/Impact Assessment
Implementation of the Project

Cluster Mapping
Project area divided into seven cluster with 25,000 population in each cluster

Training
Training on Survey, Soft Skill and basic ophthalmic Examination was given to Community Health workers at the base Hospital

Enumeration & Survey
Door to Door Survey and House hold Enumeration was conducted to 18 months.

House Hold Eye Screening and Referrals

Intervention – Surgical & Medical
Distribution of Areas among CHWs
Field Staff in the Project area
Door To Door Survey
House hold Enumeration
## Survey Format

<table>
<thead>
<tr>
<th>Information</th>
<th>Adult M</th>
<th>Adult F</th>
<th>Children M</th>
<th>Children F</th>
<th>Total M</th>
<th>Total F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Address</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. What type of work do you do?
2. What type of education do you have?
3. Do you have any medical problems?
4. Is there a family history of eye problems?
5. Do you have regular eye check-ups?

**Note:**
- Adult: Male (M), Female (F)
- Children: Male (M), Female (F)
- Total: Male (M), Female (F)
Vision Recording
Torch Light Examination
Examination at the Vision Centre
Evaluation at Secondary Centre
Surgical Intervention at Secondary Centre
Post Operative Care
# Daily Activity Monitoring Report

**Hospital Based Community Health Project - Hafiz Baba Nagar**

**Tour programme / Activity Schedule**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-06-2015</td>
<td>9.30-11.30</td>
<td>Weekly Meeting</td>
</tr>
<tr>
<td></td>
<td>11.30-12.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.30 – 1.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.30 – 2.00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>2.00 – 3.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00 to 4.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.30-5.00</td>
<td></td>
</tr>
<tr>
<td>15-06-2015</td>
<td>9.30-11.30</td>
<td>Cataract follow up (Row)</td>
</tr>
<tr>
<td></td>
<td>11.30-12.30</td>
<td>Health education - Eye</td>
</tr>
<tr>
<td></td>
<td>12.30 – 1.30</td>
<td>Cataract follow up</td>
</tr>
<tr>
<td></td>
<td>1.30 – 2.00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>2.00 – 3.00</td>
<td>Other eye diseases follow</td>
</tr>
<tr>
<td></td>
<td>3.00 to 4.30</td>
<td>Health education - Sanitation</td>
</tr>
<tr>
<td></td>
<td>4.30-5.00</td>
<td>Daily diary</td>
</tr>
<tr>
<td>16-06-2015</td>
<td>9.30-11.30</td>
<td>Cataract follow up (Row)</td>
</tr>
<tr>
<td></td>
<td>11.30-12.30</td>
<td>Health education - Cataract</td>
</tr>
<tr>
<td></td>
<td>12.30 – 1.30</td>
<td>Counselling</td>
</tr>
<tr>
<td></td>
<td>1.30 – 2.00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>2.00 – 3.00</td>
<td>Other eye diseases follow</td>
</tr>
<tr>
<td></td>
<td>3.00 to 4.30</td>
<td>Health education - (ANC-PNC)</td>
</tr>
<tr>
<td></td>
<td>4.30-5.00</td>
<td>Daily diary</td>
</tr>
<tr>
<td>17-06-2015</td>
<td>9.30-11.30</td>
<td>Cataract follow up (Row)</td>
</tr>
<tr>
<td></td>
<td>11.30-12.30</td>
<td>Health education - Eye</td>
</tr>
<tr>
<td></td>
<td>12.30 – 1.30</td>
<td>Cataract follow up</td>
</tr>
<tr>
<td></td>
<td>1.30 – 2.00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>2.00 – 3.00</td>
<td>Health education - Immunization</td>
</tr>
<tr>
<td></td>
<td>3.00 to 4.30</td>
<td>Cataract follow up</td>
</tr>
<tr>
<td></td>
<td>4.30-5.00</td>
<td>Daily diary</td>
</tr>
<tr>
<td>18-06-2015</td>
<td>9.30-11.30</td>
<td>Cataract follow up (Row)</td>
</tr>
<tr>
<td></td>
<td>11.30-12.30</td>
<td>Health education - Eye</td>
</tr>
<tr>
<td></td>
<td>12.30 – 1.30</td>
<td>Cataract follow up</td>
</tr>
<tr>
<td></td>
<td>1.30 – 2.00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>2.00 – 3.00</td>
<td>Health education - (ANC-PNC)</td>
</tr>
<tr>
<td></td>
<td>3.00 to 4.30</td>
<td>Cataract follow up</td>
</tr>
<tr>
<td></td>
<td>4.30-5.00</td>
<td>Daily diary</td>
</tr>
</tbody>
</table>

**Signature of the field staff / Coordinator**

Date: 13-06-15

**Approved by: Coordinator / In-charge**

Date: 13-06-15
Outcome – 18 months

- Total No. of persons screened in House Hold Survey - 38,553
- Total No. of Houses Enumerated - 22,315
- Identified Cataract Patients - 900
- Total No. of Surgeries performed - 230
- Surgeries Awaiting – 270
Increased Health Awareness

Social Impact of the Project

Major Step towards Eradication of Blindness

Increased Walk-ins

Recognition

Goodwill asset for better service

More BPL families will be benefitted
### Project Impact on Blindness

**Total - 270 Surgeries**

<table>
<thead>
<tr>
<th></th>
<th>Avg Per Person Per Capita (INR)</th>
<th>Impact of the Project Per capita (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Cost - 5 %</td>
<td>1,836</td>
<td>4,95,720</td>
</tr>
<tr>
<td>Productivity Loss – 17%</td>
<td>6,242</td>
<td>1,06,114</td>
</tr>
<tr>
<td>Informal Care Loss – 78 %</td>
<td>26,642</td>
<td>71,93,340</td>
</tr>
</tbody>
</table>

**Impact of Project on GDP** - Rs 77,95,174
# Project Impact on Visual Impairment

Total Number of Refractive Errors Corrected – 4,200

<table>
<thead>
<tr>
<th></th>
<th>Avg Per Person Per Capita (INR)</th>
<th>Impact of the Project Per capita (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Cost - 5 %</td>
<td>515</td>
<td>21,63,000</td>
</tr>
<tr>
<td>Productivity Loss – 17%</td>
<td>1,752</td>
<td>73,58,400</td>
</tr>
<tr>
<td>Informal Care Loss – 78%</td>
<td>8,038</td>
<td>3,37,59,600</td>
</tr>
</tbody>
</table>

**Impact of Project on GDP** - Rs 4.5 Crores
To Declare the project area as Cataract Backlog Free Zone in next 15 months
Vision Centre Based Community
Eye Health project
The goal of VCBCEHP is to eliminate avoidable blindness in the project area by 2019
Specific Objectives

• Create eye awareness and increase walk-in patients to the base hospital by 20% annually

• Reduce backlog of blinding causes by over 95% in the case of curable and treatable forms of blindness

• Integrate primary eye care services into existing primary health services

• Network with relevant governmental and non-governmental agencies for improving the socio-economic status of the target communities

• Establish a referral system leading to sustained accessibility to eye care service
Vision Centre # 1 launched on 14\textsuperscript{th} October 2016 – World Sight Day
Vision Centre # 2 inauguration on 14th October 2016 World Sight Day
Our Vision Centres in GHMC Area

- **Existing Vision Centres**
- **Proposed Vision Centres**
- **Centre of Excellence**
- **Secondary Centre**
In the state of Andhra Pradesh

Tertiary Eye Care Centre
Pushpagiri Eye Hospital
Vizianagaram

Tertiary Eye Care Centre is soon to Function
Our Future Plans in Andhra Pradesh

• Focus on Uttar Andhra Region

• To establish **100 vision centres**

• Covering population of 10 million

• Declare Uttar Andhra Region Cataract Backlog Free Zone

• PPP
Acknowledgments
Pushpagiri Eye Institute
(An NABH Accredited Super Specialty Eye Hospital)
A Not-for-profit Venture

Pushpagiri Eye Institute
Secunderabad

Indo - US Eye Hospital
Malakpet
Affiliated to & Managed by
Pushpagiri Vitreo Retina Institute

Pushpagiri Eye Hospital
Vizianagaram