GUIDELINES FOR IMPLEMENTATION OF

PRIMARY EYE CARE

VISION 2020
THE RIGHT TO SIGHT
INDIA

UNDER THE KNOWLEDGE HUB INITIATIVE OF

VISION 2020: The Right to Sight-INDIA

Developed by

VISION 2020: The Right to Sight – INDIA

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Guidelines for Implementation of Primary Eye Care

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Message

It gives us immense pleasure to present the Primary Eye Care Guidelines from VISION 2020: The Right to Sight-INDIA.

The recent World Health Assembly resolution calls for a 40-percentage point increase in effective coverage of refractive error and a 30-percentage point increase in effective coverage of cataract surgery from baseline estimate. An Integrated People-centred Eye Care (IPEC) for Universal Eye Health approach calls for engaging and empowering people and communities, coordinating services within and across sectors, strengthening and reorienting the eye health workforce, and creating an enabling environment. The current document considered these important aspects and made them an integral part of primary eye care delivery. In this context, development of standard guidelines for the implementation of primary eye care by eye care institutions well timed.

The elements and approaches included in this document are based on emerging practices across the community eye health sphere. The development of this guideline would not have been possible without the dedicated efforts, constant coordination and cooperation, technical knowledge and expertise of the technical team constituted for this purpose.

We strongly hope that eye care institutions, especially those working on community eye health development, leverage these towards ensuring quality and comprehensive delivery of primary eye care.

We are grateful to the technical committee, external reviewers and other contributors for their contribution towards these guidelines.

Together, let's make the Right to Sight an achievable reality.

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The guidelines have been developed with the collective efforts and support of the designated technical team with their dedicated time, knowledge and expertise. We were fortunate to gain from the team's rich professional experience both at their individual capacity as well as their institutional settings in making the guidelines a comprehensive and standard tool for the eye hospitals/NGOs in eye care sector in particular to primary eye care.

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With deep appreciation

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Acronyms

ADL	-	Activities of Daily Living
ANM	-	Auxiliary Nurse and Midwife
AOP	-	Allied Ophthalmic Personnel
ARMD	-	Age Related Macular Degeneration
ASHA	-	Accredited Social Health Activist
CBOs	-	Community-Based Organizations
CBR	-	Community-Based Rehabilitation
CHO	-	Community Health Officer
CMCs	-	Carboxy Methyl Cellulose
CME	-	Continuous Medical Education
COVID19	-	Coronavirus Disease-2019
CPHC	-	Comprehensive Primary Health Care
DHSs	-	District Health Societies
DR	-	Diabetic Retinopathy
ECSAT	-	WHO Eye Care Situation Analysis Tool
EMR	-	Electronic Medical Records
HPMC	-	Hydroxypropyl Methylcellulose
HWC	-	Health & Wellness Centre
IAPB	-	International Agency for Prevention of Blindness
IEC	-	Information, Education and Communication
IPEC	-	Integrated People-Centred Eye Care
IT	-	Information Technology
IVRP	-	Individual Visual Rehabilitation Plan
LVPEI	-	L V Prasad Eye Institute
MAS	-	Mahila Arogya Samiti
MBBS	-	Bachelor of Medicine and Bachelor of Surgery
MIS	-	Management Information System
MO	-	Medical Officer

MPHW	-	Multipurpose Health Worker
NCDs	-	Non-Communicable Disease
NGO	-	Non-Government Organization
NHM	-	National Health Mission
NPCB	-	National Programme for Control of Blindness
OA	-	Ophthalmic Assistant
PC	-	Personal Computer
PEC	-	Primary Eye Care
PHC	-	Primary Health Centre
PMOA	-	Para Medical Ophthalmic Assistants
PPP	-	Public-Private Partnership
PRI	-	Panchayati Raj Institutions
PwVD	-	People Living with Visual Disabilities
QO	-	Quality of Life
RBSK	-	Rashtriya Bal Swasthya Karyakram
RIO	-	Regional Institutes of Ophthalmology
SAFE	-	Surgery, Antibiotics, Facial Cleanliness and Environmental Improvement
SDGs	-	Sustainable Development Goals
SHC	-	Sub Health Centre
UEH	-	Universal Eye Health
UEHC	-	Universal Eye Health Coverage
UHC	-	Universal Health Coverage
ULB	-	Urban Local Bodies
UPHC	-	Urban Primary Health Centre
VISION 2020 India	-	VISION 2020: The Right to Sight-India
VC	-	Vision Centre
VT	-	Vision Technician
WHO	-	World Health Organization

Photo Credit: LV Prasad Eye Institute

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Introduction

CONTEXT

The National Health Mission (NHM), country's flagship health system strengthening programme, particularly for primary and secondary health care envisages "attainment of universal access to equitable, affordable and quality health care which is accountable and responsive to the needs of people"[1]. And when we talk of health, Eye Care is an important aspect because everyone who lives long enough, will experience at least one eye condition in their lifetime that will require appropriate care[2].

In India, the prevalence of visual impairment in all age groups is estimated to be 2.55%[3]. This translates to an absolute number of 3.5 crores population, and around 43% of this population suffers from refractive error. It is a well-established fact that uncorrected refractive error can be corrected very easily and is part of primary eye care service provision. However, the population continues to suffer for reasons that could be easily addressed and/or avoided. Like refractive errors, many other eye care conditions can be identified, diagnosed and treated at primary health care level within the government and civil society systems, albeit, the reality is somewhat different from what is feasible.

The Strategic plan (2021-2026) of VISION 2020: The Right to Sight-INDIA (VISION 2020 INDIA) highlights five *key objectives – Universalize, Consolidate, Systematize, Coordinate and Advocate – that help in accomplishing universal eye health*. The Plan states that unless coverage at the primary level is complete, people in need of services will be left out, and thereby lays clear emphasis on quality and comprehensive primary eye care. The Plan also says that VISION 2020 INDIA should prepare state level networks of members to follow the principle of Integrated People Centered Eye Care that implies the need of providing community based promotive, preventive eye services, and early detection of all possible eye problems in a community. Further, two of the objectives, Universalize and Consolidate, calls for public-private partnerships (PPP) for primary eye care services.

Key objectives – Universalize, Consolidate, Systematize, Coordinate and Advocate – that help accomplish universal eye health

Defining Primary Eye Care

Primary eye care is the provision of appropriate, accessible, and affordable care that meets patients' eye care needs in a comprehensive and competent manner. Primary eye care provides the patient with the first contact for eye care as well as a lifetime of continuing care.[4]

ABOUT THE GUIDELINES

These primary eye care guidelines were developed through a five members technical committee who are also practitioners of primary and secondary eye care, and the institutions they represent are nationally and internationally recognised. The guidelines incorporate lessons, experiences and good practices of implementing primary eye care services across the country. Two important steps were ensured –

1. Draft went through a critical review by an expert of international repute in public health.
2. Draft was shared with key stakeholders within health care and suggestions received were considered.

These guidelines are intended to serve as a framework for standardising the multiple components required for the delivery of comprehensive primary eye care services either through a standalone vision centre or integrated vision centres/eye care centres. These guidelines are expected to support the hospital management especially in the NGO sector, in executing comprehensive primary eye care at all levels. They provide well established standards, systems and strategies for effective and quality service delivery of comprehensive primary eye care services and cover important aspects and delivery models across community-based eye care including rehabilitation, integrated eye care, vision centres, and tele-ophthalmology.

These guidelines are intended to serve as a framework for standardising the multiple components required for the delivery of comprehensive primary eye care services

The use of these guidelines would enable the eye care hospitals to put in place strategic design elements and subsystems required for primary eye care including those under PPP models. These guidelines are envisaged to be reviewed and revised periodically, based on implementation and lessons from the field, so that they continue to provide meaningful and updated guidance to eye care service providers.

Target Audience

More specifically, the member hospitals of VISION 2020 INDIA are the immediate beneficiaries of this document. But it also includes all eye care service providers who are involved in delivering comprehensive and quality primary eye care as defined in the previous section and those who would like to operate within the public health care facilities under PPP.

Moving Forward

It is acknowledged that the exact boundaries of primary eye care definition differ from country to country, and there is no single path or prescription that countries can follow to achieve a strong primary care. *It is expected that service providers follow these guidelines with the best of their ability so that the community receives comprehensive and quality primary eye care in a more standard way*. The models or sub-models that may emerge further as part of complying to these guidelines or otherwise are planned to be further studied, documented and used in advocacy at appropriate level for their wider recognition and inclusion in the policies.

It is expected that service providers follow these guidelines with the best of their ability so that the community receives comprehensive and quality primary eye care in a more standard way

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Photo Credit: Sadguru Netra Chikitsalaya

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Primary Eye Care Through Community Based System and Health & Wellness Centres

INTRODUCTION

According to recent estimates, India has a concerning share of global blindness and visual impairment[1]. The latest NPCB survey reveals that over the decades, the blindness prevalence in Indians among the 50 + age group population has reduced[2]. The survey also revealed that Cataract still stands as the primary cause of blindness, and blindness proportion among rural and illiterate, and backward states is high.

This evidence clearly shows the need for further efforts for the Cataract problem. Along with this, rising problems of Refractive error, Diabetic Retinopathy, and Glaucoma are putting the country again on focus in the battle against avoidable blindness and visual impairment.

The key challenges in reducing the prevalence of blindness and visual impairment are mainly the aging population and the inadequacies in the health system, including scarcity of the adequate human resource[3].

Universal Health Coverage (UHC)/Universal Eye health is part of the Sustainable Development Goals (SDGs) adopted by the United Nations in 2015. WHO defines UHC as "Ensuring that all people have access to promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services"[3]. However, many years into implementation, there is a lack of certainty in meeting the targets by 2030, particularly in low-resource and underserved countries like India.

In order to address this concern, the World Health Organisation (WHO) emphasizes strengthening Primary Eye Care (PEC) as an approach to achieving Universal Eye Health Coverage (UEHC)[3]. WHO has developed the Action plan for integrated people-centred eye care (IPEC) in the year 2022 for the years 2022-30. Strengthening primary eye care by integrating it into primary health care and at all levels of public health system across the region is one of the strategies for IPEC[4]. This involves provision of promotive, preventive, and curative services at all levels of health care and thus sustainable. Along with this, referral linkages and networks must be strengthened to eliminate avoidable blindness. HWCs in India now provide this opportunity. Integrated HWCs with engagement of ASHAs or community volunteers in primary eye care and with proper referrals of patients to eye care services can be of great help in achieving UEH. Understanding the needs of community and engaging them would increase the demand for eye care services and would greatly help reducing existing inequalities.[5 6]

Almost 30% of the total blind and visually impaired population of the world resides in South East Asia. Impairment of Vision has a negative impact on achieving Sustainable Development Goals and Universal Health Coverage. To address

the eye health needs, WHO came up with Action Plan on Vision where in the member states were called upon to ensure access to eye care services for their populations and to mobilize the resources and support necessary to achieve the global targets by 2030. The action plan suggests equitable access to high-quality, comprehensive eye health services to achieve universal eye health by 2030.[3,4] The targets will be achieved through the implementation of five broad, integrated, people-centred eye health strategies, namely; Engaging and empowering people and communities, Reorienting the model of care to prioritize primary care and community-based services with functional referral linkages, coordinating services within and across sectors, Strengthening and reorienting the eye health workforce and Creating an enabling environment.[1] Integration of eye care services at all levels of the public health system would make services universally available, accessible, affordable across regions and sustainable In India[1], Health and Wellness Centres (HWC) now provide an opportunity to provide primary eye care, and strengthen referral networks to eliminate avoidable blindness.

There can be various means to strengthen primary eye care. However, the most convincing and feasible in low-resource settings are community-based eye care, i.e., engaging the community in various ways to promote primary eye care services.[6]

WHO has defined community engagement as a process of developing relationships that enable stakeholders to work together to address health-related issues and promote well-being to achieve positive health impact and outcomes.[7]

Engaging the local community is more important to India as India is a unique country with diverse geographical locations, weather, and social framework. There are communities with different languages, cultures, varied levels of literacy, and overall economic conditions.[8]

With the given need for eye care in India and the mismatch with eye care resources available in the country, engaging the community will be the ideal solution.

PART A: COMMUNITY BASED PRIMARY EYE CARE

The community-based approach in eye care aims to help ensure that eye care is comprehensive, equitable, high quality, accessible, and affordable to all without any financial hardship. *The community-based eye care is expected to be the heart of the eye care system*, which is expected to be a gateway that connects the population to the eye care they need to maintain a healthy and balanced life.[9]

The community-based eye care is expected to cover a range of services, including eye health care promotion, primary prevention, early diagnosis, treatment, and follow-up care with rehabilitation support.

Community-based eye care aims to help people avail the eye care they need by improving access to eye care through various means. It is by engaging the community as a partner in their care, and It also envisions finding innovative new models to deliver quality eye care to all.

Community-based eye care is quite comprehensive and follows an integrated, interdisciplinary care model that mainly focuses on collaboration and joint efforts by using available community resources. This includes the existing general health system, primary health workers, educational institutions, school teachers, Anganwadi workers, community leaders, and volunteers.

Community-based eye care occurs within the community, like schools, Anganwadi centres, community centres, and individual households (door-to-door approach). The focus is to ensure access to appropriate eye health services across the community and deliver quality outcomes and improved people's lives.

Community-based eye care is quite comprehensive and follows an integrated, interdisciplinary care model that mainly focuses on collaboration and joint efforts by using available community resources

Community-based eye care occurs within the community, like schools, Anganwadi centres, community centres, and individual households (door-to-door approach)

Photo Credit: Sadguru Netra Chikitsalaya

Community-Based Primary Eye Care – Implementation Guidelines

The following section describes how primary eye care can be ensured among various age groups with the community's involvement.

To bring clarity to the concept and for ease of implementation, the community's total population is divided into three major groups, which are as follows.

1. Children and Adolescent Age Group - 0- 18
2. Active working Age Group- 19- 49
3. Old Aged Population - 50+

In each age group, the current scenario of primary eye care and the need are described based on available evidence. Following that, community members to be involved, their roles specified, and the training to be imparted are discussed in detail. Resources and support facilities are also discussed in detail in each age group.

Primary Eye Care Provision for the old aged Population (50+ years Age Group) - Key Considerations

Blindness and visual impairments are found to be more prevalent in the 50+ years population[10]. More than 90% of the 50+ population require some level of eye care solution during this time of their life[11].

Blindness and visual impairments are found to be more prevalent in the 50+ years population

Effective prevention strategies, early detection and diagnosis by the qualified personnel, and regular follow-up can ensure quality eye health and retained productivity and self-reliance among these individuals.

The goal of universal eye health coverage largely depends on how we address the eye care needs of this 50+ population. Common eye diseases among this age group include Cataracts, Refractive Error, Glaucoma, Diabetic Retinopathy, ARMD, and many other ocular problems.

Tackling these problems need comprehensive approach, and community participation is the key to ensuring the reach is universal and sustainable.

Active engagement and participation from the community can enhance eye health coverage among this age group.

Active engagement and participation from the community can enhance eye health coverage

Key Members to Participate in Community

The community's involvement can play a significant role in ensuring primary eye care for these old-aged populations. Those members in the community who are already connected with these population will be ideal for engaging in addressing their eye care needs as well.

Accredited Social Health Activists (ASHA), Anganwadi Workers and Mahila Arogya Samiti (MAS) workers are among those well-connected with this population. Involving them in providing primary eye care is viable in many eye care programs. *These primary-level workers are proven influential in eye health promotion, early detection of eye problems, and referral to eye care facilities for further care.*

These primary-level workers are proven influential in eye health promotion, early detection of eye problems, and referral to eye care facilities for further care

Apart from these primary workers, we can also include volunteers from various formal and non-formalized groups. These volunteers can be mainly from the groups who work among the old age population.

Role clarity, training, education, and skill transfer will make the community members do their tasks effectively.

Key Role of the Community Members

Once the member from the community is identified to facilitate primary level eye care, the next important point is to decide on the key roles and make necessary skill transfer to make them competent to perform these expected roles.

These identified community members primarily have three significant roles to play, which are as follows-

Health Promotion

The community member should be able to spread various messages on eye care to ensure good eye health among the population they serve. This message should include the common eye problems and their solutions and available quality eye care providers within reach. They should also spread the message and importance of routine eye examinations. Creating proactive health-seeking behaviour among the population and avoiding self and other non-proven traditional remedies is the primary purpose of these efforts.

Focus on Preventive Measures

The selected community members are also expected to communicate standard preventive measures for good eye health. This measure includes but is not limited to making the population aware of the effect of uncontrolled diabetes on the eye and using safety measures while doing jobs that can affect eye health. Timely Check for glaucoma among those who have a family history and the importance of a balanced diet for good eye health also.

Early Identification of Eye Problems, Referral, Follow-Up Care, and Rehabilitation

These selected community members can also be trained to do preliminary visual acuity measurements to decide on referral for further eye examination and detailed assessment. Here these community members' role is always not to identify any particular eye disease but to suspect abnormalities early and timely referral for further examination of follow-up care. With due training, they can also assist in follow-up care like Cataract post-operative care.

Training and Capacity Building

To do the roles assigned efficiently, there has to be a proper training and education session for these community members, and it has to be done with pre- and post-assessment of candidates' capabilities and skill set.

Their training curriculum should cover the Basics of eye care and anatomy, common eye diseases that affect the 50+ population, and the treatment modalities of each disease. They should also be taught how to do preliminary visual acuity measurement, document and referral to further centres for those suspected of some vision problems. They also should be taught an efficient way of working in a team, ensuring coverage among the entire service area, handling eye emergencies, data management, reporting, and many other related tasks to ensure they can do the work effectively and consistently. The use of IT, where ever applicable, also should be taught.

Resources and Facilities

Once the member is identified and trained, we need to ensure they are equipped and supported externally to ensure they can reach each individual in the population to do the preliminary vision assessment and referral as expected. The screening can take place in individual households. Common programs can be done in schools and other public facilities which have more potential to have an old-age gathering like religious events, old age homes, and many others so that the population can participate and benefit.

These members also should be provided with equipment (mainly torch and vision chart, measuring tape, pen, note pads, survey register, web/mobile applications) and other supplies (mainly leaflets, educational booklets, flip charts, eye referral card) to ensure they can perform the duties efficiently and effectively.

Case Study

Creating Cataract Blindness Backlog Free District with Community Based Approach

In developing countries like India, Cataract still stands out as the major cause of avoidable blindness. Due to lack of awareness, access to eye care services and affordability among the people, the backlog of blinding cataract cases in the rural areas are increasing significantly. Rural areas report the largest backlog of blindness due to Cataract.

Photo Credit: Sadguru Netra Chikitsalaya

Involving ASHA and Anganwadi workers to Improve Cataract Surgical Service Uptake and Follow up care

This community-based initiative adopted by Sadguru Netra Chikitsalaya in Madhya Pradesh is evolved to tackle all such backlogs of blinding cataract with a sustainable mechanism. This focused action ensures reachability (in the specified area) of cataract services to every person affected. By adding the ASHA and Anganwadi workers into the tier of eye care service delivery, this model demonstrates a workable and sustainable approach to the entire eye care fraternity. In villages about 6,000 trained (as part of the programme) ASHA and Anganwadi workers conducted door to door surveys (of 50+ population) for identification of patients suffering with visual impairment and blindness and referred them to camp sites as per the pre-decided camp schedule. All the patients who underwent cataract surgery were provided with follow-up services after one month at their respective villages. All the patients present for follow-up were provided with spectacles (for best corrected vision).

A total of 6,000 ASHA and Anganwadi workers were trained and through this approach about 75,000 cataract surgeries were conducted in five districts in the time span of three years and post op surgical follow up was also improved significantly. Gender balance was also highlighted in the service delivery.

Through this community-based model, the organisation was able to demonstrate how existing resources can effectively be mobilized and utilized towards the elimination of needless blindness in the backward/rural areas. The trained ASHA and Anganwadi workers and the supportive machineries oriented along with are going to be in the same community for longer time.

Primary Eye Care Provision for the Children and Adolescent Age Group (0- 18) – Key Considerations

About one-third of the population of India is children[12]. Eye health is essential for children, and childhood vision disorders may continue to effect health and well-being throughout the individual's adult years[13].

Reducing blindness and visual loss in children remains a high priority in WHO, and Vision 2020. Providing primary eye care for children is a reliable strategy in this regard. However, there has been limited progress in implementing PEC for children as a key component of the continuum of care[14].

Major eye diseases among this age group include Congenital cataracts, glaucoma, Ocular trauma, squint, strabismus, refractive error, Retinopathy of prematurity, Retinoblastoma, vitamin A deficiency, and other ocular abnormalities.

Key Members to Participate in Community

Health workers (such as nurses) at the primary level health system can be involved in the primary eye care needs among early-aged (0- 6) children. Whereas for School-aged children (07 -18), school teachers, ASHA and Anganwadi workers (for non-schooling children) can be involved.

Apart from this, the role of a Neonatal Intensive Care Unit Staff and other general health practitioners, including maternity and paediatric care, are essential in facilitating primary-level eye care for diseases like Retinopathy of prematurity.

The involvement of community-based workers /volunteers in identifying childhood blindness and visual impairment cases among the remote and unreached also can be considered.

Key Roles of the Community Members

Similar like other age groups, these identified members also should be involved in health promotion, prevention and early identification of visual problems among this age group.

Training and capacity building also needs to be planned at appropriate level and with use of resources to ensure the quality of assessment at this crucial age group.

Primary Eye Care Provision for the active working-age Population (19- 49 Age Group) Key Considerations

India surpassed the UK to become the world's fifth-biggest economy[15]. Our real strength is our active working population; their overall well-being and health are crucial[16]. Many studies have evidenced quality eye health and its positive role in productivity[17]. Bringing out a person from a visual problem not only reduces the burden on the self but also supports other members of the family and society[18].

Due to the changing lifestyle and near indoor work, the problem of refractive error, especially myopia, is an unavoidable pandemic[19]. Presbyopia prevalence is also increasing rapidly yearly among this age group. Dry Eye, Computer Vision Syndrome, and other ocular problems also stand as a point of concern. Along with this, due to chronic conditions like diabetes, eye health issues are rising rapidly and steadily among this age group[20].

The provision of primary eye care with the provision of health promotion, prevention, early treatment, and follow-up care is very much required to this age group.

Key Members to Participate in Community

The community's involvement can play a significant role in ensuring primary eye care for this active age population.

Similar to other age groups, *Accredited Social Health Activists (ASHA), Anganwadi Workers and Mahila Arogya Samiti (MAS) can play a big role.* Apart from these primary workers, we can also include volunteers from various formal and non-formalized groups like workers unions. These volunteers can play a bigger role in ensuring good eye health to this crucial age group.

> Accredited Social Health Activists (ASHA), Anganwadi Workers and Mahila Arogya Samiti (MAS) can play a big role

Key Role of the Community Members

In this age group the community members mainly work on promoting good eye health practice and regular eye examinations with progress in age. Preventive and promotive focus should give emphasis on areas of Eye Health friendly diets, promotion of adequate outdoor activities, guidelines on usage of computers and electronic devices, safeguarding eyes at work and other measures to care for eyes as one progresses with age. The identification part, regular vision assessment for both distant and near, and referral to appropriate centres, need to be ensured by these identified community members.

Training, Capacity Building and Resources

Apart from the regular training as similar to the other age group, safeguarding of eyes at work, usage and availability of common eye safety devices. Added to that specific things like computer vision syndrome, continued usage of electronic devices needs to be thoroughly communicated with key preventive measures.

Resources can also be similar to other age groups and for the screening, apart from the regular sites, factories and other common workplaces also can be utilised. With the direct impact of eye problems on one's productivity, involvement of employers and self-help groups and employee associations can be easily gathered and thus, can be sustained for a longer period of time with proper planning and implementation.

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PART B: PRIMARY EYE CARE THROUGH HEALTH AND WELLNESS CENTRES

Service Delivery Framework

HWCs are envisaged to deliver expanded range services that go beyond maternal and child health care services to include care for non -communicable diseases, palliative and rehabilitative care, Oral, Eye and ENT care, mental health and first level care for emergencies and trauma, including free essential drugs and diagnostic services.[1,2]

This is a selective approach to health care to deliver a comprehensive range of services spanning preventive, promotive, curative, rehabilitative and palliative care. It has two components which are complementary to each other. Under its first component, 1,50,000 Health & Wellness Centres (HWCs) will be created to deliver Comprehensive Primary Health Care, that is universal and free to users, with a focus on wellness and the delivery of an expanded range of services closer to the community.[1,2]

In order to ensure delivery of Comprehensive Primary Health Care (CPHC) services, existing Sub Health Centres covering a population of 3000-5000 would be converted to Health and Wellness Centres (HWC), with the principle being "time to care" to be no more than 30 minutes. Primary Health Centres in rural and urban areas would also be converted to HWCs.

1. Concept

Health and Wellness Centres-Sub Health Centre/Primary Health Centre/ Urban PHC level:[1]

- At the HWC-SHC, the Primary Health Care team, led by a Community Health Officer (CHO) would ensure that regular eye screening is undertaken. They would coordinate with the Rashtriya Bal Swasthya Karyakram (RBSK) Team for screening children of age group 0-18 years in the Anganwadi and schools, manage the referral of those requiring surgery and treatment of refractive errors, ensure access to free spectacles, and would also undertake home and community-based follow up visits.
- The Medical Officer (MBBS) at the HWC-PHC/UPHC would be responsible for ensuring that eye care services are delivered through all HWCs in her/his area and through the PHC itself.
- Where available, services of the Vision Centres, at the level of 50,000 population would be utilized so as to leverage the services of the optometrist/Para Medical Ophthalmic Assistants (PMOA). Currently, the plan is to establish Vision Centres at the level of Community Health Centres (secondary level health centres) later scaling up to the Primary Health Centre level.

2. Objectives

- Increasing the penetration or coverage with reference to those in need of eye care
- Empowering patients to seek eye care on their own, without having to wait for an eye camp
- Increasing accessibility by making the care more affordable and by reducing the effort required to access it

3. Benefits

Health Benefits

- Enhanced patient care locally
- Better health seeking behavior in the community
- Comprehensive eye care to the community

Cost Benefits

- Each HWC is equipped to provide comprehensive care for a population of 5,000 to 10,000. About 90% of the patients are treated at HWC itself by providing medicines and spectacles. Only 7 to 10% of the

patients are referred to district Hospital/base hospital for further treatment such as cataract surgeries and sub-specialty care. The total cost of accessing eye care is now considerably lower for 90% of the patients, as the incidental costs (travel, loss of wages) of travelling to the base hospital are eliminated.

Photo Credit: Sadguru Netra Chikitsalaya

- Proper prescription by trained personnel, prescribed medicines or spectacles made available locally in such locations at a fair price, eliminating the costs associated with procuring them which often would entail a trip to the town.
- It is roughly estimated that the cost savings per HWC visit will be around Rs.250 to Rs. 300 compared to secondary/base hospital visit.

4. Need Assessment estimates in 1000 population

- Cataract: 10-15 Operable cataract cases
- Refractive Error adults: 200 (including Presbyopia)
- Glaucoma: 3-10 cases
- Diabetes: 25-50 cases and 5-10 DR cases
- Refractive Error in children: 20-25 cases
- Vitamin A deficiency: 0-3 case

5. Service delivery at HWC level

Main Areas of Eye Care at HWC level

- Diagnosis including refraction and Screening of Blindness and Refractive Errors
- The Community Health Officer would ensure the screening and management of School and Anganwadi children aged 0-18 years for refractive errors, and ensure spectacle delivery. And referrals too.

6. List of services to be provided at HWC level

HWC		
Services	**Preventive and curative care**	**Responsibilities**
Screening for Blindness and Refractive errors	• Visual acuity testing by Snellen's chart and Near vision card • Case identification for cataract, Presbyopia and corneal disease • Screening for Visual acuity in Diabetic Patients. • Dispensing medicines for conjunctivitis, Dry eye, trachoma follow-up medicines for chronic eye diseases (e.g. Cataract, Glaucoma and Diabetes) treated at referral centre	CHO/ANM/MPW
	School Vision Screening	School Teachers
Conjunctivitis, Acute red eye and eye allergy	Awareness and precaution to avoid spread	CHO
Trachoma	• Awareness and SAFE strategy • Awareness generation on eye donation • Refer patients to higher centres for treatment (personal hygiene, facial cleanliness and cleanliness of environment to prevent spread of Trachoma)	CHO
Xerophthalmia	To identify and treat Vit A Prophylaxis	CHO/ANM/MPW
First aid for Foreign Body, Eye injuries, stabilization and then referral	Wash. Referrals with antibiotics	CHO
Chemical (Acid/Alkali) exposure	Wash. Referrals with antibiotics	CHO/ANM/MPW
IEC Activities	Avoid touching face and eye in any eye infections Eye Donation Awareness	CHO/ANM/MPW

7. Instruments/Equipment

The following equipments should be available at Health & Wellness centre:

HWC-Sub Centre level	HWC-PHC/Urban PHC level	School Vision screening3
Instruments: Covered stainless steel tray with sterile cotton /swabs. **Equipment:** • Illuminated vision cart (Near and distance) • Torch with Batteries • Data Entry-Register or tablet digital/PC • IEC material and flip charts, brochures for common eye diseases.	All mentioned in HWC-Sub Centre level with Trial box, vision chart and vision drum. additional Non-Mydriatic fundus camera, Slit lamp, Direct and Indirect Ophthalmoscope	**School teacher kit:** Vision screening card for 6/12 vision, occluder, measuring tape, recording format, reading module, referral cards.

8. Medicines and other consumables

The following medicines and consumables should be available at Community, Health and Wellness Centres - SHC/PHC/UPHC and Referral Centre.

HWC-Sub Centre	HWC-PHC-UPHC
Essential: • Lubricant eye drops (HPMC/CMCs) and Sodium Cromoglycate 2% eye drops **Desirable:** (to be dispensed only on prescription of a registered Medical Practitioner): Ciprofloxacin eye drops Tropicamide 1% eye drops	Lubricant eye drops (HPMC/CMCs) and Sodium Cromoglycate 2% eye drops Ciprofloxacin 0.3% eye drops Lignocaine eye drops Tropicamide 1% eye drops All other medicines as per
**Do not use / store eye drops containing steroids* ***To be dispensed only on prescription of a registered Medical Practitioner*	

9. Human Resources Training and Capacity Building

The main objective is to implement Primary Eye Care (PEC) at community level, Health and Wellness Centre (H&WC) and vision centre level. We need to build the capacity of existing care providers at the government health system for effective implementation of PEC in a sustainable manner. The following training and capacity building activities can be imparted to them to implement the PEC services effectively.

Human Resource at Health and Wellness Centre

HR Required	Skill Required	Training Required
MPHW (M/F)-6 months course	-Support provision of first level of Ophthalmic care	Included in one day joint training on Universal screening, prevention and management of NCDs along with ASHAs.
Mid-Level Health provider/ANM	First aid stabilization and care of common emergencies -Supportive supervision of field level functionaries	6 months certificate course and 5-7 days supplementary training

10. Engaging Volunteers/Health Workers from NGOs and Training and Capacity Building

under public-private partnership model discussed in the section, Public Private Partnership (PPP) Model and Cross collaboration with NGOs.

11. Public Private Partnership (PPP) Model and Cross collaboration with NGOs

The Public Private Partnership is a time-tested approach to address the public health problems through joint ventures in many countries including India

The public Private partnership is a time-tested approach to address the public health problems through joint ventures in many countries including India. The partnership may be in terms of financial as well as Non-financial resources with common interest for public welfare. [4,5]

There are a few emerging PPP models where the private/NGO sector has collaborated with the government health sector to provide quality care accessible nearer to the community

There are a few emerging PPP models where the private/NGO sector has collaborated with the government health sector to provide quality care accessible nearer to the community. Sharable resources in this PPP model include Human resource (e.g. VT/volunteers), premises of both government and NGO base hospital facilities, consumables etc. This would ease inconveniences of sub-specialty eye care services like services for retina, glaucoma, cornea, pediatric ophthalmology, oculoplasty, rehabilitation of irreversibly blind people, etc.

This PPP model needs to be strengthened and extended to HWCs also so that communities may benefit more from these collaborative efforts.

12. Effective Linkages/Referrals and Rehabilitation-Registers with formats

Referral and Treatment: Ensuring Continuity of Care:

- Effective linkages to be developed from peripheral level to district level with the help of functionaries and frontline workers, including PRIs/ULBs, Primary Health Care team at HWC, Public Health Nurses, School teachers, School health doctors and sensitized parents, Private Ophthalmologists and District level officials.
- All patients identified with eye related problems that require surgery or emergency care will be referred to the Ophthalmologist at the secondary level.
- For identified cases, the follow up for treatment compliance and continuum of care has to be planned at the level of HWC/SC/PHC/UPHC itself.

REFERRAL MANAGEMENT

A register needs to be maintained for all the patients who are referred from the HWCs

A register needs to be maintained for all the patients who are referred from the HWCs and follow-up phone calls can be made periodically to enquire about their visit to the base hospital. This is a measure of referral compliance. A register also should be maintained at the base hospital to record the referral source of the patient and provide feedback to HWCs once the loop is completed. *This referral system can be greatly simplified with the digital systems and electronic medical records where the personnel at the HWC are alerted as soon as the patients visit the base hospital*. Having a mechanism to give a unique number to each patient will help to track patients across the eye care network. Facilities such as SMS services can be considered to increase the referral uptake on the services.

Effective linkages need to be developed from peripheral level to district level with the help of functionaries and frontline workers, including PRIs/ULBs, Primary Health Care team at HWC, Public Health Nurses, School teachers, School health doctors and sensitized parents, Private Ophthalmologists and District level officials. All patients identified with eye related problems that require surgery or emergency care will be referred to the Ophthalmologist at the secondary level. Complicated cases that cannot be adequately handled at the District hospital will be further referred to the State

Medical College for expert treatment. For identified cases, the follow up for treatment compliance and continuum of care has to be planned at the level of HWC/SC/PHC/UPHC itself. There needs to be a closed loop between the primary care medical provider and the specialist. This can be achieved when the specialists at district facility or higher are able to communicate to the medical officer of the adequacy of treatment, any change in treatment plans, and further referral action. *In order to expand access to services, and reach remote populations, Mobile Medical Units and Tele-Ophthalmology would enable an expansion of service delivery and serve the role of enabling the provision of care and serving to establish Continuum of care*. Medical colleges with existing Ophthalmic set up will act as tertiary referral centres, providing follow- up care Follow-up is a very important step in order to complete the cycle of comprehensive health care. All cases that are referred for further management to HWC-PHC and higher centres/ referral centres will return to the community. With support of ANM/MPW, ASHA will provide home and community-based follow up visits to such individuals and ensure that they receive complete care and, if on treatment, are complying with all the advice given to them. Long term follow- up will be necessary for certain cases.[1]

Effective linkages need to be developed from peripheral level to district level with the help of functionaries and frontline workers, including PRIs/ ULBs, Primary Health Care team

In order to expand access to services, and reach remote populations, Mobile Medical Units and Tele-Ophthalmology would enable an expansion of service delivery and serve the role of enabling the provision of care and serving to establish Continuum of care

13. School Vision Screening Component

Timely detection and treatment of refractive errors with just a pair of spectacles and other potential ocular conditions can improve the children's potential during their formative years. Visual impairment is an avoidable burden in the life of a child, his/her families and also the society. That's why periodic screening of all children by school teachers via school screening helps in early detection of visual defects and correction of refractive errors by prescription/use of corrective spectacles.

Reading and writing are basic school activities requiring good eyesight. School children are a captive group and can be easily reached through an organized educational system. Teachers interact with pupils daily and therefore it is very easy to observe their behaviour that detects early visual defects. Also, school teachers who are always available at school can ensure compliance on use of spectacles among children who are using spectacles. Moreover, they are good counsellors to parents and students and motivate them to use spectacles regularly. Using school teachers can reduce workload on ophthalmic assistants. Children can be good ambassadors to propagate key health messages not only to their homes but also via their siblings and friends to the society also.

The actual planning of School Vision screening must be done keeping in mind various factors like holidays, local festivals, examinations, vacation, etc. Children of school going age (9-14 years, 5th grade and onwards) are ideal. This should be carried out every Year, usually during April-September each year as October onwards the number of Cataract surgeries increases.[3,6]

Screening Kit Includes:

Screening cards	2
Occluder	1
Referral cards	10% of the total no. of children in the school
Measuring tape/ rope (6 Meters)	1
Record register/Forms	According to the need

14. Outputs, Outcomes and Impact

Outputs	Outcomes	Impact
• The Database creation • Health Cards and family health folders • Increased access to service	• Improved population coverage • Reduced Out of pocket expenditure and catastrophic health expenditure • Risk factor mitigation • Decongestion of secondary and tertiary health facilities	• Improved Population Health Outcomes • Increased responsiveness • Improved learning

15. Quality of Care

Monitoring and periodic evaluation is the backbone to ensure quality eye care provided at HWC. In addition, following points may help ensure quality.

- Patient centered and respectful care
- Patient centric amenities at HWC
- Adhere standard treatment/screening/diagnostic guidelines and clinical protocols for care provision.
- Implement National Quality Assurance standard

16. Sustainability

Aim of HWCs is to provide accessible, affordable and acceptable services to the local community. For long term sustainability, ensuring continuum of care, good leadership, support from the base hospital and a well-defined management structure is essential. Regular monitoring and timely actions are mandatory to preserve the long-term and credibility. *Local networking with Panchayats, Local Medical practitioners, primary health centre, women Groups, local NGOs, Schools, other groups and individuals are vital*.

Local networking with Panchayats, Local Medical practitioners, primary health Centre, women Groups, local NGOs, Schools, other groups and individuals are vital

Selection of local human resources to retain them for a longer duration, providing a career path, showing the avenues for professional growth, regular communication and Continuing Professional Development (CPD) courses will help in keeping the teams motivated. Ensure that there is local ownership.[7-10] The 'word of mouth publicity' on good services will attract more patients and re-visits, thus ensuring more foot falls and more referrals to secondary centres. Referral pathways as discussed in point number 12 under the heading of Effective Linkages /Referrals will ease burden on one particular level of eye care facility, ensure the continuity of Care and make it more sustainable in the long run.

Selection of local human resources to retain them for a longer duration, providing a career path, showing the avenues for professional growth, regular communication and Continuing Professional Development (CPD) courses will help in keeping the teams motivated

17. Monitoring and Evaluation-Registers with Formats- Periodic Monitoring and Evaluation

Monitoring and Supervision indicators of HWCs are shown below:

At Health & Wellness Centre

- Number of ASHA trained
- Population screened

- Visually impaired in either eye identified
- Cataract surgeries conducted from the catchment area.
- Number of Teachers Trained
- Number of children screened in school
- Number of children identified with VA<6/12 in any eye.
- Number of children diagnosed with Refractive Error
- Number of Children Prescribed with spectacles.

In addition, annual patient satisfaction surveys help in improving services.

Monitoring of HWCs can be done at two levels, at the HWC[1] level and the CHC level and can be divided into Clinical monitoring and Non-clinical monitoring. Monitoring led by CHO, focuses on adherence to the clinical protocols, reviewing the case records, review of the facility, maintenance upkeep, grooming of the personnel, functioning of the equipment, documentation and bookkeeping (including registers and bills books), inventory check and other non-clinical areas. and providing constructive feedback for improvement.

Frequency: At least once in three months (essential), monthly (desirable)

Duration: 3-4 hours per visit per vision centre

After every cycle of monitoring a Continuing Professional Development programme can be planned to review the findings, preferably every month or at least once in three months.

Management information system (MIS) should include a few indicators to review the performance of the HWCs overtime and also to compare performance of the other HWCs. The HWC MIS can be a simple spreadsheet excel or any other digital method can be used to show trends visualization and display. The essential minimum indicators can be included in the regular monitoring of HWCs in Table 1.

Table 1. Monitoring indicators for performance of HWC

Indicator	Formula for estimation	Frequency	Source
Average Screening Output	No. of people screened / day	Monthly	HWC report / Electronic medical records
Proportion of blind and Visually impaired identified	(Number of blind and Visually impaired identified /catchment population of HWC X 100)	Monthly	HWC report / Electronic medical records
Percentage of blind and Visually impaired referred	(Number of blind and Visually impaired referred/total number of individuals identified as being blind and Visually impaired X 100)	Monthly	HWC report / Electronic medical records
Percentage of cataract identified and referred.	(Number of cases with cataract identified and referred/total number of home visits X 100)	Monthly	HWC report / Electronic medical records
Percentage of Diabetic patients	(New/Known cases) identified and referred (Number of OPD cases with diabetic patients (New/Known cases) identified and referred/ total number of OPD X 100)	Monthly	HWC report / Electronic medical records

Indicator	Formula for estimation	Frequency	Source
Percentage of eye injuries identified and referred	(Number of OPD cases with eye injuries identified and referred/total number of OPD X 100)		HWC report / Electronic medical records
Referral rate (%)	(No. of people identified with Non-Correctable VI / Total number of patients examined) X 100	Monthly	HWC report / Electronic medical records
Referral conversion rate (%)	(No. of people who attended the base hospital / Total referrals given) X 100	Monthly	HWC report / Electronic medical records
Tele-ophthalmology referral rate (%)	(No. of people referred for tele-ophthalmology consultation / Total number of the patients examined) X 100	Monthly	HWC report / Electronic medical records
HWC Coverage (%)	Total number of unique patients examined / Total population in the catchment) X 100	Quarterly / Annual	HWC report / Electronic medical records

Checklist for Monitoring of Health and Wellness Centres

Checklist for Clinical monitoring of Health and Wellness Centres

Name of MPHW/ANM/AOP:_____Place:_____ Date:_____

(Based on records maintained by staff at HWC, At least 5% of the records selected randomly should be reviewed by the monitoring team)

Sr. No.	Parameter	Yes/ No	Comments	Actions needed, if any
1	Completeness of Personal and demographic Data ((Full name, complete address, contact phone number, Aadhar card number/ Identity card number			
2	Adequate history –Chief Complaint mentioned clearly with frequency and duration of signs and symptoms			
3	Correct documentation of Visual acuity- Distance and near			
4	Appropriateness of referral for tele-ophthalmology, if applicable.			
5	Appropriateness of referral for secondary centres			

Checklist for regular monitoring of Health and Wellness Centres

(can be used by CHO or visiting staff from Base Hospital)

Name of MPHW/ANM/AOP:_____Place:_____ Date:_____

(Based on records maintained by staff at HWC, At least 5% of the records selected randomly should be reviewed by the monitoring team)

Sr No.	Parameters	Yes/No/Not applicable	Comment, if any
1	Adherence to the protocol of complete eye examination		
2	Good documentation- Bill books, case sheets and registers		
3	Good maintenance of power supply and Instruments		
4	Good display of IEC material in the HWC		
5	Personnel well groomed		
6	Linkages and regular meetings with ASHA		
7	Others ((Problem faced by personnel), please specify.		

Eye Health Promotion and Prevention Strategies- Community Level

Major Eye health Promotion and prevention activities which can be taken place at the community level though various community-based workers are as follows:

- Generating awareness on common eye disorders and the need for early care seeking.
- Use of various IEC models to tackle misleading myths and taboos in the society and to guide people towards the best eye care available. This effort also includes discouraging the use of traditional eye medication or self-medication. Providing Information about availability of services related to eye treatment at different levels of healthcare
- Conveying focused messages like importance of regular eye screening for people living with diabetes mellitus (for diabetic retinopathy) and screening for glaucoma for people with positive family history.
- Focused group message on presbyopia for 35+ aged population and refractive error effect on productivity and screening of 35 + population, especially at various workplace settings.
- Encourage eye examination for all children who were preterm (less than 32 weeks) or low birth weight (less than 2 kg) within 30 days of their birth through various government programs.
- Sharing the information on importance of quality eye health and its relevance on child overall growth and effect on education.
- Focusing on early detection and its importance in diseases like glaucoma and retinal pathologies, where unlike cataract, reversal or vision restoration is difficult, against its preservation.

- To ensure Vitamin A prophylaxis routinely for children under age 6 months to 5 Years.
- Identification/Mobilization of patients with identified eye disease (of known diabetic, identified patients).
- Referral and follow up for availability of eye care services at referral centres.
- Follow up of post-operative cataract patients and distribution of spectacles to them with support of eye care providers in the community.
- To ensure regular use of spectacles and follow-up biannually in children with refractive error.
- Encouraging Outdoor activities for children and its importance in eye health and progression of myopia.
- Use of digital devices and precautions while using, to be promoted and shared across the groups including parents of school going children.
- Eye safety for children, especially corneal injuries, including on occasions of festivals like Holi and Deepavali needs to be promoted.
- Workplace eye safety for adults also needs to be promoted and availability of safety devices (like protective goggles) needs to be assured.

Improvement of eye health care in any given community can only be realised with support of the community itself. Guidelines and case studies discussed here can be used as a guiding tool to achieve the same

Each community is different, their beliefs, traditions and customs will have an effect on community members' behaviours and willingness to accept any service delivery models that are being offered

A way forward….

Improvement of eye health care in any given community can only be realised with support of the community itself. Guidelines and case studies discussed here can be used as a guiding tool to achieve the same. It is to be stressed here that there is no 'one size fits all' and each time we need to conform the activity, plans and everything tailored to the needs of the communities. *Each community is different, their beliefs, traditions and customs will have an effect on community members' behaviours and willingness to accept any service delivery models that are being offered*.

The barriers in each community also vary so the solutions as well, it is therefore essential to understand the problem in each community by involving people in the community level and plan programmes accordingly; justifying people centric approach of eye care.

As far as the HWCs are concerned, patient satisfaction is of paramount importance. The factors associated with the success of the HWC would depend on competence of the MPHW/ANM/AOP at the HWC, accessibility of the HWCs and proper monitoring regarding functioning and quality of activities. This will ensure that primary eye care is delivered to all those in need. There will be significant cost-saving as primary eye care is being delivered nearer to the community.[11,12] There is ample evidence that permanent, sustainable primary eye care, well-integrated with secondary and higher levels of care is essential to achieve the goal of 'Universal Eye Health' in India.

ANNEXURES

Screening Tools to be used at various levels

(Note: All Vision testing charts attached here are for reference. For the actual screening process use the actual printed charts).

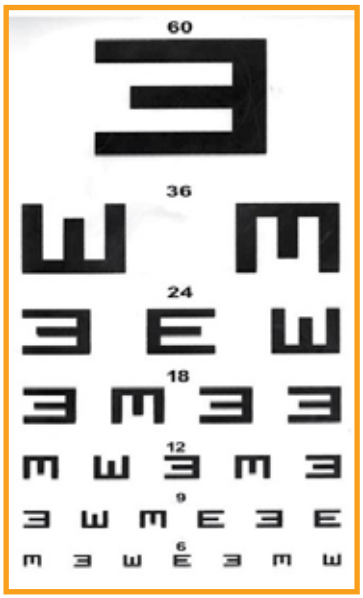
Annexure-1: Vision Chart at Community level (representative image)

6/60 Snellen Chart

6/18 Snellen Chart

Annexure-2: Distance and Near vision chart (representative image)

1. Snellen's chart



2. Near vision chart

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Photo Credit: LV Prasad Eye Institute

3

Framework for Planning and Establishing Vision Centres in India

INTRODUCTION

India is home to over 257 million people with vision loss.[1] Fortunately, over 80% of the vision loss is avoidable, that is either preventable or treatable.[2] Cataract and Uncorrected Refractive Errors are the leading causes of vision loss and can be addressed with cost-effective interventions.[2] India has been a pioneer in blindness prevention programmes and was the first in the world to set-up the National Programme for Control of Blindness (NPCB) in 1976.[3] It was followed by a large-scale world bank-funded cataract blindness programme that led to high cataract surgical rates in many parts of the country.[4] It is evident from the decline of blindness in India over time with the recent national survey showing a prevalence of blindness as 0.3%.[5]

1. The concept and the need

- Another innovation from India in the arena of primary eye care is the vision centre concept. L V Prasad Eye Institute initiated this model in 1992, and later in 2002 upscaled it as part of the 'LVPEI Pyramidal Model of Eye Care Service Delivery'.[6] Following this, vision centres gained popularity and several eye care organizations adopted this concept with relevant modifications.[7] *A vision centre is a permanent primary eye care facility that provides sustainable eye care using appropriate human resources and infrastructure.* The major causes of vision loss like refractive errors can be corrected, resulting in substantial savings to the individual and the community. The epidemiological studies have indicated that 20-30% of the population needs eye care. Another rationale for establishing the vision centres is that early detection of eye conditions has better prognosis and outcomes. Vision Centres are the first point of contact, each catering to the primary eye care needs of 50,000 to 100,000 population.

  A vision centre is a permanent primary eye care facility that provides sustainable eye care using appropriate human resources and infrastructure

  In addition to development of horizontal linkages with primary health care and provide Information, Education and Communication on issues related to eye care in the community, the core activities of the vision centre can be summarized by "3 R's":

- Recognition of common blinding conditions.

- Refraction and dispensing of glasses.
- Referral of complex eye conditions to the next level of care.

The pandemic has proved the robustness of this model with a clear indication that the vision centres approach is the way forward for comprehensive primary care to achieve the overarching goal of universal eye health in India. Given this background, this chapter provides an overview of the vision centre model as practised in India predominantly in the Non-Government sector and Private sector. It also provides insights on how organizations can develop vision centres with relevant modifications. In the government sector, vision centres are planned at Health and Wellness Centres as a part of the comprehensive Primary Health Care. The operational guidelines for these centres are reported on hwc.nhp.gov.in/download/document/Operational_Guidelines_for_Primary_Eye_Care_at_HWCs.pdf

2. Planning and setting up a vision centre in Non-Government Sector / Private sector

A thorough situational analysis is required before setting up a vision centre and may include the following stages:

(a) **Need assessment and mapping of key stakeholders:** Doing a quick survey, using information and hospital-based data on the availability of other service providers, and the range of services offered. It will ensure that services are not duplicated and result in better utilization of resources elsewhere. The presence of other Non-Governmental Organizations can also be documented for networking and a possible partnerships.

(b) **Selection of a location:** The selection of the location for VC and the specific site / premises are the next steps in establishing the VC. Following are the suggested reference criteria for selecting a suitable location to set-up a vision centre:

(i) **Base population of the VC location:** At least 10,000 (5000 in cases of remote / tribal areas) with a catchment population of 50,000 to 100,000

(ii) **Market hub in a sub-district:** A good floating population from neighbouring villages, preferably a sub-district so that services can be utilized by the villagers who usually come to a hub for their marketing and other needs. Also, it should be a place that is visited by several villagers for their day-to-day transactions such as trading, health, education, and contacting government and political representatives etc.

(iii) **Good connectivity:** In terms of public transport availability and reach.

(iv) **Distance from the secondary centre:** Within 50 km or less than one-hour travel time from the nearest referral centres or secondary hospital (with exception of tribal and remote location): It will help for referrals and for the supply of spectacles, support services, consumables and enable regular monitoring for quality.

(v) **Community support:** Involvement of community/ rent-free premises/operational expenses support for a limited duration and recruitment of vision technicians. This can be based on the previous work carried out by the organization in the region.

(c) **Defining the coverage of the vision centres:** It is critical to decide on the catchment population for each vision centre. It can be considered as a denominator for assessing the coverage over time. The names of the villages and their respective population (as per the latest Census), and distance can be defined. The catchment area of a typical vision centre can range from 50,000 to 100,000 population.

(d) **Recruitment / Identification of human resources:** Recruitment of human resources from local areas should be considered for long term suitability and continuity of care. Recruitment and posting of local personnel is one of the critical success factors for a vision centre.

(e) **Establish the spectacles delivery, referral services and monitoring framework:** As vision centres predominantly focus on the correction of refractive errors, a system needs to be in place for supply of frames and lenses. If the fitting of lenses is happening at the secondary centre, then a mechanism should be developed for smooth movement of the spectacle-frames selected by the patients and return of fitted spectacles. On similar lines, a framework for referrals should be in place.

(f) **Procurement of equipment, furniture, and vision centre space development:** All the required equipment orders need to be placed well in advance to avoid any delays in the opening of the vision centre due to

the non-arrival of the equipment. Also, vision centres are typically established on rented premises, so there might be a need to modify the facility to give a look and feel of an eye clinic. The layout to suit the workflow needs to be created with a movable partition, to separate the clinical area, dispensing area, and patient seating area. It may include whitewashing, making some changes in electrical wiring to suit the placement of the equipment, curtains for windows and placing appropriate information, education, and communication messages on the walls. With COVID-19 pandemic, the facility should be compliant with the established norms for preventing the spread of infection.

(g) **Awareness generation about the services in the community and their involvement:** Simultaneously, groundwork on the dissemination of information about the inauguration of the services should be planned to reach out to all the stakeholders including local key opinion leaders and local health and other service authorities.

(h) **Inauguration of the services:** Once everything is in place, a formal inauguration can be scheduled, preferably by an eminent person in the locality which is likely to give media attention and contribute to awareness generation in the region.

Funding the vision centres: Vision centres should be viewed as an extension of the out-patient services of an eye hospital / secondary centre. The funding support for capital costs can either come from the hospital's internal funds or national or international funding agencies. The recurrent expenses should be taken care of by revenues generated from the services provided at the centre.

Sources for Capital Support:

- Grants from local philanthropists
- Grants from national and international Non-Governmental Organizations
- Local industry support
- Funds from Corporate Social Responsibility from large business establishment and entrepreneurs

Sources for Recurring Expenses:

- Sale of spectacles
- User fee / Consultation fee (where applicable)
- Local support in kind (such as 'rent-free' premises, salary support and other support)
- Notional income from paid and subsidized surgeries should also be considered

3. Infrastructure at the Vision Centre

The primary goal of a vision centre is to provide a basic-eye examination. Vision centres should be attractive and patient-friendly. *Approximately 300 to 400 Square feet is required to set up a vision centre divided into an examination area, optical dispensing and counselling area and waiting area for patients.* The facility also should have a toilet and drinking facility. Catering to the unprecedented times of COVID 19 pandemic there have been few proposed modifications to the existing design of typical vision centres *(Figure 1)*. IEC material, developed in regional language and easily understood by the people in the rural areas, should be displayed in the waiting area. The equipment at a Vision Centre is shown in Table 1.

Approximately 300 to 400 Square feet is required to set up a vision centre divided into an examination area, optical dispensing and counselling area and waiting area for patients

4. Human Resources at the Vision Centres

The human resources for a cluster of vision centres are described in *Table 2*.

At the Level of a Vision Centre

Clinical personnel:

- **Essential Requirement:** Vision centres are staffed by one or two Allied Ophthalmic Personnel (including vision technicians, ophthalmic assistants, ophthalmic technicians, and other human resources with a minimum training of at least two years after 10+2 education).
- **Desirable:** Optometrists (with a 3–4-year degree)

Photo Credit: LV Prasad Eye Institute

Non-clinical Personnel:

- **Minimum requirement:** One patient counsellor (if patients numbers are more than 20 per day)
- **Desirable:** Counsellor + Optician/sales + Community Eye Health Worker

At the level of secondary centre for a cluster of 5-10 vision centres

Clinical Personnel:

- **Essential Requirement:** Senior AOP for every 5-10 centres.
- **Desirable:** Optometrist (with a 3-4-year degree) for every 5-10 centres

Non-clinical Personnel:

- **Minimum requirement:** Administrator (Graduate) with experience of community work + Optician + Biomedical Technician
- **Ideal:** Administrators with a master's degree in social work with basic skills on finance and accounts

5. Monitoring Framework for a Vision Centre

Monitoring of vision centres is done at two levels, at the vision centre level and the cluster level for 5-10 vision centres. At each level, the monitoring can be divided into clinical monitoring and non-clinical monitoring.

Clinical Monitoring

Led by a technical mentor of vision centres, it focuses on the clinical aspects of the vision. It involves, a critical review of the clinical competence of the vision technicians, their adherence to the clinical protocols, reviewing the case records and providing constructive feedback for improvement. It also involves a review of how they are adhering to spectacles dispensing protocols.

Monitoring of vision centres is done at two levels, at the vision centre level and the cluster level for 5-10 vision centres. At each level, the monitoring can be divided into clinical monitoring and non-clinical monitoring

Frequency: At least once in three months (essential), monthly (desirable)

Duration: 3-4 hours per visit per vision centre

After every cycle of monitoring, a Continuing Professional Development programme can be planned to review the findings, preferably every month or at least once in three months.

A checklist for clinical monitoring is shown in *Figure 2*.

Non-clinical monitoring: Led by the administrator, it involves a review of the maintenance / upkeep of the facility, grooming of the personnel, functioning of the equipment, documentation, and bookkeeping (including registers and bills books), inventory check and other non-clinical assessments.

Frequency: At least once in three months (essential), monthly (desirable)

Duration: 3-4 hours per visit per vision centre

A checklist for non-clinical monitoring is shown in *Figure 3.*

Monitoring of refraction services and dispensing:

Refraction services and spectacles dispensing are the lifelines for a vision centre. Regular monitoring of these services is essential to provide good quality care promptly. Also, for most vision models, the sale of spectacles is the most important source of revenue. This should be led by an optician from the secondary hospital and/or Optometrist / AOP with experience in dispensing.

Refraction services and spectacles dispensing are the lifelines for a vision centre

Frequency: At least once in three months (essential), monthly (desirable)

Duration: 3-4 hours per visit per vision centre

A checklist for non-clinical monitoring is shown in *Figure 4.*

Monitoring indicators for vision centre performance review

The vision centre management information system should include few indicators to review the performance of the vision centres overtime and also to compare the performance of the vision centres in different locations. The vision centre management information system (MIS) can be a simple spreadsheet excel or any other digital methods can be used. Tools like Microsoft Power Bi and any other similar applications can be used for trends, visualization and display. The essential minimum indicators that can be included in the regular monitoring of vision centres are shown in Table 3.

The vision centre management information system should include few indicators to review the performance of the vision centres overtime and also to compare the performance of the vision centres in different locations

The impact of the vision centres at the population level can be assessed using low rapid assessment methods. The population-level indicators include the prevalence of visual impairment due to uncorrected refractive errors, spectacles usage and coverage and barriers to uptake of services at vision centres.[8,9] In addition, annual patient satisfaction surveys can help in improving the services.

6. Referral Management

In a few situations, a referral may be needed for the patients examined at the vision centres. While most of these referrals may be due to cataract, there could be other cases where its management at the secondary eye care centre may be necessary. A robust framework to track the patients referred from the vision centres till they attend the secondary centre for services is essential to 'close the loop' of care. This referral system and integrated care is what differentiates the vision centres from other models of care such as private clinics and optical shops. A register needs to be maintained for all the patients who are referred from the vision centres and follow-up phone calls can be made periodically to enquire about their visit to the secondary hospital. This is a measure of referral compliance. A register also should be maintained at the secondary hospital to record the referral source of the patient and provide feedback to the vision centre once the loop is completed. This referral system can be greatly simplified with the digital systems and electronic medical records where the personnel at the vision centre are alerted as soon as the patients visit the secondary centre. Having a mechanism to give a unique number to each patient will help to track patients across the eye care network. Facilities such bulk SMS messaging can be considered to increase the referral uptake on the services.

7. Sustainability of the Vision Centres

Human Resource sustainability: Selection of local candidates helps to retain them for a longer duration and ensures local ownership. Also providing a career path and showing the avenues for professional growth will help in sustaining human resources in the long run. Regular communication with local teams and Continuing Professional Development (CPD) courses will help in keeping the teams in the vision centres motivated. Time to time recognition of the good work, promotion to the next level, fair and transparent annual appraisal system will go a long way in ensuring the long-term sustainability of human resources.[10] Also exposure to other systems, cross learning opportunities, possibility of participating in forums like VISION 2020 India Annual Conference should also be considered.

Financial Sustainability: Usually, the sale of low-cost spectacles is the only source of direct income for vision centres, and it helps in supporting the operational cost of a centre. Some organizations also charge a nominal user-fee for the services. Maintaining a steady supply of good quality and latest frames helps in improving the uptake of dispensing services. Imparting selling and counselling skills to the staff helps in increasing the sale of spectacles. Equally important is to ensure timely delivery of the spectacles after the placement of an order without repeated visits by the patient. The 'word of mouth publicity' on good services will attract more patients and re-visits, thus ensuring financial sustainability. Local philanthropic projects such as 'rent-free' space and other support will help reduce the expenditure and contribute to better cost recovery and financial sustainability. Notional income from surgeries (especially paid and subsidised) should also be considered when calculating the cost recovery (%) of the vision centres.

Programme Sustainability: The vision centres aim to provide accessible, affordable and acceptable services to the local community. For long term sustainability of vision centre services and to ensure continuity of care; good leadership, support from the secondary centre and a well-defined management structure is essential. Rigorous monitoring and timely action are mandatory to preserve the long-term and viable suitability of the vision centres. Local networking with Panchayats, Local Medical practitioners, primary health Centre, women Groups, local NGOs, Schools, other groups, and individuals are vital.

8. Conclusion and way Forward

The patient satisfaction studies among the patients visiting the vision centres, clearly reveal a high satisfaction level.[11] They also report a substantial cost-saving with the vision centre model compared to the town-based private eye clinics for spectacles.[11, 12] The factors associated with the success of the vision centre, are summarised as a) competence of the vision technician/AOP at the vision centre, b) location of the vision centre and c) Accessibility of the vision centre.[13]d) quality and timeliness of services provided.

With the evolution of newer technologies, the scope of services offered at the vision centre is also evolving to provide care beyond conventional primary eye care. These technology-enabled vision centres are expected to provide clinical services closer to the communities, resulting in substantial cost savings and better compliance. A thorough needs-assessment, the establishment of a vision centre staffed by well-trained human resources and rigorous monitoring of services, will ensure that primary eye care is available to all those in need. There is ample evidence that permanent, sustainable primary eye care, well-integrated with secondary and higher levels of care, is essential to achieve the goal of 'Universal Eye Health' in India.

Table 1: Equipment at a vision centre in India

Name of the equipment	Application	Category
Medical Equipment		
Slit Lamp Biomicroscope	Anterior segment examination	Essential
Applanation Tonometer	Intraocular pressure measurement	Essential
Trial set + Frame	Refraction	Essential
Retinoscope	Refraction	Essential
Direct Ophthalmoscope	Retina examination	Essential
Vision chart	Distance Vision testing	Essential
Pinhole Occluder	Vision testing	Essential
Near Vision Chart	Near Vision testing	Essential
Lensometer	To measure the power of the spectacles	Essential
Torchlight	External examination	Essential
Examiners stool	For the examiner	Essential
Patients chair/stool adjustable	For the patient	Essential
Inverter/UPS	Power backup	Essential
IPD ruler	To measure interpupillary distance	Essential
Non-Mydriatic fundus camera	Retinal imaging	Desirable
Edging Machine	Spectacle dispensing	Desirable
Non-clinical area		
Registration desk	Registration	Essential
Chairs for patients	Patient seating	Essential
Optical Display Unit	Spectacle sales	Essential
Tele-ophthalmology step-up		
Desktop monitor or Laptop or tablet with internet connectivity (4G/3G)	For teleophthalmology consultation	Desirable
Web Camera	For teleophthalmology consultation	Desirable
Printer	For teleophthalmology consultation	Desirable
UPS to be mandatory to avoid power cut	For teleophthalmology consultation	Desirable

Table 2: Human Resources for vision centres in India

Human resource	Application	Responsibility
At vision centre level		
Clinical personnel	**Essential:** Vision centres are staffed by one or two Allied Ophthalmic Personnel (including vision technicians, ophthalmic assistants, ophthalmic technicians, and other human resources with a minimum trained period of at least two years after 10+2 education). **Desirable:** Optometrists (with a 3–4-year degree)	**Essential:** Basic Eye examination including history recording, visual acuity assessment, refraction, external examination, slit lamp examination, intraocular pressure measurement, spectacle dispensing and counselling. **Desirable:** Fundus imaging and tele-ophthalmology
Non-clinical	**Essential:** None (if less than 20 per day on average) **Desirable:** Patient counsellor / Community eye health worker / Optician	**Essential:** None **Desirable:** Patient counselling, spectacles sales
At the Vision Centre cluster level / secondary centre (for 5-10 vision centres)		
Vision Centre Coordinator / Administrator	**Essential:** One administrator (Graduate) with experience in community work **Desirable:** Administrators with master's degree in social work	Regular monitoring of vision centres using standardised templates, community networking and routine administration
Technical mentor - Clinical	**Essential:** One senior AOP for every 5-10 centres **Desirable:** An optometrist with 3–4-year degree	Technical monitoring and mentoring of the personnel working in the vision centres
Optician	**Essential:** One optician from the secondary hospital for every 5-10 centres depending on the volume **Desirable:** A dedicated optician for vision centre related work	Monitoring spectacles dispensing services at vision centres
* Other human resources to be shared with the secondary hospital as vision centres is a geographical extension of an out-patient facility for a secondary hospital		

Table 3: Monitoring indicators for performance of vision centre – Essential

Indicator	Formula for Estimation	Frequency	Source
Average Screening Output	No. of people screened / total working days	Monthly	Vision Centre report / Electronic medical records
Spectacle prescription rate (%)	(No. of spectacle prescribed / Total number of patients examined) X 100	Monthly	Vision Centre report / Electronic medical records
Spectacle conversation rate (%)	(No. of spectacles dispensed / Total number of prescriptions) X 100	Monthly	Vision Centre report / Electronic medical records

Referral rate (%)	(No. of people identified with eye conditions and referred / Total number of patients examined) X 100	Monthly	Vision Centre report / Electronic medical records
Referral conversion rate (%)	(No. of people who attended the secondary hospital / Total referrals given) X 100	Monthly	Vision Centre report / Electronic medical records
Tele-ophthalmology referral rate (%)	(No. of people referred for tele-ophthalmology consultation / Total number of the patients examined) X 100		Vision Centre report / Electronic medical records
Cost Recovery (%)	(Income / Expenditure) X 100	Monthly	Vision Centre report / Electronic medical records
Vision Centre Coverage (%)	Total number of unique patients examined / Total population in the catchment) X 100	Quarterly / Annual	Vision Centre report / Electronic medical records

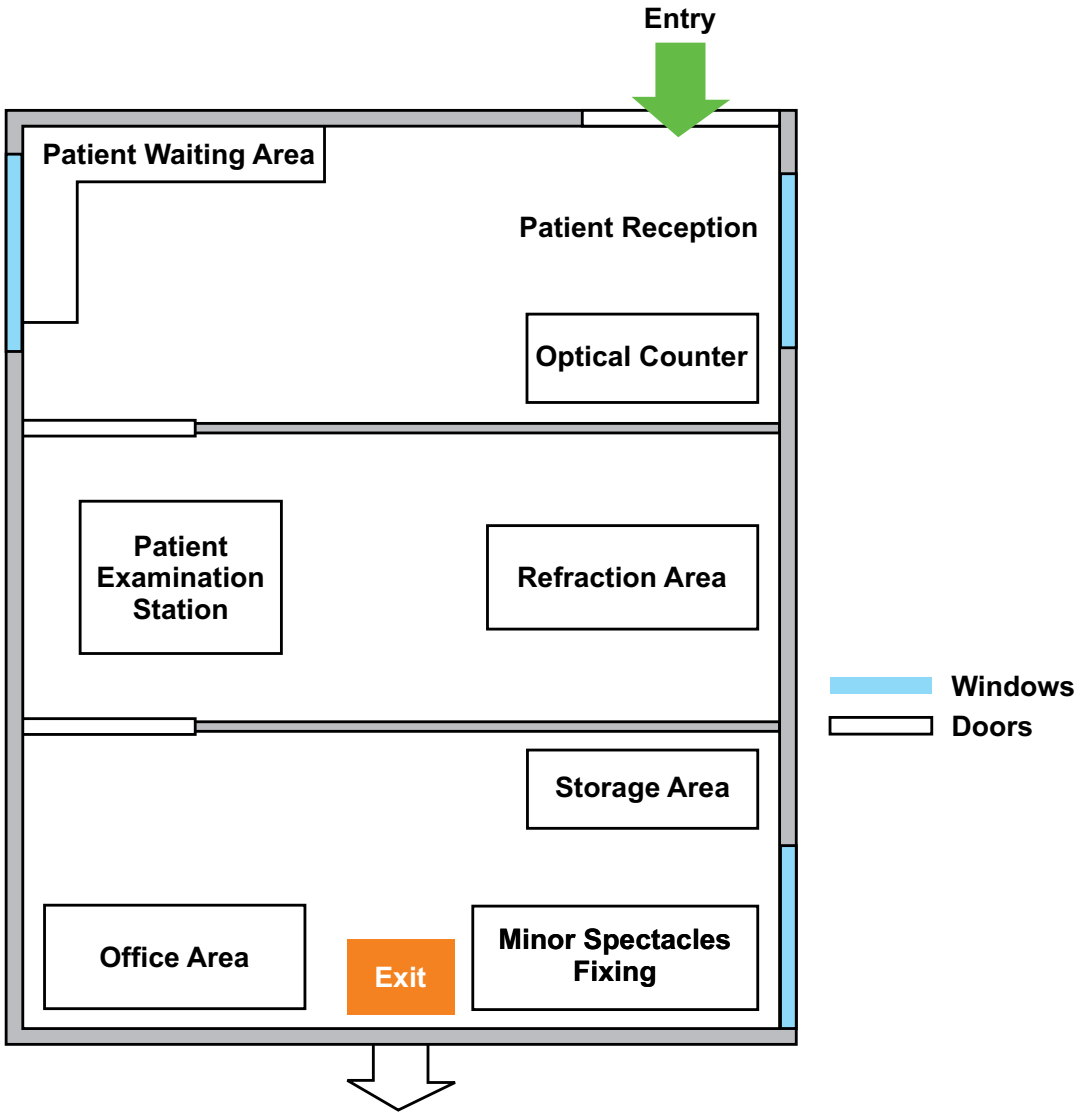

Figure 1: Layout of a vision centre conformed to COVID-19 protocols

Check list for Clinical monitoring of vision centres

Name of the AOP: _____ **Place:** _____ **Date:**_____

(Based on clinical examination and review of medical records worked up by the personnel. At least 5% of the records selected randomly should be reviewed everyone)

S No	Parameter	Yes / No	Comments	Actions need, if any
1	Personal and demographic data complete (Full name, Complete address, contact phone number, Aadhar care number / Identity card number)			
2	Adequate history – Chief complaint mentioned clearly (Frequency and duration of signs and symptoms, laterality mentioned),			
3	Correct documentation of visual Acuity – Distance and near (presenting vision and best corrected visual acuity)			
4	Refraction and its correlation with the vision for distance and near			
5	Appropriate prescription in terms of the type of lens (Single vision versus Bifocals, Ready-made spectacles versus custom made)			
6	Clinical examination (including IOP) adequate / compete			
7	Diagnosis mentioned and correlates with findings mentioned			
8	The chief complaint addressed, and advice provided accordingly			
9	Appropriateness of referral for teleophthalmology, if applicable			
10	Appropriateness of referral for secondary centres			

Any other comments:

_____

Figure 2: Template for clinical monitoring of the vision centres

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Name and signature of the evaluator with date

Check list for regular monitoring of vision centres

(Can be used by administrators, and other visiting staff from base hospital)

Name of the AOP: _____ **Place:** _____

S No	Parameter	Yes	No	Not Applicable	Comments, if any
1	Adherence to the protocol of complete eye examination				
2	Good documentation - Bills books, case sheets, registers				
3	Good maintenance of equipment / power supply				
4	Good general maintenance of the centre				
5	Average turn around for spectacle delivery time less than 5 days				
6	Sign boards in place at VC and other vintage points				
7	Good display of IEC material in the centre				
8	Adequate range and variety of frames at the centre				
9	Personnel well groomed				
10	Linkages – Any recent community visits by the VC team?				
11	Regular weekly Community Visits by the VT (village visited that week)				
12	Others (e.g. problems faced by personnel), please specify				

Any other comments:

_____

_____

_____

Name and signature of the visitor with date

Figure 3: Template for non-clinical monitoring of the vision centres – Essential minimum

Check list for Spectacles Dispensing Review at vision centres

Name of the AOP: _____ **Place:** _____ **Date:**_____

(Randomly pick-up 10 pairs of spectacles from the vision centres, half of which should be bifocals and complete the check list based on observations. Also review spectacles booking register for details)

S No	Parameter	Yes / No	Comments	Action needed, if any
1	No gaps between the eye wire and the spectacles			
2	Good pantoscopic tilt			
3	Good Bench alignment / Four-point touch (two temple tips and lens / rims of the right and left lens should touch on the flat surface)			
4	No chipping at the edge of the lens			
5	Adequate / equal size of the bifocal segment in case of bifocals			
6	Appropriateness of frame for bifocals			
7	Average duration of delivery less than one week			
8	Adequate and reasonable variety of frames available at the centre			
9	Less than 3% of prescription given are insignificant powers prescribed (< +/- 0.50 Ds/Dc)			
10	Any other issues, please specify			

Any other comments:

_____

Name and signature of the evaluator with date

Figure 4: Checklist for dispensing spectacles at a vision centre

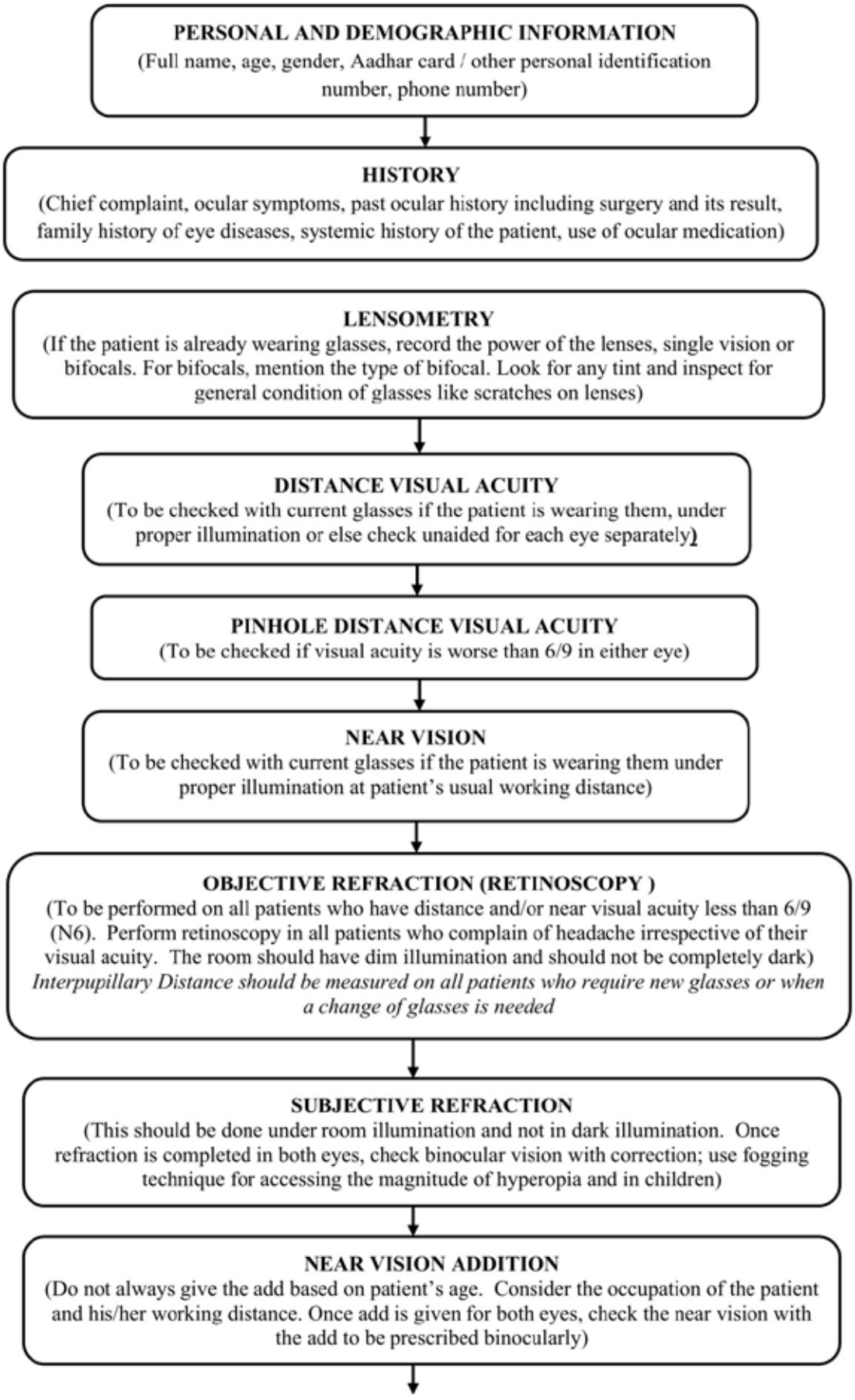

Figure 5A : Clinical Eye Examination protocol at a vision centre

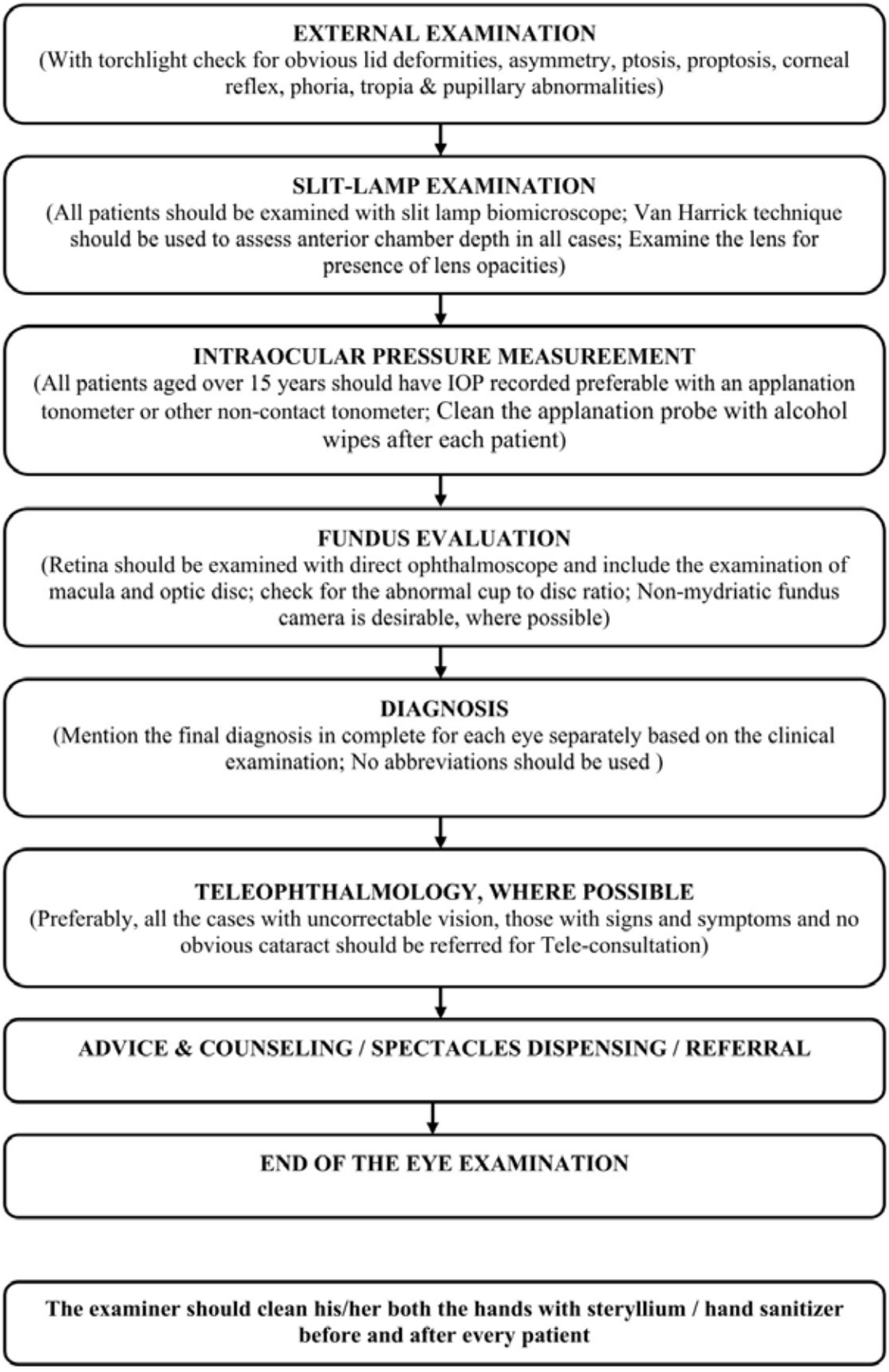

Figure 5B : Clinical Eye Examination protocol at a vision centre

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Photo Credit: Aravind Eye Hospital

4

Tele-ophthalmology and Digital Technology for Primary Eye Care

RATIONALE FOR TELE-OPHTHALMOLOGY AND DIGITAL TECHNOLOGIES IN VISION CENTRES

Vision Centres are primary eye care centres located in remote towns (rural areas) with a population of 50,000 to 70,000, areas where the patients lack access to an ophthalmologist and are unable to find the time or afford the travel expenditure to seek quality medical care.

Due to the low ophthalmologist to population ratio (1:100,000) in India, and most of them practising in urban areas, it is important to have Certified Allied Ophthalmic personnel to provide eye care in rural areas. In this context, vision centres are manned by trained and skill-certified ophthalmic technicians from the service area providing comprehensive eye care in a primary setting. Though the design of the vision centres is meant to provide primary eye care, due to the ocular conditions that are prevalent in the community there are differences between urban and rural areas. Hence, more skills are provided to the staff by intense training to diagnose and treat. *Tele-medicine-supported Vision Centres (VCs) provide the opportunity for patients to directly interact with the consultant through the use of technology using real-time patient data.*[1]

Tele-medicine-supported Vision Centres (VCs) provide the opportunity for patients to directly interact with the consultant through the use of technology using real-time patient data

With the advancements in information technology, there are greater scopes for improvement both in the quality of diagnosis and service given to the patients visiting these vision centres. This starts by addressing the gap with the help of the ophthalmologist's opinion for needy patients (Opinion for needy patients for whom the Ophthalmic Assistant find difficulty in diagnosis and management such as corneal ulcers, suspected DR cases, suspected Glaucoma, Ocular emergency or vision loss). Chronic eye conditions like corneal ulcers, abnormality in the fundus, increased intraocular pressure can be mandated to get an opinion from the ophthalmologist. The upcoming developments in artificial intelligence, especially in diagnosing chronic eye conditions like Diabetic Retinopathy, Glaucoma, and ARMD with fundus imaging might lower the dependency on Ophthalmologists for teleconsultation in the near future. It also provides a strong economic rationale for using deep learning systems as an assistive tool for screening DR[2]. The need for teleconsultation is built around the quality and patient safety grounds instead of depending on Allied Ophthalmic Personnel for patient care, advice and decision.

From the patient care perspective to get a consultation from the ophthalmologist is a great resource that the patient can get. This will increase the service uptake and influence the patient's compliance with treatment. In modern times, technology offers great scope for this through tele-medicine. Information technology has evolved over decades to

reach the current level where it is highly simplified for adoption in the local context. Various technologies which include store and forward, voice chat, tele-consultation with paper case records, the recent one being Electronic Medical Records (EMR) accommodating fundus pictures, capturing vital signs like blood sugar levels and *real-time video consultation with Ophthalmologist have demonstrated to be a great hope for connecting rural patients for eye care*.

real-time video consultation with Ophthalmologist have demonstrated to be a great hope for connecting rural patients for eye care

Infrastructure & Requirements to set up Teleophthalmology

Requirements	Base Hospital	Vision centre
Space	4x5 ft cubicle of a private room.	Part of the examination room (10x12 ft)
Furniture	Table for computers, Mic, speaker and Modem	Table for computers, Mic, speaker and Modem
Internet connectivity	10 to 15 Mbps speed suggested	Minimum 5 Mbps speed suggested
Teleconsultation application	Google Hangouts, Skype, Zoom	
EMR Software	Medical records are mandatory at Vision Centres to document the diagnosis of a patient and for future continuation of care. This can be both on paper and electronic. While there is a documentation and preservation issue of paper records, the electronic records facilitate good documentation of the patient diagnosis and treatment recommendations more objectively. With technology becoming accessible and affordable this is possible in all locations in the near future. This will be done with the documentation of the patients' ID and diagnosis from the dropdown menu and can be retrieved at any time. As the integration among primary, secondary and tertiary hospitals happens the record of the patient can also be retrieved anywhere from the same network. This electronic record at the Vision centre level is called as Vision Centre Management System (e.g., Aravind, LVPEI, Pellucid Networks & others) providing end-to-end solutions from patient registration, documentation of findings, imaging, receiving tele consultation and e-prescriptions from the ophthalmologist, and generating reports	
Power backup	Should be part of Hospital UPS.	1.5 KV invertors to ensure uninterrupted power supply

Workflow at Vision Centre and Base Hospital

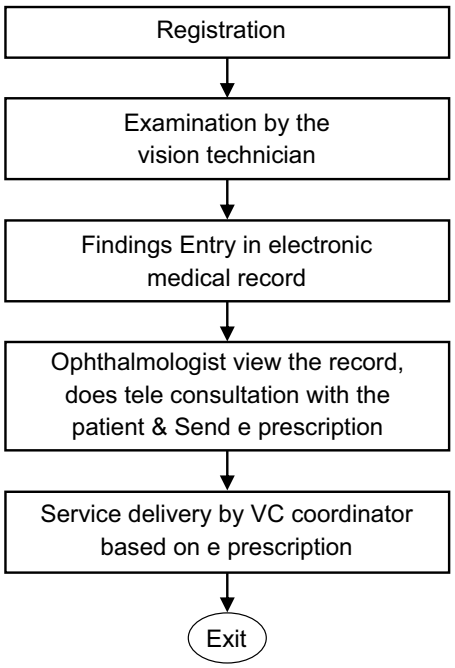
When a patient visits a Vision Centre, he/she gets a comprehensive ophthalmic examination done by the technician and all findings are entered into Electronic Medical Records. The patient then gets a real-time video consultation with an ophthalmologist at the base hospital. For each consultation, it takes 2.5 to 3 minutes for the ophthalmologist to access and look into the patient record and talk to the patient at the VC end. The vision technician orients the patient that he/she is going to interact with an ophthalmologist at the base hospital. The Ophthalmologists will introduce themselves, call the patient by name to reassess his /her identity and then EMR is opened on their screen. Listening to the complaints and going through the

Photo Credit: Aravind Eye Hospital

EMR, the ophthalmologist advises the patient and guides the Vision technician to provide more details. *Prescriptions sent by the ophthalmologist for glasses/medicines is printed in Vision Centre and handed over to the patients*. This design of closing the loop from diagnosis to intervention has resulted in patient satisfaction and has benefited a lot of patients who were unable to access primary eye care. On average a dedicated ophthalmologist can potentially do 120 – 150 consultations per day. In terms of internet connectivity, 5 Mbps broadband is sufficient for the teleconsultation at one Vision Centre.

Prescriptions sent by the ophthalmologist for glasses/medicines is printed in Vision Centre and handed over to the patients

Work flow in Vision Centre:



Training

To make the technology work and provide desired results it is important to educate about the purpose and importance of tele-consultation and also develop competent skills among Vision centre technicians, ophthalmologists and support staff to use it. Formal training needs to be arranged to develop a detailed understanding about

- Handling the computers, checking the mic, web camera and the internet connectivity installed at vision centres.
- The Vision centre electronic medical record software installed @ Vision Centre
- Entering the patient details for registration, examination finding and uploading the fundus images in the software
- Enabling hassle-free tele-consultation between the Ophthalmologist and the patients
- Generating reports – on the outpatients, refraction done, glass prescription, identification of other ocular pathologies, spectacles sale and daily cash collection reports.
- The Information technology barriers and escalate it to the base hospital professional support team

Roles and Responsibilities

Vision technician

- Orient and brief every new patient about the teleconsultation process and get consent from the patient.
- Document the ocular examination findings in EMR

- Facilitate hassle-free tele consultation between ophthalmologist and patient
- Answer the queries raised by the ophthalmologist to perform an additional examination on demand by the ophthalmologist (example: IOP repeat, fundus imaging etc)

Teleconsultant Ophthalmologist

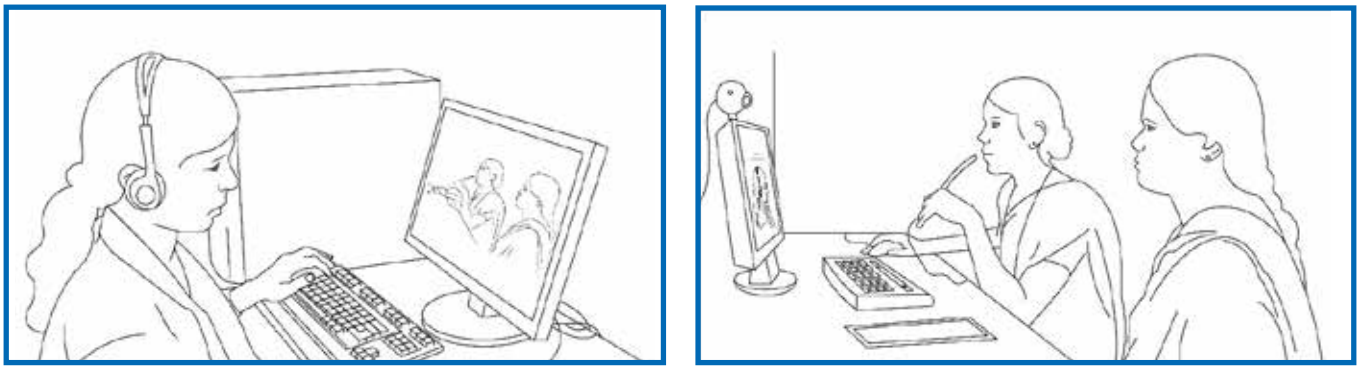
- Available during the committed time for teleconsultation
- Introduce themselves as the Ophthalmologist with their name and the location from which they are interacting
- Interact with the patient clearly in the local language (preferably) after going through the findings documented in EMR
- Ensuring that the EMR coding is done for every registered patient
- Providing E prescription and advice based on EMR and teleconsultation with the patient
- In case of further interventions communicate the need for visiting the base hospital
- Build trust in the Vision centre model through their conversation with the patients.
- Motivate the Vision technicians for acquiring better diagnostic skills

IT Personnel

- Setting up hardware, software and printers
- Ensuring continuous internet connectivity
- Training the doctor and Vision technician for using Electronic medical records, teleconsultation process and solving minor issues
- Solving operational issues related to hardware, software and connectivity
- Customizing reports as and when required

Building Awareness in the Community

Though creating awareness about eye care happens in the community through various approaches it is important to convey to the community that teleconsultation helps in accessing an Ophthalmologist from their village. This can be done through awareness programs in schools, women's development programs, panchayat meetings etc. This will help in increasing the awareness among the service area population of VCs. Sharing the model/ process through video of how the teleconsultation happens at Vision centre will build trust among the community.



Teleconsultation at Base Hospital and Vision Centre

Benefits of Teleophthalmology and Digital Technologies

With the established tele-ophthalmology and continuous consultation between vision centres and base hospital, there will be increased trust among the patients as Ophthalmologist directly interact with them.

- It is the base hospital ophthalmologist's responsibility to e-prescribe medicines[7], advise spectacles, recommend surgery or refer the patient to the base hospital for further investigation.
- Treatment of the ocular emergencies and anterior segment pathologies[3] is possible with telemedicine as otherwise, the patient may choose a nearby traditional healer over visiting the ophthalmologist at the hospital which consumes time and money.
- As and when a patient is consulted there is a scope for improvement in the diagnosing quality of a vision technician as the teleconsultant ophthalmologists ask for clarifications.
- Thus, teleconsultation serves as continuous education for the staff and also helps in monitoring the quality of work.
- The scope of diagnosing chronic eye conditions like Diabetic Retinopathy, Glaucoma and other posterior segment ocular pathologies increases with sharing of fundus images through EMR and getting opinions from teleconsultant Ophthalmologists.
- Close to 15% of the patients are referred to the base hospital and thus this reduces base hospital visits significantly[7]. It increases trust and satisfaction[4] among the patients and significantly reduces the cost and carbon footprint[5] for patients visiting the base hospital.
- Helps in both, closing the service loop and monitoring stand-alone VCs.
- Referrals can be electronically tracked through a unique patient identification number and the non-compliant patients can be followed up for treatment.
- Telemedicine linked with EMR ensures the availability of detailed case records for future reference to provide continuous treatment for the patients.
- IT also helps in monitoring day-to-day operations like attendance of the staff, patient attendance in real-time, ordering of glasses online and supply-chain management of the VCs.
- During the pandemic situation it helped us to track our staff and ensure that they are safe by having continuous interactions and update on the safety measures and ensuring they are compliant with them.[6]
- Online continuous medical education (CME) programs can be organized to refresh their knowledge post lockdown.

FINANCIAL SUSTAINABILITY

As a rural patient gets an opportunity to talk to a doctor, ensuring teleconsultation for needy patients visiting Vision centres, builds trust in the community. *Back up by an ophthalmologist with teleconsultation ensures the quality of eye care to the rural population*[7]. This results in more patients turning to the OPD and increased uptake of services like acceptance of glasses, cataract surgeries and specialty treatment at the Base Hospital. The cost of travel, attender visits, food and loss of wages will be saved and spent in the community.

> Back up by an ophthalmologist with teleconsultation ensures the quality of eye care to the rural population

Quality

Quality of diagnosis is checked by the ophthalmologists in the base hospital through clinical auditing.

Quality in video-conferencing and audio is maintained by a dedicated IT team, daily.

The quality of fundus photo images is usually checked by the Consultant in the base hospital and clinical in Charge, on a weekly basis.

CONCLUSION

Approximately 25% of the population needs eye care and at least 80% can be addressed at the primary level through Vision centres or similar approaches. These centres by design are manned by the ophthalmic assistants or mid-level ophthalmic personnel. Using tele-consultation and electronic records, patients can get opinions from an ophthalmologist. This helps them in receiving the correct advice and increased acceptance. It also reduces travel costs for rural patients. Especially during pandemic times, telemedicine provides great support in accessing eye care and cutting down costs. Similar to any other field, adopting communication technology to rural eye care increases the scope for universal coverage. From the National Medical Commission, a "Guidelines for Practice of Telemedicine in India'' has been introduced recently and will be very helpful for those who want to relocate and practise telemedicine in their locations.

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Photo Credit: Sadguru Netra Chikitsalaya

5

Integrated Model of Eye Care Delivery

INTRODUCTION

The World Health Organization (WHO) has formulated a health systems framework that describes health systems in terms of six building blocks, acknowledging the health system strengthening agenda.[1] Service delivery is one of the prominent health system building blocks (Refer to Figure 1). India has developed a strong service delivery mechanism for eye-care since the inception of the National Program for Control of Blindness in 1976. The country presently has about 147,069 Sub Health Centres (SHCs) manned by two health workers for every 5000 population in plains and 3000 population in hilly/tribal/desert areas[2]; 23,391 Primary Health Centres (PHCs) with a doctor and other paramedical staff for every 30,000 population in plains and 20,000 population in hilly/tribal/desert areas)[3]; 4,535 Community Health Centres/First Referral Units for every 120,000 population[4], and over 605 District and sub- district hospitals.[5]

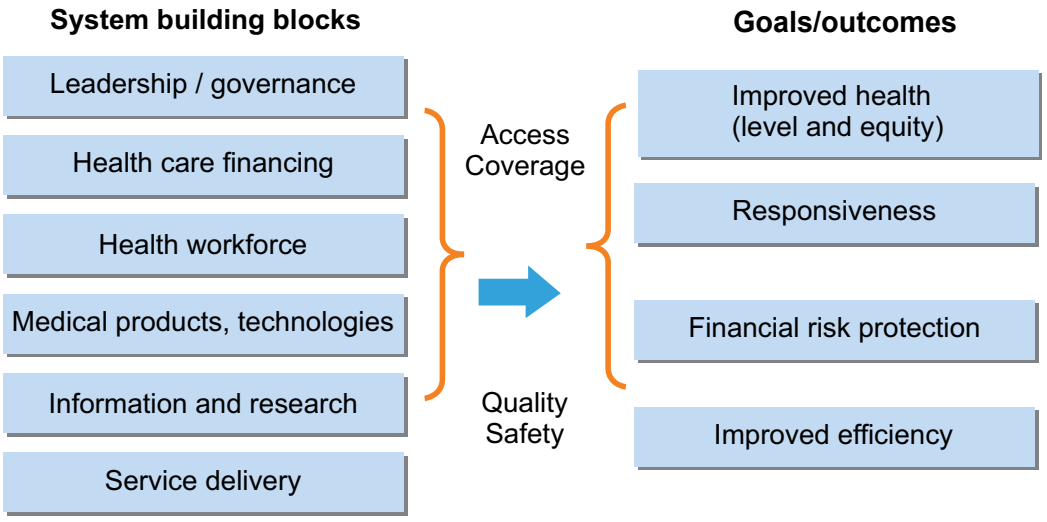

Figure 1: The WHO health system building blocks (Source: WHO)

National Programme for Control of Blindness and Visual Impairment (NPCB&VI)

India was the first country in the world to launch the National Program for Control of Blindness (NPCB) in 1976 with the goal of reducing blindness prevalence to 0.3% by the year 2020,[6] as a 100% centrally sponsored scheme.[7] The programme has been renamed in the year 2017 as National Programme for Control of Blindness and Visual Impairment (NPCB&VI).[8]

Rapid Assessment of Avoidable Blindness (RAAB) conducted under NPCB during 2006-07 showed reduction in the prevalence of blindness from 1.1% (2001-02) to 1% (2006-07), and further RAAB survey 2015-19 showed a reduction to 0.36%[9,10] (Refer to Figure 2). Various activities of the program include establishment of Regional Institutes of Ophthalmology, upgradation of medical colleges and district hospitals and block level Primary Health Centres, development of mobile units, and recruitment of required ophthalmic manpower in eye care units for provision of various ophthalmic services.[11] The program also extends assistance to voluntary organizations for providing eye care services including cataract operations and eye banking. Voluntary organizations are playing an important role in this program.

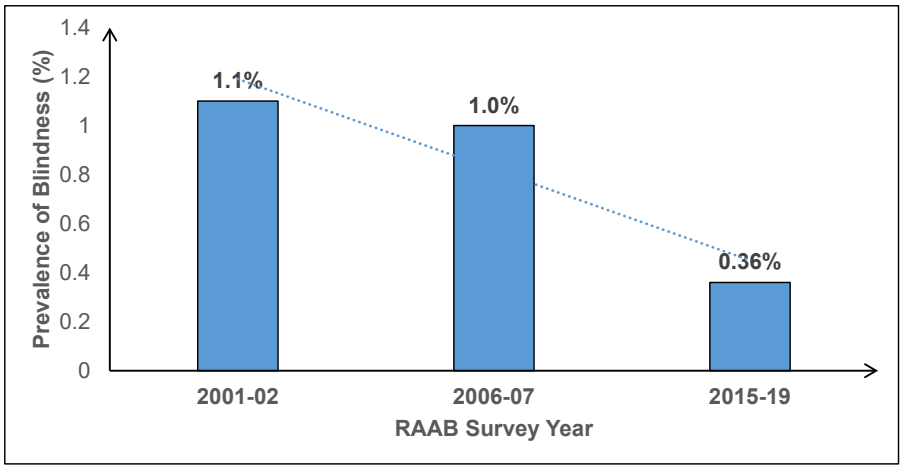

Figure 2: The decline in prevalence of blindness over successive RAAB surveys (Source: RAAB 2015-19 Summary Report)

The programme is now geared to take care of all categories of visual impairment. Apart from cataract surgeries, now the focus of the programme is on treatment and management of other eye diseases like glaucoma, diabetic retinopathy, vitreoretinal diseases, corneal blindness, low vision and childhood blindness.

Under the National Programme, some of the tertiary care centres were upgraded to Centres of Excellence [Regional Institutes of Ophthalmology (RIO)] focusing on the development of manpower and infrastructure. As of year 2020, there are 17 RIOs in the country spanning 17 states in the country. In order to facilitate the outreach activities, more than 5000 Vision Centres (VCs) were established to strengthen primary eye care (PEC) services. These peripheral Vision Centres, staffed with a trained Ophthalmic Assistant (OA), can carry out comprehensive eye examination and management of simple eye diseases. The plan is to establish Vision Centres at the level of CHCs (secondary level) and later scaling up to the PHCs (primary level).

EYE CARE SERVICE DELIVERY: ACCESS AND QUALITY

The WHO Eye Care Situation Analysis Tool (ECSAT) has further divided eye care service delivery into two components: service delivery access and service delivery quality.[12]

Eye care service delivery access in India can be understood in terms of following 8 components, as per ECSAT:

1. Equity of eye care services coverage across disadvantaged population groups
2. Primary level eye care services
3. Community-delivered eye care services
4. Integrated paediatric eye care services
5. Integrated cataract surgical services
6. Integrated diabetic eye care services
7. Integrated refractive and optical services
8. Integrated low-vision and vision rehabilitation services

Equity of eye care services coverage across disadvantaged population groups in India

Equity is the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification.[13]

India has a national strategy to strengthen governance for health equity in the country. Evidence is available in the country about equity of eye care services coverage, including identification of disadvantaged groups, and this evidence is used to advocate to the government to improve equity of eye care services. Special mention should be made of the health technology assessment of intraocular lenses for treatment of age-related cataracts in India which assessed clinical efficacy and costs of different Intraocular lenses for cataract surgeries in term of their impact on Health related Quality of life.[14] *The aspirational districts program of the government of India provides special emphasis on the districts lagging behind in terms of eye-care facilities.*[15]

The aspirational districts program of the government of India provides special emphasis on the districts lagging behind in terms of eye-care facilities

There are systems or strategies in place to ensure that primary health care (PHC), including primary eye care (PEC), effectively serves the most marginalized and disadvantaged groups in society. However, there are no policies in place to regulate the private sector to ensure equitable access to quality health care services, including eye care. The regulation for private sector and for-profit hospitals need to be strengthened. Eye care services in India are available in both the public and private sector, the latter absorbing about 75% of all health expenditure.

District Health Societies (DHSs) under National Health Mission (NHM) for decentralized program management have been established throughout the country under the Chairmanship of District Collector/ Deputy Commissioner.[16] Centrally collected data on eye care in the country is collected at the district level through District Health Societies and disaggregated by age and gender. However, progress to reduce inequity in eye care services coverage are not reviewed regularly.

There is a low level of equitable access to eye care. *There are some disadvantaged population groups that miss out on the eye care they need*, e.g. women, poor communities, indigenous people, ethnic minorities, people with disabilities, people in aged care, prisons, refugee camps etc. The gap between groups is reasonably large.

There are some disadvantaged population groups that miss out on the eye care they need

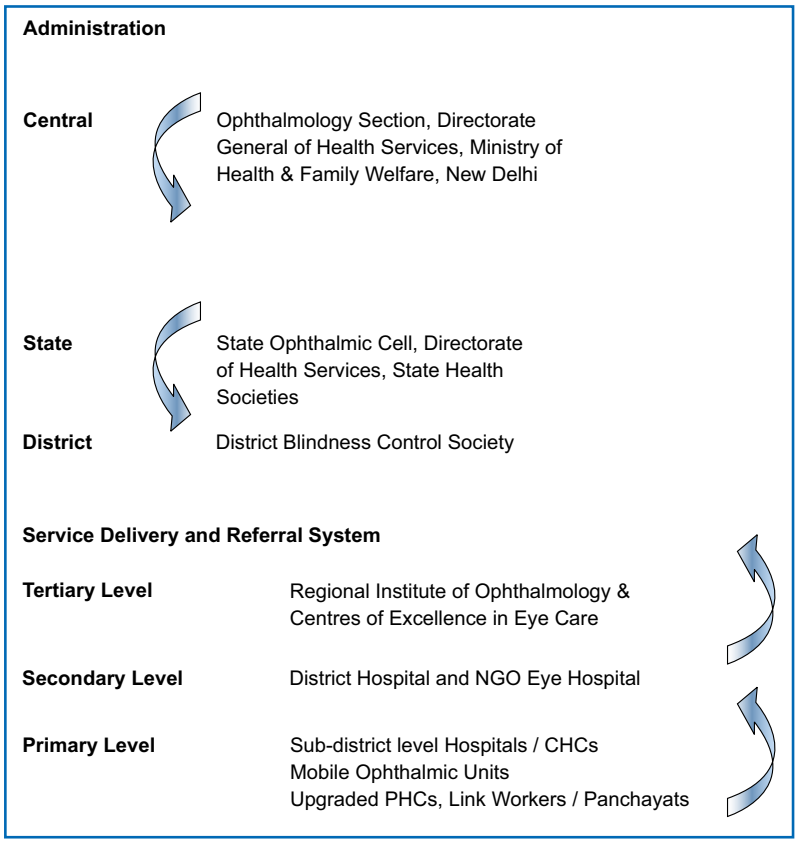

Figure 3: Organogram of National Program of Control of Blindness & Visual Impairment[17]

The following are the proposed eye care services under the various health care facilities in India

A global initiative was launched by the name of 'VISION 2020: The Right to Sight on February 18, 1999 by the World Health Organization (WHO) and the International Agency for Prevention of Blindness (IAPB), for elimination of the avoidable blindness by the year 2020 by means of global co-operation and collaborative approach. It Involves the WHO, IAPB, and other International non-governmental organizations and philanthropic institutions plus individuals working with National Governments.

The significance of this initiative is the introduction of the concept of sight as human right - recognition of sight as a fundamental human right by all countries can be an important catalyst of initiatives for prevention and control of blindness. This initiative is likely to decrease the number of blind population to 8 million by the year 2020. Various international NGOs working under the auspices of the International Agency for the Prevention of Blindness and collaborating with WHO are spending over US$ 80 million per year in support of national eye care programs. A substantial part of this funding goes to South-East Asia, where collaborating national NGOs are also making significant contributions to the activities undertaken at the local level. India has embraced the infrastructure pyramid proposed and recommended by the WHO starting from the community upwards to centres of excellence covering units of population with primary, secondary, tertiary and advanced tertiary eye care as appropriate (Refer to Figure 4).

The following are the proposed eye care services under the various health care facilities in India

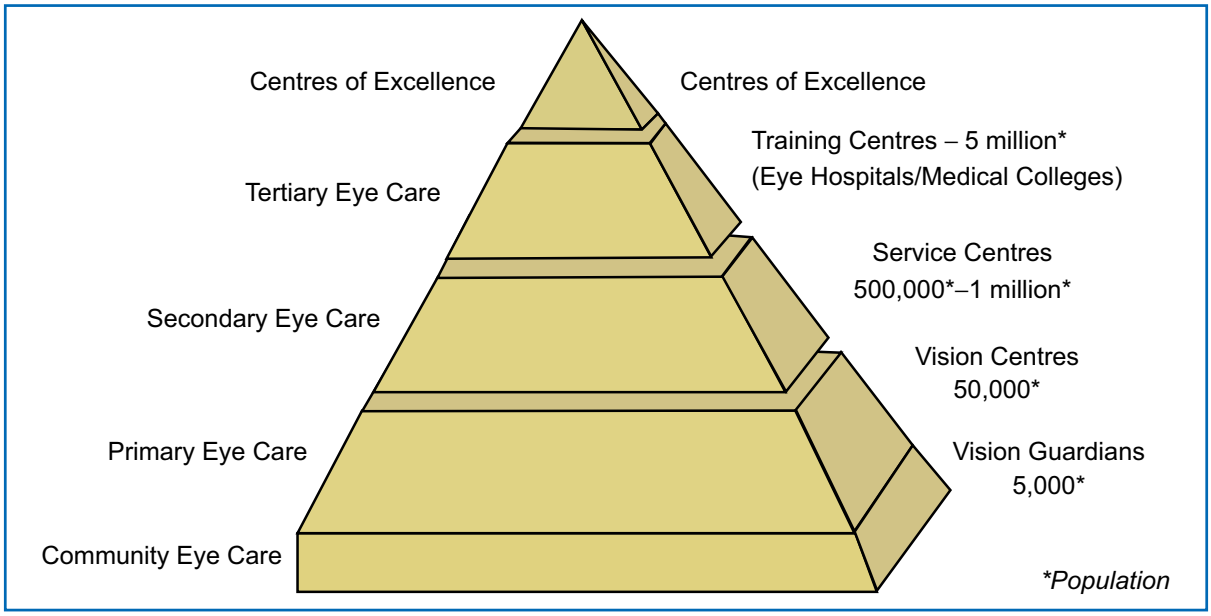

Figure 4: Service delivery framework for Eye Care Services at different levels in India

1. Care at Community Eye Care Level

- Awareness generation on common eye disorders and the need for early eye care seeking through VHSNC/MAS, VHSND/UHSND and other community level meetings *(ASHA-Accredited Social Health Activist/AF-ASHA Facilitator/MPW-Multi Purpose Worker)*.
- Clarifying misconceptions related to eye care and eye disorders *(ASHA/AF/MPW)*.
- Providing Information about the availability of services related to eye treatment at different levels of healthcare *(ASHA/AF/MPW/VHSNC-Village Health Sanitation Nutrition Committee/MAS-Mahila Arogya Samiti).*
- Screening of preterm/LBW new borns for congenital disorders and referral, children and adolescents through Anganwadis and schools for vision problems/visual acuity and population above 30 years of age for blindness and refractive errors *(facilitated by ASHA/AF/MPW in coordination with RBSK (Rashtriya Bal Swasthya Karyakram) team, where needed)*.

- Identification/Mobilization of patients with identified eye diseases (of known diabetic, identified patients) *(ASHA/AF/MPW).*
- Ensuring Vitamin A prophylaxis routinely for children aged 9 months to 5 years *(ASHA/AF/MPW).*
- Referral of patients with eye/vision problems to HWC (Health and Wellness Centre)- SHC/PHC and follow up *(ASHA/AF/MPW)*.
- Follow up of post-operative cataract patients and distribution of spectacles to them *(ASHA/AF/MPW)*.
- Ensure regular use of spectacles and follow-up bi-annually in children with refractive error *(ASHA/AF/MPW)*.
- Enabling elderly and those with Presbyopia to get free spectacles *(ASHA/AF/MPW)*.
- IEC for health promotion activities related to Eye Health; imparting health education to at-risk of visual impairment *(ASHA/AF/MPW)*.
- Maintenance of records of visually impaired/ blind individuals in the community *(ASHA/AF/MPW)*; maintaining a list of referrals from the community who cannot read by 6/18 vision *(ASHA)*.
- Undertake vision rehabilitation and counselling, including vocational counselling *(ASHA/AF/MPW)*.

2. Care at Primary Health Centre-HWC

- The Medical Officer (MO/MBBS) at the HWC-PHC/UPHC is responsible for ensuring that eye care services are delivered through all HWCs in her/his area and through the PHC itself.
- Examination and diagnosis of all eye cases referred from SHC-HWC *(MO)*.
- Diagnosis and treatment of common eye diseases like conjunctivitis, trachoma, refractive errors, dry eye, stye, superficial foreign body, eye allergy, acute red eye, xerophthalmia, etc. *(MO)*.
- Primary eye care for trauma *(MO)*.
- Referral of more complex cases-like glaucoma *(MO)*.
- Screening for diabetic retinopathy, using non-mydriatic fundus cameras and facilitating consultation with eye specialists at an early stage with referral for further treatment *(MO)*.
- Referral for advice to eye specialist for corneal blindness and follow instructions given by specialist *(MO)*.
- Medical fitness for cataract surgery, disability certification, initial reading of fundus images, outreach activities, quality assurance of ASHA and OA activities .
- Surveillance of trachoma and referral to eye specialist where needed *(MO)*.
- Provision of follow up care for post-operative cases as recommended by the eye specialist *(MO).*
- Ensure record maintenance as per NPCBVI guidelines and periodic review of progress *(MO)*.

3. Care at Secondary Health Centre (SHC)-Health Wellness Centre

- Screening for blindness and refractive errors- Testing of visual acuity (distance and near vision), identification of refractive errors and referral to Vision Centre of those requiring surgery/for management or treatment including provision of spectacles *(CHO-Community Health Officer/MPW)*.
- Identification of common diseases of the eye and referral to Vision centres – Cataract, corneal diseases, glaucoma, eye disorders in known diabetic/hypertensive patients *(CHO)*.

- Diagnosis and referral to PHC-MO – conjunctivitis, trachoma, eye allergy, acute red eye, xerophthalmia *(CHO)*.
- Regular eye screening and coordination with the RBSK team for screening children aged 0-18 years in AWC and schools *(CHO)*.
- Identification and treatment of Vitamin A deficiency and Bitot's spot; and provision of Vitamin A prophylaxis *(CHO/MPW)*.
- Undertaking home and community-based follow up visits; also, along with the ASHA/AF *(CHO/MPW)*.
- Health Promotion activities with use of IEC - Awareness generation about refractive disorders, common eye diseases, contagious eye diseases and infections and preventive care *(CHO/MPW)*.
- Stabilization and referral of cases with trauma to the eye, chemical injury to eye, foreign body lodged in cornea to the Vision centre *(CHO).*
- Dispensing of medicines for conjunctivitis, dry eye, Trachoma and follow-up medicines for chronic eye disease (e.g. Cataract, Glaucoma and Diabetes) treated at referral centre *(CHO)*.
- Awareness generation on eye donation, provide first aid for foreign bodies, eye injuries, stabilization and then referral *(CHO)*.
- Care of the eye due to acid/alkali/chemical exposure and immediate referral *(CHO/MPW)*.
- Maintenance of records as per NPCBVI guidelines *(CHO)*.

4. Care at Vision Centre/Secondary/Tertiary care facility

- Eye Screening Camp- Assist district team during eye screening/outreach camps (Ophthalmic Assistant- OA).
- Diagnosis for refractive errors and provision of free spectacles to patients diagnosed with presbyopia and school children with refractive errors (OA).
- Diagnosis for refractive errors and provide free spectacles to patients diagnosed with presbyopia and school children with refractive errors (OA).
- Collaboration with the RBSK team to provide spectacles to children with refractive errors (OA).
- Identification of operable cataract, screening for glaucoma and referral for surgery; and follow-up of post-operative patients (OA).
- Screening for diabetic retinopathy, using non-mydriatic fundus cameras and facilitating consultation with eye specialists at an early stage with referral for further treatment (OA).
- Referral for advice to eye specialist for corneal blindness and follow instructions given by specialist (OA).
- Referral to ophthalmologist for removal of corneal/deep foreign bodies in the eye (OA).
- Surveillance of trachoma and referral to eye specialist where needed (OA).
- Surgical care for eye diseases like cataract, corneal blindness, trachoma, glaucoma, severe trauma to eye, corneal/deep lodgement of foreign body in eye, retinal disease (Ophthalmologist).
- Treatment of vision disorders, eye diseases and infections (Ophthalmologist).
- Record maintenance as per NPCBVI guidelines (OA).

Currently there are a variety of paramedical personnel in eye care. Some common categories include paramedical ophthalmic assistants, opticians, ophthalmic nurses, refractionists, orthoptists, and ophthalmic technicians. The estimated number of personnel in these categories is about 15,000. However, another 15,000-20,000 persons are working in eye care facilities without acquiring any formal training or qualification.[11]

Models of Primary Eye Care

The Primary Eye Care centres are situated at fixed locations and are managed either by Non-Governmental Organizations or the government sector. This model, also known as fixed facility model, consists usually of a team comprising an optometrist and two field workers who visit once or thrice a week as per the need of the community in the different slum clusters. The optometrist conducts basic eye examinations along with the prescription of spectacles which are subsidized and arranged at the vision centre. Patients screened for cataract surgery or other ocular diseases are referred to tertiary care facilities for further investigations and treatment through the community eye care services program. The other activities include training of local volunteers in PEC, health education events in the community and school screening programs to promote community partnership and awareness about eye care.

Some *recently implemented initiatives are mobile vision centres, tele-ophthalmology and community-based rehabilitation (CBR) for blind/low vision patients.*

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Primary Eye Care Through Mobile Vans

Primary eye care services can also be delivered through mobile vans equipped with all equipment. An ophthalmic technician with support staff can be utilized for reaching underserved areas and bridging geographic inequities for eye care services. A range of PEC services can be provided through mobile units equipped with sophisticated design, equipment and skilled manpower deputed to provide services.

Primary Eye Care Through Tele-Ophthalmology

In eye care, this facility can be made available at the fixed centre as well as from the mobile vans. Tele-ophthalmology utilizes internet-based information technology, allowing the patient to have contact with an ophthalmologist at base hospital via video conferencing. This helps the patients consult an ophthalmologist without travelling and thus bridges the gap of inaccessibility of services. An ophthalmic assistant (OA) posted at PEC centres examines the patients and feeds information to the ophthalmologist at the base hospital.

Primary Eye Care Services and Health Wellness Centre

With the introduction of Ayushman Bharat, eye care service will be expanded under the Health and Wellness Centres for the community members. In the last few years, *various components of the Comprehensive Primary Health Care (CPHC) package of services under Ayushman Bharat have been rolled out and are currently being implemented across the country*. Some of the newer services introduced in this package include screening, prevention, control and management of non-communicable diseases, screening and basic management of mental health ailments, care for common eye problems and Ear-Nose-Throat (ENT) problems, basic oral health care, elderly and palliative health care services and emergency medical services. These additional packages are aimed to ensure that every citizen in this country will be able to access comprehensive health care services at the place they live or nearby to them.

various components of the Comprehensive Primary Health Care (CPHC) package of services under Ayushman Bharat have been rolled out and are currently being implemented across the country

Community Health Officer at the HWC-SHC, will lead the primary health care team and ensure that regular eye screening is undertaken in the community under his area, coordinate with the Rashtriya Bal Swasthya Karyakram (RBSK) Team for screening children of age group 0-18 years in the Anganwadi and schools, manage referral of those requiring surgery and treatment of refractive errors, ensure access to free spectacles, and also undertake home and community-based follow up visits. And, will support and supervise the activities to be undertaken by the ASHA and Multipurpose Workers such as – vision screening, preventive care activities, promotion of eye care, and home-based follow- up care.

As a part of the Health and Wellness Centre team at the Sub-Health Centre, his responsibility is to ensure that Eye Care services are available and promptly provided to the community in which he is working. It would require active cooperation of all the members in the Health and Wellness team.

INTEGRATION MODEL - INTEGRATED PEOPLE-CENTERED EYE CARE

The World Report on Vision (WHO 2019) seeks to stimulate action to meet challenges faced by countries, by proposing an integrated people-centered eye care (IPCEC) to strengthen the health system.[18] The IPCEC can help address significant eye care challenges, including those with low vision and visual disabilities. The IPCEC adopts a health system perspective with four strategies: (i) engaging, empowering people and communities; (ii) reorienting the model of care to a strong primary care; (iii) coordinating services within and across sectors; and (iv) creating an enabling environment.

The World Report on Vision (WHO 2019) seeks to stimulate action to meet challenges faced by countries, by proposing an integrated people-centered eye care

As summarised in the World Report on Vision, integrated people-centred eye care:

- is defined as "services that are managed and delivered so that people receive a continum of health interventions covering promotion, prevention, treatment and rehabilitation,
- should address the full spectrum of eye conditions according to their needs, coordinated across the different levels and sites of care within and beyond the health sector.
- recognizes people as participants and beneficiaries of these services, throughout their life course.

1. **Empowering and engaging people and communities:** The community should be empowered and engaged in eye care services through increased awareness of the importance of regular eye examinations. They should be informed about availability of services and rational use of medication. This can be achieved through various methods including the use of education and technology.

2. **Reorienting the model of care:** To address people's eye care needs, all levels of eye care are needed, from community through to specialised tertiary care. These must include integrated and effective referral pathways across the eye care system. There is a need to use innovative models of care to strengthen eye care in universal health coverage and ensure adequate funding, appropriate training for a sustainable workforce, coordination with other services and sectors, and effectively planned referral systems.

3. **Coordinating services within and across sectors:** The World Report on Vision reminds that without good continuity and coordination of eye care, patients are at risk of experiencing fragmented, poorly-integrated care from multiple providers. Coordination of care for the individual involves a range of strategies including case management, team-based care, and efficient referral systems. Coordination also encompasses the creation of linkages between eye care and other health programmes.

4. **Creating an enabling environment:** The following three blocks include specific challenges faced by the eye care sector: (i) Leadership and governance: The responsibilities of governance in health care involves developing a strategic plan, then ensuring accountability and overseeing the plan's implementation (ii) Health workforce: IPEC depends on the availability, accessibility, acceptability and quality of services provided by the health workforce (iii) Information: A well-functioning health information system should collect information about the capacity of the health system to provide eye care services. It should also measure its performance – how well existing eye services address population needs in an equitable manner.

To achieve universal health coverage (UHC), such integration of eye care within the health care delivery system at all levels is required. An increase in non-communicable eye diseases has added a larger number of people with low vision and irreversible blindness. The visual disability and low vision caused by the chronic eye diseases should not be viewed in isolation from the rest of NCDs. It is imperative that prevention of blindness and visual impairment is to be viewed within the context of global public development and improvement, which mainly endorses prevention as well as control of Non-Communicable Diseases related to general health. The WHO has defined international standards for effective service delivery at each level of care. The essential elements of international standards include guidelines for human resources, equipment, service needs, and place of service. A set of optional components is added as 'PLUS' services for primary and secondary levels to broaden and strengthen vision rehabilitation at community and district levels.

The concept of IPCEC as promoted in the World Report on Vision, confirms that by working hand-in-hand with Ministries of Health, one can ensure eye health services reach those who need these services the most. In this way, one can make a huge difference in the lives of people for generations to come.

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Photo Credit: Dr RP Centre, AIIMS

6

Vision Rehabilitation and Adaptive Training for People with Visual Disabilities

WHAT IS VISION REHABILITATION?

Low vision rehabilitation aims to optimize the use of residual vision after severe vision loss to the patients, but also aims to teach skills to improve visual functioning in daily life, thereby empowering them for independent living.[1] While making all efforts to improve independent living skills, daily living activities (ADL), and Quality of Life (QOL) as a whole for people living with visual disabilities (PwVDs), vision rehabilitation is an indispensable component. It needs a range of elements to be considered (Clinico-Social Model) as shown in Figure 1.[2] The rehabilitative needs of patients vary considerably according to clinical profile, with some patients needing a simple reading device and others requiring multiple devices and a wide range of vision disability interventions. The primary role of ophthalmologists in vision rehabilitation services is to assess the rehabilitation needs and refer the patients for vision rehabilitation. A thorough primary evaluation is imperative to determine the level of care and type of intervention required based on the complexity of the problems, needs, goals, mental status etc.

Low vision rehabilitation aims to optimize the use of residual vision after severe vision loss to the patients, but also aims to teach skills to improve visual functioning in daily life, thereby empowering them for independent living

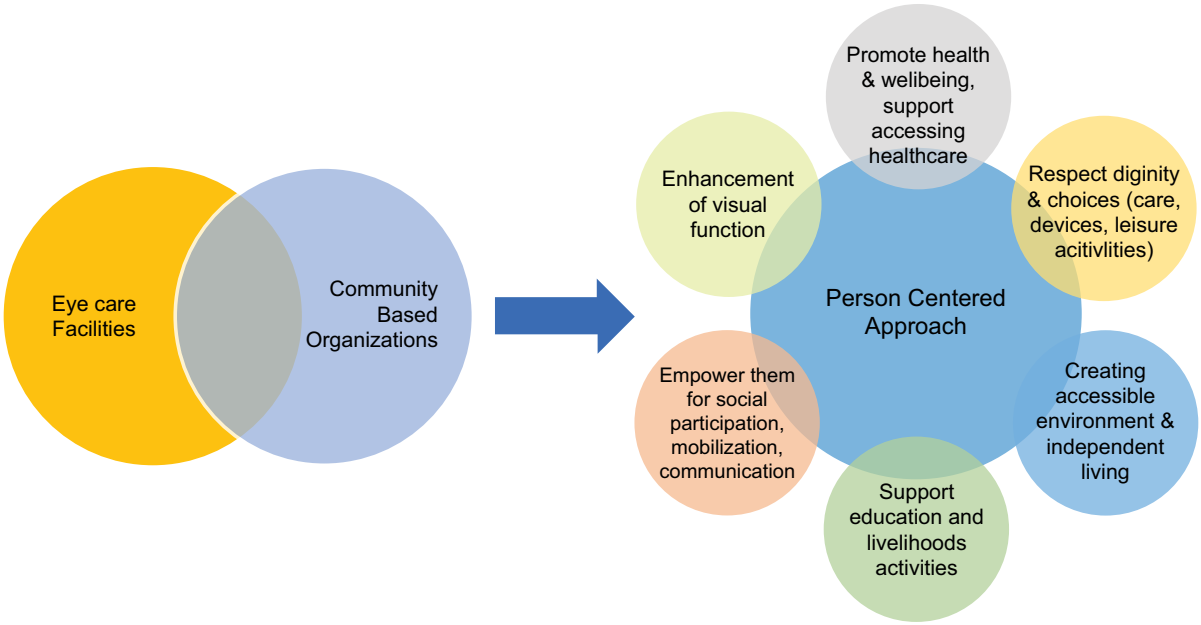

Figure 1: Clinico-Social Model

Levels of Vision Rehabilitation

Vision rehabilitation can be implemented at the following levels-

Vision rehabilitation is provided at primary care level at home by trained family members or caretaker or community multipurpose health workers

Level 1: Rehabilitation at the doorsteps

Vision rehabilitation is provided at primary care level at home by trained family members or caretaker or community multipurpose health workers. Patient centred services can be provided at the doorstep of the patient. This may include home environment and lighting modification, orientation and mobility, and inclusive education, etc.

Photo Credit: RP Centre AIIMS

Level 2: Rehabilitation at the health centre or hospital

Vision rehabilitation services are provided at the secondary setting or hospital by low vision specialists and trained personnel in rehabilitation. Services like orientation & mobility training,initial reading and writing, rehabilitation training, the use of accessible smartphone apps and features, for examples, TalkBack for androids, VoiceOver for Apple iOS, and apps like InstaReader, KiBo, TapTapSee, Visor, AI seeing, Eye-D pro, etc., training for activities of daily livings, tactile education toys using fingers over finger technique can be provided at this level. It may not include all elements of vision rehabilitation like vocational training and special education, etc.

Photo Credit: RP Centre AIIMS

Level 3: Rehabilitation services by multi-disciplinary team at dedicated regional or state centres

Vision rehabilitation can be provided in a comprehensive manner by multidisciplinary team. It is usually done at regional or tertiary eye care centre level. This includes full evaluation of visual function, assessment of the functioning and performance by ophthalmologist, optometrists, occupation therapist, and other rehabilitation professionals. Social workers, psychologists and special trainers also play an important role. This level caters to the entire gamut of community-based rehabilitation components, such as general health, vision assessment, education, livelihood, social, advocacy and empowerment activities.

Role of Counselling and Education

Counselling is not merely giving any advice or directing someone to take a particular course of action. On the other hand, it is a method of enabling the patient to choose the best fitting intervention for them. It is an interaction between trained professionals and patients to assist or provide guidance. There has been a growing recognition in this field. There is a need to tackle the various psychosocial impacts of visual impairment and to provide emotional support as part of integrated low vision services in which a range of assessment and support services, like optometry, rehabilitation and welfare benefits advice, are available at 'one stop shop'.[3] The following aspects should be considered while providing counselling and education:

(a) Educate about disease- based on low vision IEC (Information, Education and Communication) material.

(b) Educate about the low vision devices prescribed to the patient.

(c) Education about computer adaptation using screen magnification.

(d) Mobile phone application training

(e) Community resource awareness.

(f) Educate about lighting modifications -glare protection, lighting enhancement with adjustable gooseneck lamp, overhead lighting, wall mount lighting, LED lamp, CFL with various luminums etc.

(g) Patient safety education training -reduce risk of falling, fire, electricity, bathroom tile, sharp object, cooking or meal preparation with gas etc.

(h) Educate about environmental modification- arranging furniture, tables, desks, corridors, spacing in the central part of house, or wall side as per needs for the home safety.

(i) Education on Daily living activities including personal care, clothing, cleaning, bathing, brushing, eating, home management, financial management, and shopping etc.

Assessment of the Patient's ability to perform visual tasks

The followings can be observed about patient's ability:

1. Patient understands the disease or not?
2. The prognosis of eye diseases.
3. What bothers most to him or her?
4. Ability to read a continuous print
5. Ability to write.
6. Understanding the position of hours hands of a clock
7. Reading labels or medicine, like expiry date, date of manufacturing
8. Using a mobile phone, telephone, smartphones and tablets
9. Using a computer or laptop
10. Managing Emails and texts
11. Shopping and buying groceries etc.
12. Preparing meals and eating

13. Dressing and bathing
14. Managing finances, paying bills, etc
15. Walking in indoor and outdoor environment
16. Navigating steps
17. Seeing signs, traffic signals, road signs
18. Concern about safety at home and workplaces
19. Fear of falling, personal care
20. Participation in activities of daily living
21. Living conditions and family responsibilities and caretakers
22. Ability of voice dialling

Adaptations:

Adaptation is defined as the process of making modification whereas adjustment is the process of balancing any conflicting requirements that occur in behaviour. Adaptation leads to accepting and trying to adapt to new skills and information whereas adjustment is clearing the obstacle that occurs in human needs. Adaptive training is tailored to clients' needs or individuals' unique needs, clients' experiences, employment goals etc.

1. Home adaptation, e.g., home safety, kitchen adaptation, bathroom adaptation, medications adaptation
    - Home safety -segregate frequently used items from lesser used ones, then keep items together near each other. Labelling drawers, cabinets to help in locating items
    - Cover sharp corners
    - Cautious of overhangs
2. Kitchen adaptations
    - Tactile markers for cups and mugs, bold markers items
    - High contrast containers
    - Use knife holder
    - Using tactile markers for oven, microwave
    - Always better to use double spatula
    - Cooking practice with cold pan
3. School environment adaptation

Photo Credit: RP Centre AIIMS

School and classroom environmental adaptations can help the student who is blind or visually impaired to move safely and efficiently through their environment. A student's need for adaptations to the environment depends on their visual impairment and any additional disabilities. It is important to understand each student's visual diagnosis and the implications about functional vision to make the appropriate adaptations in order to maximize the student's use of vision.[4]

Training setting: Training can be given under various setting, for example,

- Centre-based training-Hospital or clinic.
- Field based training - Hostels, Library, schools, offices etc.

Training topics:

1. Communications — Audio devices, handwriting, Braille, computer use
2. Household management — safe cooking, laundry
3. Mobility — shopping, safe travel skills, public transportation
4. Personal grooming — makeup, shaving, eating etc.
5. Exercise — Coordination, balance, cardio fitness
6. Sensory training — Study and use of human senses
7. Leisure time skills — Crafts, bowling
8. Wellness classes — Proper nutrition, stress management
9. Individual or group counselling

Individual Visual Rehabilitation Plan (IVRP)

The individual needs of every patient are different with their unique and peculiar set of challenges; thus, one set of services cannot be generalized.

Category - I: Individuals with binocular BCVA less than 6/18 to 1/60

Individuals falling into Cat-1 are the potential beneficiaries for visual based assistive devices. They should be encouraged to use ATs based on visual substitution skills Assistive technology based on body sense used in learning e.g., Optical magnifiers or CCTV. Near vision assessment using M or N notation will be useful to prescribe large print books.

Assistive products: Any form of external products or equipment whose primary purpose is to improve individual's functioning and performance across all activities.

Assistive technology: The products and system, and along with application of organized skills and knowledge in order to maintain and improve functioning of people with disability.

- Assessment
- Prescription or recommendation
- Training and retraining
- Maintenance & repairing

Disease Specific (Customized) Services

This is a disease specific service which includes detailed evaluation of vision assessment and prescribing optical low vision aids. The goal of low vision aids is to maximize the functioning in patients with remaining or residual vision. Various low vision aids are available for this as follows:

Important

The sooner the Orientation &Mobility training begins, the better is the outcome and the sooner patient learns independent living.

Training on Activity of Daily Living: Skills assistance e.g. eating, bathing, clothing, washing, grooming, nail cutting, personal hygiene etc.

Living safely and independently- demonstration to the attendants

Guidance on modification of environmental factors- room lighting, living conditions etc.

- **Near magnification devices:** The near viewing magnifiers are used for nearer or closer tasks such as writing at arm's length, reading, drawing, sewing, checking bills and labels etc. There are many types of near vision magnifiers; each of them involves a separate set of utilities and limitations. Stand magnifiers are particularly useful for students with poor motor control, e.g., handheld/ stand/ electronic magnifiers, computer screen magnification programs.
- **Distance magnification devices:** Distant viewing magnifiers are useful in tasks performed at distance greater than arm's length such as reading a chalkboard, watching TV, sporting events, bus number, signpost, hoardings. e.g., telescope.
- **Visual Field Expanders:** Reverse telescopes
- **Glare control:** Anti- reflective coating on spectacles, adjusting angle of incoming light; using polarizing lenses.

Non-disease Specific Services

This intervention is required by the individuals with vision loss and blindness due to any ocular diseases. This is a non-disease specific (outcome based) vision rehabilitation service. Therefore, the intervention is similar in all cases. For example, vision loss due to glaucoma, diabetic retinopathy needs training for mobility and ADL. [5,6] However, Individual Rehabilitation Plan (IRP) can be developed for better outcomes. The following vision rehabilitation training can be considered in addition to above counselling and education.

Tactile human digestive system

- Adaptive training on utilization of devices (assistive technology)- optical low vision aids like; magnifiers, tactile aids, talking devices etc.
- How to use it at home- cleaning, maintaining, safe keeping etc.
- Orientation and mobility – Indoors and Outdoors (if required)
- Orientation- awareness about surrounding & environment, position, space etc.
- Mobility- meaningful movement through the environment safely, efficiently, independently

Other need-based Rehabilitation Services

A. Reading

Being able to read is one of the key goals for rehabilitation. Near vision assessment should be carried out using N or M notation.[7] It is not ideal to prescribe a large print book (LPB) without this assessment. Patients with Binocular BCVA 5/60 may face difficulty or may not be able to read. LPB is useful for a patient with N 20 or 2.5 M near vision. Normal or regular print size is N8 or 1M. We need to proceed as follows:

(a) Check the visual acuity, contrast sensitivity, and central visual field

(b) Decide which medium is best suited for the patient- (tactile or print text)

(c) Check lighting system and devices in hand

- Lighting
- Reading glasses
    - o Handheld magnifiers with or without illumination
    - o Stand magnifiers with or without illumination

- Electronic magnifiers
- Electronic books, audio-books, text to speech devices
- Large print
- Additional reading devices should be prescribed

In addition to optical magnifiers, the following devices can be considered to improve the reading speed and performance.[8]

- Lighting
- Large print books (size N 20 or 2.5 M)
- Low vision lamps with LED (Watts-15 and above)
- Training on optical aids if any.
- Reading stand
- Single window typoscope for albinism patients or low contrast patients

B. Writing

- Multiple window typoscope (with appropriate size)
- Pen hold magnifiers
- Computer- large print keyboard
- Pen producing high contrast

C. Games

1. Puzzle games 2. Large print cards 3. Large print games 4. Custom made chessboard

D. Communication and mobile apps: Training

- Computer accessibility
- Text to speech
- Cell phone accessibility
- GPS accessibility
- Accessible Application (InstaReader, KiBo, Tap Tap see, Eye D, Narrator etc.)

Category- II: Individuals with Best Correct Visual Acuity less than 1/60: Individuals under this category are beneficiaries for Tactile or Sound Based Assistive devices. They should be encouraged to use ATs based on visual substitution skills, particularly for educational purposes.

At the same time, we should not discourage cross-use of devices wherever it is fit- "combined techniques maximize the benefits"

Disease Specific (Customized) Service

There is hardly any productive role from disease specific low vision services for such patients with very poor vision. There is little or no productive benefit from visual based assistive devices e.g. optical magnifiers, CCTV etc.

Non-disease Specific Services

The vision rehabilitation service is similar for all patients. Assistive products based on tactile, or sound or vibration will be the primary tool used for the rehabilitation service. The following services may be considered according to needs[9]

a. Orientation and mobility - essential

- Human guide
- Self-mobility
- Walking cane
- GPS navigation, smart applications
- Activity of Daily Living (ADL) skills assistance
- Living safely and independently.
- Guidance on modification of environmental factors- room lighting, living conditions etc.
- Other need-based rehabilitation services

A. Reading

- Braille books
- Audio Digital recorder, e.g. DAISY, Note taker
- Electronic books, audio-books, text to speech devices

B. Writing

- Braille slate and stylus
- Brailler
- Refreshable Braille Display

C. Mathematics & Sciences

- Demonstration about geometry or science kits
- Other tactile mathematical assistive products

D. Games and Toys

- Tactile games
- Sound games

E. Computer adaptation using magnification, screen readers training

F. Communication and mobile Apps- Cell phone applications training (read print aloud, offer directions, identify colors, objects, currencies) e.g. TapTap See, AI seeing, Eye D etc.

Children with Visual Impairment

1. **Birth to three years -** Early intervention program for habilitation - familiarization of regular items - toys- tactile or sound toys
2. **Pre-school child -** familiarity to various devices for educations (VAT and TATs) - familiarization of regular home items, recommendations of devices - learning to write

3. **School aged Child -** assessment of visual performance - recommendations of devices - learning to write
4. **Teenagers and young adults -** digital technology preferably smartphones, tablets, computers, etc.

A. Training Visual rehabilitation goes beyond prescribing low vision aids or devices. Details are given in the Individual Visual Rehabilitation Plan (IVRP) below.

Orientation & Mobility

- Child may fear or feel anxiety for movement- emotional control
- Orientation & learning different body parts- arms, legs, hands, fee, and how they move.
- Encourage purposeful movement, developing the child's gross and fine motor skills
- Learn concepts about the child's surroundings, beginning with his immediate environment. e. Recognize what he is seeing, hearing, smelling, and touching
- Handing over toys to person with sound coordination, straight line walking

Tactile training: All students with low vision should have goals for the development of tactile skills in their education programs.[10]

- Finger over finger technique i. Kitchen items ii. Household items iii. Clothing items iv. Furniture items

Texture Training: Soft, hard, rough smooth, Sound based training

Sound recognition: Using headphone for various sound

Habilitation

Independent living: Bathing, brushing teeth, eating, food preparation (spreading, peeling a banana, stirring), grooming, combing hair, dressing, organizing (picking up toys), exposure to money, understanding time (breakfast in the morning, nap in the afternoon, and pajamas in the evening)

Children: Adaptations

- Home and school environment, curriculum, materials adaptations
- Accessible instructional materials » Large print, Braille code, audio, so on. Materials should be adapted only to the extent necessary for efficient learning.

If regular materials can be used in conjunction with environment adaptations or low vision devices, such an approach is preferable to using specialized materials.

Children with ROP

- Preschool and Kindergarten are the formative years for developing language, social skills, and concepts
- Hand over hand training for children with a visual loss
- Play- materials can be categorized as (local suitability)

Object Permanence

Kitchen Items: » Household items » Clothing items » Furniture items

Role of Medical Social Workers or Rehabilitation Assistants

The following points are potential roles of medical social worker or rehabilitation assistant in line with persons centre approach for disability care.

Table 1: Role of the Medical Social Worker in Low Vision Rehabilitation

In Hospital	In Community
Working with patients, caregivers, or family members actively to understand the needs, values, and preferences of the disabled person and formulate a plan for optimum management of what they need for their care (Person-centered Approach). Deciding a place or organization where the concerned care is provided in the networks.	Supporting a person-centered approach at the community level through networking with NGOs or schools for the blind. The community and family members are important for successful implementation of a person-centered approach.
Providing education, information about the eye disease causing low vision or blindness at the first meeting, e.g., retinitis pigmentosa, glaucoma.	Involved in preparing a roadmap for disabled. Encouraging and enabling a person with visual disability, as also the family members for active participation in decisions for his or her care.
Counselling and education about safety at home environment, e.g., need of spacing and spatial orientation, measures to reduce falls, lighting modification etc.	Orientation and training of family members or caregivers (if any) while visiting home to create a person-centred culture
Providing education and information about daily living activities, e.g., personal care, hygiene, brushing, clothing, cleaning, financial management, and initial training if feasible.	Visits to organizations or schools for the blind and involved in co-designing in welfare, health promotion or prevention and safety programs.
Counselling and information about vocational training and other livelihood activities	Support in removal of any physical or attitudinal barriers in family or in community
Facilitating to avail various schemes under The Government of India, e.g., ADIP scheme, DISHA for early intervention and school readiness scheme, Scholarships etc.	Facilitate in the application of government schemes. E.g. Individual with visual disability needs assistance in availing or even filling out the application forms
Providing initial training about use of various assistive devices and their maintenance and safe keeping, e.g., reading stand, optical magnifiers.	Visits schools for the blind and assist students for issuance of visual disability certificates if required.
Initial training on Orientation and Mobility (self-independent, Human, or sighted guide, mobility using walking cane).	Community awareness program and sensitization of other community level health workers or community leaders.
Providing all information about initial reading and writing rehabilitation, e.g., different media used in special education like Braille, audio materials.	Facilitate reference for any other healthcare services. People with disability have generally a higher risk of health problems than people without. They may require more frequent visits to the hospital.

Training on use of smartphone mobile application for communications and other daily living activities, e.g., SUPERSENSE application use for object or obstacle identification, Money application for financial management.	Training of family members or caretakers via Tele-health for people with visual disability during emergency lockdown. E.g. During lockdown due to COVID 19 disease pandemic in India.
Information about Tactile stimulation training for children and pre-academic learning.	Support in accessing healthcare needs

CONCLUSION

Low vision drastically impairs the quality of life by restricting persons' ability to carry out daily activities in addition to curtailing his/her potential for job and growth prospects. When this aspect is coupled with the fact that around 85% of these visually impaired have a likelihood of useful residual vision then it becomes imperative that every effort should be made to provide adequate visual rehabilitation. Low vision and vision rehabilitation services are an important part of eye care practices that help individuals to become independent and also for integrating them into society and community life. Sighted persons use their visual sense to do routine tasks, however a person with visual disability faces numerous challenges to do simple activities in their lives. Many of them thus adopt a restricted lifestyle that has a negative effect on their overall wellbeing and social inclusion. *Providing vision rehabilitation along with Training and equipping them with appropriate assistive products would be helpful to enhance quality of life.*

Providing vision rehabilitation along with Training and equipping them with appropriate assistive products would be helpful to enhance quality of life

Low Vision Rehabilitation and Training Centre
Daily Register Entries
Community Ophthalmology, Dr. RP Centre, AIIMS, New Delhi

Date: _____/_____/_____ **UHID:** _____

A. Personal Information

Patient Name:	**Guardian Name:**	**Age**	**Gender**	**New/Old** ☐ **New** ☐ **Old**
Address (State only)	**Contact Number:**	**BCVA (RE)**	**BCVA (LE)**	**Diagnosis:** _____ **Other Disability:**

B. Patient Referred form?

☐ LVA ☐ RPC OPD ☐ PEC/Community
☐ Blind school/Vocational centre ☐ Others, **If others**, please specify……..

C. Patient Needs

☐ ADL Training
☐ Visual disability certificate/Renewal/Name correction
☐ Mobility Training (Sighted, Self, Cane)
☐ Mobile Training
☐ Writer for exam
☐ Reading/writing Orientation
☐ School admission
☐ Vocational Training
☐ Railway Concession Certificate
☐ LVR Device
☐ LVA Device
☐ Job Placement
☐ Computer Training
☐ Others

D. Education & Counselling

☐ Using of spectacle regular basis
☐ Large print book
☐ Using dark pen/pencil
☐ Using table and chair with table lamp
☐ Environmental modification
☐ Using cap/umbrella while outing
☐ Using torch at night
☐ Medication/pills organizer
☐ Bathing / brushing / dressing
☐ Personal hygiene (nail cutting, saving)
☐ Using bright light at workplace
☐ Tactile stimulation
☐ Sound stimulation
☐ Lighting stimulation
☐ Smell sensation
☐ Smartphone use
☐ Explain benefit of VC
☐ Vit rich diet/yoga/meditation
☐ Vocational training orientation/coun.
☐ Special school orientation/admission
☐ Eating adaptation
☐ Keep devices clean and safe
☐ Marriage counselling

E. Paediatric Vision Skills Training

☐ Fixation
☐ Localization
☐ Tracking

F. Service Provided

☐ ADL counselling
☐ ADL Training
☐ Mobility Training (Sighted, Self, Cane)
☐ Mobile Training
☐ Assisted for VC/Renewal/Name
☐ Reading/Writing Rehabilitation
☐ LVR Device
☐ LVA Device
☐ Railway Concession
☐ Explain benefits of visual disability certificate
☐ Searching items
☐ Filters
☐ HMD/Smart Vision Glasses

G. Admission/referral

☐ School admission referred
☐ Vocational training referred
☐ School admission done
☐ Vocational training Done
☐ Already enrolled in school
☐ Already enrolled in vocational training centre

Please enter admission &referral Place: _____

H. Any Device Prescribed?

☐ Yes ☐ No (*If no go to I*)

If yes, Type of Prescribed device

☐ Optical Device ☐ Non-Optical Device ☐ Both

Prescribed Device

☐ Dome Magnifier	☐ Stand Magnifier	☐ Pocket Magnifier
☐ Handheld Magnifier	☐ Bar Magnifier	☐ Spectacle Magnifier
☐ Pen Holder Magnifier	☐ Uniocular Telescope (Clipped on/handheld)	☐ Binocular/Telescope
☐ Signature Guide	☐ Typo scope (Single and multi-window)	☐ Mobility Cane
☐ Braille cube	☐ Filter Glasses/Umbrella/Cap	☐ Large print book
☐ Dark Pen/Pencil	☐ Reading Stand	☐ Low vision lamp
☐ Intellectual/Tactile/sound/light/vegetable/fruit shape toy	☐ Video magnifier	☐ SeeTv Glass
☐ Torch light	☐ Mobile Stand	☐ LV makeup mirror 3X & 5X

I. Any Device Dispensed?

☐ Yes ☐ No (*If no go to J*)

If yes, Type of dispensed device

☐ Optical Device ☐ Non-Optical Device ☐ Both

Aadhar Number: ……..

Dispense Devices list

☐ Dome Magnifier	☐ Stand Magnifier	☐ Pocket Magnifier
☐ Handheld Magnifier	☐ Bar Magnifier	☐ Spectacle Magnifier
☐ Pen Holder Magnifier	☐ Uniocular Telescope (Clipped on/handheld)	☐ Binocular/Telescope
☐ Signature Guide	☐ Typo scope (Single and multi-window)	☐ Mobility Cane

☐ Other (Please specify) ……

J. Do you have visual disability certificate now?

☐ Yes ☐ No (*If no go to K*)

If yes, Percentage, please ……...%

K. Follow-up Date

☐ 4 Months ☐ 6 Months ☐ 1 Year

☐ SOS

L. Remarks (if any)

……

……

दिव्यजनों को शिक्षा, रोजगार एवं सामाजिक सुरक्षा में भागीदार बनने का समान अधिकार है।

PWDs deserve equal opportunities, rights, employment, education, and social practices and participation

असमानता और भेदभाव के बिना सभी दिव्यजनों को आगे बढ़ाने का संकल्प है।

"Leaving No One Behind" irrespective of age, gender, economic status, ethnicity

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VISION 2020: The Right to Sight – INDIA is a registered not-for-profit forum and is a key driver of the global initiative of the World Health Organization (WHO) and International Agency for the Prevention of Blindness (IAPB) for reducing avoidable visual impairment.

It is a collaborative effort of INGOs, NGOs, eye care organisations in India and the Government to coordinate and advocate for improved eye care programs; to gain and share knowledge and together develop solutions to achieve quality, comprehensive and equitable eye care.

Vision

India free of avoidable blindness where every citizen enjoys the gift of sight and the visually challenged have enhanced quality of life as a right.

Mission

Work with eye care organizations in India for the elimination of avoidable blindness by provision of equitable and affordable services as well as rehabilitation of visually challenged persons.

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