

## The Sankara Nethralaya Community model - Technology and evidence based comprehensive quality eye care equally to all

### The Sankara Nethralaya Philosophy

*Let the word Sankara of Sankara Nethralaya ever remind me and my associates His Holiness' command that there be a missionary Spirit in the project.*

*Let the word Nethralaya constantly remind me and my colleagues that the place of our work is an Alaya. Work will be our Worship which we shall do with sincerity, dedication and utmost Love.*

The mission of Sankara Nethralaya (SN) is “to provide total eye-care solutions of highest standards to all sections of the community through a team of competent, committed, and compassionate professionals in a patient-friendly environment.”<sup>[1]</sup> Keeping up with its mission statement of quality eye care to all sections of the community, SN initiated its community services as free Sunday camps inside the hospital premises in its early years that was opened to the deserving sections of the society. There were no differences in the comprehensive ophthalmic workup and the non-clinical, clinical, or counseling procedures for both the paying and non-paying patients and that continues still.

### Jaslok Community Ophthalmic Center

Starting with free camps in its hospital premises, the community outreach initiatives slowly expanded with support and collaborations with many national and international NGOs. Community camps were organized, and patients in need of services were brought to the hospital, treated, and taken back to their villages. In this entire process, there were no expenses for the patient out-of-his-pocket including professional eye care services, travel, food, and accommodation. Such outreach initiatives are essential and played a major role in the elimination of avoidable blindness in our country through screening around 44 lakhs and providing surgical services for 2.3 lakhs people.

SN adopts the holistic approach to eye care not only at the tertiary eye care level but also in its community eye care services. The community eye care services of SN are offered at the level of general communities for adult eye care needs, for people working in specific occupations in various unorganized sectors, at the level of school through a unique school eye health-based model and myopia research, and through special schools screening programs.

Recent evidence from SN and various other studies have put forth the following data. Prevalence of cataract among people aged 60 years and above is more than 50% in India.<sup>[2]</sup> Prevalence of primary open-angle glaucoma (POAG) and primary angle-closure (PAC) in rural south India is 1.62%<sup>[3]</sup> and 1.58%<sup>[4]</sup>, respectively. Prevalence of diabetic retinopathy (DR) was 10.3%<sup>[5]</sup> among diabetics in rural India. When the eye care needs of adults are increasing with increasing geriatric population, conditions causing childhood blindness and uncorrected refractive errors especially myopia is also on the rise. It is

obvious from these data that there remains a huge burden of conditions in rural and urban India that need attention. But still, availability, accessibility, and affordability remain as key concerns in the eye care services delivery in India.<sup>[6]</sup>

Availability of trained eye care professionals and the necessary infrastructure in the villages is a major barrier to the provision of eye care services in our country. After evaluating several outreach options in terms of reach, efficacy, and cost, SN decided to introduce “teleophthalmology” that would improve the quality, access, and affordability in eye care especially for patients in rural areas by reducing the need for travel and providing virtual access to a super-specialist right at their doorstep. SN’s teleophthalmology units have been at the forefront of the institution’s battle against blindness for more than two decades, successfully reaching out quality eye care to many patients in rural parts of the country. Till date, 620,930 people have utilized the expertise through 6300 such camps. SN also has specific training programs in all ophthalmic specialties including cataract surgery, and an academy to fulfill all-ophthalmic training needs benefitting 2042 ophthalmologists so far.

### Mobile Eye Surgical Unit (MESU)

A major breakthrough in the history of blindness eradication in the country was introduced by SN through its Mobile Eye Surgical Unit (MESU).<sup>[7]</sup> MESU is a self-contained, safe, and sterile surgical facility that can travel to remote locations and perform cataract surgery on-site [Fig. 1]. This first-of-its-kind technology and delivery model in the country consists of several engineering innovations to meet safety and sterility requirements while operating in a rural setting. The MESU consists of two custom-built vehicles, (a) the preparatory vehicle, that houses a prep-room and a changing room, and (b) the surgical vehicle, that has an operating theatre, a scrub, and a sterilization room. Till date, SN has contributed to the country through its MESU services to examine 80,794 people and has operated on 16,386 people with cataract. SN’s uniqueness in community activities is also because of its focus equally on other sight-threatening conditions like glaucoma and DR in adults and strabismus or congenital cataracts in children.



**Figure 1:** A patient after cataract surgery in front of the Mobile Eye Surgical Unit (MESU)



Figure 2: Students lining up for the comprehensive vision screening



Figure 3: Optometrist performing refraction in a school eye health program

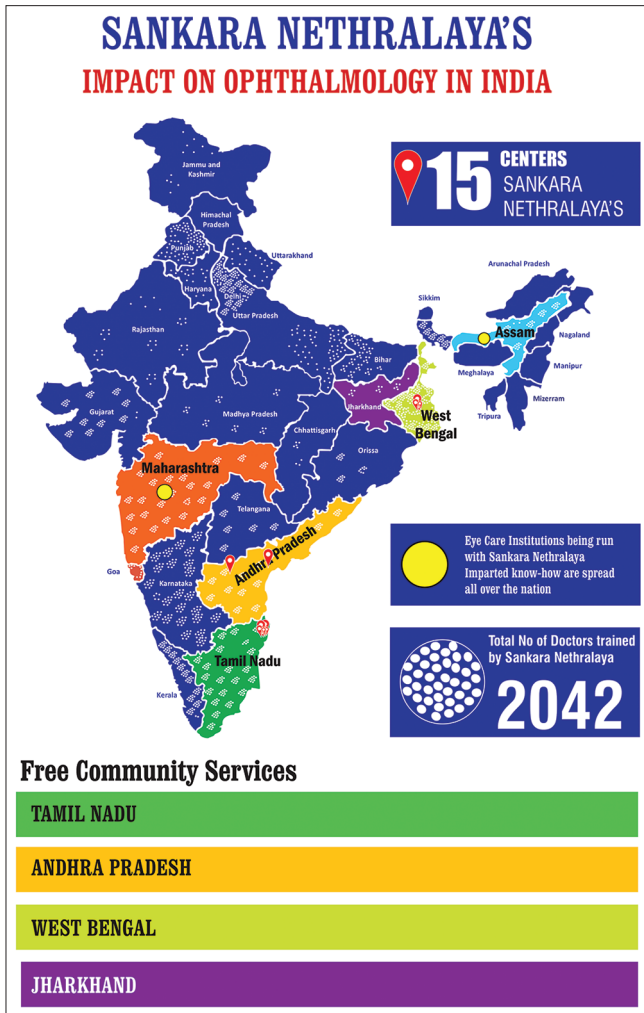


Figure 4: The location and spread of branches and training centers of Sankara Nethralaya along with the community outreach areas across India

### Elite school of Optometry's school vision screening

Elite school of Optometry (ESO) founded by Dr S S Badrinath in 1985 remains the pioneer optometry institution in the country. Around 676 has completed under graduation, with 112 graduate and 10 doctoral scholars, respectively. The

growing burden of uncorrected refractive errors among children especially myopia is well established. With 40% of our country's population under 15 years of age, there is a huge need for screening many children and the burden is more considering the annual screening need. This led to the ESO's comprehensive school eye screening strategy that included interventions to improve compliance<sup>[8]</sup> and single-day mass screening approach to screen school children.<sup>[9]</sup> ESO also holds the Limca book of records for conducting comprehensive vision screening for 8469 school children in a day [Figs. 2 and 3].

In the last decade alone, 400,000 children benefitted from this comprehensive screening model. With the myopia epidemic under limelight this decade, SN has incorporated a research-based model into the school eye health aiming to understand the risk factors for myopia onset and progression, this longitudinal study will provide insights into controlling this public health issue.

The prevalence of ocular diseases and visual concerns are multifold in children with special needs. Recognizing this need, SN offers doorstep eye care services to children and adults with special needs (mental retardation, cerebral palsy, autism, attention deficit, and multiple disabilities) in special schools and NGOs that provide residential care to this deserving population.

### Epidemiological Studies Conducted by SN

Our institution believes in the evidence, not only to understand the prevalence of common ocular conditions in the country but also to arriving at comprehensive protocols and cost-effective strategies to combat vision impairment. The Chennai Glaucoma study,<sup>[3,4]</sup> Chennai Eye Disease Incidence Study, the SN-DREAMS,<sup>[5]</sup> the BAND study,<sup>[10]</sup> and Optometry school's comprehensive school screening approach studies have opened numerous avenues for achieving these objectives. This further reinforces the unique philosophy of the institution in providing evidence-based quality eye care to the masses, optimizing both quality and quantity.

SN has always initiated preventive and promotive care to the same extent as curative or rehabilitative care. Not only does it concentrate on total eye care solutions but also on raising awareness about these conditions among the public. Unique creative ways of reaching out to the public to raise awareness have always been at the forefront. Door-to-door awareness sessions, installation of self-testing vision charts in public places, road-safety campaigns in collaboration with petrol bunks,



observing World Sight Day, World Glaucoma and Diabetes days, eye donation rallies were few such initiatives of SN in the past.

The SN model of eye care has had a tremendous impact on Indian ophthalmology [Fig. 4]. Expecting new breakthroughs in science through artificial intelligence, SN aims to take its services to everyone equally. Whether the service is for a city dweller with access to all medical facilities or to a person in a remote tribal village, technology should support reduce the differences in the solutions through qualified eye care professionals, standard evidence-based comprehensive protocols, and clinical decision-making at the doorstep of every person in the country.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### About the author



##### Dr. Sengamedu Srinivasa Badrinath

The desire to start an institute which would provide quality and affordable ophthalmic care to all patients, irrespective of class or caste, led to Dr. Badrinath establishing Sankara Nethralaya in 1978. Born in 1940 in Chennai, Dr. Badrinath is a visionary and one of the most reputed ophthalmologists in the country. Dr. Badrinath pursued his graduate studies in ophthalmology in the United States of America between 1963 and 1968 and fellowship in vitreo-retinal surgery at the Massachusetts Eye and Ear Infirmary under Dr Charles Schepens from 1968 to 1970. Dr. Badrinath established the Medical Research Foundation as ordained by His Holiness Sri Jayendra Saraswathi Swamikal in 1978. He is currently the Chairman Emeritus of Sankara Nethralaya. Over the last 41 years, he and his colleagues have relentlessly pursued the triple objectives of the foundation; 1) quality care at affordable cost, 2) teaching and training of ophthalmologists and paramedical personnel to create an army for combating blindness in India and, 3) research in vision sciences addressing the ophthalmic problems specific to India. He has been decorated with some of the most prestigious awards, including the Padma Shri, Padma Bhushan, Dr. B. C. Roy National Award, Dadhabhai Naoraji Award, ICO Golden Apple Award, CNBC TV - 18 India Business Leader Awards, DSc (Honoris Causa) by University of Missouri, USA, Lifetime Achievement Award by AIOS, Living Legend Award by NDTV and induction into Retina Hall of Fame by the American Society of Retina Specialists.