THE EYE HEALTH PYRAMID

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The eye care delivery in India has improved significantly in last three decades. With improved training, skilled eye care personnel are now available for delivery of quality eye care. One of the important impacts of availability of trained personnel is the quantum jump in the cataract surgical rate (CSR). The current CSR in India at near 5,000 per year per million populations is almost at par with the one in the developed countries such as the Western Europe and the Northern America. Despite these improvements in education and delivery, nearly one third of the blind live in India. This is because of the unequal distribution of the health delivery system. While the standard of health care should never be compromised, we have to adopt pluralism in setting the goals of health delivery.

The epidemiological studies have clearly shown the pattern of blindness in India. (Table 1). The study and the global trend of blindness suggest that 15% of the blindness can be handled in the primary level of eye care, 60% of blindness can be handled in the secondary level of eye care, and the rests in tertiary and advanced tertiary eye care system. (Table 2)

Table 1
Andhra Pradesh Eye Disease Study (APEDS) Blindness Data

Disease	Percentage
Cataract	44.0
Refractive Error	16.3
Retinal Disease	10.9
Glaucoma	8.2
Corneal disease	7.1
Optic atrophy	6.0
Amblyopia	4.3
Congenital eye disease	1.1
Others	2.2

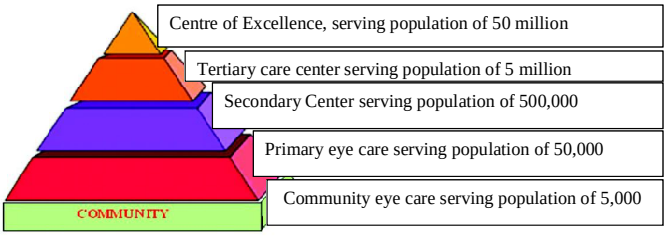
(Source: Dandona L, Dandona R, Srinivas M et al. IOVS 2001)

Table 2
Global Trends of Blindness and Strategy of care

Cause	%	Trend	Level of care & Blindness control
Trachoma/ Infective scar Onchocerciasis Vitamin A Deficiency	12 2 1	Decreasing Decreasing Decreasing	Tackled in Primary level 15% of Blindness control attempted.
Cataract Refractive Error	50 10	Increasing Increasing	Tackled in Secondary Level With Primary center 75% blindness control attempted.
Glaucoma Diabetic retinopathy	10 5	Increasing Increasing	Tackled in Tertiary level With Primary and secondary centers 90% blindness control attempted
Age-related Macular & other retinal disease	10	Increasing	Tackled in Center of Excellence With all other centers all areas of blindness control attempted

Based on these data and our experience in eye care over two decades we have developed a five tier model, the Eye Health Pyramid. This pyramidal model has a definite population based strategy for eye care delivery from a small village to a large city. (Figure 1 and Table 3). Currently this model is accepted by Government of India and is adopted by the World Health Organization (WHO) in many developing countries world wide.

Figure 1. Eye Health Pyramid



We believe that the multiple levels of intervention will help us reach all areas and all people for a comprehensive eye care. We also believe that it will utilize the available resources to the fullest extent, and avoid a lot of duplication. The key, however, is the human resource development without which no program could work successfully.

Table 3. The structure and function of Eye Health Pyramid

Service	Structure	Function
Community	Caters to 5,000 (2-3 villages) population; Community Center works closely with the nearest Primary center	Functions with **Vision Guardian** Community centers can do the following: * Keep an eye on eye health of 5,000 people * Monitor children and elderly * Refer to primary center * Monitor those who have had surgery * Provide ready made spectacles * Link to other community services
Primary	Caters to 50,000 (20-25 villages) population In a year, the Primary Center can do the following: * screen 2,500 in the center * screen 2,500 children in schools * dispense 400 pairs of spectacles * educate 300 people on spectacle usage * identifies/ refers 500 people to the next level	Functions with **Vision Technician** Vision Technicians are pooled from the same community, and are trained for a year in primary eye care. Primary centers do the following: * Full eye screening *Prescription and supply of low cost spectacles * Referral to the next level for cataract surgery and other conditions * Link to other community services
Secondary	Caters to 500,000 (10 Primary centers) population within a radius of 50 kms radius. In a year, a Secondary Center can do the following: * out patient service for 10-15,000 people * surgical service for 1,500- 2,000 people * refers 5-10% of patients to tertiary care * performs 50 community based screening activities within its target area * acts as a referral source for 10 Primary centers linked to it.	Functions with two Ophthalmologists, three Vision Technicians and four eye care Nurses Secondary centers offer comprehensive eye care services. Including surgery * Comprehensive out patient service * Common eye surgical service * Community based rehabilitation and low vision care * Fully equipped support- pharmacy and optical
Tertiary eye care center	Caters to 5,000,000 (5 million- 10 Secondary Centers) population Within 5 years of establishment, every year an Tertiary center can do the following: * out patient service for 75,000 people * surgical service for 10,000 people * collects and uses cornea for keratoplasty * trains 100 eye care professionals * publishes at least 10 research papers * acts as referral source for 10 Secondary centers linked to it.	Functions with full range of ophthalmologists, optometrists and nurses, but with a **strong emphasis on Comprehensive Eye Care.** Tertiary care centers offer a complete range of eye care services such as: *Comprehensive eye check ups * Advanced care for many complex problems * Rehabilitation of the blind and low vision care * Fully equipped support- pharmacy & optical * Training of all cadres of eye care professionals * Clinical research
CoE	Caters to population of 50 million (10 Tertiary centers) population. The Center of Excellence (CoE) is an advanced tertiary care center that engages in training of trainers and specialists, active research, and advocacy. In a year, an average CoE * out patient service for 200,000 people * surgical service for 25,000 people * trains 250 eye care professionals * full fledged eye bank service * full fledged low vision and rehab service * publishes at least 50 research papers * Contributes to eye health policy * acts as referral to 10 Tertiary centers	The Center of Excellence is at the apex of the pyramid; does every thing in patient care, clinical and basic research, eye health education, and eye health policy.