

The VIIO Child Vision Project

Vittala International Institute of Ophthalmology



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Child Vision Project

An Introduction

Childhood blindness has multiple causes and these causes vary in different age groups. We understand that a single wide-net screening strategy is not suitable for all diseases in differing age groups. Currently screening for visual disorders in children does not have effective strategies to complete the cycle of care from identification of problem to treatment delivery or rehabilitation. Further the commonly employed screening strategies do not touch the marginalized groups of children such as children of migrant labor, undocumented slum dwellers and home bound sick children. Presently we aim to coordinate our different pediatric eye screening programs such as technician led- NICU based screening of pre-term infants for Retinopathy of prematurity (ROP) using Ret-Cam and telemedicine, school screening program, house to house surveys in urban slums and screening of children in tertiary pediatric hospitals into a single comprehensive child vision program by adding child tracking system, counselling, treatment and rehabilitation. The current proposal seeks to expand geographic coverage and to address developmental cataracts, vitamin A deficiency, refractive errors, squint, ROP, retinoblastoma, neurological disorders causing visual loss, juvenile rheumatoid arthritis and ocular infections of newborns such as ophthalmia neonatorum. We plan to have community health worker, teacher led, technician led and doctor led screening and diagnosis systems, based on specific conditions. An online patient management system will ensure that the child receives full care and can be followed up. An alignment with the national child health programs will help us to with paying for the after care of children and ensure long term sustainability. Community based screening and training of "Vision Sentinels" will ensure that knowledge is transferred and retained in the areas of the project.

Why this kind of a project is needed?

Situational Assessment

An analysis of avoidable childhood blindness in India and current published literature indicates that it can be broadly be broken down into age related and cause related sets. Each of these sets needs specific, screening, diagnosis and treatment strategies. A majority of childhood blindness is caused by refractive errors, cataract, retinopathy of prematurity, nutritional

deficiencies (Vit A), squint, nystagmus, glaucoma, congenital and developmental causes, structural abnormalities, juvenile arthritis and neurological defects. Paucity of medical facilities, human resources and age/disease specific strategies hamper delivery of care. Addressing dropout rates from treatment and screening cycles is also key to avoiding blindness. School, camp and formal clinic based screening does not address children out of school and from vulnerable sections of the society like migrant labor and undocumented poor. Estimates for actual visual impairment numbers vary from 14.8% for school going children to a national estimate of 680,000 blind children of which nearly 275,00 are having refractive errors. Post screening delivery of care including surgical and rehabilitation care suffers from dropout rates due to lack of information, education, and follow up systems. Paying for surgical interventions and repeated follow ups is also a barrier

Proposed Solution and Rationale

The project will have two arms

1. The enhancement of an existing Pediatric Eye Care Clinic at VIIO by the provisioning of equipment
2. A screening and detection mechanism to reach out to children in large parts of the state

Arm 1 : The Paediatric Eye Care Services at VIIO and enhancing the same

At VIIO we provide treatment for an extensive range of pediatric eye problems such as sight-threatening conditions like retinopathy of prematurity, retinoblastoma(eye cancer), reconstructive and corrective surgeries pediatric glaucoma, cataract and congenital opacities of the cornea.

Our center also treats children who have eye problems. Small children are unable to relate their eye problems and our ophthalmologists treat children in a very friendly way with special equipment and treatment methods. The common pediatric eye problems are congenital eye diseases, Amblyopia or lazy eye, Pediatric strabismus or squint and refractive errors.

Congenital eye diseases include congenital cataract, Ptosis or drooping of eye lids, congenital nasolacrimal duct blockage (or NLD blockage) which results in watering of eyes. Newborns and

younger infants commonly have some matting in their eyes and may have a lot of tearing; this could be because of blocked tear duct.

Amblyopia or lazy eye condition happens when visual function of one eye is underdeveloped. This could be successfully treated in early childhood as complications increase with age. It is difficult to identify a child suffering from amblyopia unless there is obvious misalignment. A thorough examination done by a specialist can help in analyzing this problem.

Retinopathy of Prematurity condition happens when a baby is born prematurely (less than 36 weeks of gestation).The retina of the baby is screened in association with the NICU and action taken as necessary.

Pediatric strabismus or squint condition which can be identified when your child's eyes point in different directions. If it is not treated on time, it could lead to double vision, eye strain, discomfort and headache. Minor cases can be treated through patching and glasses. Strabismus is best treated in childhood. The main sign of strabismus is an eye that is not straight. Sometimes children will squint one eye in bright sunlight or tilt their head to use their eyes together.

Refractive errors Children needing vision correction are treated through provision of glasses and aids.

The Current clinic will need is in need of specialized equipment to enhance the services offered. The list of equipment and costs is in Annexure I

Arm 2: Outreach screening for identification of children

The project will be implemented in the southern Indian state of Karnataka. This area is selected as we already implement multiple vision screening and treatment programs across 17 districts

of the state. A multipronged screen- diagnose-treat or rehabilitate strategy will be implemented to address the following age groups Age <1 and premature, 1-3,3-6 ,6-16, with specific screening, treatment and follow up for each. Rehabilitation where conditions are not medically treatable will be made available for all age groups.

All children who need further interventions will be treated at primary, secondary and tertiary care levels. An integration with the National Child Health program and the National Program for Control of Blindness will allow for partial funding of these interventions. Interventions will be in the form of corrective glasses, low vision aids, surgeries and rehabilitation where needed. We plan to expand our current hospital and outreach based programs into a seamless, stratified and specific program to address multiple age groups and conditions.

A NICU based tele-screening program will address retinopathy of prematurity in both government and private hospitals. Pediatricians and community health workers will be educated in recognition of vision problems in children <3yrs old and a mechanism will be made available for referral and follow up. Our hospital and outreach based screening program will continue to identify vision defects. A community based identification model based on Vision Sentinels will be made in low income and migrant colonies of the project areas. A preschool and school screening program will be continued and strengthened to identify and intervene in all school going children between the ages of 3 and 16. A Child Vision Tracking and Telemedicine system based on web and mobile technologies will help ensure counseling, continued follow up and delivery of necessary care. Information education and communication strategies will raise awareness about preventable causes. A training program to increase skills of identification and referral will be implemented to help augment existing community health worker resources. A technician and optometrist led screening program augmented by telemedicine services will be implemented to increase the screening net. In addition to the detection of eye problems, the systemic disorders which are detected during the examination are referred to the concerned specialty for further management

Project Objectives, Activities and Results

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Objectives/Proposed Solution(s)	Actions/Activities	Results
Screening for neonatal ROP	NICU based technician led screening, tele med based diagnosis system. Treatment for identified infants will be delivered in situ	All infants <34 weeks and/or less than 2000 gms will be screened for ROP in government and private NICUs. Treatment will be delivered where needed.
0-3 year Screening	Community vision center, Vision Sentinel, Vaccination clinic based screening, house to house survey	All self reported and identified children from project areas and referred to the base hospital or screening camps.
Screening for 3-6 year olds	Community vision center, Vision Sentinel, Vaccination clinic based screening, house to house survey. Preschool and childcare center based screening	All self reported and identified children from project areas and referred to the base hospital or screening camps.
6-16 olds	School based, teacher and technician led	All government and low income schools
Screening for undocumented and out of schools children	Volunteer and Vision Sentinels will be used to identify and refer children needing screening	Throughout the project area
Mobile and Internet based child tracking system	Creation and roll out of a child eye health record	Every child will have a unique identifier and this record will also help in monitoring and evaluation
Eye Health Identification Training	For Volunteers, teachers, community health workers and Vision Sentinels	Creation of awareness about eye health, need for early intervention in all stake holder communities and community health care deliverers. Create permanent resources for early identification, Doctor and pediatrician training to increase referral networks
Interventions	Provision of glasses, visual aids, medicines, surgical interventions and rehabilitation	All identified children will receive comprehensive care and attention

The key elements of the project are

1. Ensuring all childhood blindness causing conditions are addressed as per appropriate standard protocols in a timely and effective manner
2. Ensuring that the full cycle of care (continuum of care) is delivered to the identified child through active tracking including aids, glasses and surgical care.
3. Creation of human resources to carry forward the effort after the project completion
4. Integration with government and other agencies to ensure continuity and sustainability of the project
5. Creation of epidemiological, management and operational data to broaden the understanding of childhood blindness and effective strategies to tackle it

Management and Staffing

A continuous monitoring mechanism based on online data will be implemented . Lessons drawn from our earlier outreach projects will be used for patient tracking and ensuring continuum of care., A dedicated project manager will oversee the operational, legal, financial and regulatory aspects of the project on a daily basis. The project will be led by Dr Krishna R Murthy, MD MRCOphth(Lon) an experienced paediatric ophthalmologist and will have Dr Muralidharakrishna, DrChitralekha De and Dr Praveen R Murthy as medical members of the team, and will be staffed with experienced field managers and operational staff.

About the Institute

Started in 1988, **Sri Keshava Trust(SKT)** is a Bangalore based public charitable trust engaged in provision of health care services to those that need it the most. Focusing on eye care in particular, Sri Keshava Trust started in a small way out of Prabha Eye Clinic and Research Center.

Our Work is inspired by our founder **Dr K Ramachandramurthy (1943-2008)** a visionary ophthalmologist and a very respected pioneering legend in the area of eye care. Dr KRM as he was fondly called, dedicated his life towards providing quality eye care to his countrymen, at a time when such care was scarcely available. He gave us our motto **“Shraddahi Paramagathihi”**



Dr KR Murthy 1943-2008

(Dedication is the ultimate goal) a tenet by which the institution functions to this day.

The driving spirit of the organization is to fulfill the dream of our founder, whose desire was to ensure that **“No one shall go blind for want of money or lack of care”**

A need was felt to take diagnostic and treatment services to rural areas around Bangalore. Five rural ophthalmic clinics in Jigani, Anekal, Magadi, Hosur and Yelandur were started with the help of other NGOs and were run for over a decade.

In 1998 the Government of Karnataka granted us land in the new area of Banashankari III stage. Supported by over 3500 donors big and small, SKT built a state of the art tertiary care ophthalmic center called **Vittala International Institute of Ophthalmology (VIIO)**. This facility started offering its services since October 2001. Today the Hospital is equipped with the latest diagnostic and treatment equipment for all round eye care.

Sri Keshava Trust is a “Sustainable Charity” engaged in provision of eye care services primarily in the Southern Indian State of Karnataka. The Trust has its activities in clinical work, out reach programs and in research. The trust undertakes research and training in all areas of ophthalmology and is currently in the process of creating comprehensive care models.

Sri Keshava Trust has a very clear focus on affordable quality eye care by providing cost effective access to preventive and diagnostic care through unique Advanced Eye Care Mobiles. A successful economic model based on revenue sharing with existing medical establishments in the hinterland has proven successful. This model piloted through three separate units for various eye conditions have proven sustainable and has been replicated in over 17 locations. The institute offers Cataract, Corneal and Refractive, Retina, Glaucoma, Uvea and Ocular Inflammation, Pediatric, Custom Ocular Prosthesis, Low Vision, Community Ophthalmology and Clinical laboratory services.

Today the Institute has earned a name for itself as a Center of Excellence in various areas of Ophthalmology, and trains doctors and support staff from all over the world.



A story not limited to numbers

An unerring focus on clinical and surgical excellence has made VIIO a much sought after center for care Nearly half a million people directly benefited from our services. **45%** of them received this care for free. **72%** of the remaining patients received concessions ranging from **10** to **90%**. **1500** outreach camps, **650,000** KM of mobile unit travel, **114** scientific papers and presentations, **19** postgraduate and **56** paramedical staff trained. All this would not have been possible without the support of our donors, patrons.

