

# REFLECTIONS ON A FANTASTIC JOURNEY

## HYDERABAD



Founding and guiding a world-renowned eye institute.



**BY GULLAPALLI N. RAO, MD, FACS,  
FRCS, DSc, DMEd**

My initial ophthalmology training was in India, where I completed my residency. I then moved to the United States in the mid-1970s and performed fellowships in Boston and in Rochester, New York. After those fellowships, I was on the clinical faculty of the University of Rochester Medical Center for about a decade.

The L.V. Prasad Eye Institute (LVPEI; Figure 1), of which I am Founder and Chair, had its genesis during this period, with the idea that my wife and I had of returning to India and starting an academic eye center in the city of Hyderabad. This desire, I believe, stemmed from our backgrounds and influences during childhood. Both of us came from medical families. My father was an ophthalmologist, and that propelled me to choose ophthalmology as my career. Growing up in a rural village left a strong influence on the way my career was shaped over the years, although this is something that I realized much later in my life.

### SHAPING AN INSTITUTION

Inspiration and impetus for creation of LVPEI came from many famous institutions and visionary leaders in ophthalmology in both the United States and in India. My exposure to various cultures, traditions, and socioeconomic conditions has influenced the evolution of this eye care organization. The not-for-profit Hyderabad Eye Institute was founded in India with funding mostly from personal savings and the support of friends in early 1986, and, in recognition of a large and generous contribution from Mr. L.V. Prasad, a well-known Indian movie director and producer, it was formally named LVPEI.

Inaugurated in June 1987 in Hyderabad as a not-for-profit comprehensive eye care institution, LVPEI has since become internationally renowned and is now a World Health Organization (WHO) Collaborating Center for Prevention of Blindness. The passion for research and writing that I developed in Rochester was set aside to create

this institution and bring eye care to underprivileged people in the developing world.

### EVOLUTION OF A VISION

The founding vision for LVPEI was to develop a high-quality academic eye center in Hyderabad along the lines of US academic eye centers. The institute's structure has since evolved into a five-tier pyramidal eye care network model encompassing all levels of care from primary to advanced tertiary care, with infrastructure, well-trained human resources, and systems appropriate to each level. The network now includes at the top of the pyramid an advanced tertiary care Center of Excellence, three tertiary care centers, 16 secondary centers in rural areas, and 146 primary care vision centers located in four states of Eastern and Southern India.

Another aspect of the founding vision of LVPEI was to reconcile excellence with equity. We treat all patients—paying or nonpaying, rich or poor—with the same high-quality, no-compromise level of care (Figures 2–7). Our policy has always been that everyone who comes to any of our campuses for eye care should be provided the highest possible quality of care, however complex the problem is, whether they pay or do not pay. This practice has continued throughout our 30-year journey.

Excellence is an ever-ascending goal that LVPEI strives to achieve. The institute's mission is to provide comprehensive eye care (preventive, treatment, and rehabilitation) with rigorous commitment to quality. Since LVPEI's founding, we have brought care closer to the massive rural and remote population of India through an integrated system of secondary and primary eye care centers. This system ensures continuity of care in these geographic locations and acts as a point of entry

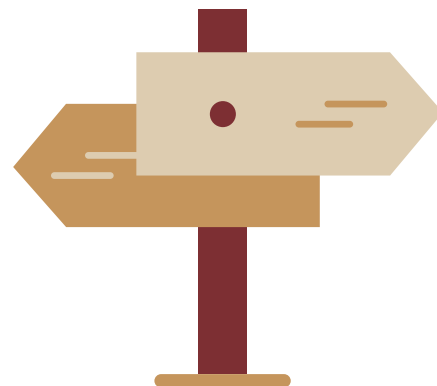




Figure 1. The main campus of the L.V. Prasad Eye Institute in Hyderabad.



Figure 2. The author escorting a nonpaying patient from the waiting area.



Figure 3. The author conducting slit-lamp evaluation on a tribal patient in the outpatient examination room.



Figure 4. A child undergoing examination at the Child Sight Institute of LVPEI.



Figure 5. A team of eye care professionals providing care for a baby with retinopathy of prematurity.



Figure 6. Surgery in progress in the operating room.



Figure 7. Patient examination with trainees.

to eye care. As LVPEI has evolved, we have developed nine major functional areas within our practice:

- Clinical services;
- Education;
- Research;
- Innovation;
- Rehabilitation and sight enhancement services;
- Eye banking;
- Community and rural eye health;
- Capacity building; and
- Advocacy, planning, and formulation of policy.

For an in-depth description of each, see the *Functional Areas* on the following page.

## LOOKING TO THE FUTURE

As we look toward the future, LVPEI will focus on developing two major strategic areas: (1) Institutes of Excellence for niche areas of eye care that will act as global resource centers for that aspect of blindness and visual impairment, playing a catalytic global role; and (2) a robust, high-quality primary eye care network in three states of India, where we have an impact on 150 million people directly.

My recent involvement as President of Academia Ophthalmologica Internationalis (AOI), a group of 80 eminent academicians in ophthalmology, has been a huge honor and has offered opportunities to work with some of the best minds in the field.

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## Functional Areas

### 1 CLINICAL SERVICES

LVPEI has served more than 12 million people through its clinical services, more than 50% of them entirely free of cost, irrespective of the complexity of care required. All subspecialty care is provided at the highest standards.

### 2 EDUCATION

Competence-based education is provided to meet the needs of eye care in India and the developing world, encompassing all cadres of eye care personnel. Training involves rigorous didactic, hands-on, and integrative forms, with additional benefit from exposure to a large number of visiting professors and lecturers from all over the world. To date, LVPEI has trained nearly 19,000 eye care professionals from all over the world (Figure 8).

### 3 RESEARCH

Over the past 28 years, research activity at LVPEI has expanded to encompass all aspects of eye research, including basic, clinical, and translational research; vision physics and adaptive optics; low vision; and public health and outcomes research.

More than 40 PhD degrees have been awarded, nearly 1,800 peer-reviewed research papers published, more than 2,500 presentations made at meetings worldwide, and many prestigious honors received.

### 4 INNOVATION

Although innovation has always been at the core of our mission, technology innovation was specifically incorporated in 2013. The vision is to develop low-cost, high-quality products for the benefit of the most disadvantaged people in the world. A bulls-eye eye dropper (Figure 9) and a folding phoropter (Figure 10) are examples of the technologies designed at LVPEI.

### 5 REHABILITATION AND SIGHT ENHANCEMENT SERVICES

Low-vision rehabilitation is an integral part of the LVPEI's pyramidal model of care delivery. LVPEI was the first eye institute in the world to integrate rehabilitation services as part of an eye institute. Since inception, its vision rehabilitation centers have successfully rehabilitated about 160,000 people across its network (Figure 11). The positive impact on the lives of many individuals is gratifying.

### 6 EYE BANKING

LVPEI has played a leadership role in eye banking in India and Asia. The Ramayamma International Eye Bank (RIEB), established in 1989, is the largest provider of sight-restoring corneal tissue in India. The RIEB also manufactures and distributes corneal preservation medium and is involved in training and capacity-building for other eye banks. Over the years, RIEB has contributed significantly to the effective networking and proliferation of eye banks through promotion of community eye banking programs and has helped to elevate eye-banking standards in the developing world.

Currently, RIEB and three other eye banks in the LVPEI network cover the needs of a population of 150 million in three states of India, in addition to supplying excess corneas to other parts of India. The Hyderabad campus has the distinction of

performing the largest number of corneal transplants by a single center in the world, with 31,085 procedures performed and counting.

### 7 COMMUNITY AND RURAL EYE HEALTH

This component of LVPEI's activity has produced a huge global impact through its innovative approach to delivery of high-quality eye care to remote rural populations. The model is based on the following:

- Focusing on a finite population;
- Providing continuity of care;
- Taking care closer to the people;
- Offering comprehensive and integrated eye care;
- Building care teams with local people; and
- Providing appropriate linkages to higher levels of care.

Employing these principles, the LVPEI developed its model for secondary level eye care centers to serve a total population of 500,000. Each of these centers caters to 15,000 to 30,000 outpatients per year, performs 1,500 to 4,000 surgical procedures per year, and offers prevention programs and low-vision rehabilitation services with an eye care team of one to three ophthalmologists along with 25 to 30 other team members comprising technical and nontechnical staff. LVPEI now has 16 of these centers spread over four states.

To these are linked a cluster of 10 vision centers, a concept developed by LVPEI for providing primary eye care, each for a population of 50,000 (Figure 12). A technician with 1 year of training provides services at these centers. LVPEI now has 146 of these centers spread over three states.

This integration of secondary and primary eye care has become a model for the world. Additionally, community screening programs are conducted in rural areas through which about 10 million people have been screened to date.

The integrated LVPEI model has great relevance to all sectors of health care beyond eye care, and it is a model that is appropriate for many developing countries aspiring to provide universal health care. The LVPEI model has now been replicated in many countries.

### 8 CAPACITY BUILDING

Another major function of LVPEI has been to provide capacity-building services to eye care organizations to enhance the quality and reach of their services. To date, more than 200 eye care organizations in India and other countries have benefitted, and this has produced significant global impact.

### 9 ADVOCACY, PLANNING, AND FORMULATION OF POLICY

These three activities have been important functional areas of LVPEI. I have been involved with the WHO's Vision 2020: The Right to Sight program from its inception through its implementation and growth during its first decade. This has been a great source of learning, inspiration, and satisfaction. I was closely involved with this global initiative for nearly 12 years as Secretary-General and Chair of the Board of the International Agency for the Prevention of Blindness (IAPB). In this role, both the institute and I, personally, have been actively involved in advocacy, planning, and formulation of policy both nationally and internationally.





Figure 8. Training of ophthalmic nursing assistants.



Figure 9. Bulls-eye eye dropper developed at the Innovation Centre.

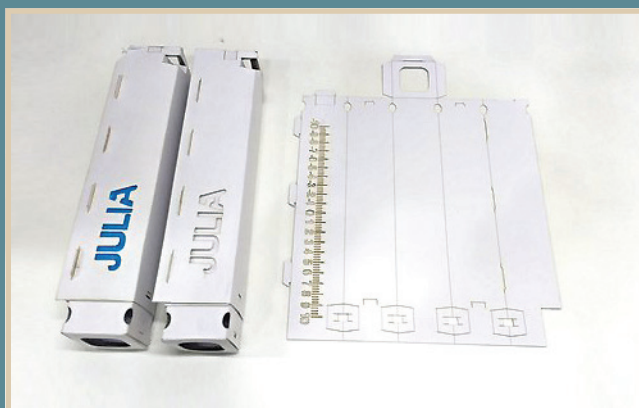


Figure 10. Folding phoropter, an innovative device to detect refractive errors developed at the Innovation Centre.



Figure 11. A blind person undergoing training in Braille.



Figure 12. Tribal patients in the waiting area at LVPEI's primary care vision center.

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## FANTASTIC JOURNEY

My career as an ophthalmologist has been an exciting journey since 1970. I have had the privilege of gaining personal experience in all aspects of ophthalmology, with the greatest reward being the satisfaction of touching many lives directly and indirectly in many parts of the world. ■

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