Image courtesy: L V Prasad Eye Institute

VISION 2020: The Right to Sight - INDIA

VISION CENTRE MANUAL

2nd edition
September 2024

Under the knowledge hub initiative of
VISION 2020: The Right to Sight-INDIA

Developed by

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Vision Centre Manual

Image courtesy: L V Prasad Eye Institute

A VISION 2020 : The Right to Sight-India Publication

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2nd edition, September 2024

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Message

The first edition of Vision Centre manual was developed in October 2011. With the rapid changes in service delivery models and emerging technologies, the second edition has been developed in September 2024 after thorough discussions and consultations.

The Vision Centre Manual is presented to you in detail which is an important component in establishing, operating and managing the vision Centres which provide primary eye care services to patients. This manual is written for healthcare managers, administrators, and other interested parties seeking ways to improve the quality and accessibility of primary eye care services, and it covers all aspects of the vision centre model.

More than a billion people are affected by vision impairment (VI) in the world, which alters their social, economic and emotional status. It is said that in India itself where more than 34 million people are suffering from VI, if managed effectively and at the right time more than 80% of blindness conditions can be tackled. Vision centres play a vital role in this preventive measure as they are equipped to offer services ranging from simple eye checkups to treatment of other common ailments, which are in high demand in primary eye care.

Vision centres were pioneered by L V Prasad Eye Institute, India in 1992 and further developed as part of the 'Pyramidal Model of Eye Care Service Delivery,' the vision centre refers to a breakthrough in primary eye care concepts. This manual examines the different facets of Vision Centres such as their range of services, coverage, main functions, and the benefits they bring. It has provisions on how to choose and how to set up a vision centre that includes infrastructure, required equipment, personnel, and important activities such as eye examination, spectacles dispensing, and referral of patients.

We also look at the role of the vision centres within the national health systems and how they can be used to achieve the goals of Universal Eye Health (UEH) and how technology can be utilized further to improve the scope of these centres. The manual covers issues related to revenue generation and sustainability, management of monitoring indicators, increasing patient footfall, factors for success and experiences from the implementation of various models in India.

Correspondingly, this manual addresses the role of national and International NGOs in the promotion and support of vision centres, gives the addresses for possible credit sources, and details the management tasks necessary for the centre.

Our objective with this manual is to equip the service providers with the necessary knowledge and tools to establish, manage and monitor vision centres. By following the guidelines and best practices outlined, services can be enhanced, ultimately improving the quality of life for individuals affected with vision impairment.

Dr Rajesh Saini
President

Mr Phanindra Babu Nukella, Ph.D.
Chief Executive Officer

Acknowledgment

We extend our heartfelt gratitude to the dedicated committee members who played an invaluable role in revising and enhancing this Vision Centre Manual. Their expertise, insights, and unwavering commitment have been instrumental in shaping this comprehensive guide.

We deeply appreciate the time and effort each member invested in reviewing, updating and rewriting the manual. Their contributions have ensured that the document reflects the most current practices, standards, and innovations in primary eye care. The thoughtful revisions and additions the committee provided have greatly enriched the content and effectiveness of this manual.

Our sincere thanks go to the Committee:

- Dr. Srinivas Marmamula, Network Associate Director, Research - Public Health Research & Training, Gullapalli Pratibha Rao International Centre for Advancement of Rural Eyecare, LV Prasad Eye Institute, Hyderabad
- Mr Franklin Daniel, Lead - Vision Centre & Allied Ophthalmic Personnel Programmes, Mission for Vision
- Ms. Bharti Janyani, Sr. Hospital Manager (Operations- Community Eye Care, Education & Training), Sewa Sadan Eye Hospital, Bhopal

We are thankful to Prof. (Dr.) BR Shamanna, School of Medical Sciences, University of Hyderabad for reviewing the draft manual and offering key inputs that helped further strengthen the manual.

We also wish to acknowledge the support of other stakeholders whose ongoing collaboration has been vital to this revision process. Their commitment to advancing eye care and supporting vision centres is deeply appreciated.

This manual stands as a testament to the collective efforts and expertise of this remarkable committee. We are confident that it will serve as a valuable resource for establishing and managing vision centres, ultimately contributing to improved eye care services and better outcomes for individuals affected by vision impairment.

Abbreviations

ANM	-	Auxiliary Nursing and Midwifery
AOP	-	Allied Ophthalmic Personnel
ASHAs	-	Accredited Social Health Activist
ATV	-	Average Transaction Value
AWWs	-	Anganwadi Worker
CEH	-	Community Eye Health
CHCs	-	Community Health Centres
CHW	-	Community Health Worker
CPD	-	Continuing Professional Development
DR	-	Diabetic Retinopathy
EMR	-	Electronic Medical Record
IOP	-	Intra Ocular Pressure
IPD	-	Inter Pupillary Distance
VI	-	Vision Impairment
VC	-	Vision Centre
UEH	-	Universal Eye Health
CO	-	Corneal Opacity
IEC	-	Information, Education, Communication
IPD	-	Inter Pupillary Distance
LVPEI	-	L V Prasad Eye Institute
MIS	-	Management Information System
MCH	-	Maternal and Child Health
MLOP	-	Mid-Level Ophthalmic Personnel
MFV	-	Mission for Vision
NGO	-	Non-Government Organization
NPCBVI	-	National Program for Control of Blindness and Visual Impairment
PCO	-	Posterior Capsular Opacification
PEC	-	Primary Eye Care
PHC	-	Primary Health Centre
OA	-	Ophthalmic Assistant
OP	-	Out Patient
PHCs	-	Primary Health Centres
PMT	-	Post Mydriatic Test
RE	-	Refractive Error
SDGs	-	Sustainable Development Goals
TOCC	-	Tele-Ophthalmology Command Centre
UHC	-	Universal health coverage
UEHC	-	Universal Eye health coverage
VA	-	Visual Acuity
VI	-	Vision Impairment
VT	-	Vision Technician

Content

Chapter 1

Introduction to the Vision Centre concept

Vision Impairment (VI) affects over a billion people globally. It adversely affects an individual's social, economic, and emotional well-being. Fortunately, over 80% of blindness is avoidable, and timely interventions, such as cataract surgery and spectacles, can positively change the quality of life of individuals suffering from vision loss. Visual impairment directly or indirectly impacts eight out of seventeen Sustainable Development Goals (SDGs) adopted by the United Nations in 2015. The Global Burden of Disease study estimated that 275 million people in India have VI, which is 23% of the total population.[1] Cataract and uncorrected refractive errors are the leading causes of this vision loss. Both these conditions can be addressed with relatively simple and cost-effective interventions.

Addressing VI has been a priority of the Indian government. In 1976, India was the first country to initiate the National Programme for Control of Blindness (NPCB).[2] It was followed by a large-scale World Bank-funded cataract blindness programme that led to high rates of cataract surgical rates in many parts of the country.[3] The efforts of the government and other non-governmental organisations are evident from the decline in blindness from 1% in 2006-2007 to 0.3% in the most recent national survey.[4]

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[1] Bourne, Rupert, et al. "Trends in prevalence of blindness and distance and near vision impairment over 30 years: an analysis for the Global Burden of Disease Study." *The Lancet global health 9.2 (2021)*: e130-e143.

[2] Agarwal LP. National programme for prevention of visual impairment and control of blindness. Indian J Ophthalmol. 1978 Jan;25(4):1-5. PMID: 659002.

[3] Jose R, Bachani D. World Bank-assisted Cataract Blindness Control Project. Indian J Ophthalmol. 1995 Mar;43(1):35-43. PMID: 8522371.

[4] Vashist P, Senjam SS, Gupta V, Gupta N, Shamanna BR, Wadhwani M, et al. Blindness and visual impairment and their causes in India: Results of a nationally representative survey. PLoS One. 2022 Jul 1;17(7 July).

The concept and need for vision centres

Vision centres are another innovative concept from India in the arena of primary eye care. L V Prasad Eye Institute (LVPEI) initiated this model in 1992 and upscaled it in 2002 as part of the 'LVPEI Pyramidal Model of Eye Care Service Delivery.' Vision centres gained popularity following this upscale, and several eye care organisations adopted this concept with relevant modifications. Vision centres aim to provide permanent, committed, and sustainable primary eye care. They use appropriately trained personnel and technology to address common conditions that lead to vision loss. The major causes of vision loss, like refractive errors, can be corrected by dispensing spectacles, and cataract can be detected and referred to the next level (secondary/tertiary centres) of care. With advancements in technology, more and more eye conditions are being brought into the purview of vision centres. Early detection of serious eye conditions, such as glaucoma and diabetic retinopathy, is now possible at technology-enabled vision centres.

Vision Centres are the first point of contact for many patients, and each centre caters to the primary eye care needs of 50,000 to 100,000 populations. Epidemiological studies have indicated that 20-30% of the population needs eye care, including those with VI and other ocular morbidities that may not result in vision loss. Apart from the objectives to develop horizontal linkages with primary health care and provide information, education, and communication on issues related to eye care in the community, other core activities of the vision centre can be summarised with the 4 Rs:

- Recognition of common conditions that cause VI and blindness

  For example: Cataract.

- Refraction and dispensing of Spectacles

  For refractive errors and presbyopia

- Referral to higher levels of care for complex eye conditions

  For example: acute eye conditions, such as eye infections, glaucoma, and diabetic retinopathy

- Relationship/Rapport – Building partnerships with community based developmental organizations and other stakeholders in the community.

In the non-government sector, several NGOs have established vision centres to provide primary eye care. In the government sector, more than 5000 Vision Centres (VCs) were established to strengthen primary eye care (PEC) services. These VCs are staffed with trained vision technicians / Ophthalmic Assistants (OA)/ Ophthalmic medical officers and are equipped to can carry out comprehensive eye examinations. The government also planning to establish Vision Centres at the level of CHCs (secondary level) and later scaling up to the PHCs (primary level).

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[5] Rao GN, Khanna RC, Athota SM, Rajshekar V, Rani PK. Integrated model of primary and secondary eye care for underserved rural areas: the L V Prasad Eye Institute experience. Indian J Ophthalmol 2012;60:396-400

[6] Khanna RC, Sabherwal S, Sil A, Gowth M, Dole K, Kuyyadiyil S, Chase H. Primary eye care in India - The vision center model. Indian J Ophthalmol. 2020 Feb;68(2):333-339. PMID: 31957722.

Chapter 2

Services, Coverage, Key functions, Advantages and Impact of Vision Centres

Services

The following services can be provided at Vision Centre (VC) and its catchment areas.

Services provided at VC & its catchment areas				
Eye Condition	Prevention in the catchment areas through education	Early Detection and Diagnosis at VC	First Line Management at VC	Referral to service centre (hospital)
Refractive Errors	Health Education & Awareness	Yes	More than 90%	<10%
Cataract	Health Education & Awareness	Yes	Counselling	All operable
Vitamin A Deficiency / Corneal	Health Education & Awareness	Yes	Yes	Referral to service centre (hospital)
Trachoma/ Conjunctivitis	Safe water, Sanitation, Personal hygiene	Yes	Yes	Referral to service centre (hospital)
Glaucoma	Health Education & Awareness	IOP for those who have Family history & all 40+	Counselling/ follow up	Referral to service centre (hospital)
Trauma	Health Education & Awareness	Preliminary examination	Emergency Care	Referral to service centre (hospital)
Diabetic Retinopathy	Health Education & Awareness	Yes, through fundus photography and sharing with hospital	Follow-up and counselling	Referral to service centre (hospital)
Low Vision	Community-Based Rehabilitation	Low vision assessment and aid provision	Follow-up and counselling	Referral to service centre (hospital/ Rehabilitation centre)
Retinoblastoma	Health Education & Awareness	Identification and referrals	Follow-up and counselling	Referral to service centre (hospital)

Key functions

Provide quality eye care services to the communities irrespective of caste, religion and socio-economic status. Have a provision for free, subsidised, and paid services.

Conduct a comprehensive eye examination

Immediately address refractive error-related problems and provide corrections, including spectacles-dispensing considering age, gender and economic background.

Refer surgery and other speciality eye care cases like cataract, suspected glaucoma or retinal problems to the base hospital and ensure treatment and follow-up.

Increase accessibility of services through facilitating outreach screening camps and school screening programmes in the villages but within the catchment areas of the VC.

Regularly organising eye health education and awareness events; thus, Eye care demand generation through various community-based events, home visits, etc. can happen.

Over the period, upgrading to technologically advanced services such as digitalisation, tele-ophthalmology, etc.

Advantages of VC

Strong presence of the hospital in the rural areas – a nano eye hospital.

Permanent solution to the need for eye care in the community and a regular referral centre for the base hospital. Increases in surgical load to the base hospital and financial sustainability of this centre can be achieved through counselling and referring potential paying/subsidised section of patients, Use fees and subsidised spectacles.

Quality can be maintained and become a successful social marketing health unit.

Address barriers like services poverty, distance and absence of attendant to the uptake of eye care with the provision of quality services at doorsteps.

Accessible, affordable, acceptable eye health services made available.

Detection and referral of significant eye problems like glaucoma and diabetic retinopathy; Improving awareness about eye conditions and their management within the community.

(Courtesy: Mission for Vision – Aravind Eye Care System)

Efficient management of vision centres can help to eliminate avoidable blindness in the catchment areas.

An efficiently and effectively implemented VC can attain financial sustainability within three to four years.

Can create a network umbrella among the stakeholders and get regular contributions towards community well-being.

Coverage & the impact area of VC:

The immediate catchment for a Vision Centre will be 50,000 in the rural areas. In urban slums of metro cities, it can cover up to 100,000 population.

The Vision Centre could conduct the outreach eye camps/activities at a minimum distance of 4 km and a maximum of up to 8 km from the respective VCs. Upto 4 km of VCs to be reached out through door-to-door screening and referral to the VC. This will help the Vision Centre have regular footfall and ensure that beneficiaries from the nearby areas will directly walk into the VC and seek services. To have a better impact, the following activities should be taken into consideration.

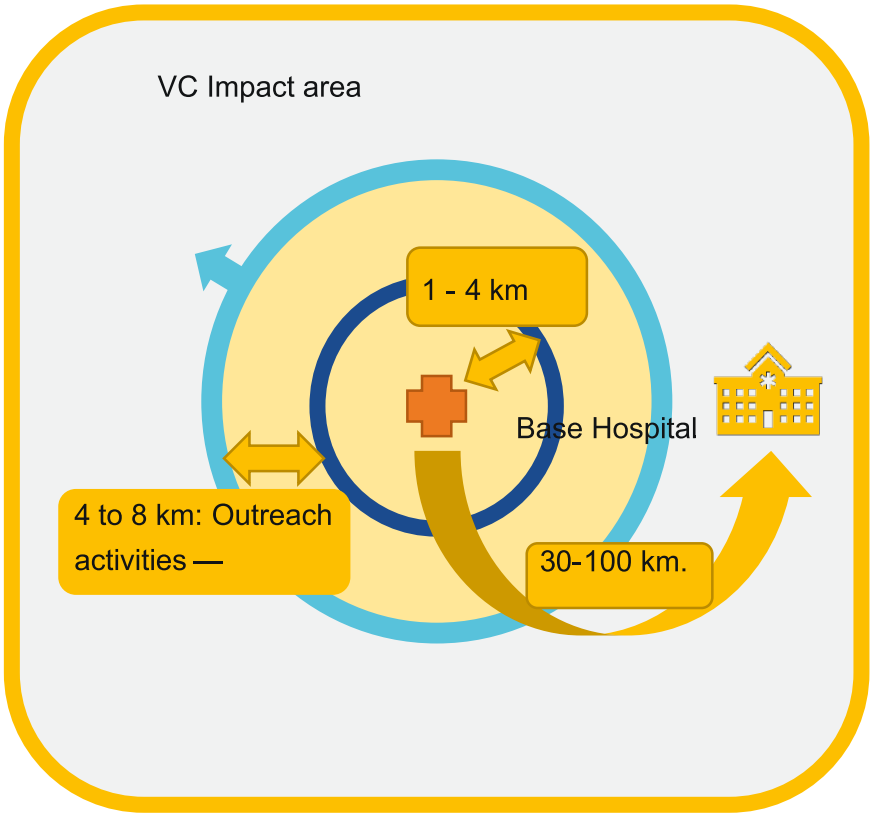

Figure 1: Vision Centre Coverage Schematic

Chapter 3

Vision Centre Establishment - Location Criteria, Requirements and Specifications

Vision Centre Location Criteria

Vision Centres (VCs) should preferably be planned in rural or underserved urban/semi-urban areas based on the need, ease of accessibility, and after checking the availability of existing services. A minimum distance from the base hospital is 30 km.

Before setting up a vision centre, the following preparations can be done and checked by a self-developed checklist:

- The recommended distance from the base hospital could be a minimum of 30 km to a maximum of 100 km, depending on the geography of the concerned Vision Centre. This could be relaxed in case of other compelling factors like distance, service points, population density, etc. This could vary in states with very limited quality eye care centres but a widespread population.
- The VC should ideally be on the ground floor, in a market location with other shops and business establishments, so that it is accessible and frequently visited by people. However, the rent also needs to be taken into consideration, which will impact the VC's financial sustainability.
- Proximity to transportation facilities like railway stations, bus stands, Auto stands, and other public transport so people can easily access them.

(Courtesy: Mission for Vision – Aravind Eye Care System)

- To avoid duplication, it is ideal to identify a location where other eye health professionals/ organisations are not providing quality services to the needy in the cross-subsidy model (Free, subsidized and paid services).
- The VC space could be owned by the service provider or rented or donated by an individual/ institution/ organisation. While receiving the donated premises, it is essential to have an agreement for non-interference in the operations of VC is necessary.
- For the safety of the equipment, the facility should be under lock and key when not functional.
- To enhance operations, hospitals and implementing agencies may also consider the suitability of their location for effective volunteer support.

Requirements and Specifications

Mapping of important stakeholders, schools, etc.

It is even better if the VC runs from a portion of an already existing non-commercial and non-eye health service centre. On the other hand, establishing VC in government premises may affect patient user fee collection and spectacle dispensing at subsidised cost.

Proximity to critical resources like medical practitioners, local government offices like Panchayat/Municipal Corporation, district health and education officials, ASHAs/AWWs, etc., should be ensured.

Ideally, parking and fire safety measures can also be considered.

The VC should have enough space for the patient waiting area, clinical examination, spectacles display and small storage. An approximate area of 300 sq.ft. (minimum) should be good for a VC. Please refer to ideal VC layout diagram as **Annexure 1: VC layout.**

The VC should have running water, a toilet (a must for patients and staff or a clean public toilet in the same premises/ building), and standard furniture for patient examination and waiting areas. Care should be taken to ensure the centre is patient-friendly, locomotor-friendly, and attractive. Necessary modifications should be made to accommodate people with disabilities. Wheelchair availability must be ensured.

(Courtesy: Mission for Vision – Aravind Eye Care System)

(Courtesy: Mission for Vision – Sadguru Netra Chikitsalaya)

Chapter 4

Infrastructure, Equipment, Consumables, Furniture & Other Facilities

Background

Vision Centre is an innovative concept designed to provide primary eye care. Each vision centre is intended to serve a population of 50,000–100,000. They are staffed by a two-year trained vision technician / allied ophthalmic personnel (AOP), preferably recruited from the local community. The vision centres are well-equipped to provide basic eye examinations, including refraction without pupillary dilatation. A small optical outlet equipped with a good stock of frames for the participants to choose from is an integral part of a vision centre. A cluster of 5-10 vision centres are linked to a secondary eye care centre (service centre). The secondary centres act as the nodal point for fitting and distributing spectacles to all the vision centres. They also provide administrative, logistic, and referral support for the treatment of complex conditions.

The core functions of the vision centre are summarized in the following 3 Rs: a) Recognition of common blinding conditions; b) Refraction and dispensing of spectacles; c) Referral and follow up of complex cases to higher levels of care.

Infrastructure at the vision centre

Approximately 250 to 400 square feet (a minimum of 300 sq ft) of space is required to set up a vision centre. It is divided into an examination area, an optical dispensing and counselling area, and a patient waiting area. The facility also should have toilets and a drinking water facility. Relevant eye health education material developed in the regional language is displayed in the waiting area.

Courtesy – Sewa Sadan Eye Hospital Berasia Vision Center supported by Operation EyeSight Universal

Table 1: Recommended equipment at a typical vision centre (conventional VC) in India

Name of the medical equipment	Application	Requirement
Clinical area		
Slit Lamp	Anterior segment examination	Essential
Applanation tonometer	Intraocular pressure measurement	Essential
Trial set + Frame	Refraction	Essential
Retinoscope	Refraction	Essential
Direct Ophthalmoscope	Retina examination	Desirable
Vision chart	Distance vision testing	Essential
Occluder	Vision testing	Essential
Near Vision Chart	Near vision testing	Essential
Lensometer (manual/digital)	To measure the power of the spectacles	Essential
Torchlight	External examination	Essential
Non-Mydriatic fundus camera	Retinal imaging	Desirable
Edging machine	Spectacle dispensing	Desirable
Examiners stool (adjustable)	For the examiner	Essential
Patient chair/stool adjustable	For the patient	Essential
Inverter/UPS	Power backup	Essential
IPD ruler	To measure the interpupillary distance	Essential
Non-clinical area		
Registration desk	Registration	Essential
Chairs patients	Patient seating	Essential
Optical Display Unit	Spectacle sales	Essential
Fire extinguisher	For safety	Desirable
Tele-ophthalmology step-up		
Desktop monitor, Laptop or tablet with stable internet connectivity	For teleophthalmology consultation	Desirable
Web camera/ microphones	For teleophthalmology consultation	Desirable
Printer	For teleophthalmology consultation	Desirable
Generator	For teleophthalmology consultation	Desirable
Spectacle fitting unit	For grinding and fitting of lenses	Desirable
Chair Unit	For patient's comfortability	Essential

Chapter 5

Image Courtesy - Vision Center Equipment, Sewa Sadan Eye Hospital

Eye examination in vision centres

All patients visiting the vision centre will undergo a complete, un-dilated eye examination, including retinoscopy. The sequence of eye examination is presented here for reference.

History

The patients are enquired about the presenting ocular complaints and any relevant history of eye problems. Their responses are recorded on a case sheet/electronic medical record. Any history of previous eye treatment, consultation, or surgery is also recorded. Details of their general health and any systemic diseases, along with a significant family history of eye problems, are also recorded.

Visual acuity assessment:

Distance vision

Visual acuity (VA) for distance is assessed using a standard illuminated Snellen's visual acuity chart in an adequately illuminated room at a 6-meter (3-meter, where relevant) distance. VA is measured separately for both eyes. If the patient is using spectacles, VA is measured with the spectacles.

Near Vision

Near visual acuity is measured in each eye separately using a standard near vision acuity card under adequate illumination. If the patient uses spectacles for near vision, the VA is measured with the spectacles. A notation chart with tumbling E optotypes or text in regional language/English is recommended.

Objective refraction:

Objective retinoscopy should be performed for all patients with:

- Presenting distance visual acuity less than 6/9 in either eye;
- Patients complaining of asthenopic symptoms;
- Patients with near vision less than N6 in any eye.

Figure 1: An older person wearing spectacles and doing near work (Image courtesy: L V Prasad Eye Institute)

Subjective acceptance:

After objective retinoscopy, subjective refraction is performed to provide minimum minus/maximum plus correction to achieve the best possible visual acuity for distance. In addition, the patient is prescribed bifocals, and single vision Spectacles for near or progressive addition lenses based on the age of the patient and near work requirements. Inter Pupillary Distance (IPD) should be measured and recorded on the prescription.

Figure 2: Spectacle dispensing at the vision centres (Image courtesy: L V Prasad Eye Institute)

Slit lamp examination:

Slit lamp examination should be performed for all patients. The lids and lashes, conjunctiva, cornea, anterior chamber, iris, pupil, and lens in both eyes should be examined in detail. Any deviation from the normal should be recorded and referred for further evaluation. The depth of the anterior chamber should be assessed using the Van Herick technique.

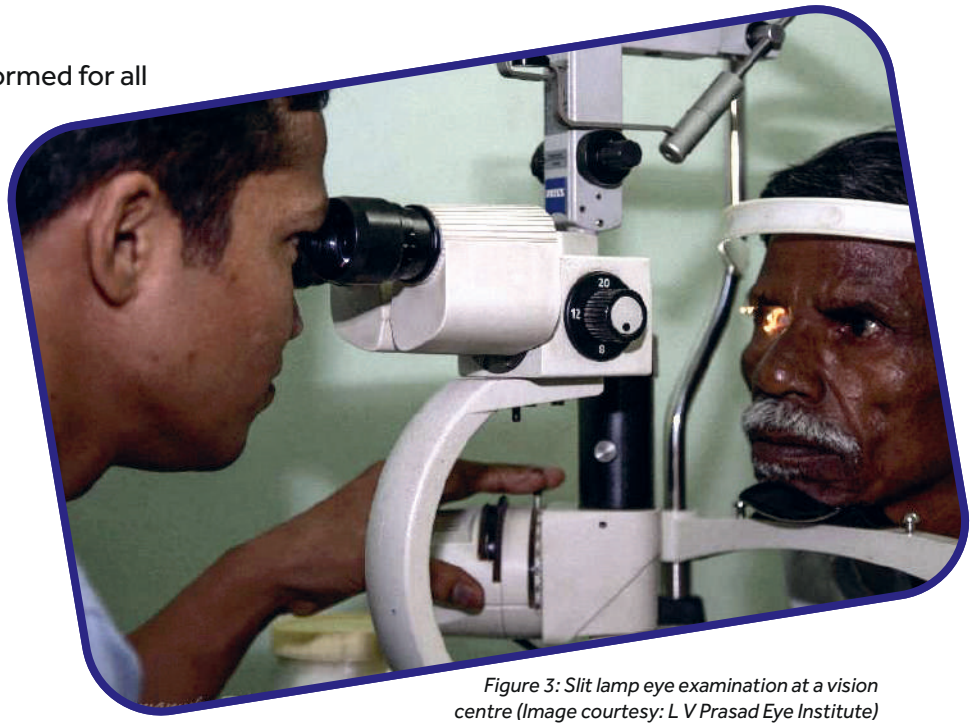

Figure 3: Slit lamp eye examination at a vision centre (Image courtesy: L V Prasad Eye Institute)

Tonometry:

The intraocular pressure is recorded for all patients above the age of 40 years (or in younger patients if there is a family history of glaucoma/blindness). Tonometry is performed using an applanation tonometer (Goldmann or Perkin's) or equivalent. The probe of the tonometer should be cleaned with alcohol swabs after every use.

Undilated fundus examination (desirable):

Using a direct ophthalmoscope, the disc, macula, blood vessels, and central retina should be examined for abnormalities. The cup/disc ratio should be examined and recorded on the case sheet/electronic medical record. It is recommended to use a non-mydriatic fundus camera to capture retinal images of the optic disc and macula grade the abnormalities (such as glaucoma, diabetic retinopathy and age related macular degeneration) and ensure referral of cases that need intervention. One disc-centred and a macula-centred image for each eye are recommended.

Lensometry:

If the patient is using spectacles, the power of the lenses is measured using a lensometer and recorded on the case sheet/electronic medical record.

(Image Courtesy: Mission for Vision – L V Prasad Eye Institute)

Referral for higher centres:

In a few situations, a referral might be needed for the patients examined at the vision centres. While most of these referrals may be due to cataract, there could be cases where management at the base hospital (secondary centre) is necessary. A robust framework is essential for the 'close the loop' of care to track the patients referred from the vision centres till they are

examined at the base hospital for services. This referral system and integrated care differentiate these vision centres from other models of eye care, such as private clinics and optical shops. A register (physical or electronic) 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 base hospital.

A referral attendance register (physical/electronic) should also be maintained at the base hospital to record the patient's referral source and provide feedback to the vision centre once the loop is completed. This referral system can be simplified with digital systems and electronic medical records, where the personnel at the vision centre are alerted as soon as the referred patients visit the base hospital. Having a mechanism to provide each patient with a unique ID number will help to track patients across the eye care network. Facilities such as bulk SMS messaging can be considered to increase referral uptake on the services.

Guidelines for referral to the next level of care:

In general, any patient whose visual acuity does not improve to at least 6/12 for distance vision or N8 for near vision in any eye after spectacle correction is referred to the next level of care. In addition, all patients with any anterior or posterior segment pathology/abnormality are also referred to the next level of care.

Type of referrals:

Based on the signs and symptoms and clinical eye examination of the patient, referrals can be classified as regular/routine and urgent/priority.

- Conditions that do not need a referral to the next level of care:
- Refractive errors and presbyopia
- Those who come for a routine eye examination.
- Eye health is within normal limits.

Conditions that are referred to secondary/higher centres – Routine referrals / regular referrals that need consultation, preferably within a month (examples of few conditions/indications under regular referral category):

- Cataracts (moderate vision loss better than or equal to 6/60) or second eye cataract surgery
- Cases with no positive findings in the anterior segment of the eye, but vision does not improve beyond 6/12 in either eye (gradual onset unexplained vision loss).
- Children requiring cycloplegic refraction.
- Pterygium crossing the limbus.
- Pigmentation of conjunctiva or any abnormality
- Corneal scars/opacities
- Spheroidal degeneration that is close to the pupillary margin or covering the pupillary area
- Shallow anterior chamber (show the slit view)
- Pupil/Iris abnormalities such as atrophic patches on the iris and sphincter atrophy
- Any lid abnormality, such as ptosis, meibomitis, blepharitis, chalazion, and other conditions, that is obvious on a torch light examination.

Conditions that are referred to secondary/higher centres – Priority/urgent referrals that need consultation as soon as possible (examples of few conditions/indications under priority/urgent referral category)

- All patients with ocular trauma or active infection in any part of the eye.
- Sudden onset of loss of vision.
- Any lid abnormality or swelling of the eyelids/adnexa.
- A red eye(s) with or without discharge.
- Corneal infiltrates/epithelial defects
- Corneal or ocular foreign body
- All patients with shallow anterior chamber and/or raised intraocular pressure (>20 mm Hg).
- Flare and cells in the anterior chamber
- Hyper mature cataracts (with vision loss worse than 6/60 in either eye)
- Relative afferent pupillary defect
- New blood vessels on the iris.
- Complaints of flashes and floaters or coloured rings around the light sources, double vision
- Infants and toddlers where visual acuity assessment is not possible and there is a suspicion of eye problems/vision impairment based on visual behaviour/complaints from the parents.
- Leukocoria/white reflex in the pupillary area on torchlight exam or distant direct ophthalmoscopy in case of children

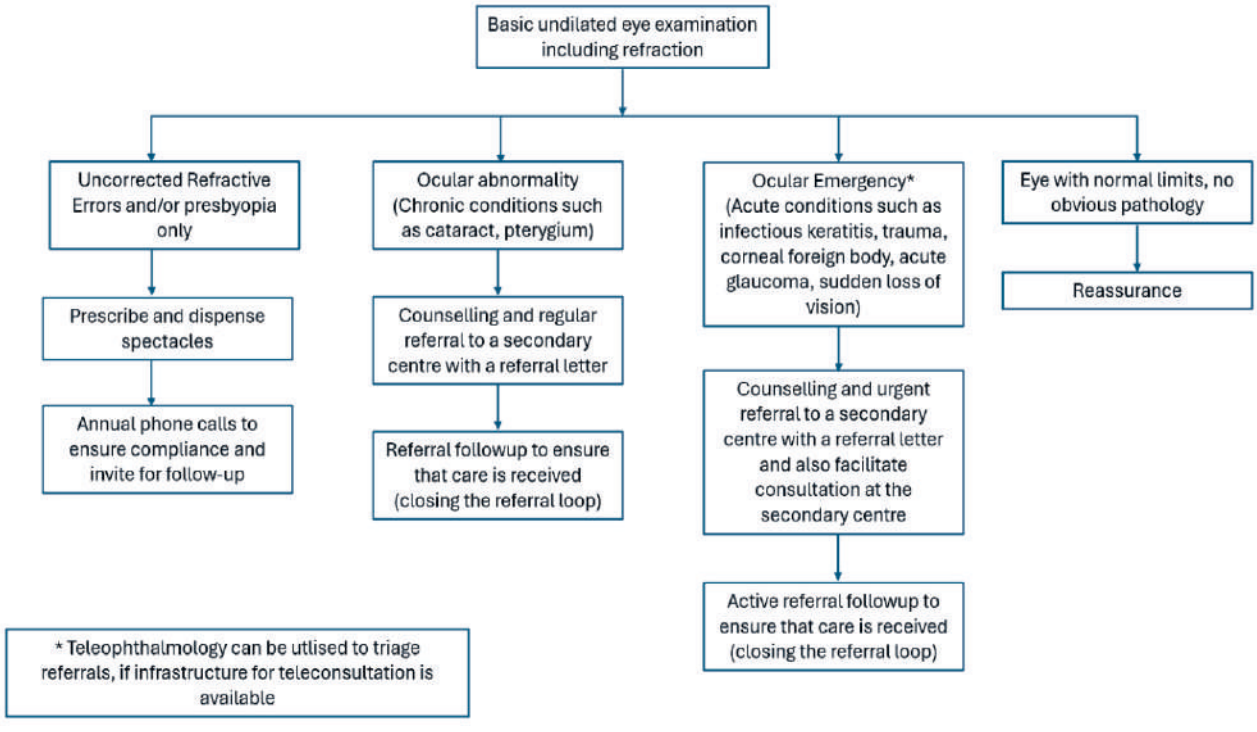

Figure 1: A flowchart showing the workflow at vision centres and the referral pathway

Chapter 6

Spectacle Dispensing and Delivery at Vision Centre

The VC would prescribe and dispense a wide range of gender and age-specific, affordable, and good-quality spectacles to patients diagnosed with uncorrected refractive error. While doing so, the following points must be ensured:

There should be an effective display unit with multiple varieties of quality, design and price ranges to choose from for patients of different socio-economic backgrounds and age groups. Depending on the location, branded frames and lenses can also be kept.

The lowest range of spectacles, including lens and frame, is from INR 250 to INR 300.

Readymade near vision spectacles should be available for between INR 150/- to INR 200.

The local market must be analysed based on the available prices and socio-economic conditions of the population in the catchment areas before prices are fixed.

The higher range could be a maximum of INR 4000. This should depend on the area of VC establishment and the hospital's policy. However, it is strongly recommended that the Average Transaction Value (ATV) of the spectacles including frames and lenses be monitored regularly to understand the trend. Higher ATV would mean that the poor patients are getting ignored and on the other hand, lower ATV would affect the financial sustainability of the VCs. Ideally, ATV could be below INR 1000.

The VC also must provide a few high-quality spectacles for the poorest who cannot afford them.

Display of frames

The spectacle frames should be displayed in the VC along with a big mirror (2'x2') for the patients to try and choose.

Scientific dispensing should be followed – Type of frame, frame fitting on the face, lens, profile of patients, and the patient's economic condition to be considered.

A simple sticker on each rod/ rack/ tray can have price details for patients to read and select.

At least 80-100 frames should be available for patients to select from on the display.

Image Courtesy – Sewa Sadan Eye Hospital Gairatganj Vision Center supported by Operation Eye Sight Universal & Standard Chartered Bank

Quality of spectacles delivered

The technician/optometrist should receive training in inspecting and performing basic fitting procedures for spectacles, such as inserting lenses into frames and adjusting nose pads. A fitting kit should be readily accessible at the vision centre.

Before spectacle delivery, the technician/Optometrist needs to check the frame fitting, quality of the frame, and lenses.

The delivery of spectacles (any power) should ideally be ensured within a maximum of five working days.

Payment and deadstock

Each spectacle should be booked against an advance payment of 50% of the cost of the complete spectacle or the full cost of the lens being used (whichever is higher)

The patients should collect the spectacles from the VC within a maximum of 60 days (or hospital-specified time) from the given delivery date.

The ordered spectacles which are not collected by the patients within a time limit will be used for other purposes at the hospital's discretion.

The advance amount paid towards such spectacles will not be refunded. This is also applicable to frames that are not purchased for a long duration - keeping deadstock for a longer duration is a loss for the VC.

The schedule of keeping dead stock should not be more than 2 months. This needs to be explained to the patients well, and a notice can be pasted into the display unit so that the patient is aware of this.

The vision centre must furnish patients with payment receipts (advance, balance) for spectacles.

Others

The advance amount paid towards the spectacles will be refunded only if the order is cancelled within two hours of booking.

It is essential to have sun Spectacles of various price ranges at the VC for sale to generate revenue.

Ambience

The VC's ambience should reflect the base hospital as a small replica of the implementing hospital in terms of look, design, quality of furniture etc.

A small amount under the administration budget should be kept aside for regular cleaning activities of the VC campus regularly.

The Optometrist/Vision Technician will be primarily responsible for the cleanliness and functionality of the equipment such as slit lamp, chair unit, and other equipment; whereas the rest of the areas like spectacles display and other furniture cleanliness would be the responsibility of the Community health worker/ optical dispensing person.

The VC should be cleaned daily.

Image Courtesy: Mission for Vison - Sadguru Netra Chikitsalaya

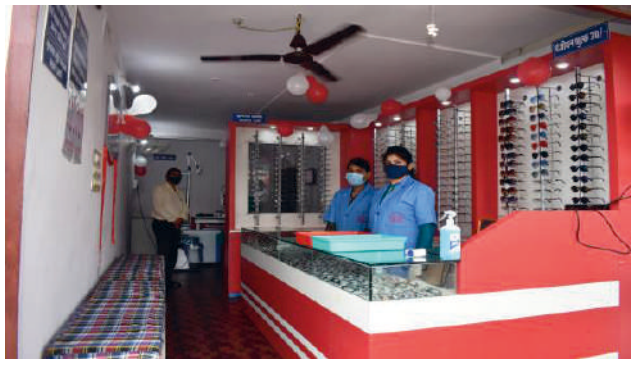

Image Courtesy: Mission for Vision - Sewa Sadan Eye Hospital

Chapter 7

Human Resources at Vision Centre

Required Human Resources/staff for VC is always a debatable issue. However, the clarity on the roles and responsibilities of individuals and the performance of the VCs, impact on financial sustainability to be taken into consideration.

The vision centre personnel could preferably be from the same community to retain staff and ensure dedication to the work.

Essential (if the implementing partner can afford the cost): Mid-level ophthalmic person (Optometrist/ Ophthalmic Assistants)[7]

Ideal (a minimum requirement): Vision Technician[8] with minimum one-year training and one-year internship from a recognized institution will be ideal and adequate.

The vision Technician must be trained for a comprehensive eye examination, with applanation tonometry, refraction, good knowledge of common eye diseases and the ability to counsel patients. The success of the vision centre will be directly linked to the skill of the vision centre staff and their attitude and behaviour towards patients. Therefore, an induction course at the Base Hospital should be organized for all new personnel before being taken into the Vision Centre.

Three important elements are required for long-term success of the Vision Centre and the personnel in the Vision Centre:

Periodic visit of the ophthalmologist/ Senior Optometrist from the affiliated secondary centre/base hospital for clinical assessment and skill enhancement of the Vision Centre personnel.

A strong link to the Community Eye Health (CEH) component which is essential in the beginning of the Vision Centre. When patient flow is less, the same person can also assist the VC optometrist in documentation and selling spectacles. He/ She is also to be trained at the Hospital before placing in the VC.

Suppose the VC flow is increased to more than 12 per day. In that case, additional staff can be recruited as community eye health worker focusing on all community-level interventions in the catchment population.

Importance of Community Health Worker (CHW) with the VC

The success of Vision Centre depends on various elements such as location, infrastructure, comprehensive examination, cost of spectacles, qualified personnel and referral mechanism, etc.

However, a continuous patient flow from the adjacent villages/areas to a Vision Centre requires a strong Community Eye Health component. The primary eye health and Community Eye Health are two different service delivery mechanisms that required to be mutually complementing each other.

A referral mechanism is to be developed in the beginning to create awareness about Vision Centre, and screen

[7,8] The National Commission for Allied and Healthcare Professions Act 2021

and refer potential patients to the Vision Centre. This could play a catalyst role in the beginning of the Vision Centre. These will be carried out by the trained CHW.

CHW Need and Matrix in VC.

Type/ Need	Essential – CEH	Ideal - CEH	Desirable - CEH
Number of CHWs/ Staff	One well-trained Community Health Worker	Two well-trained staff One for VC – to assist, with spectacle dispensing, documentation One for community-level interventions	Three well-trained staff One for VC – to assist, spectacle dispensing, monitor CHWs and networking, documentation Two for community-level interventions
Expected roles	Door-to-door screening and referrals Conducting awareness events Networking with local stakeholders Assisting at VC in spectacle dispensing Documentation Screening camp	At VC: Spectacle dispensing, counselling, documentation and follow-up Conducting screening camps in the community School screening Door to door screening and referrals Conducting awareness events	Dispensing, counselling, documentation and follow up Conducting screening camps in the community School screening Door to door screening and referrals Conducting awareness events
Expected outcomes	75% spectacle conversion One camp in a month Limited door-to-door screening Average OPD/ day to 10.	75% spectacle conversion Two camps in a month and one school screening event Significant time to be spent on door-to-door screening Average OPD/ day to more than 15/ day.	75% Spectacle conversion Four camps in a month and one school screening event Significant time to be spent on door-to-door screening Average OPD/ day to more than 20/ day.

Note: The Number of HR will significantly impact the VC's financial sustainability. It is ideal to increase the HR only when the patient flow increases in the VC or available resources for additional staff.

Staff recruitment

Optometrist/Vision Technician

It is also important to remember that a person at a vision centre is an independent functionary and will need patience and tact to handle communities with diverse characteristics. Such people should therefore be more

experienced compared to those in a hospital set up where the senior doctors and administrators can help out in a problematic situation.

He/ She should be well-trained in comprehensive eye examination protocol

Good communicator in the local language

A team leader: Able to plan, implement, train, encourage the team members and increase the footfall of the VC.

Able to understand and monitor finance documents and other documentation in the VC

Must conduct screening programmes/ camps in the Villages and validate the performance of CHW on the field.

Community Health Workers (CHWs)

It is preferable that the community staff comprises of middle-aged women, belonging to the local areas of Vision Centre

To ensure the availability of staff and continuation of the services without any hindrance

Local and Vocal: To belong to the same communities in which the VC is established. Willing to visit the nearby villages with good communication in the local language/ dialect.

It is very important to sensitize the PHC staff like ASHAs, ANMs, Anganwadi workers and local NGOs about the CHW selection.

It is an ideal way to select two to three female CHW trainees and train them for three days for residential training and three days in the field for practical exposure and finalize the best one among them. While publicizing the CHW selection, local ASHAs, Self Help Group members, NGOs, Opinion leaders can be considered.

They must also be interested to undergo training in spectacle dispensing so they can assist Vision Technicians with spectacle counselling during busy days.

(Image Courtesy: Mission for Vision – Tulsi Eye Hospital)

(Image Courtesy: Mission for Vision – Sri Sankaradeva Netralaya)

Chapter 8

Key Monitoring Indicators for Vision Centres

The vision centres are monitored at two levels: the vision centre level and the cluster level of 5-10 vision centres. At each level, the monitoring can be divided into clinical and non-clinical monitoring. The checklist for clinical and non-clinical monitoring are shown at the end the chapters (Figure 1, Figure 2, Figure 3)

Clinical monitoring

Led by the technical mentor of the vision centres, clinical monitoring focuses on the clinical aspects. It involves a critical review of the vision technicians' clinical competence and adherence to clinical protocols, reviewing the case records/electronic medical records, and providing constructive feedback for improvement. It also reviews their adherence to spectacles dispensing protocols.

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

Duration: 3-4 hours per visit per vision centre

After each monitoring cycle, a Continuing Professional Development (CPD) programme can be planned to review the findings and provide training on the deficiencies identified during the clinical audits. (Figure 1)

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:

_____

Name and signature of the evaluator with date

Figure 1: Template for the clinical monitoring of vision centres.

Non-clinical monitoring

Led by the administrator/ coordinator, a non-clinical review involves reviewing the facility, maintenance upkeep, grooming of the personnel, functioning of the equipment, documentation, bookkeeping (including registers and bills books), an inventory check, community level interventions and referrals and other non-clinical areas. (Figure 2)

Frequency: At least once a month (essential), weekly (desirable).

Duration: 3-4 hours per visit per vision centre

Monitoring of refraction services and spectacles dispensing

Refraction services and spectacles dispensing are the lifelines of a vision centre. Regular monitoring of these services is essential to provide good quality care promptly. Moreover, for most vision centre models, the sale of spectacles is the most important source of revenue. The monitoring should be led by an optician from the base hospital or an optometrist/Allied Ophthalmic Personnel (AOP) with experience in optical dispensing. (Figure 3)

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

Duration: 3-4 hours per visit per vision centre

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 2: Template for the non-clinical monitoring of 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 3: Template for monitoring optical di spensing at vision centres—Essential minimum

Monitoring indicators for vision centre performance review

The vision centre management information system (MIS) should include a few indicators to review the performance of the vision centres over time and to compare the performance of the vision centres in different locations. The Vision Centre MIS can be an Excel spreadsheet or any other digital documentation tool. Tools like Microsoft Power BI and similar applications can be used to visualize and display performance trends over time. The essential minimum indicators can be included in the non-clinical monitoring of vision centres, as shown in Table 1.

Table 1: Monitoring indicators for the performance of vision centres

Indicator	Formula for estimation	Frequency	Source
Average screening output	No. of people screened/day	Monthly	Vision Centre report/Electronic medical records
Spectacle prescription rate (%)	(No. 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 Non-Correctable VI/Total number of patients examined) X 100	Monthly	Vision Centre report/Electronic medical records
Referral conversion rate (%)	(No. of people who attended the base hospital/Total referrals given) X 100	Monthly	Vision Centre report/Electronic medical records
Teleophthalmology referral rate (%)	(No. of people referred for teleophthalmology consultation/Total number of the patients examined) X 100	Monthly	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
Average Transaction Value of Spectacles	Total revenue generated through spectacle selling/ number of spectacles sold	Monthly	Vision Centre report/ Electronic medical records

The impact of the vision centre 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 the uptake of eye care services.[9,10] In addition, periodic patient satisfaction surveys, either in person or through telephonic interviews, can help improve performance.

Conclusion

Patient satisfaction studies among the patients visiting the vision centres reveal a high satisfaction level.[11] They also report a substantial cost-saving with the vision centre model compared to the town-based clinics for primary eye care.[12,13] The factors associated with the success of the vision centre are the competence of the vision technician/AOP at the vision centre, the location of the vision centre, and accessibility to the vision centre.[14]

With the evolution of new technologies, the scope of services offered at the vision centre is 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 of an established 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.

[9,10] Marmamula S, Challa R, Yellapragada S, Mohd J, Khanna RC. Temporal trends in the prevalence of spectacle use and spectacle coverage in India. Clin Exp Optom. 2020 Sep;103(5):693-698. PMID: 31828848.

[9,10] Marmamula S, Khanna RC, Yellapragada S, Challa R, Mohd J, Rao GN. Temporal trends in the prevalence and causes of visual impairment in the South Indian state of Telangana: a population-based cross-sectional study. BMJ Open. 2019 Jul 24;9(7):e029114. PMID: 31345976.

[11] Kovai V, Rao GN, Holden B, Sannapaneni K, et al. Comparison of patient satisfaction with services of vision centers in rural areas of Andhra Pradesh, India. Indian J Ophthalmol. 2010 Sep-Oct;58(5):407-13. PMCID: PMC2992916.

[12] Kovai V, Rao GN, Holden B, Krishnaiah S, et al. An estimate of patient costs and benefits of the new primary eye care model utilization through vision centers in Andhra Pradesh, India. Asia Pac J Public Health. 2010 Oct;22(4):426-35. PMID: 20483829.

[13] Kumar Sg P, Banerjee S, Pal S, Kundu S, et al. Economic Analysis of Primary Eye Care Services Provided through Vision Centers in Eastern India. Ophthalmic Epidemiol. 2019 Dec;26(6):439-447. PMID: 31393741.

[14] Kovai V, Rao GN, Holden B. Key factors determining success of primary eye care through vision centres in rural India: patients' perspectives. Indian J Ophthalmol. 2012 Sep-Oct;60(5):487-91. PMID: 22944765.

Chapter 9

Financial Sustainability and Financial Monitoring

Financial Sustainability

The financial sustainability of a vision centre should ideally be achieved within a period of two to four years of initiation of services. However, financial sustainability is dependent on a host of co-factors

- **Location and accessibility**
- **Attitude, knowledge, behaviour of the VC staff**
- **Micro level - community-based intervention: Door-to-door screening, periodical awareness events, screening camps**
- **Good ambience and branding with a good Information, education and communication materials display**
- **Comprehensive eye care services: USP of the VC**
- **Strong demand creation through awareness events**
- **Pricing: Attractive cost of spectacles and increased focus towards conversion of spectacles, shortest delivery time and maintaining Average Transaction Value of spectacles – lower than market rates.**
- **Strong referral system for surgical patients and available transport transport facilities to the patients**
- **Continued capacity-building activities of staff and weekly, and monthly formal meetings through virtual and onsite with key managerial staff at base hospital.**
- **Strong linkages with local stakeholders including PHC staff for referral,**
- **Standardisation of Vision Centre services**
- **Timing of Vision Centre based on the local circumstances and**
- **Reputation of the work undertaken in the community, etc.**

[7,8] The National Commission for Allied and Healthcare Professions Act 2021

(Image Courtesy: Mission for Vision – CL Gupta Eye Institute)

Apart from the above, the revenue generation in the VC from affordable patients can be carried out in the VC. However, it is important to have clear communication to the team NOT to ignore/ deny free services to the poor and needy.

A nominal user fee for all patient registrations is recommended. Depending on the location, the hospital can decide.

Prescription and sale of spectacles may be considered major sources of revenue for financial sustainability. If we consider half of the annual demand for spectacles, the revenue generated from about 300 to 800 spectacles may support a major portion of operational cost.

Charge a nominal user fee as a registration fee. If the patient is unable to pay the cost of registration fee, he/ she can be waved off by the optometrist

Sale of spectacles at vision centre should consider the market value of spectacles (Vision Centre should charge less than the market value to attract clients)

Apart from these, a good number of free, paying and subsidized surgeries from the VC and screening programmes within the catchment areas of VC do contribute to VC revenue. A 10-20% notional fee from the surgeries can be accounted for VC revenue.

Ensuring a high quality of service and client-interaction

Delivery time of spectacles should be minimized

Good quality of spectacles

Tailoring Vision Centre timings to suit the population needs

Another primary source of income is the proportionate income from the surgeries, which is explained in the section below.

The Hospital can consider mark-up charges, profit margin and revision policies and implement them periodically.

Financial sustainability would mean that the vision centre is able to meet its recurring expenses over the operating expenses. When calculating cost recovery, fixed asset and refurbishment costs should also be considered. Any recurring cost support from the donor should not be considered part of income, and the expenses should be adjusted accordingly. The provisions for these expenses should be considered while planning for cost recovery beyond the scope of support from donor (s).

There are various methods followed. An ideal calculation to calculate financial sustainability can include following factors into consideration:

The income stream should include registration charges, income from spectacles, diagnostic charges if any (Blood Pressure, Blood sugar, teleophthalmology consultations) and surgery cost apportioning – preferable

for paying/subsidised surgeries (including insurance/schemes supported) – a proportionate of 10-15% surgery revenue and for free surgeries (DBCS supported) can a have INR 350 as a proportionate income to the VC.

Source of Income

- **User fee**
- **Sale of spectacles**
- **Blood sugar & BP tests**
- **Notional surgery/procedure cost**
  - **Free**
  - **Paying and Subsidized**

Types of expenses

- **Salaries**
- **Purchase of frames & lenses**
- **Rent**
- **Information, education & communication materials**
- **Travel for camps**
- **Administration & maintenance**

VC Finance Monitoring

Pre-printed and Pre-numbered receipt books for OPD registration charges to be shared by Base Hospital with strict monitoring over receipt books issued and returned

Receipt Books for advances received to be issued and controlled by Base Hospital

Invoices to be issued to all customers for the registration and sale of spectacles

In case GST is applicable, the GST number has to be printed on the Invoice, and the break up to be given on the invoice (as per the GST scheme opted by the Partner Hospital)

Regular monitoring and support from base hospital to be carried out every quarter

It would be ideal to have a digitalised billing and receipt system in place so that regular online monitoring can also be carried out.

Audits

It is strongly recommended to have a financial audit at VC by the Accounts Personnel once a quarter and a Clinical audit by a senior Optometrist or Ophthalmologist once a month. This helps the VC staff 1) Identify the gaps and rectify them and 2) Cross learning wherever possible.

Monitoring, refresher training and review of Vcs

The VC activities and performance must be monitored daily by the implementing organisation to ensure the achievement of targets, quality, accountability and transparency. Periodic monitoring by senior staff on weekly/ fortnightly would be necessary to add value.

A yearly review by an external expert may be facilitated to ensure further development.

A WhatsApp group formation within the implementing hospital/organisation along with VC team will be highly advisable where the team can share photos of activities, images of daily diaries, outputs including revenue generated, etc.

A periodical refresher training for the VC staff with the support of senior hospital staff/ stakeholders will help them perform well and fine-tune their knowledge and skills.

Impact of monitoring and review of the VC

Regular and periodic monitoring and review of VCs will certainly help in the following outcomes.

- Is VC able to provide good quality services?
- The planned activities are achieved
- High patient satisfaction
- Financial sustainability
- Error-free documentation
- Sustainable increase of patient flow to the VC
- Increased credibility of VC

Chapter 10

Key factors that contribute to the success of a VC

Figure 1: Factors that contribute to success of a vision centre

Key Strategies to improve VC performance

For improving Walk-in:

- Focus on 4 km radius from the VC
- Use door-to-door screening by the trained CHW
- Use 6/12, 6/18 and 6/60 for distance
- For near vision – newspaper and a bowl filled with black particles, needle and thread; identify and refer patients to the VC.
- Special events in the VCs – focusing on women, shop keepers etc

Targeted approach

- Monthly once to improve the footfall in the VC
- Use the Inaugurations/ VC anniversaries – Great opportunities.
- Publicize to the patients about your services
- Date of transportation
- Type of services and facilities provided when they visit to the hospital
- Schedule and implement activities.
- Screening programme/ camps – once a week/ fortnight – identify and refer patients to VC
- Hold school screening events and encourage teachers/ students/ parents to visit the VC. It is recommended that spectacles be provided to the children at the VC. Instead of sending a separate team, the VC team will be involved in the screening.

Be in touch with the old patients:

- The duration of their last visit
- Diagnosis
- Vision
- Age
- Location (nearby ones should be first preference)
- Last advice given.

Motivating Government's Primary Health Care (PHC) staff –

Identify, screen, provide services - discount, special attention

Chapter 11

Universal Eye Health and Vision Centres

Universal health coverage (UHC)/Universal Eye health coverage (UEHC) is the aspiration of several countries. WHO defines UEHC as "Ensuring that all people have access to needed 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."[15] The WHO World Health Assembly, 73rd and 74th resolutions highlighted the endorsement of integrated people centred care as a way forward to achieve UEH. The Lancet Global Health Commission on Global Eye Health provides evidence on the importance of eye health and the need for urgent action and also highlights the approaches to enable eye care within the UEH coverage.[16]

Vision centres provide an essential starting point of care for universal eye health at the community level. Being located closer to communities and providing high-quality eye care at an affordable cost on a sustainable basis address the prerequisites for UEH. Promotive, preventive, curative (corrective) care and basic rehabilitation elements form the vital elements of the vision centre when integrated with higher levels of care underlining the basic tenets of UEH.

Vision centres also contribute to sustainable development goals as the employees of the centres come from the local communities, which empowers and enhances the continuity of care. There is ample evidence emerging that permanent, sustainable primary eye care through vision centres, well-integrated with secondary and higher levels of care, is essential for achieving the goal of 'Universal Eye Health' in India.

[15] Universal Eye Health: A global action plan 2014-2019

[16] Burton MJ, et al. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020. Lancet Glob Health. 2021 Apr;9(4):e489-e551. doi: 10.1016/S2214-109X(20)30488-5. Epub 2021 Feb 16. PMID: 33607016; PMCID: PMC7966694.

Chapter 12

Application of Technology in Vision Centres in India - Few experiences

Technology-enabled vision centres

Technology-enabled vision centres leverage new technologies to boost vision centres' performance. Such centres will take eye care even closer to people; their "futuristic" technologies provide eye care where it is needed the most.[17] [18] The following new elements are added to these "futuristic", technology-enabled vision centres: Posterior segment imaging and teleophthalmology.

Fundus imaging

The posterior segment (Fundus imaging) is recommended as a part of the comprehensive assessment of the eye at a vision centre. In most cases serviced by such vision centres, a non-mydriatic fundus camera can be used without pupillary dilatation. Two images for each eye are recommended, one image centred on the optic disc and the other centred on the macula. Based on the clarity and details captured in the images, they are graded as

a) good, with all the details

b) poor details but gradable

c) non-gradable

All images should be graded, preferably using an automatic grading system (using artificial intelligence (AI) algorithms), and if that is unavailable, then graded manually. The images obtained from the patient are compared with standard images and if any abnormality is detected, then the patient is referred to the next level of care. If teleophthalmology is available, the images can be shared with the teleophthalmology command centre for their advice. Ideally, every patient examined at the vision centres should have fundus images captured. It is strongly recommended for the following group of patients:

- Patients aged 40 years and older
- Patients with a history of diabetes and/or hypertension
- Unexplained or sudden loss of vision, with flashes or floaters
- Patients with a positive family history of glaucoma or any blindness due to any cause
- Patients complaining of severe headache

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[17] Rani PK, Das AV. Setting up a primary eye care teleconsultation service. Community Eye Health. 2022;35(114):6-7. Epub 2022 Jun 7. PMID: 36035097; PMCID: PMC9412091.

[18] N. Misra, R. C. Khanna, A. L. Mettla, S. Marmamula, V. M. Rathi, and A. V. Das, "Role of teleophthalmology to manage anterior segment conditions in vision centres of South India: 6 International Journal of Telemedicine and Applications EyeSmart study-I, " Indian Journal of Ophthalmology, vol. 68, pp. 362 –367, 2020.

Teleophthalmology

Teleophthalmology aims to minimise needless referrals to higher centre and provide high-quality care closer to the communities. All vision centres can be equipped with an 'eyeSmart' (LVPEI) tab-based application or a similar tablet-based or computer-based electronic medical records application. If a tablet-based system is used, then it should have a good camera to capture good-quality images of the anterior segment of the eye to facilitate teleconsultation. This can be coupled with Skype lite, Zoom or a similar app to facilitate video tele-consultation from vision centres to the Tele-Ophthalmology Command Centre (TOCC) at the base hospital staffed by an ophthalmologist/s. WhatsApp or a similar application can be used to communicate on common issues related to tele-ophthalmology across the network. All the key team members are a part of this app-enabled group and provide advice as and when required.

Teleophthalmology consultation process

Based on the type of eye condition, the images can be of two types: an external image, mainly for conditions that affect the eyelids and conjunctiva; and slit lamp images for conditions that involve the cornea and anterior segment of the eye. External images of the face may also be required for conditions such as ptosis, squint and lid abnormalities. Always ensure that there is enough light when taking images. This can be achieved using a torch light or an overhead reading light. Images are captured and shared with the command centre along with the case history. The following details need to be provided for a smooth teleconsultation process:

- Age/gender
- Chief complaint
- Visual acuity in the affected eye
- Visual acuity in the fellow eye
- Describe your clinical findings
- Example: Diffuse congestion in both the eyes with discharge
- Ask a specific question to the examiners
- Example: I want to know if this is a case of conjunctivitis.
- Respond to the follow-up questions asked by the consultant at the command centre
- What is the final diagnosis?
- What is your advice? Please check and confirm the advice.

Based on the discussion, the final advice can be shared with the patient, which may include medication or referral to a secondary centre / higher centres for further evaluation. This can be a routine referral, a priority referral or an immediate referral as suggested by the consultant at the TOCC. While it is ideal to perform a teleconsultation for every case, in resource-constrained settings, teleconsultation is recommended for the following conditions (only indicative)

[19] A. V. Das, S. Mididoddi, P. Kammari et al., "App-based tele ophthalmology: a novel method of rural eye care delivery connecting tertiary eye care center and vision centers in India," International Journal of Telemedicine and Applications , vol. 2019, Article ID 8107064, 6 pages, 2019.

- Any lid abnormality such as ptosis, severe meibomitis, blepharitis, stye, chalazion and other conditions that are obvious on torch light examination
- Pterygium crossing the limbus
- Pigmentation of conjunctiva or any abnormality that is seen on a slit lamp
- Red eye with or without discharge
- Corneal scars
- Corneal infiltrates
- Corneal epithelial defects (need images with and without staining)
- Severe spheroidal degeneration that is close to pupillary margin or covering the pupillary area
- Shallow anterior chamber (show the slit view)
- Hyperopia more than 3.0 Ds (to rule of shallow angles)
- Flare and cells in the anterior chamber
- Pupil / Iris abnormalities such as atrophic patches on Iris, sphincter atrophy, new blood vessels on the iris
- Leukocoria / white reflex in the pupillary area on torchlight exam or distant direct ophthalmoscopy in case of children
- Post cataract surgical follow up cases
- Other emerging technologies at the vision centre

Other than those described above, there are additional technologies that are being in few vision centres in India. These include, a) use of solar power instead of conventional power supply, b) auto refractors (tabletop and handheld), c) hand-held virtual reality based perimetric devices and other technologies.

Table 1 summaries the difference between the current vision centre model and the proposed technology enabled vision centre model.

	Conventional vision centre model	**Technology Enabled Vision Centre**
Scope	Common causes of visual impairment with emphasis on cataract detection, correction of refractive errors and referral of other eye conditions	Goes beyond common causes of vision impairment and covers the extended domain of ocular morbidity Early detection of chronic eye conditions such as glaucoma, diabetic retinopathy Detection of complex cases otherwise missed such as anterior uveitis, pseudoexfoliation Supplements tele-ophthalmology Surveillance / Follow-up care of chronic eye conditions such as diabetic retinopathy, Glaucoma Remote post-operative consultations in vision centres

	Conventional vision centre model	Technology Enabled Vision Centre
Decision making	Personnel skill dependentManual systemRecognize common blinding eye conditions	Consistent decision-making and referrals independent of skills of the personnel; (using Artificial Intelligence (AI) models where applicable)
Referral management	Refractive error correction	Automated and dynamic system powered by technology-enabled platforms
Services	Referral for medical and Surgical intervention	Recognize more complex and chronic eye conditions. Diagnosis based on digital imaging. Medical management using tele-ophthalmology. Follow-up care after surgery and other chronic eye conditions. Advanced data analytics for assessing coverage

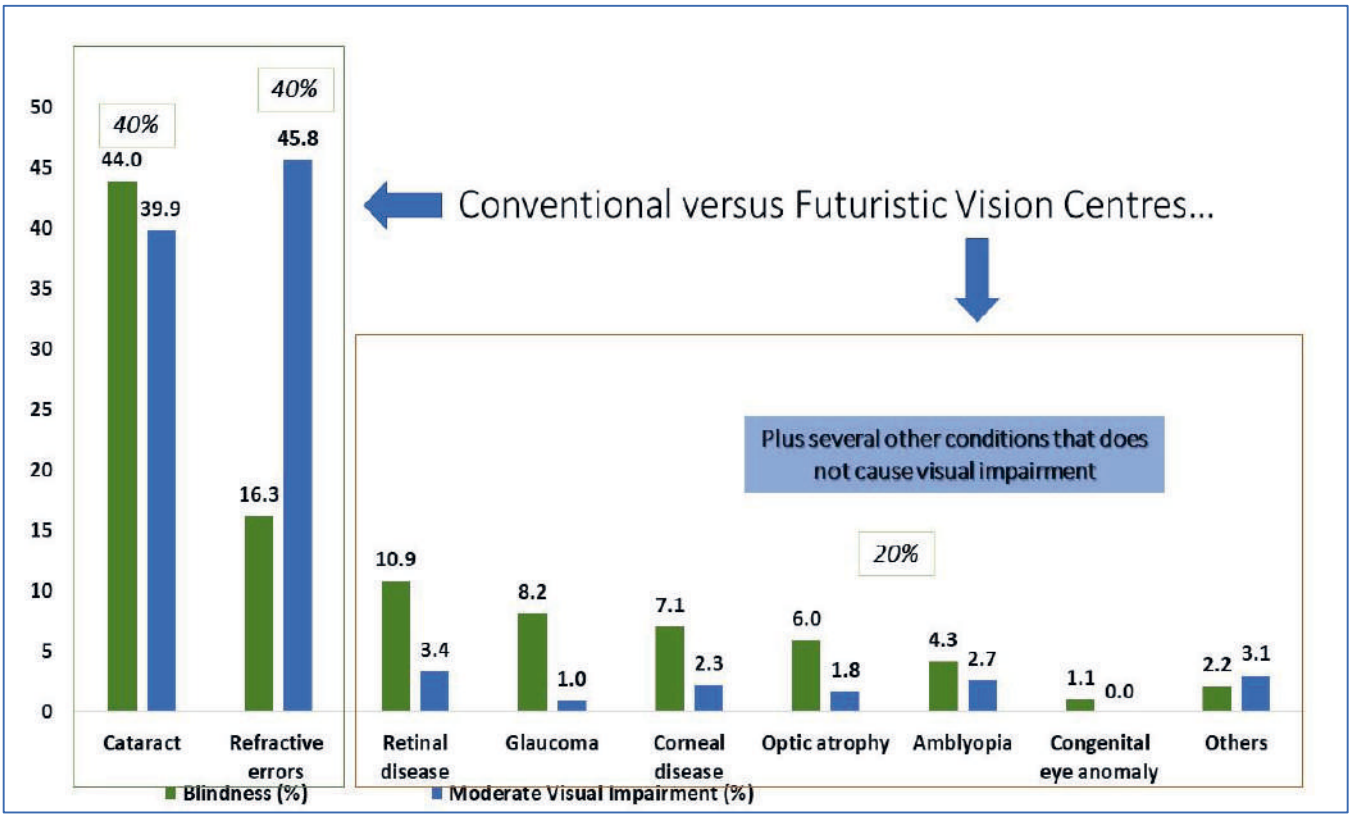

Figure 1: Role of vision centres in addressing eye conditions. Causes of visual impairment estimates are based on the findings of the Andhra Pradesh Eye Disease Study

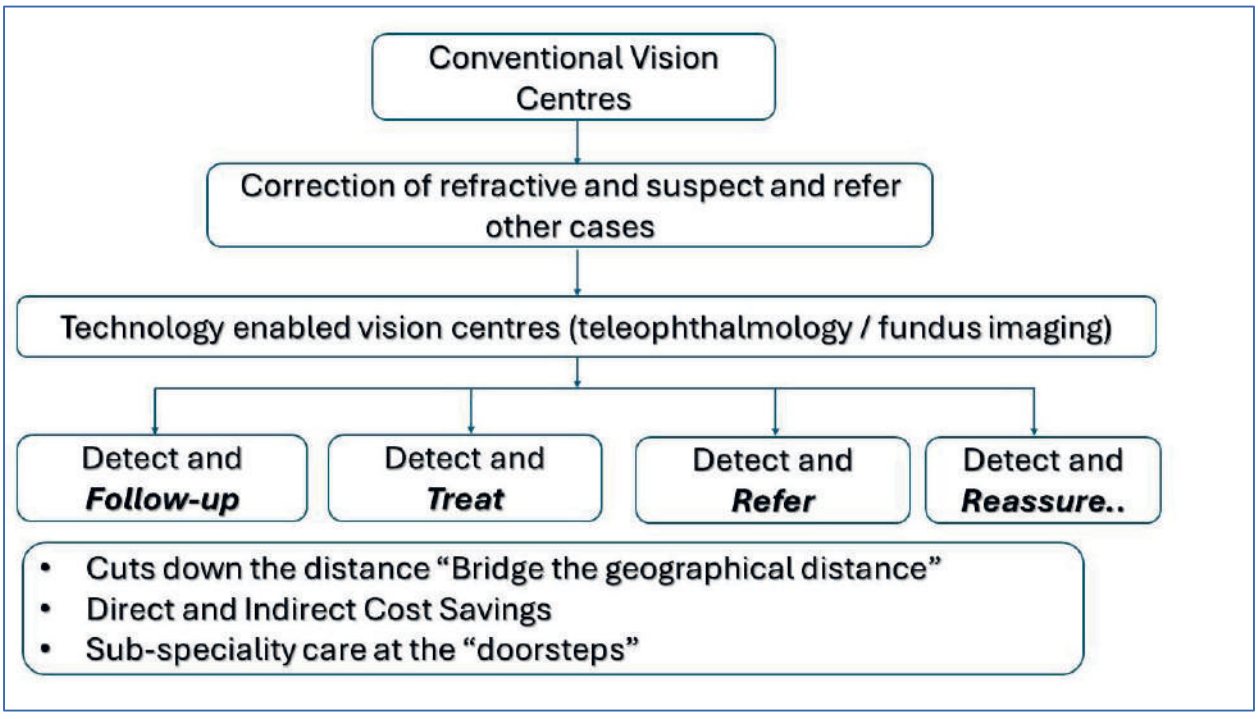

Figure 2: Conventional versus technology-enabled vision centres

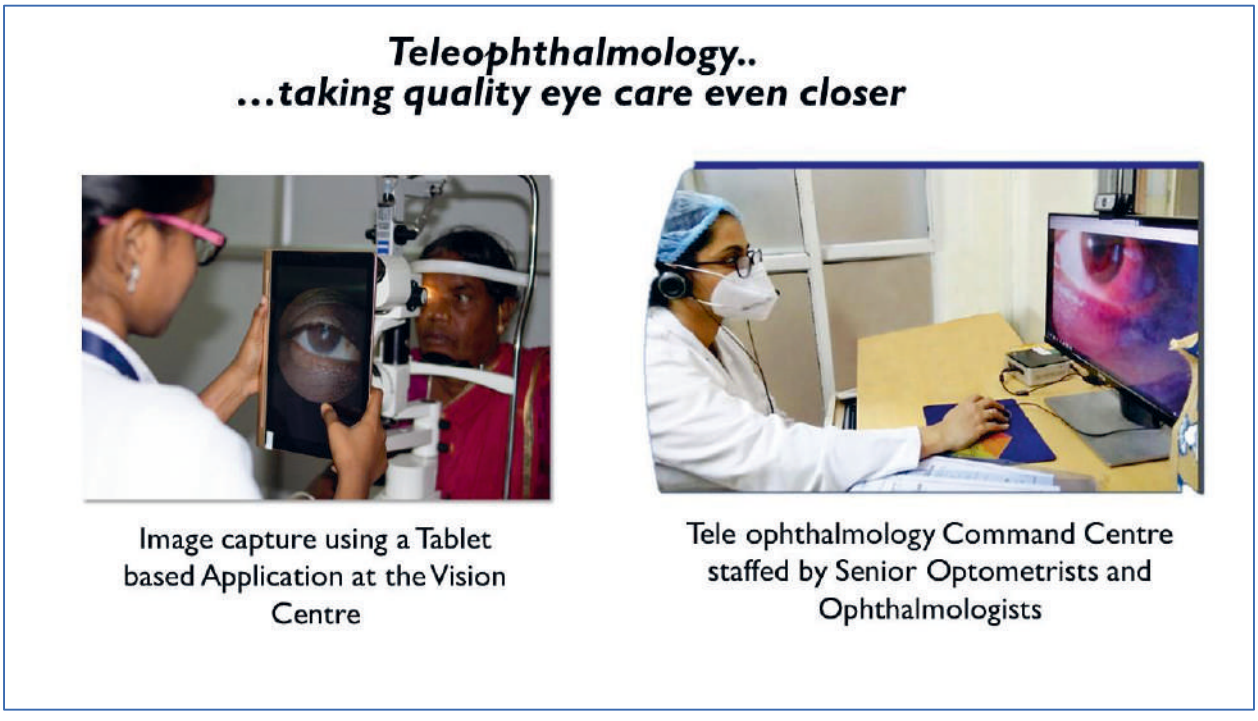

Figure 3 : Tele- ophthalmology consultation process.

Vision Centre Accreditation Process : The vision centre concept has become popular and implemented by several organizations across the country. A need for standardisation and accreditation of protocols and processes was felt.

The accreditation process for a vision center helps that the center meets recognized standards of quality and service delivery in eye care and ensures that the vision center operates efficiently, maintains high standards of patient care, and adheres to ethical practices. For more information, one may refer to "Accreditation Standards for Vision Centres", Quality and Accreditation Institute, May 2024.

Chapter 13

Role of Leadership in Vision Centre Management

The success of the vision centre starts from the management's commitment, understanding and appreciation of the need for the vision centres as an essential service delivery mechanism. The concept of Vision Centre, standard operating protocol, principles and provision of adequate directions are basic management responsibilities. Identifying the correct person to monitor the vision centre network and providing the necessary authority will add value. The person to be fully trained and experienced in vision centre management. Considering the teams at VC would require clinical inputs it is essential to have committed Optometry faculty involved in the system for continuous monitoring and capacity building of the VC staff.

While there are too many vision centres to manage, the leadership could consider putting a system in place to monitor them regularly and take necessary action in time.

Allotment of a coordinator for five vision centres to manage who would visit at least once a fortnight to VC

The VC in charge is to have regular onsite visits at least once in three months.

Identify and groom mid-level managers.

Daily, weekly and monthly monitoring of the VCs

Formal meetings with the VC staff at least once a fortnight

Identify and recognise the best-performing staff

Having set yearly targets – broken into quarterly and monthly performance. This should be regularly monitored and necessary actions need to be taken.

Ensuring financial and clinical audits are carried out, and gaps are identified and rectified.

Visit and learn about other organisations, and participate in National conferences such as Vision 2020 Annual Conference to share and learn how others implement vision centres.

Since the majority of VCs are run in isolation, regular contacts are important for developing a sense of belonging to the team.

The interns – optometrists, and managerial staff to be placed in the vision centre to develop a clear understanding of the VCs

Grading mechanism of vision centres for both financial and performance. The financial grading will be based on the cost recovery mechanism whereas performance grading will be based on the performance of key indicators against a set target.

Chapter 14

Status of VCs support by NGOs/ INGOs in the country

Organisation name	Number of Vcs supported	As of
CBM India	183	31st October 23
Operation Eyesight Universal	138	31st March 24
Mission for Vision	156	31st March 24
Orbis	114	31st October 23
Seva Foundation	164	31st March 24
Sightsavers	273	31st October 23
Total	1028	

[17] Rani PK, Das AV. Setting up a primary eye care teleconsultation service. Community Eye Health. 2022;35(114):6-7. Epub 2022 Jun 7. PMID: 36035097; PMCID: PMC9412091.

[18] N. Misra, R. C. Khanna, A. L. Mettla, S. Marmamula, V. M. Rathi, and A. V. Das, "Role of teleophthalmology to manage anterior segment conditions in vision centres of South India: 6 International Journal of Telemedicine and Applications EyeSmart study-I, " Indian Journal of Ophthalmology, vol. 68, pp. 362 –367, 2020.

Chapter 15

USPs of different Vision Centre approaches in India and key learning – Case studies

Case stories on VC management

This section collects ten core issues from a few organisations that have more than 100+ functional VCs collectively or individual organisations. This gives a broader range of information implemented in various parts of the country and will be helpful to those managing VCs or planning to initiate new ones. These organizations are placed in alphabetical order.

Concept (coverage, connected with secondary/ tertiary etc.)

Aravind Eyecare System (AES)

- Aravind Vision Center started to provide permanent eye care to the rural community. All these VCs are run permanently from 9 to 5 pm for six days a week, covering 70,000 to 1 lakh population. Has VC network in Tamil Nadu, Pondicherry, covering 12 million population

HV Desai Eye Hospital (HV Desai)

- The concept is to provide access to primary eye care services in places where they are needed and unavailable. Thus, Vision Centres (VCs) are established either in rural and semi-urban slums or at the block level to serve the villages, catering to a population of 50,000 – 70,000.

L V Prasad Eye Institute (LVPEI)

- 50,000 as VC catchment population
- Part of the Eyecare pyramid – representing the primary eye care service delivery mechanism
- Majority of VCs are handled by one or two VTs depending on the workload
- Present in village with floating population & needy locations

Dr Shroff's Charity Eye Hospital (SCEH)

- The concept is to provide access to primary eye care services in places where they are required. Thus, Vision Centres (VCs) are established in urban slums or at the block level to serve the villages.

Sadguru Netra Chikitsalaya (SNC)

- The centre is suggested to cater to a population ranging from 50,000 to 100,000 in an underserved area, situated prominently within the target region to ensure accessibility for all and maximise footfall
- Before establishing a Vision Center in the community, SNC organized several outreach camps and developed community engagement programmes in the region with the support of local stakeholders and potential supporters. This helped increase footfall in the VC from the beginning.

Sewa Sadan Eye Hospital (Sewa Sadan)

- The centre has to be at block level with a 250 sq. ft area at the main market where access to public transport is available. The centre is proposed to cater to a population ranging from 50,000 to 100,000 in an underserved area/non-availability of eye care.
- The VC staff actively conducts door-to-door screenings, Outreach camps, School screening camps, and training for grassroots workers on common eye diseases by engaging Local stakeholders, Government officials, and Social groups to build trust, acceptability, and credibility in the targeted population.

Siliguri Greater Lions Eye Hospital (SGLEH)

The center is proposed to cater to a population ranging from 50,000 to 100,000 in an underserved area/non availability of eye care. The VC are managed by 2- 4 staff and actively conducts Door to Door screening for building the trust and acceptibility in the targeted population.

- Comprehensive eye examination, early detection of eye problems. .i.e.(Slit Lamp Examination; Applanation Tonometry; Retinoscopy; Direct Ophthalmoscope)
- Diagnosis, of Diseases such as cataract, glaucoma, diabetic retinopathy, and other eye illnesses.
- Refraction & Dispensing of Spectacles
- Counseling
- Referral for treatment/ surgery and follow-up
- Diabetes (Glucometer Random) and blood pressure test.
- First aid services, including conjunctivitis, ulcers, trauma, and foreign bodies.
- Creating awareness, IEC dessimination;
- Patients referral to the base hospital for further treatment & rehabilitation.

Human Resources

Aravind Eyecare System (AES)

- Two human resources: One is a VC technician who is qualified and skill-certified to perform a comprehensive eye examination, including Visual acuity measurement, refraction, slit-lamp examination, fundus photography, IOP, BP, and blood sugar. The findings were documented in EMR, and they facilitate teleconsultation.
- The other is the VC coordinator, responsible for receiving patients, registration, Counseling, selling Spectacles, maintaining reports, and managing finances and stock. She will also serve as a liaison between the base hospital, the community, and the Vcs.

HV Desai Eye Hospital (HV Desai)

- 3 Staff model – Optometrist, Data Entry Operator & Mobiliser

L V Prasad Eye Institute (LVPEI):

- Majority of VCs are handled by one or two VTs depending on the workload
- Vision Technicians recruited from the rural areas, trained at LVPEI, and placed back in rural locations
- Monitored by Vision Centre Coordinator / secondary centre Administrator

Dr Shroff's Charity Eye Hospital (SCEH)

- Vision Technician – One
- Community Health Worker – One
- A VC coordinator for five Vcs

Sadguru Netra Chikitsalaya (SNC)

- Ophthalmic Assistant – One
- Community Health Worker – One
- A VC coordinator for five Vcs

Sewa Sadan Eye Hospital

- Follows 2-4 Staff Models – 1 Optometrist, 1 DEO/VC Assistant, 2 CHW
- DEO & CHW from the local area from the vicinity of vision centers.

Siliguri Greater Lions Eye Hospital

- Follows 2-4 Staff Models – 1 Optometrist, 1 DEO/VC Assistant, 2 CHW
- Optometrists and Vision Technicians selected from the rural areas, trained at Siliguri and placed back in rural locations.
- DEO & CHW from the local area from the vicinity of vision centers.

States intervening

AES: Tamil Nadu, Pondicherry

LVPEI: Andhra Pradesh, Telangana, Karnataka and Odisha

HV Desai: Maharashtra

Sewa Sadan: Madhya Pradesh

SGLEH: North Bengal (West Bengal), Sikkim, Bihar

SCEH: Delhi, Uttar Pradesh

SNC: Uttar Pradesh and Madhya Pradesh

Key strengths

Aravind Eyecare System (AES)

- Provision of comprehensive eye examination to all 40+ aged population
- Identify common eye conditions
- Providing optimum care at the VC level
- Referral chain for higher treatment such as surgery or specialty
- Acceptance and compliance to treatment is 75 to 85%
- Retention of Staff (85% of VC staff stay for more than five years)

HV Desai Eye Hospital (HV Desai)

- Comprehensive Eye care delivery
- Tele-Consultation at all Centers
- Desai trains the maximum staff working at VC, so staff already knows the culture and clinical pattern of the hospital
- Strong Community Trust

LV Prasad Eye Institute (LVPEI)

- The pyramidal model of LVPEI for eye care service delivery integrating all levels.
- Training, retraining, and capacity building of human resources in-house.
- Well-defined carrier path for Vision Technicians

Dr Shroff's Charity Eye Hospital (SCEH)

- Constantly increasing number of patients accessing Vcs
- Almost 50 per cent of surgeries in secondary centres contributed by Vcs
- Effective teleconsultation services with specialists getting involved for cornea and pediatric ophthalmology calls. All our existing centres are connected to these services
- Available electronic medical records and clinical data being used for audits
- Clinical optometrists at hospitals contributing to training and monitoring

Sadguru Netra Chikitsalaya (SNC)

- Strong Community Support & strong Outreach Programme support – local stakeholders' involvement
- Integrated approach – involving ASHAs/ ANMS and improving referrals
- High surgical volume from the catchment areas of VC

Sewa Sadan Eye Hospital

- Providing Comprehensive eye examinations and post-surgery follow-ups at VC by well-trained staff.
- The strong network of local stakeholders/Groups – Lions Group, Women's Groups, Local Businessmen, Religious Groups, Govt. Officials help with referrals, identification, publicity, camps, and acceptance in the community.
- Integration with the grassroot workers and local district health centres

Siliguri Greater Lions Eye Hospital

- Providing Comprehensive eye examinations at VC.
- The strong network of local Lions Groups, Rotary clubs, Local Clubs, and NGOs helps with Identification, Publicity, Camps, and Acceptance in the community.
- Integration with the Government (e.g., Department of Health & Family Welfare, Women & Child Development Department, Department of Education and Panchayat/Municipality, NGO, local Clubs, SHG, and RMP within VC intervention area).

Uniqueness

Aravind Eyecare System (AES)

- Senior Leadership Involvement
- Strong organisation structure
- Location and layout ease the patient flow and access
- Efficient operation system
- Staff from the local area are identified, recruited and trained at Aravind
- Community support
- Teleconsultation for all patients
- Ensuring the patient-friendly physical layout and patient facilities
- Supply chain management (delivery of Spectacles and medications on time to the patients).
- The difference between the advice for treatment and actual treatment is less
- Financial Sustainability for VC operations is ensured at the end of 2 years

HV Desai Eye Hospital (HV Desai)

- Teleconsultation for all patients
- 2 VC's are established under Temple Premises i.e. Alandi & Sangamner VC – Jain Temple Premises. These centres provide premises free of cost, generating paid surgeries: Alandi 250 (70% paid) surgeries Sangamer – 150 (50% paid).
- Collaborate with local Opticians/Optometrists (The Hospital manages transportation). 80% free, 20% paid—no commission for paid surgeries.
- Providing the service of operating Cataract at an economical rate at VC's; surgery ratio is 50:50 (Free: Subsidized)

L V Prasad Eye Institute (LVPEI):

- **Comprehensive eye examination:** Complete examination to all the patients
- **Awareness:** Awareness on eye health and prevention of conditions leading to visual impairment. Demand creation for eye care among every individual.
- Acceptability: The main human resource, the 'Vision Technician,' is recruited from the local community. This person can interact with and create linkages with existing services. Local infrastructure support and referrals are encouraged.
- **Availability:** The presence of Vision Centre's in the remote and rural areas with qualified human resource
- **Accessibility:** Provide all levels (Primary/secondary/tertiary) of eye care (treatment/surgery/ vision enhancement /rehabilitation) to all community segments. Offer high-quality teleophthal mology, which is faster and better services at the doorstep.
- **Affordability:** Complete eye examination/treatment / surgery at no cost for those who cannot afford and provide spectacles at an affordable cost

Dr Shroff's Charity Eye Hospital (SCEH)

- Focus on clinical processes- with regular clinical audits from the secondary centres.
- We focus on comprehensive eye care and tele-consultation is used extensively
- All SCEH projects in community screen for children and adults treat VCs as a referral point
- In the villages within 5 to 7 Km from VCs, SCEH conducts door to door screening and referrals are made to the vision centres
- Vision Centre Management System helps us in robust data collection- both programmatic and clinical

Sadguru Netra Chikitsalaya (SNC)

- Community-Driven Approach – Establish VC after strong outreach activities and stakeholder involvement.
- Surgery Facilitation: A good number of screening programmes in the catchment areas of Vcs facilitate a good number of surgical referrals
- Improved Follow-up Compliance: Systems in place to ensure improved follow-up compliance.
- Rural Employment Opportunities: Our centers provide employment opportunities in rural areas, contributing to local economic development and empowerment.

Sewa Sadan Eye Hospital

- Comprehensive Eye examination for all patients
- Less spectacle turnaround time - Spectacle Transportation is done through local public buses and the fitting centers at the District level to reduce the Turn Around Time for spectacles
- Door to Door screening
- Free transportation facilities for patients for free/paid surgeries at the base hospital.
- Tele consultation
- CCTV equipped
- Inclusive & Accessible Centre's with Ramp & Wheelchairs.

Siliguri Greater Lions Eye Hospital

- Comprehensive Eye examination for all patients
- Less spectacle turnaround time - Spectacle Transportation is done through local buses/taxi's, to reduce the Turn Around Time for spectacles
- EMR - All the VC's have broadband connection and have same software centralized connected with base hospital.
- Door to Door screening
- Geographically- Siliguri, a narrow stretch of land lying in the foothills of the Himalayas. Besides its obvious strategic position, Siliguri is the gateway to the north east, Sikkim; North Bengal & Bihar. It is also the transit point to go to the neighboring countries of Bhutan, Nepal and Bangladesh.
- Gradually centers are being powered by Solar with Green Vision centers concept. E-Bikes to CHWs.
- CCTV equipped.

Equipment other than conventional ones (mentioned in the equipment section)

Aravind Eyecare System (AES)

Apart from conventional VC equipment, the following equipment/ instruments are used:

- 90D
- Fundus Camera with Artificial Intelligence for DR
- Tele Ophthalmology services for each patient to be consulted by a doctor from the base hospital
- VC software

HV Desai Eye Hospital (HV Desai)

- Fundus Camera

L V Prasad Eye Institute (LVPEI)

- Futuristic VC / technology-enabled vision centres
- Fundus camera
- Portable Perimeter
- Pupil plus
- Teleophthalmology
- To identify sight-threatening conditions like glaucoma and retinal diseases at an early stage and also provide follow-up care.

Dr Shroff's Charity Eye Hospital (SCEH)

- All VCs are equipped with conventional VC equipment. Additionally, equipment for teleconsultation includes a dedicated computer system, web camera, microphone, and effective internet connectivity.
- The platform for tele is built into our Vision Centre management system to monitor and address the need. Some high-volume VCs are being upgraded with provision for glaucoma and DR screening using hand-held cameras.

Sadguru Netra Chikitsalaya (SNC)

- Conventional Vision Centre Equipment with good VC software is used

Sewa Sadan Eye Hospital

- Fundus Camera

Siliguri Greater Lions Eye Hospital

- Auto Ref Machine (FORUS)
- Web Cam

Key indicators that are used for monitoring

Aravind Eyecare System (AES)

- Average patients examined at VC per day
- Unique OP coverage in the service area population by the VC
- Spectacle acceptance rate and spectacle conversion rate to outpatients
- Cataract Surgery acceptance
- Specialty referral acceptance rate

HV Desai Eye Hospital

- Average OPD/VC/ Day
- Spectacle conversion and acceptance
- Average pricing value of the spectacles
- Average surgeries per month
- Cost recovery

L V Prasad Eye Institute (LVPEI)

- Average OPD/VC/day
- Average spectacles prescription rate
- Average spectacles conversion rate
- Average surgeries / VC / per annum
- Cost recovery (%)
- Referral conversion rate (%)
- Service & financial sustainability

Dr Shroff's Charity Eye Hospital (SCEH)

- Average OPD/VC/ Day
- Spectacle conversion
- Average pricing value of the spectacles
- Average surgeries per month
- Cost recovery

Sadguru Netra Chikitsalaya (SNC)

- Patients screened in OPD/ day, month
- Surgeries per month
- Spectacle conversion
- Average price value of spectacles
- Cost recovery from the Vcs

Sewa Sadan Eye Hospital

- Average OPD/VC/day
- Average spectacles conversion rate/ compliance /ATV
- Average surgeries / VC / per month/annum/ compliance
- Cost recovery (%)
- VC Income v/s Expenses
- Weekly Review Meetings through Zoom
- Quarterly Audits

Siliguri Greater Lions Eye Hospital

- Average OPD/VC/day
- Average spectacles conversion rate/ compliance
- Average surgeries / VC / per month/annum/ compliance
- Gender wise Service acceptability
- Cost recovery (%).
- VC Income
- VC expenses.
- School Screening
- Community Level Intervention (D2D survey)
- Attrition rate of Human resources
- Patients referred to Base Hospital- Specialty wise

Community-level interventions

Aravind Eyecare System (AES)

- Identify and network with local eye camp sponsors: For free space, publicize and organize camps.
- **Networking with NGOs:** Their involvement strengthens community engagement and awareness of eye health issues.
- **Coordination with Government Schemes:** Coordinating and utilizing schemes such as the National Rural Employment Guarantee (NREG) Scheme can assist in organizing health education programs within the community, enhancing awareness and outreach efforts.
- **Schools:** Collaboration with schools enables Vision Centres to organize eye screenings for students within their service areas.
- **Local Physicians & Primary Health Centers** This collaboration ensures comprehensive eye care for patients with chronic conditions and enhances the reach of preventive services.

HV Desai Eye Hospital

- Network with local stakeholders and local political bodies to sponsor eye camps
- School Screening in the VC Intervention areas
- Training for Grassroots workers on Eye Health
- Collaborating with local Physicians

L V Prasad Eye Institute (LVPEI)

- Vision Centre network actively engages in community-level activities and networks with local gross root health workers, PHC/CHC, local RMP/GPs, pharmacies, NGOs, and other local groups.
- Celebrate special days like World Sight Day, World Diabetic Day, Children's Day, International Women's Day etc., at both Vision Centres and centre locations annually.
- Teams also participate in village-level monthly meetings in various groups, namely ASHA

Dr Shroff's Charity Eye Hospital (SCEH)

- It is an essential part of SCEH's VC programme. It has regular community meetings and invites key village people to the VCs. A budget is allocated for this annually. In the new VC regions, intensive door-to-door screening is conducted.

Sadguru Netra Chikitsalaya (SNC)

- **Community Workshops and Education Programmes:** Regular sessions on eye health, prevention, and early detection of eye conditions are conducted in the community.
- **Collaboration with Local Schools:** Partnering with schools to offer vision screenings for students
- **Vision Center-based outreach camps:** Free eye screening camps are conducted regularly in the catchment areas, and patients are referred to the VC.
- **Partnerships with Local stakeholders:** Strong association with local stakeholders in each VC. Community Engagement Platforms: The vision centre staff (in charge) also utilize social media and other online platforms to engage with the community by getting involved in their WhatsApp groups.

Sewa Sadan Eye Hospital

- Grassroot Workers Training at community level and organizing Sensitization workshops for ASHA; RMP & Anganwadi at frequent intervals.
- Connecting with the local stakeholders, such as the government officials, NGO's and social groups.

Siliguri Greater Lions Eye Hospital

- Grassroot Workers Training at the community level and organizing Sensitization workshops for ASHA; RMP & Anganwadi at frequent intervals.
- Connecting with the Local stakeholders, NGO's and social groups

Key challenges

Aravind Eyecare System (AES)

- The human resources development aspect poses a significant challenge for Aravind as it takes four years for a person to become VT or VCC
- Current guidelines do not permit VCs to provide essential medications, which poses a significant limitation.

HV Desai Eye Hospital

- Due to market competition, the spectacle Acceptance is average, and Turnaround Time is more i.e. 4-5 days
- OPD is low is semi-urban areas
- Staff retention

L V Prasad Eye Institute (LVPEI)

- Human resources recruitment & retention
- Logistic issues concerning spectacles delivery
- Motivating patients for service uptake

Dr Shroff's Charity Eye Hospital (SCEH)

- Attrition- of optometrists-this is a challenge, especially till the in-house trained vision technicians are not ready
- Remote monitoring for disciplinary issues like late coming and not opening VCs on time, missing registering patients and sometimes inter-personal conflicts
- Relatively low surgical uptake in summers at the vision centres

Sadguru Netra Chikitsalaya (SNC)

- **Human Resource Management:** To ensure staff motivation and retention
- **Community Engagement and Support:** Maintaining consistency
- **Challenges of Misuse of Hospital Name:** As a recognised and trusted provider of eye care services in the region, there are challenges with other providers using SNC' name in a similar setting to their vision centre, leading to confusion among patients.

Sewa Sadan Eye Hospital

- Lack of Awareness in the community on eye care.
- Human resources recruitment & retention specially Technicians

Siliguri Greater Lions Eye Hospital

- Human resources recruitment & retention
- Low OPD in Hilly located Vision Centers
- Transportation and communication gaps in the remote hill areas.
- Strong Monitoring especially in distant centers

Minimum services expected from a VC (combined from all)

- Permanent location & services with 300 – 400 sq.ft, preferably on the ground floor
- Permanent staff availability for clinical and community-level intervention
- Opening regularly at least six days a week and serving at least 8 hours in a day
- Refraction and spectacle dispensing at a subsidized cost
- Comprehensive examination (at least anterior segment)
- Blood pressure and blood sugar for surgical patients
- Clear-cut referral mechanisms and clear linkage with the base hospital for services and monitoring
- Software for data collection
- To have community-level interventions and dedicated staff
- Conventional VCs to upgrade to Tele-ophthalmology after a year/ two, depending on performances, staff skills, referral mechanism etc., establishing Diabetic Retinopathy and Glaucoma services
- Cost recovery mechanism to be built in the service provision for financial sustainability of Vcs
- Integrated school eye health programme
- Effective follow-up system for operated patients at VC
- Periodic evaluation of Staff and training Enhancement system
- Documentation and reports to facilitate improvement and decision-making

Annexure 1: Vision Centre layout

Disclaimer:

VISION 2020: The Right to Sight-INDIA does not in any way claim that this is the only way to manage vision centres. There will be newer practices that will develop with time. The contents of this document should not be quoted as authority in any court of law or dispute. VISION 2020: The Right to Sight-INDIA will not be involved, either directly or indirectly, in any way for any damages to any persons/group of persons in the event of carrying out any of the activities mentioned in this document.

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 Dr RP Centre, AIIMS to coordinate and engage itself at policy level 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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