Eye Care in India

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DEFINITION OF BLINDNESS IN INDIA

Visual Acuity less than 6/60 in the better eye with available correction
<table>
<thead>
<tr>
<th>BLINDNESS &amp; VISUAL IMPAIRMENT</th>
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<tbody>
<tr>
<td><strong>WHO</strong></td>
</tr>
<tr>
<td>Blindness</td>
</tr>
<tr>
<td>Severe Visual Impairment</td>
</tr>
<tr>
<td>Moderate Visual Impairment</td>
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<tr>
<td>Mild Visual Impairment</td>
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</tbody>
</table>
# BLINDNESS AND VISUAL IMPAIRMENT: (WHO 2011)

<table>
<thead>
<tr>
<th></th>
<th>Global (Millions)</th>
<th>India (WHO)</th>
<th>India (NPCB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind</td>
<td>39.4</td>
<td>8</td>
<td>12 (1%)</td>
</tr>
<tr>
<td>Low Vision (Severe+ Moderate VI)</td>
<td>246.0</td>
<td>54</td>
<td>50</td>
</tr>
<tr>
<td>Blind +VI</td>
<td>285.4</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>
INDIA-BLINDNESS PREVALENCE TRENDS

ICMR Survey 1971-74: 1.38
WHO-NPCB 1986-89: 1.49
National Blindness Survey, 2001: 1.1
RAAB- National Survey, 2007: 1

12 Million blind as per NPCB definition

R.P. Centre, AIIMS
CAUSES OF BLINDNESS - GLOBAL

- Cataract: 21
- Glaucoma: 7
- Post. Segment Disease (AMD, DR): 6
- Corneal Opacities: 8
- Childhood: 4
- Refractive Errors: 3
- Undetermined: 51
CAUSES OF BLINDNESS IN INDIA 2001

(Source: Current estimates of Blindness in India, BJO, March 2005)

- Cataract 62.6%
- Ref. Errors 19.7%
- Glaucoma 5.8%
- Post. Seg. Disorders 4.7%
- Corneal Blindness 1%
- Others 5.2%
- Surgical Comp. 1%
BLINDNESS IN INDIA

- 1.2 Crore as per NPCB definition
- 6.2 Crore visually impaired (VA <6/18- 6/60 in better eye)
- More than 90% are above 50 years
- Higher prevalence in women and in rural areas

80-90% of this blindness is avoidable.
PREVALENCE OF BLINDNESS IN 50+

INDIA - 8.5%

- < 8.5 %
- 8.5 - 11%
- > 11%

National Survey 2001
National Programme for Control of Blindness

HISTORICAL MILESTONES

- 1963 - National Trachoma Programme
- 1976 - National Programme for Control of Blindness
- 1978 - DANIDA Assistance (three phases)
- 1994 - World Bank Assistance
- 2004 - Vision 2020- Right to Sight India
- 2005 - National Rural Health Mission
- 2012 - National Urban Health Mission

Goal: To reduce blindness prevalence to 0.3% by 2020
ROLE OF NPCB

Policy Maker, Program Planner

Budget Provider

Technical guidance to state and district stakeholders, NGOs

Monitoring & Evaluation
NPCB OBJECTIVES

- Reduce the backlog of blindness
- Comprehensive Eye Care
- Strengthening RIOs as COE
- HR & Infrastructure Development
- Community Eye Awareness
- Expand Research for PBL & VI
- Quality Service Provision
- Participation of NGOs & Private Practitioners
## ORGANIZATION OF NPCB

<table>
<thead>
<tr>
<th>Centre</th>
<th>Central Ophthalmic Cell: MOH&amp;FW Ophthalmic Section-NPCB, DGHS, New Delhi</th>
</tr>
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<tbody>
<tr>
<td>State</td>
<td>State Ophthalmic Cell State Health Society/UT Health Societies managed by NRHM &amp; SPOs</td>
</tr>
<tr>
<td>District</td>
<td>District Health Society--641, District hospitals &amp; NGOs Managed by DPM Chairman- District Collector</td>
</tr>
</tbody>
</table>
THE PRIORITY DISEASES IN INDIA

- Cataract
- Refractive Errors and Low Vision
- Childhood Blindness
- Corneal Blindness including Trachoma in some pockets
- Glaucoma
- Diabetic Retinopathy
CATARACT

- Major public health problem
- Commonest cause of Blindness
- Second most common cause of visual impairment 25%
- Only 65.7% of estimated blind due to cataract are covered for surgery
STRATEGIES FOR REDUCING THE BACKLOG- CATARACT

- Reach in Approach
- Active screening of population above 50 years, organizing screening eye camps
- Involving NGOs- More than 2200 NGOs registered with NPCB
- Free quality surgery - Phaco/SICS surgery
- Assistance for Cataract Surgery @ Rs.1000/- per cataract operation/per eye
- Ensuring follow up

Cataract surgery is considered as one of the most cost-effective health intervention
PERFORMANCE OF CATARACT SURGERY

Number of cataract surgeries (Lakhs)

- 1991: 11.9
- 2001: 36.4
- 2007: 50.4
- 2011: 63.4
- 2015: 63.5

CSR- 5000 surgeries per million population per year
### INDICATORS FOR CATARACT SERVICES

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Achieved</th>
<th>Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract Surgeries per 10 lakh population</td>
<td>5000</td>
<td>9000</td>
</tr>
<tr>
<td>Cataract Surgical Coverage</td>
<td>65-70%</td>
<td>100%</td>
</tr>
<tr>
<td>Proportion of IOL</td>
<td>95%</td>
<td>&gt; 98%</td>
</tr>
<tr>
<td>Visual Outcome &lt; 6/60</td>
<td>20%</td>
<td>5%</td>
</tr>
<tr>
<td>No. of surgeries / active OS</td>
<td>500</td>
<td>1000</td>
</tr>
</tbody>
</table>

RPCentre, AIIMS
CATARACT SURGERIES NEEDED

Gujarat CSR >14000- still cataract blindness is persisting

VA Better than 6/18 in both eyes

Unilateral VI

Unilateral Blind

One eye of BL VI

Blind

Surgery need

Cataract Surgical Coverage- 65%

RPCentre, AIIMS
Uncorrected refractive errors are a major cause of treatable visual impairment and blindness- 19.7% of blindness and 70% of Visual impairment.

Refractive errors can be easily diagnosed and effectively treated with spectacles.
REFRACTIVE ERROR: SCHOOL VISION SCREENING

- First level screening by teachers: **Primary & Secondary**
- Refraction at Vision Centre by Ophthalmic Assistant
- Optical services: Free spectacles to BPL children;
- Rs. 275 per spectacle by NPCB
- Target 9 lakh spectacles/year in 12th Plan
PROTOCOL FOR SCHOOL VISION SCREENING

1. Screening by teacher at school
   - Eye sight 'not good'
     - 2. Examination by PMOA
       - Eye sight 'good'
         - Sent home
       - Eye sight 'good'
         - Sent home
     - Spectacles required for refractive errors
       - Refraction done
         - Optician provides spectacles
   - Eye sight 'good'
     - Spectacles required
       - Refraction done
         - Optician provides spectacles
     - other conditions treated
       - Sent home

Minimal Role of Ophthalmologist in School Vision Screening Programme
The size of the E conforms to 6/9 on the Standard Snellen's E chart.
PRESBYOPIA

- Initiative in 12th plan
- Distribution of spectacles for near vision to old people- 2 lakh spectacles per year
- Rs. 100 per pair of spectacles
CHILDHOOD BLINDNESS INDIAN

- Estimated Blind Children in India: 2,80,000
- Estimated Prevalence: 0.80 per 1000
  - West Bengal (R): 0.51 per 1000
  - Andhra Pradesh (R): 0.61 per 1000
  - Delhi (U): 1.00 per 1000
- Estimated no of children with VA<6/18: 92 Lakhs
<table>
<thead>
<tr>
<th>(Under 5MR)</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-19</td>
<td>0.3 per 1,000</td>
</tr>
<tr>
<td>20-39</td>
<td>0.4 per 1,000</td>
</tr>
<tr>
<td>40-59</td>
<td>0.5 per 1,000</td>
</tr>
<tr>
<td>60-79</td>
<td>0.6 per 1,000</td>
</tr>
<tr>
<td>80-99</td>
<td>0.7 per 1,000</td>
</tr>
<tr>
<td>100-119</td>
<td>0.8 per 1,000</td>
</tr>
<tr>
<td>120-139</td>
<td>0.9 per 1,000</td>
</tr>
<tr>
<td>140-159</td>
<td>1.0 per 1,000</td>
</tr>
<tr>
<td>160-179</td>
<td>1.1 per 1,000</td>
</tr>
<tr>
<td>180-199</td>
<td>1.2 per 1,000</td>
</tr>
<tr>
<td>200-219</td>
<td>1.3 per 1,000</td>
</tr>
<tr>
<td>220-239</td>
<td>1.4 per 1,000</td>
</tr>
<tr>
<td>240+</td>
<td>1.5 per 1,000</td>
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CORNEAL BLINDNESS AND EYE DONATION

- Hospital Cornea Retrieval Programme: Grief counselors
- Public awareness: Eye donation fortnight (25th Aug to 8th Sept)
- Strengthening of eye banks
- Support Rs. 2000/- per pair of eyes collected
Targets of 50,000 cornea collection per year in 12th Plan
Achievement- 57 thousand cornea collected in 2015
8% of blind (< 3/60) due to Glaucoma in India
Three fold increase compared to earlier surveys.
Underestimate as field of vision not considered.
15 -16% blind if field of vision also considered
Total estimated cases in India 2010- 1.2 Crore
  Primary Open Angle (POAG)- 82 Lakh
  Primary Angle Closure (PACG)- 37 Lakh
In India >90% of people with POAG remain undiagnosed
GLAUCOMA- STRATEGIES

- Opportunistic screening of all 40+
- Health education campaign for glaucoma awareness
- Diagnostic facilities at secondary level
- Screening of Family members of glaucoma patients
- Regular follow up and compliance
- Good referral linkage
DIABETIC RETINOPATHY

- Diabetic patients in India – 6.24 Crore with prevalence ranging from 3% - 28%
- Diabetic epidemic-Estimated 8 Crore cases in India by 2030
- DR - 20% of diabetics at a given time
- Life time prevalence of DR among diabetics-80%
- Blindness by DR is irreversible and increases the economic burden on the nation
RECENT INITIATIVES IN 12TH PLAN - DISEASE CONTROL

- Assistance of Rs. 1500/- per case for management of diseases like diabetic retinopathy, glaucoma, childhood blindness including squint and ROP etc.
- Assistance of Rs. 5000/- per case for corneal transplantation, vitreo-retinal surgery
- Promoting public-private partnership
EYE CARE INFRASTRUCTURE BY 2020

Centre Of Excellence:
1 for 50 million

Training Centre:
1 for 5 million

Service Centre:
1 for 500,000

Vision Centre:
1 for 50,000
## INFRASTRUCTURAL SUPPORT - 12TH PLAN
### INITIATIVES TARGETS

<table>
<thead>
<tr>
<th>Detail</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening of RIOs &amp; Medical Colleges</td>
<td>20 RIOs, 122 MC</td>
</tr>
<tr>
<td>District hospital</td>
<td>642</td>
</tr>
<tr>
<td>Strengthening of Eye Banks</td>
<td>20</td>
</tr>
<tr>
<td>Strengthening of Eye Donation Centres</td>
<td>100</td>
</tr>
<tr>
<td>Support to Vision Centres</td>
<td>5000</td>
</tr>
<tr>
<td>Strengthening of NGOs Eye Hospitals</td>
<td>20</td>
</tr>
<tr>
<td>Construction of Eye Wards/OTs in NE States/other Hilly States</td>
<td>25</td>
</tr>
<tr>
<td>Setting up of Tele-Ophthalmology Units</td>
<td>25</td>
</tr>
<tr>
<td>Maintenance of equipment</td>
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RECENT INITIATIVES IN 12TH PLAN

- Setting of 400 Multipurpose District Mobile Units
- Tele-Ophthalmology services in underserved areas
- Strengthening primary eye care by establishing Vision Centres in all PHCs with posting of PMOAs.
- Target of setting up 5000 vision centres
DIFFERENT MODELS OF VISION CENTRES

- PMOA model- Government of India since 1990s
- LVP Vision Centres- Vision technician and vision guardian
- Aravind Fixed Facility comprehensive eye care model
- Urban slums- Sightsavers model- Delhi, Kolkata, Mumbai
- Mobile Vision Centre
- Tele-ophthalmology
2000 eye surgeons trained in 5 years in various eye specialities.

Training to para ophthalmic personnel including Paramedical Ophthalmic Assistant, Nurses, District Programme Managers etc

Arranging contractual positions for filing vacant positions at district and CHC level- Ophthalmologists, Ophthalmic Assistants, Eye Donation Counselors & Data Entry Operators

Community participation by involving Panchayat Raj Institutions including ASHA & AWWs
CAN ASHA BE INVOLVED IN PRIMARY EYE CARE?
In order to reduce the burden of blindness in the country: Minimal primary eye care services should be available at the doorstep to the people in underserved areas.

The National Program for Control of Blindness aimed to post one paramedical ophthalmic assistant (PMOA) at vision centre for every 50,000 population by the year 2020.

There would still remain a wide gap in attaining primary eye care at the community level.
ROLE OF ASHAS IN EYE CARE

Eye health education and awareness about

- Prevention of blinding conditions
- Harmful traditional practices and misconceptions

Identification of

- Blind
- Common ocular morbidities

Timely referral
AWARENESS ABOUT EYE DISEASES
Rationale for using ASHA workers as primary eye care volunteers

- Available for every 1000 population under National Rural Health Mission (NRHM)
- Trained in other primary health care activities
- Locally acceptable & selected from the same community
- Possess minimum basis education

The department has been instrumental in training more than 570 primary eye care volunteers, so as to reach the underserved and outreach populations.
ROLE IN REDUCING BARRIERS FOR CATARACT SURGERY

- Unaffordable- Cost??
- Ignorance of facilities
- Appropriate Season- Winters only
- Don’t know that the operation is simple and safe
- Waiting for the cataract to mature
- No one to accompany- No time, wages loss
- Other eye in good condition
- Fear of surgery, hospital
- people sometimes expect to go blind as a natural part of ageing, need not felt
WAY FORWARD

- Involving volunteers is an effective strategy to replace the screening camp approach for identification of blind and visually impaired.

- Countrywide implementation is essentially needed for elimination of blindness by 2020.
Thank You