

So That All May See



How LV Prasad Eye Institute evolved as a caring organisation

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with

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The Road Not Taken

BY ROBERT FROST¹

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

¹ Frost, Robert Lee. "The Road Not Taken." Mountain Interval collection, 1916. <https://www.public-domain-poetry.com/robert-lee-frost/road-not-taken-1222>

The Preamble

Rich and Poor: The Global Healthcare Divide

In his 1962 science fiction book “Profiles of the Future,” author Arthur C. Clarke wrote, “Any sufficiently advanced technology is indistinguishable from magic.” At the L V Prasad Eye Institute, we saw magic. We saw how many millions of people had their vision improved, or for some, totally restored. We saw how the latest advances in ophthalmology and other medical sciences are made accessible to all, rich, middle class and poor alike. We saw how creative individuals used their skills and knowledge. And most of all, we saw one of the most dramatic examples ever of how the vision and principles of one person changed the lives of countless individuals, enabling them to say, “I can see again!” It is our hope that this book will contribute, in some small way, to spreading the innovative healthcare model of L V Prasad Eye Institute far beyond India’s borders.

The Grand Canyon is very steep—over a mile deep at places, carved out by the Colorado River in Arizona, United States. It is 277 miles long, 18 miles wide and one mile deep. Globally, an equally deep and wide metaphoric canyon exists—the huge divide between the rich and the poor. The global economic system

constructed in just a few days in the July of 1944 at the Bretton Woods Conference in New Hampshire, United States, created great wealth and prosperity for many countries, especially in Asia. In its later stages, the global financial system also created a “Grand Canyon” of economic inequality between the rich and the poor.

A controversial study by *Oxfam* (Oxfam International, a non-profit confederation of 20 independent charitable organisations focusing on the alleviation of global poverty) revealed that just eight people own the same amount of wealth as half the world, or 3.5 billion people. Other studies show that 71% of the world holds only 3% of global wealth. The world’s wealthiest individuals, those owning over \$100,000 in assets, amount to only 8.1 million people, or about 0.1% of the world’s population. Perhaps the most distressing aspect of this “Grand Canyon” of economic inequality is that most of the world is denied a fair share of the copious benefits of the global economy, such as healthcare.

Consider quality surgical procedures and post-surgical care—these are taken for granted in most Western nations. Almost everyone at some point in their life needs essential surgical care, if only for cataract, hernia or appendicitis, and often for more complicated procedures. Let’s look at some facts: There are 5 billion people worldwide who do not have access to safe and affordable surgical procedures. Around 18.6 million people die every year due to lack of surgical care—a number that is over three times the combined number of deaths caused by HIV/AIDS, tuberculosis and malaria. More than one-third of the world’s global burden of disease may be ameliorated with access to good surgical care. Therefore, a paradigm shift is needed in existing healthcare to herald a change.

There is another aspect to the global healthcare crisis—the Baumol’s Cost Disease named after Professor William Baumol. Talking about healthcare, education and the cost disease, Baumol said:

“An economic spectre haunts the democratic governments of the world’s most prosperous economies. The rising cost of healthcare and education casts a shadow over virtually every election...”².

This “disease” was diagnosed by Baumol and Professor William Bowen in a study about the performing arts. The dilemma is simple—while rising productivity in most economic sectors drives wages upward, in the performing arts there is no such productivity gain. As the two scholars noted, a Beethoven string quartet takes four musicians, and that labour input is immutable. Yet those musicians are compensated per rising standards and wages in the general economy. The result? Music, art, theatre and opera are plagued by steeply rising costs, leading to two outcomes—either they swallow a growing share of society’s resources (in the United States, healthcare swallows 18% of the GDP) or society chooses to consume far less of them when such services are price-sensitive.

Healthcare is labour-intensive and skill-intensive, and increasingly, technology-intensive. Principally, advanced medical technology is expensive to develop and to use, while at the same time it is also life-saving. There are many global programmes to combat specific illnesses like malaria and HIV/AIDS. These are worthy of praise, but what is needed is a systemic and holistic approach, one based

² Baumol, W.J., 1993. “Health Care, Education and the Cost Disease: A Looming Crisis for Public Choice,” *Public Choice*, 77, 17–28.

on this fundamental premise: the global healthcare paradigm is unfair, unethical and unworthy of a world that has grown wealthier since 1944.

What can replace it? What healthcare paradigm might square the circle, provide quality healthcare for all—including the poor—provide it at scale, and provide it in an economically sustainable way in the long run?

In this book, we describe in detail a path-breaking institute—the L V Prasad Eye Institute (LVPEI). LVPEI is remarkable not just for providing world-class eye care for the rich and the poor, but also for doing so sustainably. It also offers a glimpse into a possible new paradigm for healthcare provision in developing and developed countries alike. It offers an approach that can mitigate the Baumol's Cost Disease, diminish the inequality in healthcare provision between the rich and the poor, and reinvent the way we pay for and provide quality healthcare.

In this book, we describe the key elements of LVPEI driven by the vision of its remarkable founders. We also try to find out if this model can be extended to other areas of healthcare, and if so, how. We let our readers ponder this question as they read our account of LVPEI, its innovations, leadership and operational excellence. While this book is principally about LVPEI, this institute is only one of several outstanding healthcare innovations in India. These other radically innovative experiments too deserve close study by people and countries seeking to square the circle of high-quality low-cost healthcare.

Innovating Healthcare: India's Path-Breaking Experiments

The United States is grappling with the effects of a failed and expensive healthcare system that completely absorbs over one-sixth of its GDP. The country has been struggling to try to fix this for decades. As compared to countries like India, few efforts have been made to find innovative solutions to this problem. Robert Pearl, writing in *USA Today* (29 January 2017), observes:

Ask most Americans about obtaining their health care outside of the United States and they respond with disdain and negativity. In their mind, the quality and medical expertise available elsewhere is second-rate.... The high quality and low cost [of quality care in India] represent the type of disruptive innovation that has impacted nearly all industries in the United States, and should serve as a wake-up call for American doctors and hospitals.³

Mr. Pearl, writing in the same article, further observed:

Global innovators are doing high-quality \$1,800 heart surgery. Why aren't we [Americans] paying attention? In Bangalore, India, heart surgeons perform daily state-of-the-

³ Pearl, Robert. "U.S. health care needs a wakeup call from India: Column." *USA Today*, 29 January 2017. <https://www.usatoday.com/story/opinion/2017/01/29/health-care-surgery-india-america-disruption-column/97056938/>

art heart surgery on adults and children at an average cost of \$1,800. For the record, that's about 2% of the \$90,000 that the average heart surgery costs in the United States. And when it comes to the quality of the heart surgery, the patient outcomes are among the best in the world.

We begin by briefly discussing the innovative methods of three path-breaking Indian healthcare providers—Aravind Eye Care System, Narayana Hrudayalaya (now Narayana Health) and Lifeline Express.

Aravind Eye Care System

What are the odds that a retired 58-year-old ophthalmologist, who once suffered from severe rheumatoid arthritis, could bring vision to millions in India? Dr. Govindappa Venkataswamy retired as head of ophthalmology at the Government Madurai Medical College. Letting go of a well-earned break, he decided to fulfill his life-long dream of creating a private non-profit hospital that would provide quality eye care. Dr. Venkataswamy founded the Aravind Eye Hospital in 1976 with 11 beds that later increased to 20. Fast forward to 2015, Aravind has 10 branches with over 4,000 beds in Tamil Nadu, and in many other locations across South India. Over 35 million patients have been treated at Aravind since its establishment. From 2014 to 2015, doctors at Aravind treated more than 3.5 million patients and performed over 4,00,000 surgeries. The hospital has two basic principles: the first one was that paying patients would subsidise patients who could not afford to pay; the second key principle consisted of efficiency, scale and cost-reduction.

Intraocular lenses required for eye surgeries were very expensive. With the help of an American entrepreneur and the World Health Organization, Aravind started Aurolab—a lens manufacturing plant

near Madurai. By 2012, Aurolab had produced nearly 1.8 million lenses annually at a price of \$2 each, about 1% of the cost (\$200) of comparable lenses in the USA. Aravind's business model is based on efficiency and scale. Operation theatres are set up such that surgeons can perform many cataract surgeries in a day, moving from one table to the next. Interestingly, Dr. Venkataswamy had before retirement trained to perform 50 such surgeries in a single day.

Aravind was set up in Chennai at a cost of Rs. 1.4 billion with a capacity to perform 60,000 surgeries a year. Aravind now has its first overseas venture in Nigeria, the largest eye care facility in Africa, with a capacity to annually perform 10,000 surgeries. We will learn later that L V Prasad Eye Institute has also reached out to establish an eye hospital in Africa.

Narayana Health

Narayana Health was founded in Bangalore in the year 2000 by its charismatic leader Dr. Devi Shetty to democratise cardiac care and make it affordable to the masses through innovation. Over the years, it has evolved into a multi-speciality hospital and has presence in over 25 cities in India, while also making forays overseas, the most notable of which is setting up a hospital in the Cayman Islands, an hour's flight from Florida, USA. The disruptive innovation Dr. Shetty has implemented isn't treatment just at a lower cost, but also at a higher quality.

As with Aravind, the Narayana system also provides an exceptional quality of healthcare and minimal cost. In the same *USA Today* news story, Mr. Pearl described his visit with Dr. Shetty:

I visited India during Thanksgiving week to meet with Dr. Devi Shetty. He's the heart surgeon who served as personal

physician to Mother Teresa and now runs Narayana Health, with 20 hospitals in India. I wanted to see what the United States could learn from medical innovations undertaken halfway around the world, and how he achieves these impressive clinical results at such a low price... The day I was there, the teams of surgeons performed 37 heart surgeries on adults and children, including one heart transplant. That translates into about 900 procedures a month, or about what most U.S. university hospitals do a year. His success results from a combination of high volume, advanced technology and a focus on people and performance.

The experience of a surgeon and the surgeon's team are the best predictors of clinical outcomes. Given the large number of procedures that the team at Narayana performs each day, the results are exceptional. The clinicians at Narayana Health developed a sophisticated Electronic Health Record (EHR) using information stored on an iPad. Unlike most of the EHRs used in the US, the system developed at Narayana is so intuitive that minimal physician or nurse training is required. The operating rooms at Narayana have huge windows overlooking protected gardens, designed to allow natural sunlight to enter and spur creativity. The bedside patient-monitoring equipment is connected to a central computer system that measures the time taken by a physician to intervene for a potentially urgent medical problem. In the United States, this time often exceeds an hour, particularly on weekends. In India, it was just eight minutes.

Lifeline Express

Often, children and adults in remote villages of India suffer from medical conditions that can be easily cured with surgery or other

simple medical procedures. Conditions like cleft palate or cataract go untreated in villages because people cannot afford medical care, which is only available in cities. Travelling to these cities to seek medical treatment is also difficult because of poverty. How can one bring medical care to remote villages in India?

In 1991, the Indian Railways and the Ministry of Health joined forces to provide basic medical care to poor villagers living in remote areas. They called it the Lifeline Express or the Jeevan Rekha Express. India's rail network is one of the largest in the world. It transports 18 million passengers yearly, has 1.4 million employees and has a route that covers nearly 40,000 miles. The basic idea—equip a train with modern medical equipment and operation theatres, staff it with volunteer doctors and surgeons, run the train through the length and breadth of India to more than 7,000 stations, inform the villagers in advance, examine them quickly and choose those best suited for the Lifeline Express care. The project is supported by charitable foundations, Indian businesses and individuals.

From its inception, the Lifeline Express has covered 2,00,000 kilometres, treated a million patients in 18 Indian states and involved 1,00,000 medical professionals. The idea has spread—China now has four such trains and South Africa has two; Bangladesh and Cambodia each have a river boat hospital.

A common thread runs through all three path-breaking innovation stories. While each story starts with a strong, overriding vision to bring quality medical care to those who can afford to pay and to those who cannot, all three facilities are built on strong and rigorous business principles that generate healthy, sustained economic viability. These principles are efficiency (partly with the help

of scale), equity (all are treated alike, regardless of how much each pays) and measurement of excellence (constantly monitoring results, impact, cost, quality and throughput).

These principles are equally pervasive in the story of the L V Prasad Eye Institute—a story we now proceed to tell.

Keywords and Acronyms

Keywords and Acronyms	Full Word/Phrase
3H	Hands, Head and Heart
3T	Time, Talent and Treasure
AAO	American Academy of Ophthalmology
Advocacy	Publicity for a good cause
AEH/AECS	Aravind Eye Hospitals/Aravind Eye Care System
AIIMS	All India Institute of Medical Sciences
AIOS	All India Ophthalmological Society
APEDS	Andhra Pradesh Eye Disease Study
ARVO	Association for Research in Vision and Ophthalmology
Avoidable blindness	Avoiding or preventing eye disease as the cure is known
Board	Institute's Governing Boards (HEI and HERF)
BLSO	Bausch & Lomb School of Optometry
BHIOVS	Brien Holden Institute of Optometry and Vision Sciences

Keywords and Acronyms	Full Word/Phrase
BHVI	Brien Holden Vision Institute
CCMB	Centre for Cellular and Molecular Biology
CEC	Community Eye Care
CECC	Children's Eye Care Centre
CME	Continuing Medical Education
CoE	Centre of Excellence
CSR	Corporate social responsibility programmes for community development
DAISY	Digital Accessible Information System software
DBT	Department of Biotechnology
DMEK	Descemet's Membrane Endothelial Keratoplasty (A type of partial thickness cornea transplant)
DNB	Diplomate of National Board (see Resident)
Dr. Rao; Nag Rao; Nag	Dr. Gullapalli Nageswara Rao/Dr. G.N. Rao
DSEK	Descemet Stripping Endothelial Keratoplasty (A type of partial thickness cornea transplant)
DST	Department of Science and Technology

Keywords and Acronyms	Full Word/Phrase
EMR	Electronic Medical Records; LVPEI’s brand name “eyeSmart EMR”
Excellence, Equity, Efficiency	The values that LVPEI aims to achieve through eye care services
Fellow Doctor	Fellowship or speciality training after post-graduation in medicine to become an expert clinical or surgical eye doctor
FRCS	Fellowship of the Royal College of Surgeons and Physicians, Glasgow
Geriatric care	Referring to care for the elderly
GMR Varalakshmi campus; GMRV campus; GMRV	Grandhi Mallikarjuna Rao Varalakshmi Campus
GPR ICARE	Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye Care
HCRP	Hospital Cornea Retrieval Programme
HEI	Hyderabad Eye Institute Trust (registered trust that manages LVPEI)
HERF	Hyderabad Eye Research Foundation (registered society that manages the research component)
HMS	Hospital Management System

Keywords and Acronyms	Full Word/Phrase
IAECS	Indo-American Eye Care Society
IAPB	International Agency for the Prevention of Blindness
ICMR	Indian Council of Medical Research
ICO	International Council of Ophthalmology
IERG	Indian Eye Research Group
IFETB	International Federation of Eye and Tissue Banks
Intervention	Medical or surgical procedure to cure a physical ailment, illness or body problem
IPW	In-Patient Ward
ISD	Information Systems department
KAR campus; KAR	Kallam Anji Reddy Campus
KVC campus; KVC	Kode Venkatadri Chowdary Campus
LASIK	A type of Laser Refractive Surgery
LVPEI; institute	L V Prasad Eye Institute
LVPEI Pyramid of Eye Health	Also referred to as LVPEI Eye Health Pyramid, LVPEI Pyramid; Pyramidal model of Eye Care; Pyramidal model; LVPEI Pyramid of Trust

Keywords and Acronyms	Full Word/Phrase
MD	Doctor of Medicine
MINE	Microsoft Intelligent Network for Eyecare
MIT	Massachusetts Institute of Technology
MK medium	McCarey-Kaufman (MK) medium
MRD	Medical Records Department
MS	Master of Surgery
MTC campus; MTC	Mithu Tulsi Chanrai Campus
NABH	National Accreditation Board for Hospitals and Healthcare Providers
NEHA	Newborn Eye Health Alliance, working towards preventing or treating blindness due to retinopathy of prematurity, amblyopia etc.
NIMS	Nizam's Institute of Medical Sciences
NRI	Non-resident Indian
OPD	Outpatient Department
ONA	Ophthalmic Nursing Assistant
OT/OR	Operation Theatre/Operating Room
P/NP	Paying/Non-paying
Paediatric/Pediatric care	Referring to children and care of children
Pyramid	A polygonal structure with three built interfaces on a quadrilateral base

Keywords and Acronyms	Full Word/Phrase
Rehabilitation; Vision Rehabilitation	Providing training and therapy to help a person who is visually impaired or blind to become independent in life.
Resident	Doctor pursuing a three-year residency for a post-graduate master's degree in a speciality of medicine; DNB
RIEB	Ramayamma International Eye Bank
ROP	Retinopathy of prematurity
SC	Secondary Centre
SLET	Simple Limbal Epithelial Transplantation, the technique of stem cell transplant in the eye that was pioneered at LVPEI by Dr. Virender S. Sangwan
Surgery	Operation on the physical body
TC	Tertiary Centre
VIP	Very Important Person
VISION 2020	VISION 2020: The Right to Sight is a joint global initiative of IAPB and WHO to achieve the goal of eliminating avoidable blindness by 2020.
VC	Vision Centre
VT	Vision Technician
VVC	Village Vision Complex
WHO	World Health Organization

PART – 1

Foundation – The Beginning

1.1. LVPEI Opens Its Doors

1 June 1987 – The newly built grey building on Road Number 2, Banjara Hills, stood ready to open its doors to all those who would come seeking eye care. Outside the gates, people went their way, unaware that an institution was unfolding; but for the small band of staff, it was a momentous occasion. They worked furiously to take care of the tiniest details and snags that continued to pop up at the last moment, while they waited to receive the first patients.

There was no big fanfare; the VIPs for the day, the guests of honour, were the first two patients who walked in. They came from opposite ends of the economic and social scale. One was a young boy from an affluent family, who could afford the best treatment anywhere in the world. The other was a construction worker, who lived on a daily wage barely meeting his basic needs and who could not afford to lose a single day's wages, let alone seek medical care. On that day, four patients were seen; two paid for care, two did not.

The patients arrived at the appointed time, and the entire staff was there to receive them with the same respect and attention. The team consisted of two ophthalmologists, Dr. Gullapalli N. Rao and Dr. Satish Gupta, and they were scheduled to see patients on alternate days. Dr. Rao was scheduled for the first day and was ready to see his patients. After the patients were registered and the first entries made in the patient record, he escorted each of them personally to the examination room that was set up with the latest and best equipment that, till then, was found only in hospitals in affluent Western countries. Dr. Rao examined them, explained the diagnosis

and treatment plan, and escorted them back to the reception to be checked out. L V Prasad Eye Institute was born!

This non-profit institute's birth was the culmination of several months' activity that began when the first shovel dug into the ground to lay the foundation stone on 17 October 1986, giving concrete shape to an **idea** born and nurtured since early 1982. That first day was symbolic, as the charter of the institute provided for 50% of services free-of-charge to the patients who could not afford the cost of care.

The story of L V Prasad Eye Institute (LVPEI) is one of unlikely coincidence, passion and determination. It all started in the early 1980s when a young Indian ophthalmologist at the peak of his career in the United States, along with his wife, grew restless and wanted to return to India to give back something in return for all that they had received from the country. They had already seen both ends of the world, rural India with all its poverty and lack of resources, and the United States of America, a land of plenty with all its wonderful opportunities. The contrasts were striking, with maximum manifestation in health/medical care sectors.

So what goes into the making of a non-profit institute that in three decades has impacted the nature and course of eye care in India? "When I was working in the United States, I realised what it meant to offer excellent care, and I decided that somehow, we should make it possible to make that kind of care available to the common person in India," says Dr. Gullapalli Nageswara Rao, founder and first director of the L V Prasad Eye Institute. Dr. Rao's sensitivity to the needs of the under-privileged perhaps stems from his intimate knowledge of life in rural India, where access to basic healthcare is rare.

1.2. Early Days: Recollections of the Founder and First Director

Born in 1945 in Krishna District of Andhra Pradesh, Gullapalli Nageswara Rao (Nag Rao as he is known to friends) was the eldest of four children. His father, Dr. Gullapalli Venkateswara Rao, was an ophthalmologist. Dr. Rao received his early education in a small village called Edupugallu near Vijayawada in Andhra Pradesh. Dr. Rao recalls his early days which shaped his future career and growth.

“My father was on the move as, at that time, he was completing his medical training in Vizag and Chennai, and not settled yet. So, I was left with my aunt in the village. It was a gift in disguise for me. I would have never got the chance of living in a village—I consider it a privilege. I think this kind of an experience is good for all who live in cities, particularly doctors who practice in India—it makes a huge difference to one’s perspective. It is different from just visiting or passing through a village.

“I didn’t resent being left behind in the village by my parents. I was quite pampered by my aunt. I had accelerated education through quick promotions in primary and secondary school. By the time I joined high school, I was only 12 years old.

“In 1953, my father started practicing as a doctor in Guntur, so I moved there later to attend high school. My father just wanted

to be a good doctor—I suppose in those days that meant being a popular doctor. He had tremendous values, he never charged other doctors or teachers for consultation. He did not own a car until late in his life. He lived a very simple life. Sadly, society now is a victim of materialism and complexity. He was the first doctor in his family. My grandfather passed away when my father was still very young. My father was insistent that I shouldn't go into private practice, and in my own mind, the question of working for another institute just did not arise.

“It was taken for granted that I would be a doctor. I don't look back—I have always been too busy to reflect. Even if I did, I wonder if I would have done anything different. At every phase in my life, I have gotten busier, so I didn't think about the past. I don't have time to think whether what I have done is the only thing I could have done, if the clock were to be turned back.

“I had little exposure to life beyond the town of Guntur, and my only goal was to become a good doctor. After high school, I got into medical college in Guntur. Back then, one had to study in the medical college of one's district. There was not much difference in the quality of medical education across the state, and all facilities were pretty much similar. Initially, my dream was to become a pathologist, as pathology fascinated me, maybe because I was so taken by the inspiring lectures of Professor Dr. V. Ramalingaswami of All India Institute of Medical Science (AIIMS) when he spoke to us as medical students in Guntur.

“However, when I studied ophthalmology, I decided that this would be my speciality. I was so in love with the subject that in my application form for AIIMS, I entered ophthalmology under all three preferences. The postgraduate study at AIIMS was a turning point in my life, and not only in terms of academic progress. The learning

I got while there was equal to everything I had received in the first 23 years of my life. But for the first time, I was completely on my own, exposed to so many kinds of people, languages, cultures, new environments...it was a culture shock of sorts.

“It was in AIIMS that I decided I wanted to be an academic doctor. It was my first exposure to the science of medicine; it kind of directed me to a research-oriented career. The big influence in my life was Professor L. P. Agarwal, whom I still consider to be the best ophthalmologist India has produced. A man of great vision, he influenced me greatly. It was under him that the Dr. R.P. Centre for Ophthalmic Sciences established itself as a premier research and clinical institute in India (R.P. in memory of Dr. Rajendra Prasad, the first president of independent India).

“Another major influence on me during those years was Dr. K. Jaganmohan Rao who was practically my guru. He taught me the ‘ABC’ of ophthalmology. He could have chosen to be anywhere in the world he wished, but he had chosen to go back to his hometown and practice there.

“It was during my days at R.P. Centre that I got married to Pratibha, the daughter of a renowned surgeon, Dr. Pinnamaneni Venkateswara Rao. She had received a master’s degree in English from Stella Maris College, Madras.”

1.3. 1974: Moving to America

Dr. Rao and his wife Mrs. Pratibha Rao moved to America in 1974. Mrs. Rao's sister Dr. Sudha and brother-in-law Dr. C. Nageswara Rao were already settled in Boston, and they supported the young couple in the initial days as they coped with the transition and settled down. Ophthalmology was one of the most sought-after disciplines in the United States, and it was very tough to get a residency or fellowship at that time. Dr. Jules Baum at Tufts University offered Dr. Rao a position to work pro bono, and under Dr. Baum, Dr. Rao learned to appreciate the rigour in academic ophthalmology.

The period 1976–1977 was a defining one. Dr. Rao went to the University of Rochester and, under the mentorship of Dr. James Aquavella, a leader in cornea and external eye disease, he developed significantly in surgical skills and research. “This was the most productive year of research,” says Dr. Rao. “While my most influential teacher in terms of research and diagnosis was Dr. Baum, my surgery teacher was Dr. Aquavella. I learnt from him many things—the value of hard work, discipline and management skills. He was a multi-tasker and worked for the best part of his time. Halfway through my fellowship, Dr. Aquavella asked me to stay on and work with him, and it seemed the most natural thing to do.” At the time, he never thought he would return to India.

At age 36, Dr. Rao's career was at a zenith. In 10 years at Rochester, he had established his reputation as a corneal surgeon and scholar. He had published dozens of highly acclaimed papers, performed complicated surgeries and trained many young medical

students. His wife and he had a lovely home in Rochester and two young children who loved where they were.

However, it was not enough for him. A niggling restlessness remained—it just did not seem right that there was so much expertise and infrastructure in one part of the world and practically nothing in another. In 1982, Dr. Rao and Mrs. Rao decided to return home to Andhra Pradesh to “set up something different.” Mrs. Rao recalls, “The next four years were spent in finding out what that ‘something’ would be and in making it happen.”

His determination to do “something” expressed itself early on in Dr. Rao’s career, says Dr. Sriram Sonty, a long-time friend and associate of Dr. Rao. “Soon after he came to the United States, he began talking about the need for a world-class facility in India, one that would serve everyone, irrespective of ability to pay,” Dr. Sonty says.

If Dr. Rao took “the road less travelled,” then accompanying him on his journey was his wife, Mrs. Gullapalli Pratibha Rao. Mrs. Rao played a key role in establishing LVPEI in many aspects. She set up the framework for education programmes and created the aesthetic profile for the institute.

Reminiscing on their life in the USA, Mrs. Rao says that just as most people who migrate to America do, they too had to go through their share of struggle, initially. However, Dr. Rao soon earned a reputation for himself as a corneal surgeon and a contact lens specialist. He was invited to speak at ophthalmology meetings in the United States and India. He was travelling and away most of the time, and she was managing everything on the home front.

Participating in the All India Ophthalmological Society (AIOS) meetings made Dr. Rao realise the need and the opportunity for the kind of services he could provide to patients in India. There

was a dearth of corneal surgeons and a big lacuna in training ophthalmologists in India. Youngsters would flock around him after every meeting to seek guidance, many people with corneal problems would seek his consultation, and there was not a single corneal surgeon in India he could refer them to at that time! A few patients who could afford expensive trips came to Rochester for surgery and stayed in Dr. Rao's home before and after surgery. "That is when I got my basic training in ophthalmic nursing," says Mrs. Rao, in jest.

Dr. Rao's visits to India and his exposure to the healthcare situation in the country reinforced his resolve to return. "But there was just one hurdle and that was to convince *me*," says Mrs. Rao. She confesses that she had many reasons to oppose the doctor's thought of moving back—her biggest concern being their young children and the fear of what the future held. She was only in her late 20s when this life-changing decision was being made. Living in America, she was used to being independent and thinking differently. She knew only too well that all this wouldn't sit very well in India. However, while these practical concerns were daunting, she never allowed anything to shake her resolve to return to India to help fulfill Dr. Rao's vision.

Mrs. Rao also observed that when they were living in America, the senior ophthalmologists from India who came for a visit were warm and effusive. However, once the Raos returned to India, it was a totally different story, she says, recalling the initial struggles and challenges. It was entirely Dr. Rao's discipline, patience and perseverance that made this enterprise happen, she acknowledges. While she was very involved from conception to inception of the project, she does not claim any credit for its taking shape, except for one thing: "Even during the most frustrating and traumatic times, I never said 'let's pack up and leave!'"

When they made plans to return to India, the family on both sides were concerned about their leaving behind a good life. They worried if they could survive the hurdles and challenges in India. Sharing the behind-the-scenes story, Mrs. Rao says that the two people who were not happy about their decision to return were her father and her father-in-law. Both were very proud of Dr. Rao's achievements in the United States, and they did not want him to get bogged down running an institute in India.

1.4. Inspiration and Influences

There was no big idea, just a small dream to build a non-profit academic institute of the highest standards. It took shape as the culmination of all the influences in Dr. Rao's personal life, education and career in different institutes in India and the United States. "Initially, we had the simple idea that we would seek inspiration from some of the legendary eye care institutes from all over the world. We would try to embody the good qualities of the institutes and distil them to build our institute," says Dr. Rao. Among the institutes that influenced the shaping of LVPEI, two American institutes stand out in addition to the models back home.

The story of **Wilmer Eye Institute at the Johns Hopkins Hospital** in the United States is inspiring. In the early 1920s, a young socialite in New York, Aida de Acosta Root Breckinridge, was going blind. She went from one doctor to another, but none could diagnose her condition. She then consulted a relatively unknown doctor in Washington, D.C., Dr. William H. Wilmer, who diagnosed her as suffering from glaucoma and restored her eyesight with surgery. She was inspired to promote his work and raised funds to set up an eye care institute. Her perseverance, aided by a substantial donation from the famous steel magnate and philanthropist Andrew Mellon, resulted in the creation of Wilmer Eye Institute in 1925. Mrs. Breckinridge was a grateful patient, very persistent and dedicated, who made this institute happen. Ever since its establishment, this training and research institute has

produced breakthrough discoveries and trained several renowned ophthalmologists, all of whom have left a legacy of outstanding contributions to eye care.

The second story is of Dr. Edward W.D. Norton, a retina specialist from New York who moved to Miami and founded the **Bascom Palmer Eye Institute**. This institute has been ranked as the best in America year after year for more than a decade. Many “firsts” in the field of ophthalmology have been attributed to this institute. On Dr. Norton’s passing, a tribute was paid to him quoting the Spanish poet Antonio Machado — “Wanderer, there is no road, the road is made by walking.”⁴ When Dr. Norton came to Miami, there was no road to eye care; he built the road to innovative eye care, and the entire world walked on that road to his institute. Dr. Rao was greatly inspired by Dr. Norton’s perseverance, efforts and path-breaking work in ophthalmology.

Back home in India, Professor L.P. Agarwal, who founded the Dr. R.P. Centre for Ophthalmic Sciences at AIIMS, was Dr. Rao’s mentor and major influence in developing several aspects of training and care.

Another mentor whom he had known all his life, Dr. Govindappa Venkataswamy, inspired Dr. Rao with the phenomenal impact he made by instituting the Aravind Eye Care System. Similarly, during his initial years as an ophthalmologist, Dr. Rao learnt considerably from Dr. S.S. Badrinath, the founder of Sankara Nethralaya, Chennai.

This background, along with recognising the burden of the eye care problem, the education and the international exposure helped to crystallise the vision for the institute.

⁴ Machado, Antonio. “Campos de Castilla,” 1912.

1.5. Making the Move (1980–86)

“We knew right from the start that moving to India to set up an eye care institute was what we wanted to do,” Dr. Rao says. “My wife was very supportive. We decided a year ahead and gradually started planning. When I first informed the university about leaving, they tried to dissuade me. They reminded me of the impending promotion to full professor, etc. I spoke to Pratibha about it and decided that if she were hesitant, then we would drop the idea of doing this, but she gave me 100% support.

“We started talking about it in the early 80s, then in 1982, we finalised on the year—we would return to India in 1986. My son was a little upset. He felt that we were uprooting him from ‘his country,’ but my daughter took the idea of moving well. We were open to each other’s opinion in this regard.”

Dr. and Mrs. Rao decided that they would commit all their savings over the next four years to this project. In 1984, they established a non-profit foundation in the United States called the Indo-American Eye Care Society, with the intent of raising money to set up the institute in India. Inspired by the idea, their friend Professor Brijen Gupta managed this trust until his passing in 2018. With the help of friends and family, funds were mobilised in the United States and India, and the Raos began making tentative inquiries in Hyderabad about what would be needed in terms of government clearances.

The Rao family decided to settle in Hyderabad because it was an accessible location from different parts of the country. They knew

they would have patients from outside the state, and it was also easier to attract talent. So preparations were made for the comeback—formulating plans, finding equipment, searching for land, allocating funds and recruiting people. The initial plan was to open a non-profit facility, a concept which people in India did not comprehend then, says Mrs. Rao.

Dr. Rao recalls, “My friend, Professor Gupta, a professor of political science and history in the USA, helped me with the legal drafting of the trust deed, and continued to manage fundraising in the USA. Pratibha, some close friends and I discussed and reached the consensus that it would be easy enough to source funds from both the medical and non-medical communities of NRIs. I was very sure that we would not have anything to do with the government—it had to be privately funded and controlled. I was told that it was very difficult to get an audience with the then-chief minister of Andhra Pradesh, N.T. Rama Rao. However, I took a chance and wrote him a letter through the special cell that the government of Andhra Pradesh had for NRIs. He responded immediately and asked me to meet him on my next visit to Hyderabad. He allocated seven acres of land in Kismatpur, Hyderabad, to set up the campus for the eye care institute. However, I still did not have enough money to build the hospital.”

The seven acres of land in Kismatpur took time to be handed over by the Andhra Pradesh government. Help was required, and support came at the most opportune moment. A mutual friend, Dr. Ratnam V. Mullapudi, introduced Dr. Rao to L.V. Prasad, a successful filmmaker. Mr. Prasad was looking to donate to a charitable medical or education project at that time. His Bollywood film *Ek Duije ke Liye* had just had an unprecedented run at the box office, and he wished to donate some of that profit to a social cause.

“We had just acquired a large tract of land in Banjara Hills, and had a fund of about Rs. 1 crore, which we thought could be used for a multi-speciality hospital,” says Mr. Ramesh Prasad, Mr. Prasad’s son and now chairman and managing director of Prasad Film Laboratories. He met Dr. Mullapudi, a successful cardiac surgeon in Iowa who had plans to establish a hospital in India. “However, the money we had was not enough for a multi-speciality hospital. Dr. Mullapudi had heard of Dr. Rao’s proposal to set up an eye care institute in Hyderabad, so we decided to meet him,” says Ramesh Prasad.

He made a phone call to Dr. Rao and soon after, took a flight to Rochester, New York. Mrs. Rao received him at the airport. By the time Dr. Rao had finished presenting his idea, Mr. Prasad was convinced. He returned to India and told his father about the young ophthalmologist from Andhra Pradesh and his dream. L.V. Prasad felt that, as a filmmaker who deals with visual arts, it was absolutely fitting to donate to the cause of persons who are blind or visually impaired.

The story of L.V. Prasad, who was a legendary Indian film producer, actor, director and a businessman, inspires Dr. Rao even to this day. As a young man of 22 years, he had moved from his village in Andhra Pradesh to Bombay with a dream to become a film star and a film director. Later, his wife joined him in Bombay, where the initial years continued to be a struggle to make ends meet. Mr. Prasad went on to become a legendary producer and director of movies in multiple Indian languages. In 1982, he received India’s highest award in cinema, the Dadasaheb Phalke Award.

L.V. Prasad offered five acres of land in Banjara Hills, a prime location in Hyderabad, and additionally Rs. 1 crore toward building the eye care institute. The generosity of the film maker, who

understood the value of vision only too well, provided the resources needed to build the institute, one that was eventually named after him for having made the largest donation.

It looked like everything was finally on track to make Dr. Rao's vision come to life. Soon, Dr. Rao began to explore his large network of friends and acquaintances to set up a trust for the institute, called Hyderabad Eye Institute (HEI).

In October 1986, Dr. Rao and his family left Rochester to start a new life in Hyderabad. When closing his office door in Rochester for the last time, he recalls: "I suppose there was a bit of sadness, because we had had a good life there. But there was also this immense sense of excitement, because we were going to be doing something so different. There was no pain, just a feeling of sadness. Fortunately, I did not have the time to brood over this."

1.6. Giving Shape to the Vision (October 1986-87)

The foundation stone for the building was laid on 17 October 1986, just a week after the Raos returned to India, and construction of the non-profit eye care institute was soon underway. Dr. Rao then began putting together a team. The very first employee was Lalitha Raghuram, who joined as Dr. Rao's secretary and went on to become the executive director of the Eye Bank Association of India. The team of doctors who agreed to join the dream included Dr. Sriram Sonty, Dr. Rao's long-time friend who helped start the institute's glaucoma service.

An ophthalmologist couple returned from Africa to join LVPEI—Dr. Satish Gupta, a cornea specialist, and Dr. Madhu Gupta, who specialised in refractive problems. Dr. G. Chandra Sekhar, a young ophthalmologist from Kurnool, joined ophthalmic plastic surgery. A few months later, Dr. Taraprasad Das, a retinal surgeon who had already established a formidable reputation at Aravind Eye Hospital in Madurai, joined LVPEI, along with his wife Dr. Savitri Sharma, a research scientist. Other friends and associates agreed to visit periodically from the United States and elsewhere to help transfer skills and set up systems. At that time, LVPEI was a nascent hospital with a vision—but little else.

“The first few months were a real struggle—getting government clearances, organising the transfer of the land, processing the papers. At every stage, we were met with resistance and often,

absolute non-cooperation. People would ask questions like—who is this person, and what is this institute?” recalls Vijaya Ramam, who served as the first administrator of LVPEI. “Many people would have thrown up their hands in despair and returned to the easy life in the US—but, not Dr. Rao—he stuck it out and somehow everything fell into place.”

Stephen Jenner, a Canadian hospital administrator, helped create a policy manual for the hospital. This formed the framework for the administration of the institute.

The hospital was constructed on a war footing. In nine months, the basement and first floor were constructed. An excellent planner and executor with an eye for detail, Dr. Rao knew how to get things done. Although he was impatient in those early days and intolerant of sloppiness, he was truly compassionate. The institute started with two to three examination rooms, a lobby, a waiting lounge and a few administrative areas in about 20,000 to 30,000 square feet of built space. As the construction of the building was completed, the L.V. Prasad Charities released Rs. 70 lakhs (Rs. 7 million) of the Rs. 1 crore (Rs. 10 million) pledged. A three months’ lead time was set, with a deadline for commissioning operation theatres; it took about three months to generate income from surgical services. Dr. Rao had invested his own money to buy equipment. Mrs. Ramam helped to obtain the customs exemption for clearance of the imported equipment and approvals under the Foreign Contributions Registration Act (FCRA) for funds from outside India.

The cash crunch was not completely over yet. The funds were insufficient to complete the patients’ wing and furnish the rooms. One day, an interested passer-by named Vitthal Rao enquired about the project. When he heard the story, Mr. Rao readily asked whether he could help; being the manager of the local branch of the Bank of Baroda, he immediately arranged for a loan.

The ground floor was ready by June 1987, and another floor by October 1987. On 1 June 1987, a little over six months after the shovels first hit the ground next to Prasad Film Labs, L V Prasad Eye Institute was ready for its first patients. Two paying and two non-paying patients were seen on the first day. The first paying patient was the son of industrialist Challa Rajendra Prasad, and the first non-paying patient was one of the construction workers. This concept of equitable care would become the model by which the hospital would operate in the future—50% of all services would be provided free of cost to those who could not afford to pay. The surgical services/operating rooms (OR) started on 1 October 1987.

The small team included Uma Nath, India's first patient care advocate; Lalitha Raghuram, who assisted Dr. Rao; and G.V. Kumar, the maintenance engineer. Dr. Satish Gupta was the first medical staff to be recruited. Dr. Gupta was an excellent trainer and clinician, but he was not interested in research. While working in Nigeria, he was asked by Dr. Rao to join the eye institute in Hyderabad. Dr. Rao also offered to finance Dr. Gupta's advanced training in corneal transplants in the United States. Other team members included Vijaya Ramam, who joined to manage accounts and later took charge of overall administration. Dr. G. Chandra Sekhar (GCS), Dr. Madhu Gupta and Dr. Shobha Boghani joined later. There were also some staff in stores and purchase.

This speed of execution set the tone for the culture that was subsequently nurtured at LVPEI. LVPEI's philosophy was to hire new talent and not necessarily someone experienced.

The physical structure was designed with the patient's comfort in mind. "It would look or feel nothing like a hospital—it had to be a sunny, pleasant place," says Dr. Rao. "I was very sure we would have wide, spacious corridors, not passages where you keep bumping into others."

However, all this had to be done in the most cost-effective way. There were neither expensive embellishments nor fancy stuff; the cheapest available good quality materials were used. Fundraising was a struggle initially, and those who provided major donations acted on their innate trust in Dr. Rao's vision. A substantial part of the hospital's success was based on his ability to network effectively. He brought in support from the industry, large non-government organisations, universities and research foundations, and professionals.

Mrs. Rao was involved in the aesthetics, design, planning and structures of the building, among many other things that she did in the initial years. She initiated the education centre at LVPEI.

“She is a very organised person, a lot more organised than I am, and fond of checklists!” exclaims Dr. Rao, acknowledging her contributions. “Years before Dr. Atul Gawande wrote his book, ‘The Checklist Manifesto,’⁵ she had already mastered the art of deploying checklists in all that she did. She wouldn't do anything without a checklist.”

With his uncompromising ideals of efficiency and excellence, Dr. Rao seemed to stick out like a sore thumb. People told him that he was too rigid, that he wouldn't be able to survive long in the Indian environment, and that it would be for the best if he were to move back to the United States. His reply to such detractors usually was, “If I swim, I'll swim against the tide.”

From the beginning, the objective was that the institute should not be merely a hospital, and primacy was given to research and education. While LVPEI's growth has largely been organic, the

⁵ Gawande, Atul. “The Checklist Manifesto: How to Get Things Right.” Henry Holt and Company. December 2009. <https://www.amazon.sg/Checklist-Manifesto-How-Things-Right/dp/0312430000>

thought of developing LVPEI into an academic and research centre of excellence was Dr. Rao's latent wish. Initially, the institute was registered in January 1986 as a non-profit trust named "Hyderabad Eye Institute" with the aim of providing quality eye care to all in need, irrespective of their social and economic status, and indirectly through training, research, etc. In 1987, another registration was made with the Registrar of Societies in the name of "Hyderabad Eye Research Foundation" to support and facilitate research activities, at once placing LVPEI in a unique position in the academic and research institutes of the world.

Among Dr. Rao's large network of friends and acquaintances, several like-minded, highly-accomplished professionals were requested to become the trustees of the institute. Therefore, the trust comprised a diverse group of people, including medical professionals, philanthropists and social workers, all of whom believed in Dr. Rao's vision. Some of the illustrious leaders who have served on LVPEI's board of trustees include Professor Srinath Reddy, president of Public Health Foundation of India and former head of the department of cardiology at AIIMS; Professor Palle Rama Rao, distinguished scientist and former vice-chancellor of the University of Hyderabad; Dr. Evita Fernandez, a pioneering obstetrician and gynaecologist who helped establish Hyderabad's first human milk bank, and who is currently the president of the Palliative Care Society of Hyderabad; the late Dr. Kallam Anji Reddy, founder of Dr. Reddy's Laboratories, a giant in the pharmaceutical industry that pioneered generic medications from India; and eminent scientist Professor Chintalagiri Mohan Rao, director of the Centre for Cellular and Molecular Biology in Hyderabad. These and other trustees shared intellectual resources with the institute and gave public lectures by invitation, thereby bringing their ideas and expertise into the making of LVPEI.

When Dr. Rao first announced his intention to start a non-profit eye hospital in India, none of his friends in the USA took him seriously. Both his father, an ophthalmologist in Guntur, and his father-in-law, a general physician in Vijayawada, tried to dissuade him from returning to India. However, Dr. Rao was determined to return, even though it meant that his family would have to forego many comforts.

In the early days, the Hyderabad Eye Institute (HEI) Trust did not have any assets or funds. An amount of Rs. 50 lakhs (Rs. 5 million) was needed to complete construction of the outpatient clinics and purchase the necessary clinical equipment. Banks didn't extend loans for the project back then.

The hospital was not yet popular and, what's more, Dr. Rao did not believe in commercial advertising as much as he believed in giving the patients a great experience on their hospital visit. That by itself, he believed, would generate the desired publicity. As it happened, the name and fame gained over the years by LVPEI have been through word-of-mouth.

However, in the early years of LVPEI, family and friends from every stage of Dr. Rao's life—college friends, ophthalmologists in the US of Indian origin, friends in Rochester and New York where he had earlier lived, the ophthalmic industry—just about every one of these entities contributed their time, talent or treasure to set up the institute. Later, every major international non-governmental organisation in ophthalmology and every major international ophthalmic corporation in eye care helped in the development of the institute. The superb team that Dr. Rao put together at LVPEI, along with the growing band of believers in the vision of the institute, lent much-needed support and contributed significantly to the growth.

1.7. The Structural and Functional Scope of LVPEI

The initial vision for LVPEI was limited to a centre in Hyderabad with just three components: patient care, education and research, and the additional component, vision rehabilitation of persons who are blind or vision-impaired. In subsequent years, other needs became apparent as the institute evolved, and its vision widened to include a larger role—that of developing innovative and advanced treatment modalities, developing ophthalmic products at subsidised prices, and reaching people in rural areas right at their doorstep.

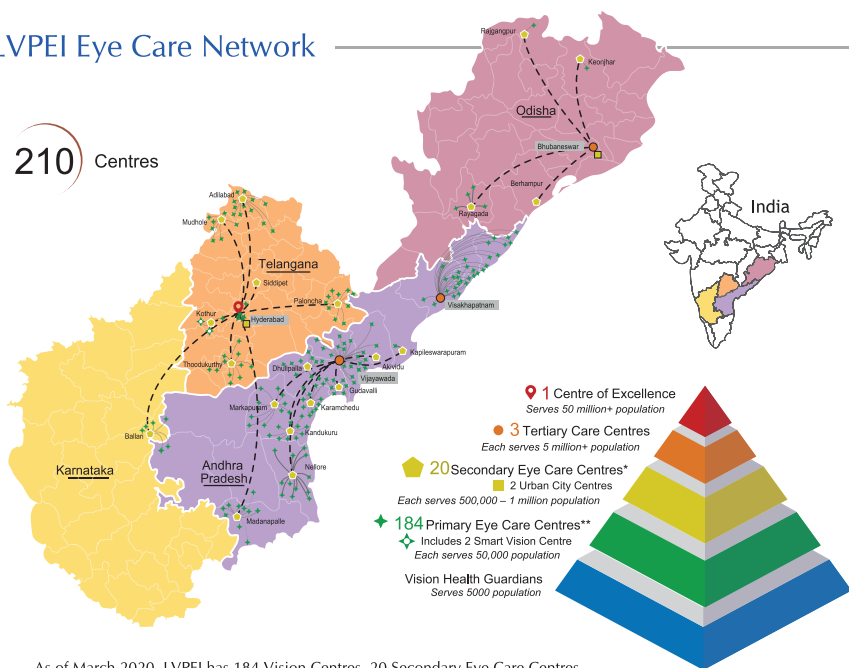
When it became apparent that these goals would be beyond the boundary of one single organisation, LVPEI started to offer support to other organisations for building their capacity. As LVPEI grew in world stature, involvement in global policy and planning increased. After the institute’s landmark population-based survey—the Andhra Pradesh Eye Disease Study or APEDS—highlighted the extent of the problem, 10-year-old LVPEI shifted its focus to making deeper inroads into rural areas.

Over the years, the institute’s foundation and superstructure evolved as “The LVPEI Pyramid of Eye Health” with 10 functional arms that cover all aspects of eye care services. Currently, the LVPEI Pyramid has a network of more than 210 centres⁶—from primary vision care at the rural doorstep serviced by vision guardians going

⁶ Please note that all statistics and numbers noted in the book are current up to March 2020.

LVPEI Eye Care Network

210 Centres



As of March 2020, LVPEI has 184 Vision Centres, 20 Secondary Eye Care Centres, 2 Urban City Centres, 3 Tertiary Centres and the flagship Centre of Excellence. Additionally, it has 1 Overseas Partnership in West Africa with Liberia Eye Centre in Monrovia.

* Secondary Centres; ** Vision Centres

The LVPEI Pyramid and entire network

door-to-door, moving upwards to community-based primary vision centres, followed by the secondary service centres, then the tertiary centres, and finally at the apex the advanced tertiary care centre also known as the Centre of Excellence.

LVPEI's global position warranted its evolution into 10 functional arms, with constant efforts being made to closely interlink their operations and management. Thus, the institute continues to function as a healthy single unit.

Clinical Care: LVPEI's hallmark comprehensive care covers all eye specialities and all aspects of vision care. It is of the highest standards, irrespective of the patient's ability to pay, ensuring nobody who needs care is denied it.



LVPEI's 10 functional arms

Education: LVPEI develops need-based programmes for all cadres of eye care personnel, with an eye care team approach; also, it trains doctors to be 3H specialists (Hands, Head and Heart).

Research: LVPEI's research arm is translational in nature, covering all aspects of the eye to find answers to sight-threatening conditions, developing improved and new modalities of treatment and translating these to clinical practice.

Vision Rehabilitation: LVPEI helps those who cannot be treated clinically to achieve their full potential.

Public Health: LVPEI focuses on rural and community eye health, taking care to the doorstep of the people who need it most, and ensuring continuity of care.

Eye Banking: LVPEI maintains an international eye bank of the highest standards and develops models in eye banking.

Product Development: The institute develops low-cost products that are not commercially viable and makes these available to those who need them.

Innovation: LVPEI ensures it is at the forefront of eye research and technology in all its practices, from simple daily tasks to developing models at all levels.

Capacity Building: LVPEI helps eye care providers, especially in India and other developing countries, to upgrade their standards and capacity to provide efficient and quality care.

Advocacy, Policy and Planning: The institute plays a pivotal role in policy and planning at both the national and global levels to improve the standards of eye care and reduce blindness across the world.

LVPEI Network of Centres

The first facility was set up on Road Number 2 (renamed L.V. Prasad Marg), Banjara Hills, which is now at the apex as the Centre of Excellence (CoE). Eventually, three more tertiary centres were constructed in Bhubaneswar in Odisha state, and Visakhapatnam and Vijayawada in Andhra Pradesh state (see LVPEI Network Map on page 25). Linked to these four campuses are 20 secondary centres and 184 vision centres that comprise the entire LVPEI network (numbers updated as of March 2020, <https://www.lvpei.org/about-us>). The four campuses, named to recognise the generous support of major donors, are as follows:

- Kallam Anji Reddy (KAR) campus, in Banjara Hills, Hyderabad (CoE), Telangana
- Mithu Tulsi Chanrai (MTC) campus, Bhubaneswar, Odisha

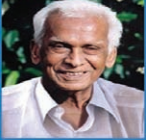

- Grandhi Mallikarjuna Rao (GMR) Varalakshmi campus, Visakhapatnam, Andhra Pradesh
- Kode Venkatadri Chowdary (KVC) campus, Vijayawada, Andhra Pradesh

Built over 33 years, the LVPEI Pyramid of Eye Health offers care that is appropriate to each level, making it available, affordable, acceptable, and most importantly, accessible to everyone. There is no compromise on quality at any stage or level and trust is created at every level through its systems and services. The entire pyramid seeks to provide eye care services that range from simple vision screening to the management of complex eye problems.

1.8. Photographs



Dr. Rao's Parents—Mrs. Venkatalakshmi Narasamma and Dr. Gullapalli Venkateswara Rao

 <p>Dr G Venkateswara Rao Father</p>	 <p>Dr P Venkateswara Rao Father-in-Law</p>	 <p>Wilmer Eye Institute Johns Hopkins, USA</p>	 <p>Dr G Venkataswamy Aravind Eye Hospital</p>	 <p>Prof V Ramalingeswami Mentor</p>
Inspiration				
 <p>Prof L P Agarwal AIIMS, New Delhi</p>	 <p>Prof Jules Baum USA</p>	 <p>Bascom Palmer Eye Instt USA</p>	 <p>Prof James Aquavella USA</p>	 <p>Dr S S Badrinath Sankara Netralaya, India</p>

Individuals and institutes that inspired Dr. Rao in the creation of LVPEI



Dr. Rao (first from left) poses with classmates in All India Institute of Medical Sciences (AIIMS), New Delhi. Dr. Sriram Sonty is third from left.



Dr. Rao seen in Rochester, New York, USA in the early 1980s



The Indo-American Eye Care Society (IAECS) Team (left to right): Dr. Manuel del Cerro, Mrs. Pratibha Rao, Dr. Y Mrutyunjaya, Dr. Rao, Professor Brijen Gupta and Dr. H. Janardhan in the early 1980s. (Not in the picture: Dr. Jeff Harris)

LVPEI timelines from 1981 to 1 June 1987

L V Prasad Eye Institute—The Genesis

- Decision on 1986 Return to India – 1981
- Indo-American Eye Care Society – 1984
- Land from the AP Government – 1985
- Meeting with the Prasads – January 1986
- Returned from USA – October 1986
- Groundbreaking – 17 October 1986
- Construction Started – 6 December 1986
- First Patient Seen – 1 June 1987

From day one, LVPEI has pursued “The Road Not Taken,” and the evolution of LVPEI encompasses these activities:

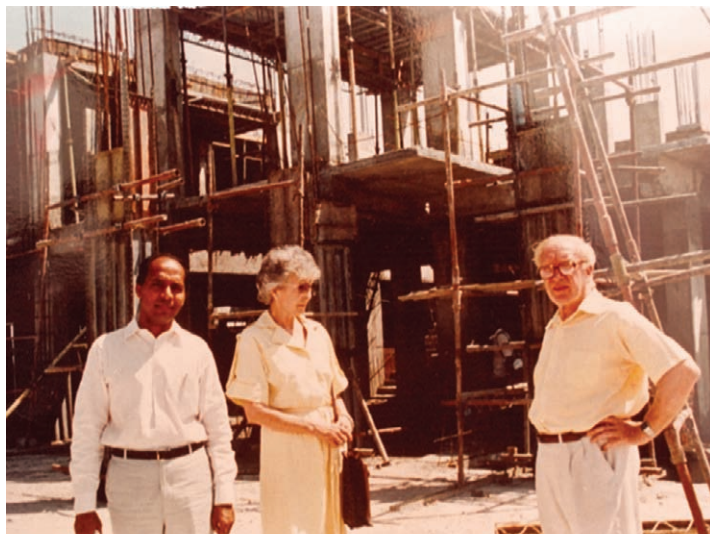
- Service
- Education
- Rehabilitation
- Community and Rural Eye Health
- Product Development
- Comprehensive Eye Care
- Children’s Eye Care
- Eye Banking
- Intraocular Lenses for All Non-Paying Patients



Five acres of land were donated in 1986 by Prasad Film Laboratories, Road Number 2, Banjara Hills, Hyderabad.



Foundation stone-laying ceremony on 17 October 1986. Andhra Pradesh Chief Minister Mr. N. T. Rama Rao, Maharashtra Cabinet Minister Mr. Sushilkumar Shinde and filmmaker Mr. L.V. Prasad graced the groundbreaking.



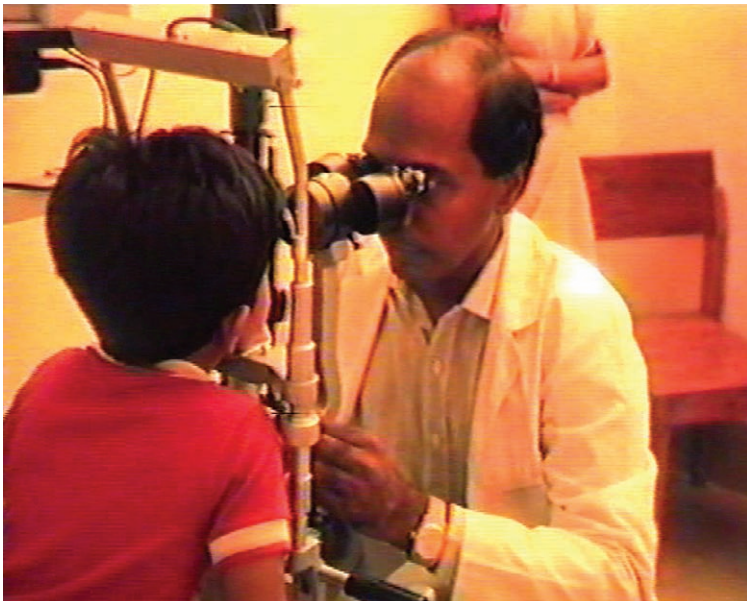
Dr. Rao seen here during building construction with Stephen Jenner, a Canadian hospital administrator from Halifax, Nova Scotia, and his wife Ann Jenner, who wrote the comprehensive policy manual for LVPEI.



Building construction in six months.



Dr. Rao is seen with his batch mates from residency days at an annual conference of the All India Ophthalmological Society in Kanpur in the early 1980s. Left to right: Dr. Sriram Sonty, Mrs. Pratibha Rao, Dr. Gullapalli N. Rao, Dr. Md. Yasin, Dr. R. Neelakantan and Dr. Pradeep Kumar Bakshi.



Inaugural Patient Care Day, 1 June 1987, L V Prasad Eye Institute, Hyderabad, Dr. Rao examines the first patient.



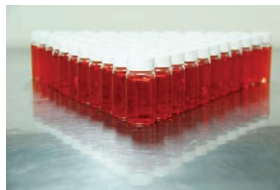
The first core team of doctors (left to right): Drs. Taraprasad Das, Rajeev Buddi, Shobha Boghani, G. Chandra Sekhar, Anil Kumar Mandal, Gullapalli Nageswara Rao, Kuchakulla Madhukar Reddy, Savitri Sharma, Madhu Gupta and Satish Gupta



Mrs. Lalitha Raghuram (third from left), first employee of L. V. Prasad Eye Institute, 1987. Also seen are Mrs. Uma Nath, Mrs. Shaila Rani and Dr. Rao.



Inauguration of the Ramayamma International Eye Bank on 27 June 1989. Dr. Frederick N. Griffith from the International Federation of Eye and Tissue Banks, Mr. L.V. Prasad and Mr. Ramesh Prasad are seen here with Dr. Rao.



McCarey-Kaufman medium, a liquid preservative to store donor corneas, is being prepared and transported in glass vials to reach different places in India and neighbouring Nepal, Myanmar and Bangladesh.

PART – 2

A Model of Care – The LVPEI Method

2.1. Culture of Care

“An organisation can sustain itself for hundreds of years only if its values are appreciated by everybody 100%. How do we communicate the values of this organisation?” pondered Dr. G. Chandra Sekhar, vice-chair at LVPEI. Over the years, the institute had expanded in scope and size. With the impending leadership change (detailed in later chapters), Dr. GCS, as he is known, was feeling an acute need to communicate LVPEI’s values.

So he suggested that Dr. Rao should give a series of lectures, supplemented by other long-term staff, on the vision, mission and evolution of the institute in all its aspects of reconciling excellence with equity. Dr. Rao’s six lectures over three months (December 2018 – February 2019) summed up all that is practiced daily at LVPEI. **The lectures were a revelation to the LVPEI team, emphasising the significance of what they do each day as a matter of course, along with the tremendous value they add to the vision and mission of LVPEI.**

The foundational values from day one were to reconcile excellence with equity. Dr. Rao, addressing the LVPEIans at a 7 a.m. morning session, said, “Whatever we do shall be of the highest possible quality, and whatever care we give shall be available to everybody. Anybody coming to any of our campuses for any form of eye care, however complex the eye problem is, and however expensive the treatment might be, shall be given that same high quality care, whether they are able to pay for the services or not. We have been very fortunate to have been able to practice this till date.”

The initial plan for the institute was simple: to build an academic institute of the highest standards inspired by American institutes. The situation in the country—the huge burden of the healthcare problem, unequal distribution of care, substandard quality of treatment, poor training standards, poverty, etc.—transformed this plan into a concrete vision of making quality eye care available and accessible to all Indians, irrespective of their financial ability and the complexity and cost of care.

Vision and Mission

Our vision is: *“To create excellent and equitable eye care systems that reach all those in need.”*

Mission statement: *“The mission of L V Prasad Eye Institute is to be a centre of excellence in eye care services, basic and clinical research into eye diseases and vision-threatening conditions, education, product development, and rehabilitation for those with incurable visual disability, with a focus on extending equitable and efficient eye care to underserved populations in the developing world.”*

The five values that are identified and articulated as the most important for the institute define LVPEI’s culture of care:

- Patient First
- Excellence
- Equity
- Integrity
- Togetherness

Note: See Values Pentagon on Page 115.

“We have to reflect on each of them every day, and particularly for people in the top management, these values are most important and should be practiced unflinchingly day after day. If people at the top (of the organisation) don’t practice these values, we should not expect the other cadres to practice these. And if we think it is impossible to practice these values, we might as well never talk about these. So, let us all remember the burden of responsibility as you wear the white coats and as you take the executive and administrator kind of roles,” Dr. Rao reminded his team in the lectures.

Today, LVPEI is an organisation that provides the 5Cs:

- Comprehensive care
- Commitment to quality
- Closer to the doorstep
- Continuity of care
- Compassion

Comprehensive care related to the eye encompasses prevention of blindness, promotion of eye health, treatment of every eye care ailment, and rehabilitation of irreversible blindness and low vision.

Commitment to quality is evident in all aspects of work at LVPEI and at every level, from cleanliness, hand-washing and documentation, to high quality care, education and research.

LVPEI started rural programmes over two decades ago to take eye care **closer to the doorstep** of people in remote and under-served locations. Much later, the World Health Organization (WHO) published the characteristics of primary eye care to include, among other factors, providing the service closer to the community at the entry point, continuity of care, patient-centered care and serving a

clearly identifiable and finite population. LVPEI’s vision centres and secondary centres use all these practices, providing **continuity of care** and serving as entry points to healthcare.

These concepts are built on a strong foundation of **compassion** and achieved with strong community participation.

Some of the practices started at LVPEI were anomalies to prevailing thought in the country, Dr. Rao said in a personal interview. From day one, the institute was a “no smoking” and “vegetarian” campus, and no outside food was allowed for various reasons, the most important being to maintain the highest possible standards of cleanliness and hygiene. For example, doctors washed hands before and after seeing every patient. Even in 2019, we have very few hospitals that are clean because even the healthcare professionals don’t insist on sanitary practices, he states.

Other practices that were frowned upon included firm adherence to visiting hours, an appointment system and one attendant per patient. The belief, “We go to the patient, the patient doesn’t come to us,” was followed in every aspect of care. Every patient was personally escorted from the waiting areas. The examination rooms and other patient care areas were so designed that the patient was not moved from one room to the other. Instead, the doctors and staff would go to the patient and also discharge them in their room in the in-patient ward.

It was reiterated daily that the only VIP is the patient, and every patient is a VIP irrespective of considerations such as socio-economic position, gender, etc. One symbolic aspect is that preferential parking spots, the parking spots closest to the centres, were allocated only for patients. Unlike other healthcare facilities, elevators were reserved for patients and visitors, with restricted use by staff, to avoid inconvenience to patients and their families, thus exemplifying the value “Patient First.”

The culture of calling colleagues of the campuses “Sir” or “Madam” was always discouraged. These titles were reserved for patients and guests. Dr. Rao admits that he is disappointed that this practice is facing constant threat when waves of new recruits and trainees bring these habits from outside, where calling a person by their name is rarely practiced.

Grooming and proper uniforms were given importance because these symbolised discipline and professionalism. When the managing director of Tata Steel visited LVPEI, he entered his office and said, “Dr. Rao, I don’t have to see anything else in your institute. I have seen all—I know what kind of institute this is. As I was walking in, I saw your housekeeping ladies in uniforms, wearing nice colourful sarees, and that has indicated to me the overall culture of the organisation.”

Punctuality is non-negotiable at LVPEI. Everything has to start on time. The morning session begins at 7 a.m. come what may. The staff are at their desk before the first patient walks in, the LVPEI clock works without fail! The concept is that we should respect each other’s time.

While many people wonder about the relevance of these practices, uncommon in India, it is these practices that have contributed to creating an image of a credible organisation built on a strong foundation of values.

Yet another special dimension is attention to aesthetics. At LVPEI, this is reflected in the gardens, the art and the pleasing colours. The contributions of renowned Indian artist the late Surya Prakash, who was the artist-in-residence from soon after the institute’s inception until his recent passing, helped create a pleasing and elegant ambience. The efficient management of resources also contributes to an eye care environment that “should not look or feel like a hospital,” Dr. Rao said.

The secular nature of the institute is explicit in the annual holiday list, where holidays are equally divided between the three major religions prevailing in the country. Patients, trainees and staff are treated equally irrespective of the religion, caste or region they belong to.

Some of LVPEI's initiatives might feel too inconsequential to highlight; however, these little aspects are required to enhance standards, Dr. Rao believes. He realised right at the time of founding the institute that without forcing and implementing global standards, the institute would have suboptimal standards. These initiatives were implemented against the advice of many people who believed them to be "impractical in India."

Practicing Values—Live!

While everybody talks about the corruption in India, the LVPEI team, during the last 33 years of its existence, never had to bribe anybody at any level, nor did they have to ingratiate themselves to please people. It could be believed that there is fairness in the Indian system, because LVPEI accomplished its achievements without compromising its values. Happily for LVPEI, corruption has never been a concern.

Dr. G. Chandra Sekhar recalls an incident about one of his patients from Mumbai. At the time of discharge, the patient misplaced his wallet containing Rs. 80,000. When he came looking for it, he confidently said, "I don't suspect anybody here, because I tried to tip people and nobody took any money. If they find my wallet, it will come back." The wallet was found in the pharmacy and was returned to him.

Dr. Rao says with pride: "When people talk to me about values, they ask if all our staff can articulate them. I think if we ask our

housekeeping ladies, they may not be able to give a big speech on values and articulate them; they practice them. The way they keep our floors shining is our value of excellence. The way they hold the hands of non-paying patients and help them is practicing equity and patient first. The way they don't go for these tips and all is their integrity. So they practice it; practicing is better than giving lectures any day!"

Shobha Mocherla, in the Communications team and a long-term employee of LVPEI, succinctly sums up the culture: "What hits you in the eye is LVPEI's culture, which is in stark contrast to the world outside. Here at LVPEI, you are expected to remember with innate gratitude the munificence of benefactors who gave of their time, talent and treasure. So your actions are put to the acid test of responsibility, ownership, obedience, adherence, loyalty—adhocracy, if you will. ... Every employee dances with destiny and depends on their cosmic wisdom, as they get acclimatised to moving in tune with the LVPEI ways. Here is an organisation much ahead of its time in an Indian setting, with its irreverence for the average, a 'never say die' approach, dynamic experimentation with all possible combinations and permutations of incumbent resources, an international way of being, a life routine you got married to with eyes wide open, such was the buy-in demanded by LVPEI's premier position in the world of eye care."

2.2. Preserving Values While Empowering: The Human Element

Right from its inception, LVPEI put in place several measures to promote the values of TOGETHERNESS, EQUITY and INTEGRITY, respecting the dignity of the individual. These include:

- Terminology for all cadres that is respectful, e.g., housekeeping assistants, patient care assistants, patient counsellors, etc.
- Common eating areas in the cafeteria
- Workplace uniforms that are presentable while non-threatening to patients—quite a lot of thinking went into implementing this concept
- Discouraging the culture of calling doctors and other professionals “Sir” and “Madam,” limiting that usage for patients and visitors. The theme has been, “We are all one team doing different tasks.”
- Opportunities for advancement
- Performance preferred over mere qualifications—if a person demonstrates an unusual gift for any job, he or she shall be promoted, irrespective of certified qualifications
- No place for considerations such as caste, community, region, religion, nationality at LVPEI

One of the main strengths of LVPEI is its human resource towards which the institute makes significant investment. In many cadres, it seeks to nurture home-grown talent as much as possible, so that the value acculturation takes place naturally. Its training programmes are need-based and innovative, classic examples being Ophthalmic Nursing Assistant (ONA) and Vision Technician (VT) programmes. These programmes are designed to meet the current and emerging needs of the institute and the field of eye care. They also provide employment opportunities for economically under-privileged youth from rural and tribal backgrounds, who have limited opportunities for a career.

Ophthalmologists at LVPEI are groomed to be “3H ophthalmologists”—with “3H” standing for the Hands, Head and Heart. Excellent knowledge and skills should be combined with compassion and ethical practice. LVPEI is the only institute in the country to offer dedicated time to clinicians on the faculty to pursue research that promotes intellectual growth. It is up to each member of the faculty how they utilise this time. This is contrary to the widespread practice in the country of focusing entirely on revenue generation through patient care 100% of the time. To further promote research, cross-fertilisation is encouraged and facilitated between various groups—clinicians, basic scientists, public health and vision rehabilitation experts, and technology and engineering groups.

For the faculty and other professionals, LVPEI provides opportunities to advance their education and competencies. It has in place the policy of accelerated promotions for high calibre professionals. Challenging roles are provided to them to showcase their capabilities. The institute often challenges the trainees and the faculty to excel and to apply for leadership positions.

Even for those outside the core medical team, there are opportunities. For instance, a person initially hired as a language

editor was encouraged to develop training programmes in scientific writing and medical communication for the institute. She was given the space and support to grow the communications department, which is now a full-fledged department that handles publications and internal and external public relations. Growing the communications department, too, was a departure from the way in which most hospitals in India functioned. And this departure stems directly from the insight that a world-class institute demands excellence in all aspects of its functioning—from medical care and research to administration, outreach and communication.

The leadership team was very meticulous about the staffing at LVPEI. They tried to understand why hospitals were badly managed and unfriendly to patients and visitors. Their observation was that most individuals in leadership positions lacked sensitivity towards their patients' needs, and did not spend the time required to monitor the functions. LVPEI decided not to follow these dysfunctional practices and instead created its own human resource matrix.

Education at LVPEI is need-based for all cadres of eye care personnel, with an eye care team approach. The training programmes were created after identifying the needs of the institute and the competencies required to meet those needs. The nomenclature was completely changed and made patient-friendly to ensure the positions reflected the dignity and respect required to perform the job. The staff at LVPEI was trained rigorously. “The first batch of housekeeping staff was trained by my family members. This set the standards for cleanliness in the institute forever,” informs Dr. Rao. These were simple things, but they had a monumental impact on the standards later.

Patient care requires trained staff like nurses and counsellors, because unlike other specialities, nurses working in ophthalmic care

need to be trained for more specific tasks, such as putting eye drops, in addition to checking blood sugar levels and blood pressure. The nursing staff must be fastidious about cleanliness and have empathy. Surgeries mostly require daycare, and patients do not stay in the hospital. Therefore, to meet the need for nursing staff, LVPEI started its own Ophthalmic Nursing Assistant (ONA) training programme. The Vision Technician training programme provides human resources for the vision centres located in remote rural settings, while offering local employment for youth with otherwise limited opportunities.

Optometry services started on a solid foundation at LVPEI and played a significant role in its outpatient services. Since inception, the departments of ophthalmology and optometry have worked together to cover all specialities. This model was adopted from the United States and improved upon. Optometry also has played an important role in teaching and research.

Having a dedicated, well-trained and need-based core team taking care of the patient rather than a single doctor was a revolutionary concept in healthcare in India. The team leader remained the ophthalmology specialist, but the team surrounding the specialist provided the additional help that allowed the doctor to focus on the patient and the disease. This team approach put the patients on centre stage, and gave them huge comfort and real care. The LVPEI experience became wholesome for both patients and the staff.

“At LVPEI, if you work hard, you rise quickly in the organisation,” says Dr. Avinash Pathengay, recalling his rapid growth from a junior consultant to the level of director. The leadership believes that the institute needs many young people who can work hard. According to him, the hierarchical way of working would not be suitable for LVPEI. Much of what one sees at LVPEI in terms of the way of

working has been adopted from the long years of Dr. Rao's exposure to the best practices in ophthalmology during his formative years. If one is interested in working hard and learning, LVPEI is a great place and one can keep growing.

Reaching LVPEI before 7 a.m. every single working day over several years has been a personal victory for Dr. Subhadra Jalali. The values LVPEI practices have positive ripple effects that get transmitted to those outside LVPEI, as well. Dignity of labour is a value that is cherished at LVPEI. Thus, for instance, housekeeping staff take pride in their work. Cleanliness and hygiene are practiced routinely; people at LVPEI take for granted the good systems and processes that are in place that make the facilities clean and orderly. Dr. Jalali explains how constant monitoring of these processes is part of the system. Over time, these habits have been internalised by everyone in the organisation.

The LVPEI way of working has a lot to do with a “can do” philosophy of life, as well as the high level of comfort and self-respect that one has within oneself. “At LVPEI, excellence is important,” Dr. Jalali says. “Excellence cannot be partitioned; one cannot be excellent in one aspect and not in another.” Many doctors at LVPEI aspire to be the best at everything they do.

Dr. Jalali feels passionate about her work. LVPEI has given her that opportunity, and despite many inevitable struggles and heartburns, the organisation has set course in the correct direction, according to her. She believes that hard work and competence is encouraged at LVPEI. Most faculty members at LVPEI simultaneously pursue research, teaching and patient care, and are now moving out to public health too. True research, Dr. Jalali reflects, is to find a solution to a patient's problem that has no existing solution. When she encounters a clinical problem that has no solution, she is obsessed by it and seeks to find a solution, she says.

When asked if remuneration at LVPEI for doctors is comparable to that of other hospitals, she said that in the past, it was true that some faculty members left LVPEI for higher financial gains. Those who continue at LVPEI do so because of what they can do here and because they can use their knowledge and competencies for everyone who needs it, whether they can pay or not, she says. Equally exciting for them is the academic environment.

Respect is one of the values practiced at LVPEI. There is no hierarchy in the organisation. All cadres have their respective roles and have mutual respect. The staff facilities, for example, are shared by everyone, irrespective of their position at the institute.

The atmosphere of excellence and equity is safeguarded with a system of effective monitoring and corrective action. For example, sexual harassment is a big NO; any violation of this norm results in severe action being taken in a short time. Such is the case with embezzlement, as well.

However, issues such as coming late to work (i.e., not being punctual), while violating the core values, are set right by mentoring.

Living Culture: A Walk-Through

There are little things at LVPEI that are followed very rigorously, such as discouraging staff members from using mobile phones in meetings as it is considered impolite and takes away attention.

Elevators are meant for patients and visitors, and staff can use them only when they are unwell.

The morning session of education commences at 7 a.m. and ends around 8 a.m. Attendance is mandatory for the faculty and students; if they are late even by a few seconds, they cannot attend. Non-medical and support staff work in staggered shifts of nine hours,

between 7 a.m. and 7 p.m., with skeletal staffing on the night shifts. By 8.30 a.m., all areas are buzzing with activity and everything happens like clockwork. While every effort is made to complete the work as scheduled, staff are sensitised to the needs of the patients and trained not to look at the watch until every patient is satisfactorily checked out. The staff and trainees proudly claim that they are products of LVPEI. They learn to appreciate the ethics and values upheld by LVPEI. Occasionally, some of the staff leave LVPEI for better prospects. Some of them return because the values ingrained in them make it difficult to gel with the outside world.

Going Forward As a Caring Institute

Dr. Rao strongly believes that the future model of eye care for the institute is a combination of “3 Ts,” and whichever medical institute can bring about this balance will be the winner in the future: Those who can combine “Talent” with “Technology” optimally, and then add that element of “Tenderness,” will become a caring institute. “Technology should not be something that makes us less human,” he asserts. “That human element should remain, so we should strive to become a better caring organisation. Technology should facilitate better care and not the converse.”

The growth of the individual and the growth of the institute should continue to be mutual; they can never be separated. He hopes that growth will continue in the future, and the goals will remain shared between the individuals and the institute, without ever compromising the values.

“The best way to predict the future is to create it.”

—Abraham Lincoln

2.3. The Road Not Taken: Innovative Approaches to Care (Foundations for Quality Care)

“The Road Not Taken,” the poem by poet Robert Frost that is often quoted by Dr. Rao, describes the journey of LVPEI. “Srujana” (a Sanskrit term for “innovation”), a recent innovation initiative, is housed on one floor in a building in the Hyderabad campus; but “Srujana is everywhere in LVPEI,” says Dr. Rao. Right from its inception, innovation has become part of LVPEI’s DNA, and the recent addition is “Technology Innovation.” Srujana has been renamed as the Center for Innovation.

Most of the innovation has happened by breaking established norms. Over the years, the institute has pioneered a unique approach to operating an innovative business model and blazed a trail not only in restoring vision, but also in innovation—one that other organisations can learn from and adapt.

Patient-Centric Care

As the idea of the institute evolved, a conscious decision was made that at least 50% of its services should be provided free to those who needed eye care but could not pay for it. “This was just a blind ambition at that time without understanding the economics, based on what we had read and heard, that every day at least half the people in our country go to bed hungry,” Dr. Rao says. “If people don’t have

two square meals a day, how can they think of spending any money for healthcare? But, they should not be denied healthcare. That was the only belief on which that decision was made to provide at least half of our services free of cost and not to deny eye care to anyone when they come to us.”

It turned out that those percentages have some validity. In 2012, the McKinsey Global Institute came up with an index different from the Poverty Line called the Empowerment Line, which was a composite of eight criteria for basic living. When that was applied, even as late as 2012, 56% of Indians were below the Empowerment Line.⁷ A more recent article in *The Economist*⁸ also spelt out that at least half of Indians don’t make even \$2 a day. “All this actually corroborated our initial guess work and strengthened and provided evidence for our work,” Dr. Rao says.

To provide care to 50% of the patients free of cost was one of the earliest management decisions of LVPEI, says Mrs. Pratibha Rao. She discloses that this was not at all difficult for them, because they were just institutionalising a practice already followed both by her father and her father-in-law in their own clinical practice. Both would never deny treatment to people who could not pay. They also provided free treatment to students and teachers, and waived fees for doctors and their families.

The patients’ examination rooms and infrastructure for ancillary services were initially funded by close relatives and friends of the Rao family here in India and in the United States. In later years,

⁷ McKinsey Global Institute. “India’s path from poverty to empowerment.” February 2012. <https://www.mckinsey.com/featured-insights/asia-pacific/indias-path-from-poverty-to-empowerment#>, 1 February 2014

⁸ *The Economist*. “India has a hole where its middle class should be.” January 2018. <https://www.economist.com/leaders/2018/01/13/india-has-a-hole-where-its-middle-class-should-be>, 13 January 2018

many noted Non Resident Indian (NRI) philanthropists from the USA, such as Subbarao Makineni, the Ravi brothers (Sudhakar and Sreekanth Ravi) and Dr. Rattaiah Jasti, also contributed. International organisations from around the world, Bausch & Lomb of the United States, Sightsavers International of the United Kingdom, Christoffel Blindenmission of Germany and Institute for Eye Research of Australia, are some of LVPEI's major partners. Equipment was donated by companies like Alcon, Allergan, Bausch + Lomb and Carl Zeiss Vision. Dr. Kallam Anji Reddy, chairman of Dr. Reddy's, one of India's most successful pharmaceutical companies, learnt of Dr. Rao's work soon after it began. He not only donated generously, but also agreed to share the dream by serving on the institute's board.

With all this help, the hospital grew into a comprehensive facility with several unique features—a dedicated children's eye clinic with a highly skilled team of paediatric ophthalmologists, an ocular oncology service that treats complex eye tumours, a contact lens service that tests and fits every type of lens available in the world, and comprehensive low-vision and rehabilitation services. Most of these services have been provided for the first time inside an eye hospital, either at the global or Asian regional level. Effectively using the donated “Time, Talent and Treasure,” risks were taken, strategies were planned, human resources were adequately trained and exposed to the best practices, infrastructure was created and programmes were rolled out.

“In all this, the focus is on maintaining the patient's dignity, and making it as easy as possible for those with visual impairment to be treated,” says Dr. Rao. Several other individuals and corporations have contributed generously over the years to help LVPEI realise its aspirations.

The physical layouts and systems were developed with a patient-centric approach. Every patient at LVPEI is escorted throughout

their movement in the system by a trained staff member. That is why, until they had to comply with the National Accreditation Board for Hospitals and Healthcare Providers (NABH) regulations, all signage was avoided. At LVPEI, the Patient Advocates—a concept Dr. Rao borrowed from the U.S.—are the patient care managers. LVPEI was probably one of the first institutes in India to have patient counsellors. These counsellors bridge the gap between the doctor and the patient. The doctor evaluates the patient, and then before the patient leaves, the patient counsellor spends time explaining everything clearly to the patient, including the symptom, the planned treatment and post-hospital care. If the patient or attendant has any doubts that the counsellors are unable to address, the counsellors immediately connect them to the doctor.

Comprehensive eye care was new in India in the 1990s. When the institute started, most of the country was focused only on cataract—setting up cataract camps and performing maximum number of surgeries—but no attention was paid to the outcome of the surgeries. Numbers took precedence over effectiveness. Most other eye problems were ignored. LVPEI was one of the first institutes that began focusing on comprehensive eye care, addressing all facets of eye care and providing end-to-end solutions.

The definition of “comprehensive eye care” evolved further to include preventive promotive, curative and rehabilitative care.

LVPEI was the first institute in Asia that started a dedicated Children’s Eye Care Centre. In those days, other children’s eye care centres were only in the USA.

From very early on, cataract operation in LVPEI was done using an intraocular lens to replace the natural lens that had become opaque. In fact, LVPEI was one of the first eye care institutes in the world to implant an intraocular lens (IOL) free of cost for economically

under-privileged persons, even though the cost of the lens was US \$100 a piece. Although there was no local manufacturing of lenses at that time, IOLs were implanted for every cataract patient, including all non-paying patients, setting a new trend in India.

Vision Rehabilitation (Care Beyond Medicine)

One of the most unique features of LVPEI is the Vision Rehabilitation Centre. While LVPEI'S focus is on cure and prevention of eye problems, the team believes that the management of incurable vision loss is equally important. Without knowing the term “comprehensive eye care” at that time, a rehabilitation centre was started with the idea to have all services related to eye care under one umbrella. LVPEI is the first institute in the world that integrated rehabilitation services for the blind as an integral part of care. This facilitates cross-referrals and patients are not sent away for lack of medical or surgical treatment. “It is one of the areas where LVPEI has made major strides as compared to other eye care institutes in the world,” says Dr. Merle Fernandes.

Rehabilitation services for persons with low vision and blindness are provided in all the tertiary care centres, and the secondary and primary rural centres provide community-based rehabilitation programmes. These are overseen by the Institute for Vision Rehabilitation (Dr. P.R.K. Prasad Centre for Rehabilitation of the Blind and Visually Impaired and the Meera and L.B. Deshpande Centre for Sight Enhancement) at the Centre of Excellence (CoE) in Banjara Hills, Hyderabad. People who suffer from vision loss that cannot be cured through surgery or medication find new hope at the rehabilitation centre.

The centre offers psychological counselling and treatment for depression for people with difficult eye conditions that cannot

be treated through the usual surgical procedures. Rehabilitation professionals help them discover independence and become productive through training in the use of special aids to enhance their skills at home and at the workplace. A special clinic for children offers a non-threatening and supportive environment, where vision rehabilitation workers interact with parents and children and help them learn skills to better integrate with society. Services are also available for patients with multiple disabilities. Most of the patients of rehabilitation need ongoing treatment for their eye condition. Optometrists interested in managing low-vision problems get specialised training to run low-vision clinics in the network.

Including vision rehabilitation services as part of LVPEI's eye care services was truly an innovation, as no other eye institute in the world had rehabilitation as a component of eye care. A few other institutes such as the Moorfields Eye Hospital in London started these programmes later.

Eye Banking (The Ultimate Giving)

Soon after the institute began operations, the process to start an eye donation movement in the region was set in motion, with a plan to bring state-of-the-art techniques and technology to eye banking. Corneal blindness, one of the most serious problems in India, can be cured by transplantation of a healthy donor cornea. However, transplantation depends on efficient handling and transportation of donor tissues and motivating higher numbers of donations. LVPEI's Ramayamma International Eye Bank (RIEB) harvests, stores and transports corneas using methods that meet the most stringent international standards.

RIEB is the first eye bank established to international standards anywhere in Asia and in the rest of the developing countries. When

the eye bank was started, everyone was sceptical about whether people would agree to donate corneas of their dead relatives. But now, RIEB is the biggest eye bank in Asia, at par with the best eye banks in the USA. The Hospital Cornea Retrieval Programme (HCRP), first introduced by LVPEI in three hospitals in Hyderabad, was another innovation.

The eye bank is now a leading training centre, attracting trainees from across Asia and many other regions. It also supplies corneas to other eye hospitals in the region, generating a high volume of donations sustained through a grief counselling programme.

Education (Spreading Skills and Knowledge)

LVPEI's thrust on education was unique and innovative. The traditional models of developing educational programmes that prevailed in India at the time were never followed at LVPEI. The training programmes are need-based and innovative, and were created to meet the optimal requirements, the classic examples being the Ophthalmic Nursing Assistants (ONA) programme and the Vision Technicians (VT) programme. Faced by a lack of well-trained doctors, paramedics and administrators in ophthalmology, it was decided early on to train people in-house. Therefore, training became a major part of LVPEI's mission.

Not offering postgraduate programmes (residency training) in ophthalmology was a well-deliberated decision initially. There was no need for it because there are several other training programmes in the country already. Instead, the focus was on enhancing the competencies of those who completed residency through fellowships, short-term as well as long-term programmes and two-week "observerships." For the first time in India, the concept of three-month short-term fellowships was introduced for practicing

ophthalmologists. Similarly, observership programmes were launched to demonstrate simple things such as the importance of hand-washing for practicing ophthalmologists. These were all new innovations in India at that time.

However, in 2008, with strong persuasion from the faculty who promised to create a residency programme of the highest standard, residency training affiliated with the National Board of Examinations (Diplomate of National Board or DNB) was introduced in LVPEI. Continuing medical education has been a central initiative since the founding years.

The Indian Contact Lens Education Programme (ICLEP), after more than 25 years, is the longest running contact lens education programme in the world. Over 5,000 eye care professionals have been trained in the country, in the practice of contact lens fitting and care. Refraction training courses were started many years ago in collaboration with the International Centre for Eyecare Education (ICEE) based in Australia, which is today called the Brien Holden Vision Institute.

Dr. G. Chandra Sekhar oversaw the education initiative during the initial years. He set up many systems for continuing education, with the help of Mrs. Pratibha Rao. True to the philosophy of LVPEI, continuing education was designed even before the first patient was seen. LVPEI is focused on the continuing education of the entire team, asserts Dr. Subhadra Jalali. The entire team, including nurses, optometrists and housekeeping staff are trained. LVPEI offered this training to several hospitals outside the LVPEI system, as well.

“In the next 30 years, the vision for LVPEI entails upscaling our mission,” says Dr. Avinash Pathengay, the current director of education. The mission to help the needy has been successful for the last 33 years. LVPEI cannot be everywhere in the world, but

it can certainly empower people and organisations involved in eye care by transmitting its business model. This could be done through partnering, mentoring and tutoring. Ultimately, it boils down to education, because any transformation in an organisation is catalysed by education, Dr. Pathengay declares. Education, he says, makes people understand what they are capable of and what they need to do.

Extending the vision: Once a month, usually on the second Wednesday, regular education sessions take a break, and LVPEI fellows, faculty and staff assemble at 7 a.m. to listen to talks that open their minds to the world outside their disciplinary boundaries. These talks broaden their outlook and help them understand the larger context within which their work finds a place. An integral part of the calendar, these sessions are live streamed across the LVPEI network, like the regular morning sessions.

Focus on Research (Exploring New Frontiers)

With a strong commitment to research from the beginning, the institute has evolved into a comprehensive eye care facility—one where clinical practice draws from and feeds back into research. The research wing was established with substantial support from Professor Brien Holden, a world-renowned contact lens specialist from Australia, in addition to many other individuals and industries. L.D. Jhaveri, a pearl merchant from Japan who was given a tour of LVPEI in 1991 when he visited as a patient’s attendant, chose to help establish the microbiology laboratory.

The research unit at LVPEI is not an ivory tower. “We identify projects that are relevant to the needs of populations in developing countries and study them. Our aim is to develop ideas, procedures and products that answer local needs, and to understand the dynamics

of eye disease and eye problems in our contexts,” says Professor Dorairajan Balasubramanian, the first director of research at LVPEI, and a biophysical chemist and ocular biochemist by qualification.

Much of the research carried out at LVPEI directly feeds into patient care. Nearly 12% to 15% of the annual budget is dedicated to research and development, signalling a very strong commitment to research. In India, it is the most productive eye research institute. Focus on translational research, the stem cell work, etc., are some of the pioneering research initiatives. One of the striking features is the scientist-clinician linkage to promote clinical and translational research.

Research projects include work on tumours of the eye, microorganisms that infect the eye, genetics of eye disease and stem cell research. The stem cell laboratory, funded by Silicon Valley multi-millionaires Sudhakar Ravi and Sreekanth Ravi, is a cutting-edge facility that is among the very few centres in the world where such research is taking place.

The research ecosystem at LVPEI is strengthened through a variety of supporting facilitative mechanisms. The faculty has access to multiple collaborations and to many visiting professors. To promote the importance of research outside LVPEI, Dr. Rao formed the Hyderabad Eye Research Group. The group started as a once-a-month meeting of its initial founding members, the Centre for Cellular and Molecular Biology (CCMB), National Institute of Nutrition (NIN) and LVPEI to share research and discuss areas of common interest in the realm of eye research. It later expanded to become the Indian Eye Research Group (IERG). Other institutes involved in eye research were invited to this platform to facilitate research exchange. A few years ago, the IERG transformed into the Indian branch of the Association for Research in Vision and

Ophthalmology (ARVO). ARVO is the largest and most respected eye and vision research organisation in the world. The members include nearly 12,000 researchers from over 75 countries. Thus, LVPEI had a significant role in the evolution of the IERG.

LVPEI probably provides one of the best research-enabling environments. There is dedicated research time each week for clinicians. They are given opportunities for getting further education and for participating in international meetings, seminars and conferences to give them a chance to interact with the best in the world. The clinicians are encouraged to be a part of forums that facilitate the exchange of knowledge and insights among experts. They have the freedom to choose their areas of research. The management does not dictate the areas in which every faculty member is expected to pursue his or her research.

Performance evaluation for the faculty is strongly linked to research output. Encouraging performance by providing a nurturing and challenging environment for the individual to become the best in the world in the chosen subspeciality is one of the hallmarks of LVPEI.

Public Health/Rural Eye Care

After the initial vision of bringing quality eye care to India had materialised, the next step was to reach out to the villages of India where, amongst many other developmental issues, inadequate or almost non-existent healthcare is a major challenge. The need for quality healthcare was the greatest in the vast hinterland where three-fourths of the country's population lived. A clear strategy was necessary to raise the level and nature of eye care in rural India, particularly among disadvantaged populations.

“Soon we realised that one of the major problems with eye care in India was access and distribution of resources,” says Dr. Rao. “We needed to start an aggressive community outreach programme—one in which we could take high-quality eye care to the remotest villages.”

Initially, it was simple—just trying to find ways to provide eye care in the remotest of areas. Dr. Rao was against eye camps because epidemiological studies showed that in Hyderabad city, many people who had cataract surgery —whether at eye camps or hospitals—became blind due to poor hygiene and sterilisation systems. This was more so in the rural districts of Adilabad, West Godavari and Mahabubnagar. LVPEI studied this eye care data carefully and did not want this problem to recur. So it started to look for a permanent solution to this problem.

This was when the concept of a secondary centre with an ophthalmologist and a team of 25 people came up. However, even these secondary centres could not reach the remotest rural and tribal areas, because no doctors and optometrists were willing to go there. So LVPEI came up with the concept of a “vision centre” for primary eye care. The vision centre is staffed by a “Vision Technician” (VT). A typical VT would be a high school graduate, who would be given one-year training. Such a person would single-handedly operate the rural vision centre serving a population of 50,000 people. The vision centres were then integrated, with 10 vision centres linked to a secondary centre and the secondary centres linked to tertiary hospitals in the LVPEI network.

Soon, a unique model emerged from a recognised need, based on the results of the Andhra Pradesh Eye Disease Study (APEDS), the first systematically conducted, large population-based study of eye diseases prevalent in the region in 1996. APEDS became a standard for epidemiological research in eye health and led to several insights

that helped LVPEI plan and implement an eye care programme that would be comprehensive in all aspects and reach the needy.

The LVPEI Pyramid of Eye Health is an integrated model of eye care delivery encompassing all levels of service delivery from community to advanced tertiary, combining excellence with equity. The most innovative aspect of this model is that it allows strong community ownership at the primary and secondary levels. Over 70% of the staff at these levels is recruited locally. LVPEI was the first eye care institute to innovate and implement this model.

The Gullapalli Pratibha Rao International Centre for the Advancement of Rural Eye care (GPR ICARE) was established as LVPEI's instrument of public eye health. GPR ICARE's mandate is to take vision care into the villages by training eye care workers at all levels, and by developing simple yet efficient and effective systems of eye care delivery in rural areas. The mandate includes conducting research that will tap the eye care needs of rural populations.

LVPEI has revolutionised eye care in the four states in India where it is active, through its "pyramidal model" of eye care. This model visualises the Centre of Excellence at LVPEI's facility in Banjara Hills at the apex, supported by three tertiary care hospitals in Bhubaneswar, Visakhapatnam and Vijayawada. Each hospital has several secondary care centres attached, which in turn support 184 primary eye care centres. GPR ICARE's sustainable system of eye care delivery is being used as a model by the World Health Organization and the International Agency for the Prevention of Blindness (IAPB) in the VISION 2020 programme.

Today, GPR ICARE programmes cater to the needs of tens of thousands of the rural poor in Telangana, Odisha, Andhra Pradesh

and Karnataka, and indirectly through its training programmes to the rural population in other developing countries such as Vietnam, Bangladesh and Myanmar.

Product Development and Ophthalmic Engineering Unit

In the area of product development, LVPEI was involved in the development of McCarey-Kaufman (MK) medium (a preservation medium for storing donor cornea tissue until transplantation) and low-vision devices. The idea was to make products that are important for patient care that are not economically viable, so not produced by any company. Over time, LVPEI evolved in this area and started to focus on innovation. Innovation is much more than product development; it involves research and creation of new products to improve and simplify care at a low cost. Recently, the BostonSight Lens Manufacturing Lab was set up with support from the Boston Foundation for Sight. The facility provides affordable, effective and customised contact lenses to patients with complex ocular surface disorders. It is the first facility outside Boston and the second in the world to manufacture BostonSight Scleral lenses, providing ocular health solutions to India, Southeast Asia and the Middle East.

LVPEI developed products that were not available commercially for eye care in India, but it never ventured into commercial products, true to its non-profit status. Technological adaptation and experimentation are the essential elements of LVPEI's thrust towards innovation. The best quality eye care equipment that is imported is expensive; consequently, LVPEI started experimenting with alternatives to make these affordable and available to all people, resulting in the creation of an ophthalmic engineering unit. The engineering unit headed by Dr. Ashutosh Richhariya is called the Engineering Translational Research Group.

Technology Innovation

LVPEI has always been intent on incorporating technology into eye care. Dr. Anthony Vipin Das has a favourite term to describe the unique innovation process at LVPEI—*People to Policy*—which seeks to get closer to the ground realities of patients, especially poor patients, through a variety of new technological approaches, including machine learning, using the HoloLens for education and developing technology innovation.

The Technology Center for Innovation, where devices like the Pediatric Perimeter and Folding Foropter are being developed, would have an impact especially on taking cost-effective care to the rural under-served communities. This team led by Dr. Rao's son Raghav Gullapalli has developed a pipeline of products useful for service and diagnosis. Areas such as machine learning and artificial intelligence are steadily getting incorporated.

The eyeSmart EMR, developed in-house by Dr. Das, is a highly acclaimed innovation. This is an electronic medical records (EMR) and hospital management system which enables electronic documentation for faster information retrieval and for research purposes. With scope for a lot of improvement and upgradation, it is more user-friendly than many other existing systems. The eyeSmart EMR system is equipped with machine learning models that provide insights for better clinical decision-making.

While the facility in the Hyderabad campus primarily houses the technology group, the Center for Innovation also has an education group, a research group, a clinical service group and a public health group. The unique LVPEI service delivery model depicted as a pyramid is also a product of innovation.

Global Policy, Planning and Capacity Building

Through the years, LVPEI's development has been closely linked with that of its founder-director, Dr. Rao. While LVPEI has learnt from the experience of institutes such as Aravind Eye Care in Madurai and Sankara Netralaya in Chennai, it has also contributed substantially to eye care and vision research in India and internationally. At LVPEI, the faculty members continually share their learning with others involved in eye care.

To work in the sector of public health was not in the original plan. The initial idea was to set up an ophthalmic care centre. However, LVPEI's entry into community eye care was marked by a series of remarkable events. Dr. Rao was first introduced to the International Agency for the Prevention of Blindness (IAPB) in 1995 in Geneva. IAPB, an international coalition of organisations working in eye health and blindness prevention across the world, was founded by Sir John Wilson, who was himself visually impaired. The association is heavily involved in community eye care, with a focus on reaching out to people who have little access to eye care. Initially, Dr. Rao's involvement in the IAPB was limited to participation in meetings and events. He soon got deeply involved in building and growing the organisation while in various leadership positions between 1997 and 2008.

Therefore, it is no surprise that LVPEI is today playing a key role in the international combat against needless blindness, an aggressive collaborative mission that aims to eradicate avoidable blindness across the globe by the year 2020. The LVPEI team is at the front lines of this struggle.

LVPEI is a World Health Organization (WHO) collaborating centre for training and a major resource centre for VISION 2020: The Right to Sight initiative, jointly managed by WHO and IAPB.

Stories of institutes and causes like LVPEI do not have an end. There are phases that begin and conclude; there are people who come and go. LVPEI has now embarked on the work of taking its learning to countries as far away as Liberia and Vietnam, to act as an advocate for better eye health policies and systems in developing countries, and to continue the battle against avoidable blindness globally. The strength of LVPEI lies in its ability to understand the global significance of issues related to eye care combined with the acumen to devise locally relevant solutions. That's how LVPEI has opened the eyes of thousands of people, one at a time, to a world full of possibility.

Throughout, LVPEI has been aiming for universal eye health! Dr. Rao tells his team, “So that all may see is possible only when we do this—what looks gruelling, unglamorous and unappreciated quite often. But I think, in the long run, the institute's legacy will be enduring only on the basis of work that we are doing out there in under-privileged communities, not what we are doing here in the cities. Just remember that what we do here, many others in the world do. What we do out there in rural areas, hardly anybody else is doing. So for youngsters that are going out, wherever you are going, remember that. The rich have many alternatives, but for the economically under-privileged, very often, we are their only choice. We have that opportunity to make a difference, and the more we do it, the more grateful we feel.”

2.4. The Pyramid of Eye Health: Sustaining Through an Innovative Business Model

This chapter presents a comprehensive depiction of LVPEI's unique service delivery model.

Five years after the institute started, as more patients began to come from the rural areas, there was a realisation that people in the rural communities are often denied care due to ignorance, poverty or lack of facilities. There was a sense of dissatisfaction that services were not reaching the people who need care the most. Recognising this need in rural communities where there is minimal to no access to care, and encouraged at that time by P.G. Michael (Christoffel-Blindenmission or CBM) and D. Nagarajan (Sightsavers International or SSI), LVPEI launched the secondary centres programme.

Even with these secondary centres, however, the institute was still not reaching the rural and tribal areas that lacked permanent facilities for eye care. The concept of vision centres came up out of this felt need. Over time, this evolved into the Pyramid of Eye Health with permanent infrastructure supported by community eye care projects.

The pyramidal model caters to different levels of care, from primary, to secondary, tertiary and advanced tertiary care. The services include simple screening to the management of the most

complex problems, appropriate in every respect to the level at which the care is provided without compromising on quality. The care is affordable and available to all people, irrespective of their ability to pay, and accessible even to the remotest rural communities in at least three states. Most importantly, the care is comprehensive in every respect—management of the entire gamut of eye diseases; geographical and population coverage reaching the most remote and inaccessible areas; and all eye care services, including rehabilitation of the blind. The delivery structures are clearly defined with appropriate linkages facilitating referrals between different levels of care within the network.

At the base of the pyramid are the vision guardians, who are LVPEI's field-level workers. Their primary task is to monitor the eye health of 5,000 people in their designated geographical area, which typically is a cluster of a few villages. The model is evolving and has to be uniformly applied across the entire system. The roll-out of this model over the four states that are LVPEI's primary targeted geography is continuing.

The vision centres constitute the next level upwards from the bottom of the pyramid. These centres are managed by vision technicians, who are high school-qualified youth from the local community, trained in basic ophthalmic techniques. These technicians provide care at the primary level, which includes refraction and dispensing eyeglasses, recognition of potentially blinding disease, and appropriate referrals both horizontally and vertically (the three Rs). In addition, they can also provide post-operative follow-up to a modest extent. A vision centre is designed to serve a population of 50,000, and a cluster of 10 such centres are linked to a secondary centre. With the addition of more advanced technology to these units, the tasks of the vision centres will become easier and more expansive, going forward.

Primary eye care centres are linked to secondary centres that are located at about 50 kilometres, approximately two hours by road. A secondary centre caters to a population of 500,000 and provides comprehensive eye care. Other than the ophthalmologist, the necessary human resources at the secondary level are largely drawn from the local communities, trained, then put to work. These centres provide high quality care to all people, both paying and non-paying, using an eye care team approach in a sustainable manner. This has now become a model for the world in the true sense, with optimal numbers for a 500,000 population.

The top two tiers provide services at the tertiary and advanced tertiary levels, with the Centre of Excellence at the apex. In addition to managing the most complex problems, these centres are involved in advanced training, research, policy and planning.

The model grew out of strong evidence-based epidemiological insights drawn from LVPEI's Andhra Pradesh Eye Disease Study (APEDS) conducted in 1996. While the proposed idea of a large-scale epidemiological survey did not receive support initially, the outcomes of the study were revealing and attracted global attention of entities in eye care and public health. The data gave insights into the ground realities of eye care in the rural hinterland, and consequently helped evolve benchmarks on service quality. Out of this came the unique pyramid model, which many organisations both in India and abroad have subsequently adopted. The study also resulted in prolific research output that translated into articles published in international peer-reviewed journals.

As of today, LVPEI spans the Centre of Excellence (Hyderabad), three tertiary centres (at Bhubaneswar, Visakhapatnam and Vijayawada), 20 secondary centres and 184 vision centres to provide last mile reach to the poorest patients.

Another innovation in outreach by LVPEI is the Village Vision Complex (VVC), which is an integrated model of secondary and primary eye care. A VVC is composed of 100 vision guardians, 10 vision centres and 1 secondary centre. Each VVC covers around 100 to 200 villages. It is the first integrated model of secondary and primary eye care anywhere in the world, and a perfect setup for the global aspiration of Universal Health!

For a poor patient, the economics of coming to the Centre of Excellence at Hyderabad, or to one of the three tertiary hospitals at Bhubaneswar, Visakhapatnam or Vijayawada, is staggering, Professor Balasubramanian points out. The cost includes loss of daily wages for five to six days to make this trip from a distant village, cost of travel, stay, etc., not including costs of treatment in a typical private hospital. For LVPEI, the value of the rural eye care centre is not only in terms of providing eye care that is affordable and available, free of cost to the under-privileged, but also about access to big data, as well as providing information about the prevalence of blindness and eye diseases across the chosen geographies where LVPEI operates. The data helps in planning eye care service delivery and facilitating research into various blinding conditions, the adverse impact they have on vision, and the search for possible solutions.

Note: See page 116 for a schematic representation of the LVPEI Pyramid of Eye Health.

2.5. Sustainability

On the issue of sustainability, LVPEI has a well-thought-out model:

1. Primary care is subsidised to serve the most neglected sections of the population. Private primary care does not exist in most of the places where LVPEI provides such care. LVPEI's primary care thus serves the remotest areas, where the population has little paying capacity. All care is provided free at this level.
2. Basic research is not self-sustaining but supplemented by royalties and philanthropy.
3. The royalty income of LVPEI is Rs. 10 crores (Rs. 100 million) annually, which is perhaps the highest among healthcare providers in India.
4. At the level of the primary centre, opticals (i.e., glasses for correcting refractive errors) are the primary revenue stream, as paying patients pay for the glasses, some of which are subsidised by TOMS Eyewear. At the Village Vision Complex (secondary centre plus 10 primary vision centres), the model becomes financially sustainable, with revenue from both opticals and patient care.
5. Vision rehabilitation, which forms a significant aspect of LVPEI's comprehensive offering, is not entirely sustainable, as many of the patients for rehabilitation come from the poorer sections of society, having little paying capacity.
6. LVPEI is self-sustaining in its education initiatives. Young people from economically disadvantaged backgrounds hailing from villages are trained in various fields such as optometry,

housekeeping and ophthalmic nursing. Much of this education is provided for free. Promising graduates of these programmes are offered an opportunity to serve at LVPEI. Some of these programmes, such as optometry, award a degree on completion of study.

7. Free education provides LVPEI the opportunity to do social good while also enabling it to generate well-trained human capital to cater to its growing operations.

Significant support comes from several individuals and corporations under corporate social responsibility (CSR) programmes. At the main campus in Banjara Hills, close to 1,400 outpatients are seen each day. The outpatient service consists of three paying categories in addition to non-paying—general, supporters and sight-savers—with a varying fee structure. The non-paying service is entirely free of cost.

The financial health of the institute is sound, and the present perception that LVPEI depends on grants is not correct. Dr. Rao declared that currently nearly 90% of all operating expenses, which includes every activity across the LVPEI network, is covered by the money generated from paying patients. With tighter cost controls, the network could attain 100% cost coverage from paying patient revenues alone. This will ensure that the money that comes from other sources is not used for funding operating expenditure. These other sources include money from various agencies and government in the form of subsidies to support non-paying surgeries, royalties, profits made from the opticals business and pharmacies in the network, profits from our technology innovation and product development centres, and competitive research grants and education grants from agencies around the world. The surplus made from the business components is used to grow the organisation to achieve its vision.

2.6. Perspectives (On the Past and the Future)

Mrs. Pratibha Rao acknowledges the support of well-wishers among relatives, friends, classmates and colleagues who contributed in many ways to create a favorable environment that helped the institute grow way beyond the Raos' expectations. Mrs. Rao led from the front, committing personal savings for the initiative before seeking support from others. Her contributions span various areas of activity at LVPEI during the initial years of development, including aesthetics and training the staff. Dr. Rao wanted to have training programmes for young ophthalmologists and short programmes for practitioners even before patient care started. She initiated the education programmes and set up systems, which were then taken forward by later heads of education.

Initially, everything was a challenge, she recalls, and quite a few of these challenges were heart-breaking and difficult. For example, limiting patients' attendants to two persons (in India, influential patients would come with several attendants), making doctors available by appointments, banning smoking on campus, limiting visiting hours, having early morning learning sessions for the faculty and fellows, and having Continuing Medical Education (CME) as part of the programme. Ironically, these issues made for some amusing moments too. Visitors arriving after visiting hours often invoked the name of Ramesh Prasad to enter the facility, to which the security guard declared that even if L.V. Prasad himself arrived, no one was going to be allowed inside!

Mrs. Rao took up many assignments in the initial days, when the finances were tight and hiring the right people for various tasks was difficult. She would be assigned to take over functions whenever no one was available to take care of it. When people were eventually hired by the institute, she was assigned to other areas where there was a need. Much money was invested in training, but sometimes, those trained would leave at the slightest pretext. “So, I used to tell Dr. Rao, why don’t you train me, I am not going to run away, you can be assured of that!” Mrs. Rao says, in jest.

Looking at future avenues for innovation at LVPEI, GMR Varalakshmi Campus Director Dr. Merle Fernandes opines that the major goal will be to increase efficiency and to have a bigger impact, both nationally and globally through partnerships. One of the institute’s focuses is to find ways to reach out to more ophthalmologists for medical and surgical training through innovation in education. Physically, there is a limit on the number of doctors who can be given hands-on training at LVPEI’s hospitals at a given point of time. The possibility of increasing this number using simulations is being explored, she says.

Another area to explore would be the use of artificial intelligence for remote diagnosis, says Dr. Fernandes. This would enable reaching more patients through a concentrated web of specialists, who can sift through the resulting medical data. These technologies can be used to enhance the quality of care.

About the use of robotics in ophthalmology, LVPEI has not pursued that path so far, but Dr. Rao feels that it may be considered in the future as technology advances. According to him, the main focus of innovation at LVPEI is going to be about combining research in the fields of technology, biology (including biomedical) and human interaction. He believes that those institutes that innovate

in evolving the right mix of these three critical aspects will be the winners in the future.

D. Nagarajan was formerly the head of the South Asian branch of Sightsavers International, an international charity working to prevent avoidable blindness. Since his retirement, he has been an honorary consultant and advisor to LVPEI and Aravind Eye Hospitals. He had been closely associated with both these institutes for several projects supported by Sightsavers. According to Mr. Nagarajan, Dr. Rao is a great institution builder. He first heard about Dr. Rao in late 1988 from David Green, a freelance consultant associated with Seva Foundation in the United States, who told him, “In 20 years, Dr. Rao will be what Dr. G. Venkataswamy, the visionary founder of Aravind Eye Hospitals, is today.”

Mr. Nagarajan’s predecessor at Sightsavers told him that LVPEI is based in a city, Hyderabad, while Sightsavers was focused on rural programmes, and hence could not support LVPEI. Mr. Nagarajan wanted to learn more about LVPEI and came for a visit, but Dr. Rao was away. He went around the centre and was impressed with what he saw. He later met Dr. Rao and three things struck him during their initial discussions:

1. Dr. Rao’s sincerity and commitment to the mission of LVPEI. Dr. Rao wished for the best possible eye care to be made available to Indians irrespective of whether they could afford it or not. He gave away a significant part of his savings and invested 200% of his time to make his dream come true. What impressed Mr. Nagarajan was LVPEI’s clinical excellence, with state-of-the-art facilities that were available to everyone, irrespective of their ability to pay.
2. Dr. Rao’s total focus on quality, and commitment to equity and excellence.

3. Dr. Rao's curiosity. Dr. Rao was a keen learner, constantly looking for ways to improve. He was an expert in ophthalmology, with experience gained in the USA, working in a different culture and environment. Here, he was learning to apply that expertise and adapt his prior experience to Indian conditions.

In a workshop in 1989, LVPEI's initial initiatives were discussed, which provided scope for a partnership between LVPEI and the Sightsavers International. These initiatives included patient care, training, research, rehabilitation, outreach programmes, establishment of secondary centres, vision centres in rural communities and product development.

The challenge of building an institute appears to have been great for Dr. Rao. He did not have a pool of family talent to build the institute, says Mr. Nagarajan. While his family supported him wholeheartedly, they were not directly involved in day-to-day management. He had two school-going children and was new to Hyderabad and India, having just returned from the USA after a very successful 12-year stint. However, Dr Rao's family was amenable to begin life in India, living in a rented home while he was busily establishing LVPEI.

So despite all these difficulties which underlined his commitment, Dr. Rao, with his family's support, went ahead with his plans. He was focused on building the campus in Banjara Hills, Hyderabad, as an institute that would deal with multiple facets of eye care. He wanted excellence in every area.

Dr. Rao was not a person who would employ the first retina specialist who applied for the position, although there was a crying need for such a specialist in LVPEI in those early years. He would wait for a person who was aligned to the purpose and core values of LVPEI, and manifested a missionary zeal in all that they would do.

He chose the best specialists in all fields—Dr. G. Chandra Sekhar for glaucoma, Dr. Taraprasad Das for retina, Dr. Satish Gupta for cataract, Dr. Shobha Boghani for contact lenses and anterior segment disease, and Dr. Savitri Sharma for microbiology. Doctors who joined later were Dr. Virender S. Sangwan for cornea, Dr. Subhadra Jalali for retina and retinopathy of prematurity (ROP), Dr. Anil Kumar Mandal for congenital glaucoma, Dr. Murali K. Aasuri for cornea, contact lens, cataract and refractive surgery, Dr. Santosh G. Honavar for glaucoma and eye cancers, Dr. Geeta Kashyap Vemuganti for ocular pathology, Dr. Lalit Dandona for clinical epidemiology and Dr. B.V. Rao for squint. Eventually, the team added Dr. Somasheila Murthy for cornea and uveitis, Dr. Ramesh Kekunnaya for paediatric ophthalmology, Dr. Rohit C. Khanna for public health, Dr. Milind Naik for orbit, ocular and facial aesthetics, Dr. Annie Mathai for medical and surgical retina, Dr. Swathi Kaliki for cancer of the eye, and Dr. Mohammad Javed Ali for Dacryology, to name a few.

Dr. Rao was a quick learner and he learnt how to develop people. He gave them every opportunity to excel in their areas of expertise. Most of these doctors joined after completing their training at LVPEI and were then sent to internationally renowned centres for speciality training. Dr. Rao was instrumental in ensuring that LVPEI faculty members acquired state-of-the-art knowledge by sending them to the best learning centres in the world. As he was already a renowned cornea specialist, he sent doctors in other specialities for specialist training to the best institutes in the world. With his foresight and focus, he set for LVPEI and himself long-term goals and achieved them.

Over a period of time, Sightsavers funded programmes in training, outreach and rehabilitation at LVPEI. For patient care, costs were met by cross-subsidisation—money earned from paying

patients was used to treat poor patients. Apart from Sightsavers, other international non-governmental organisations (INGOs) such as the CBM (Christoffel-Blinden Mission) International and the Seva Foundation supported LVPEI. They would discuss ideas for new projects with Dr. Rao, and raise the requisite funds to help LVPEI implement these new project ideas. Mr. Nagarajan recalled that Dr. Rao's philosophy for a successful project is ownership of the purpose and not ownership of the project.

Dr. Rao is a fountainhead of knowledge, skills, vision, and access to powerful networks. At LVPEI, there is zero negotiability about vision, mission and values, but Dr. Rao gives the team a great deal of freedom to work within that framework. Until 10 years back, Dr. Rao was in personal touch with every single employee, including the housekeeping assistant. This helped him in recognising the true potential of people. For example, Rajashekar, who is currently the associate director in charge of all secondary centres and external connections, joined initially as an administrative trainee. Dr. Srinivas Marmamula, initially a vision technician, now has a Ph.D. and did post-doctoral research for his speciality in some of the best universities abroad. He is often invited to prestigious international meetings.

Because of Dr. Rao's direct contact with the rank and file of LVPEI, he could identify those with potential and provide them opportunities to blossom far beyond what they thought was possible. Dr. Khanna, who joined as an ophthalmology fellow, developed an interest in public health. He was sent to Johns Hopkins University for training and now heads all outreach programmes at LVPEI. Building people is Dr. Rao's special skill.

Mr. Nagarajan says that he has rarely seen Dr. Rao take time off; yet, he finds time to meet people, respond to emails and return phone

calls. He says that during the early years of LVPEI, it was very easy to walk into Dr. Rao's room. He is very approachable, both in his room and in the hospital during his routine hospital rounds. He would walk through the hospital four times a day, and he knew every brick, plant and every single person working in LVPEI by name. He would be the first to know when something was not working well.

Research Innovations

Stem Cell Magic

Stem cell miracle: L V Prasad develops mini eyes in a test tube

Times of India, 1 February 2018

HYDERABAD: City-based L V Prasad Eye Institute has developed mini human eyes in a test tube with stem cells. Though it may take a few more years to develop the whole eye through stem cells that could readily be used for transplant, the present development in L V Prasad Eye Institute's research laboratory holds promise for the future. The technology could also be utilized for treating critical eye injuries. The institute has been conducting research on stem cells to develop human eyes for around 15 years. It now succeeded in developing complex 3D corneal organoids, which are miniature versions of a larger organ developed in a test tube. These organoids developed by the institute are capable of recapitulating steps of normal corneal development. Results of stem cell research were presented at ongoing International Congress of Cell Biology (ICCB – 2018) here by Dr. Indumathi Mariappan,

research scientist at Sudhakar and Sreekanth Ravi Stem Cell Biology Laboratory at L V Prasad Eye Institute (LVPEI). Her laboratory is involved in basic and translational research towards addressing problems of retinal and corneal diseases using different sources of adult and pluripotent stem cells.

“We generated three-dimensional retinal and corneal organoids from human pluripotent stem cells. Eye field primordial clusters that emerged from differentiating pluripotent stem cells developed into whole eye ball-like, self-organised, three-dimensional, miniature structures consisting of retinal primordia, corneal primordia, primitive eye lid-like outer covering and ciliary margin zone-like adnexal tissues in a step-wise maturation process within 15 weeks. These organoids recapitulate early developmental events in vitro and displayed similar anatomical features and marker expression profiles as that of adult tissues. They offer an alternative tissue source for regenerating different tissues of eye and eliminate the need for complicated cell enrichment procedures,” researchers said.

According to Dr. Mariappan, “Here in the stem cell lab department, our people are involved in trying to understand how the eye functions; apart from that we also do a significant amount of translation research where we apply stem cells for treating diseases. For example, if there is a surface injury of the eye, we take a small biopsy from the patient’s unaffected eye (if only one eye is affected) and we expand the cells in the lab. This sheet is transplanted on to the patient for treating the affected eye. This procedure is called a Cultured Limbal Stem Cell Transplantation.”

World's first biological retina

An audacious goal that Dr. Taraprasad Das, a vice-chair at LVPEI, has set is to make a biological retina to cure patients with difficult retinal diseases. He was one of the first ophthalmologists in the world to perform retinal transplant. The success rates in retinal transplants are very low, he admits. At the time he started doing retinal transplants, enough research on the retina had not been carried out in the world. However, over the last several years, a lot of basic research has been done. Based on these advances, LVPEI should be able to make the world's first biological retina, taking tissues from a patient or an embryo. His team also includes young doctors, Dr. Vivek Pravin Dave and Dr. Indumathi Mariappan. This could be a truly path-breaking innovation, and it could help many people with complex retinal problems.

2.7. Photographs



L V Prasad Eye Institute Building, 1999 and 2007.



L V Prasad Eye Institute, 2017.



Amaltas tree with yellow flowers showcase the entrance of the Gullapalli Pratibha Rao building, Kallam Anji Reddy campus, Banjara Hills, Hyderabad.



This 2.6 billion-year-old ancient rock formation is preserved at the entrance to the Velamati Soubhagyavathamma Patient Care Building, Kallam Anji Reddy campus, Hyderabad, 2016.



Aesthetics all around: Invited artist Mr. Chippa Sudhakar's creation adorns the walls of the three-floors-high atrium, the Sightsavers' Lounge in Kallam Anji Reddy campus, 2016.



The Exclusive Opticals store for Sightsavers category patients sports an upmarket decor in Kallam Anji Reddy campus, 2016.



Photographs of the inspiring lives of vision rehabilitation clients adorn the corridor walls, and the floor is modified to include rows of tactile tiles on ground zero, Gullapalli Pratibha Rao building, Kallam Anji Reddy campus, Hyderabad, 2016.



The patient is a very important person, the only VIP. Fellow doctor in cornea and anterior segment speciality, Dr. Merle Fernandes, calls a patient from the waiting lounge, 1996.



Patient-centric care: Optometrist Nagaraju Konda escorts a patient back from the clinic to the reception desk with Patient Counsellor Praveen Kumar at the helm.



LVPEI should not look or feel like a hospital. Wide corridors, paintings and glass sculptures adorn the walls, and there is minimal signage in the main lobby of the eye hospital, Gullapalli Pratibha Rao building, Kallam Anji Reddy campus, 2012.



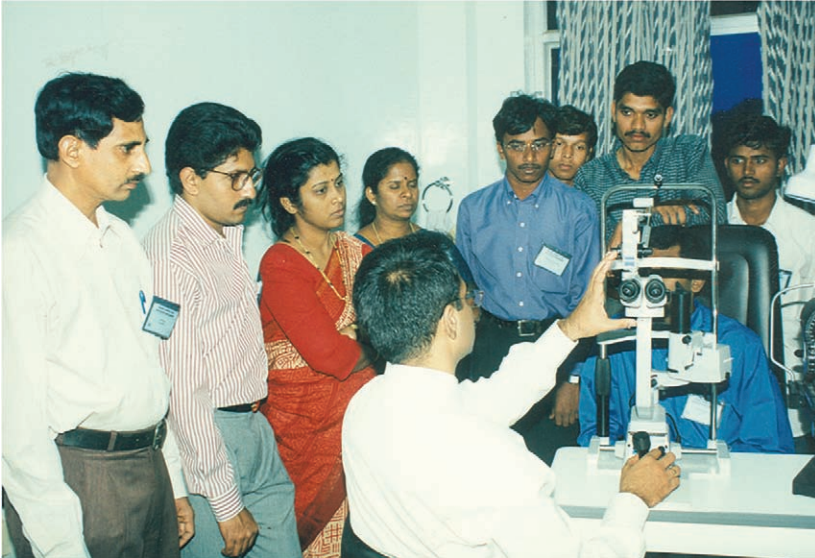
The way the staff in the patient care department hold the hands of non-paying patients and help them is practicing Equity and Patient First.



Doctors qualified in MS or MD Ophthalmology train further at L V Prasad Eye Institute, doing a sub-speciality fellowship programme to gain clinical and surgical exposure.



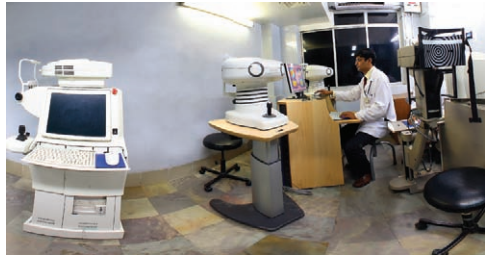
Fellow doctors are trained in the nuances of plastic surgery of the eye. Dr. Milind Naik trains a fellow doctor in the new operating room at Velamati Soubhagyavathamma Patient Care building.



The Indian Contact Lens Education Programme (ICLEP) that started in the 1990s included a live demonstration of the principles and operation of the Slit lamp biomicroscope.



Optometrist Preetam Kumar conducts a session during ICLEP, 8 June 2018. At right, Dr. Pragnya Rao Donthineni is seen guiding EyePEP 2016 participants in the wet lab.



The thoroughness of the eye examination and related diagnostic tests have earned LVPEI fame. At right, an Optometrist is seen analyzing a cornea diagnostic test.



The superior quality of housekeeping efforts is a revelation to visitors and patients. Here, the housekeeping ladies are seen cleaning the microbiology laboratory and the operating room.



One's attention is given to the task at hand, sweeping, training or repairing—these employees and trainees are ever alert.



Security guards are helpful and friendly, giving directions and guiding patients and their attendants after they arrive on the campus for an eye check-up.



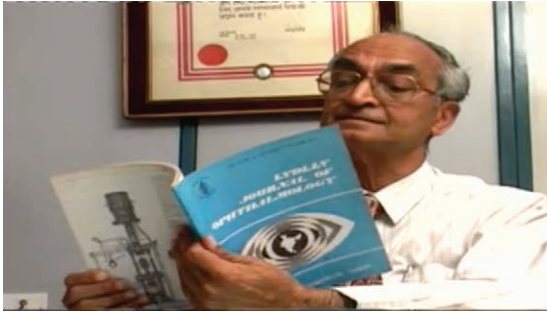
The borders between art and science merge in the precision of surgery.



For individuals who cannot be treated medically, LVPEI's Vision Rehabilitation Centre opens new doors for them, training them in life skills. Dr. Beula Christy is seen here training a client in cognitive skills.



Style Editor Dr. Usha Raman and Administrator Ms. Durga Dhanraj Kocherla helped the IJO editors at LVPEI in transforming the *Indian Journal of Ophthalmology* (IJO) publication.



Noted eye specialist Dr. Madan Mohan avidly reads an issue of the *Indian Journal of Ophthalmology*.



The cornea retrieved from a body at the time of death is processed at the eye bank and used by the cornea surgeon for vision-restoring cornea transplantation eye surgery.



Certification training for Ophthalmic Nursing Assistants: Here, Nurse Tutor Ms. Yamuna demonstrates the model of a human eyeball to a batch of ONA students.



Senior Consultant Dr. P.V.K.S. Varma listens patiently to a surgical patient in the in-patient ward, GMR Varalakshmi campus, Visakhapatnam.



A fellow doctor wheels a non-paying patient after the eye examination back to the waiting area for checking out.



The Wall of Hope, framed impressions of the hands of eye cancer survivors, inaugurated by film actress Ms. Simi Garewal, on 18 July 2016.



Adherence to the appointment system streamlined patient consultations, reducing the waiting time in busy clinics.



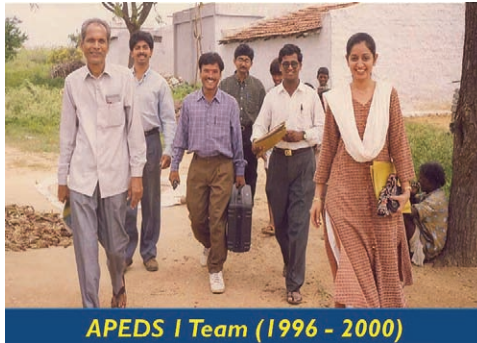
Patient Care Assistant Ashok Kolluru wheels a patient past the paintings and sculptures in the main lobby to the exit in Gullapalli Pratibha Rao building.



Technicians in the pathology laboratory of the Brien Holden Eye Research Centre, Kallam Anji Reddy campus.



Research scholars pursue basic research in vision science in the biochemistry laboratory.



Public Health

The APEDS team in 1997: Mr. M.N. Prasad, Mr. Vilas Kovai, Mr. Thirupathiah, Mr. Giridhar Pyda, Dr. Srinivas Marmamula and Optometrist Rakhi Sehgal.

**THE LVPEI
EYE HEALTH PYRAMID**



The LVPEI Pyramid of Eye Health (A Pyramid of Trust)



Centre of Excellence: The daily academic session in progress at 7 a.m. for ophthalmologists and optometrists, June 1996.



Employees maintain the highest standards of cleanliness all over the campus.



Vision research scientists meet in LVPEI to form the Indian Eye Research Group (IERG)—Dr. R.A. Mashelkar, Dr. P.D. Gupta, Dr. Gullapalli N. Rao and Professor D. Balasubramanian; Audiovisual Technician Mr. Giridhar is in the background, 1999.



The U.S. Ambassador to India visits LVPEI, seen here with the staff of the eye bank, Dr. Usha Gopinathan and Professor D. Balasubramanian.



Professor Jill Keeffe looks on as Dr. Subhabrata Chakrabarti introduces LVPEI's research laboratory efforts to New Zealand Deputy High Commissioner to India Ms. Suzannah Jessep, 28 November 2016.



Professor Alfred Sommer, who reported that Vitamin A deficiency is one of the causes of night blindness, is welcomed to LVPEI, Hyderabad, 17 December 1998.



In-house artist Surya Prakash meets with visitors from TOMS Eyewear in the LVPEI Art Gallery, 9 November 2016.



Prerna Award to Mr. Devaraju Kanugala, engineering group innovation department, KAR campus, for contributions to ophthalmic product development—Dr. Ashutosh Richhariya, Dr. G. Chandra Sekhar, Mr. Devaraju Kanugala and the Late Mr. Bhooshan Bagga, 30 September 2016.



The Folding Foropter measures the refractive error at the doorstep, so the person need not visit the eye clinic for a prescription, 2016.



Sai Naga Sri Harsha Chittajallu from LVPEI's Engineering Group wins the second prize for the Bulls Eye Dropper in the young innovator competition InnoHEALTH conference, New Delhi, held 18-19 September 2017.



The Pediatric Perimeter was showcased at the Festival of Innovation 2017 presided over by the president of India at Rashtrapati Bhavan, New Delhi. The innovation measures visual fields in infants.



Full face protective gear, LVPEI's open source visor, was designed, prepared and made available in record time for staff in the network eye clinics, and gifted to police service personnel during the COVID-19 lockdown in March 2020.



“Parivartan—Good to Great,” a programme to bring about positive organisational change by enhancing the management skills of the middle level-management team of LVPEI, was conducted 2016-2018 across the LVPEI network.

(Photo on left) Mr. Ratan Jalan, founder of Medium Healthcare Consulting and a thought leader in the healthcare industry, asks the audience a question during a lecture for administrators at KAR campus. (Photo on right) GMR Varalakshmi campus Administrator Mrs. Rekha Gunturu listens attentively to the Parivartan Programme facilitator Mr. Abhay Rao, a consultant from Human Resource Development.



The Patient Care Team at work in the Children's Eye Care Centre, 2016.



An optometrist performs a diagnostic eye test on a patient.



An ophthalmic nursing assistant holding a baby after examination under anesthesia, 9 October 2009.



Surgery in progress in one of the 14 operating rooms of the new modular operation theatre complex in the Velamati Soubhagyavathamma Patient Care Building, 2021.



Dr. Siddharth Dikshit transfers skills during the Advanced Glaucoma Implant Workshop on 17–18 August 2019.



LVPEI's BostonSight Lens Manufacturing Lab, the first manufacturing facility outside Boston, USA, inaugurated by Professor Deborah Sweeney, pro vice-chancellor (Research & Innovation), Western Sydney University, Australia, and Mr. Gene Guselli, president and CEO, BostonSight, Massachusetts, USA, on 29 September 2017.



The audio-visual is set up for group viewing of live surgery inside the Kothapalli Rama Rao Ophthalmic Surgical Centre; the audience watches a live demonstration during the DSEK workshop, 11-14 December 2017.



Nurses Sujata and Kochumol escort a patient from the non-paying ward during a mock drill, 2017.



The Fire and Safety Department mock drill, 2018.



Tertiary Centre
Mithu Tulsī Chanraī campus, Bhubaneswar, 2016.



The pleasing lobby ambience is enhanced by an exquisite glass sculpture by artist Mr. Sisir Sahana in the Mithu Tulsī Chanraī campus in Bhubaneswar, 2016.



GMR Varalakshmi campus, Visakhapatnam, 2012.



An evergreen treat, the sprawling garden in the GMR Varalakshmi campus, Visakhapatnam, was planned by Dr. Avinash Pathengay, 2015.



Kode Venkatadri Chowdary (KVC) campus, Vijayawada, 2013.



Visitors to Microsoft-supported Mobility and Sensory Stimulation Park read the instructions in Braille code at the KVC campus, Vijayawada, Andhra Pradesh, 2013.



Various views of the Microsoft-supported Mobility and Sensory Stimulation Park set up for persons with vision impairment.



Equitable high-quality care for patients is demonstrated here at a secondary centre of LVPEI.



A fellow doctor performs an eye operation in the Seshanna Chennawar Eye Centre, Adilabad, Telangana, 2013. Dr Somasheila Murthy performs the First Corneal Transplant Surgery, Bhosle Gopal Rao Eye Centre, Mudhole 13 June 2016.



The most advanced corneal transplant surgery is performed for the first time at a secondary centre. Dr. C. Jagadesh Reddy and team are seen here with the patient at Swarna Bharat Eye Centre in Nellore, Andhra Pradesh, February 2017.



Vision Centres

Ranasthalam Vision Centre, Sompeta —A patient gets her vision examined.



A Vision Technician sells eyeglasses in Bhainsa Vision Centre.



Reaching the unreached at the base of the LVPEI Pyramid of Eye Health: Eye screening at rural locations—vision centres, school and a community location.



Vision screening is provided at their doorstep for those who cannot visit the local vision centre.



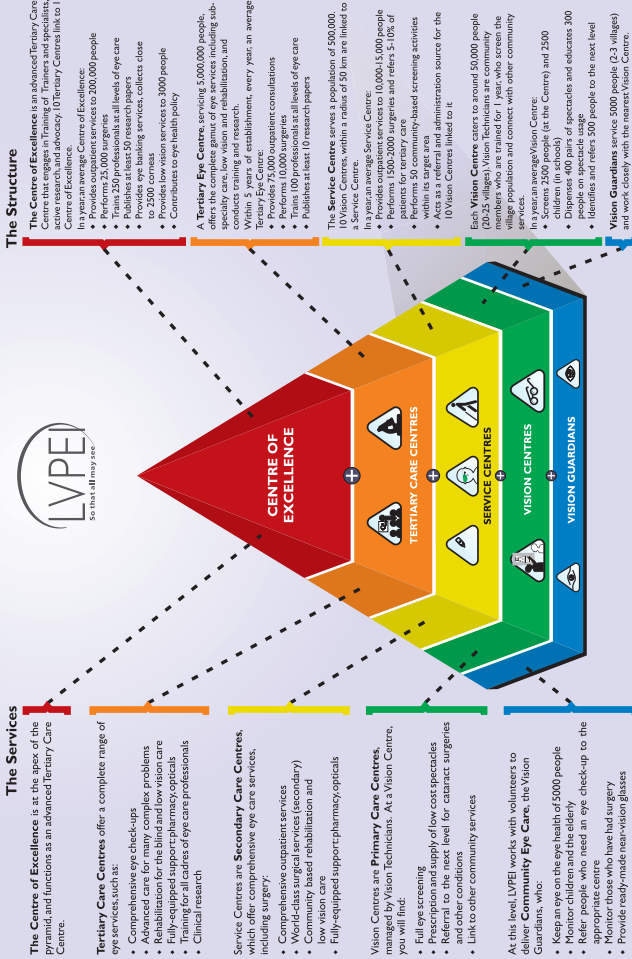
Economic rehabilitation to overcome the limitations of blindness: a goat was presented to this lady and she quickly re-invested in more goats to earn a living.



Care, engagement and transformation: The LVPEI Values Pentagon.

An Eye Health System that reaches all those in need...

Every level of the Eye Health Pyramid has fully-trained personnel and world-class equipment. All services are offered free of cost to those who cannot pay.



The LVPEI Pyramid of Eye Health—A schematic representation.

PART – 3

Heroes Everywhere

This section is about heroes and heroines at LVPEI. It is said that heroes are made, not born. The stories in this section recount how ordinary people of flesh and blood perform extraordinary deeds and achieve great heights at LVPEI. There are hundreds of heroes at LVPEI; capturing all their journeys and perspectives will run into several hundred pages. Hence, only a few of them have been presented in this book, more as an illustration of the caliber of the typical faculty members at LVPEI. It is by no means exhaustive.

But who is a hero? Eminent American author Professor Joseph Campbell describes a hero as someone who has given his or her life to something bigger than themselves. At LVPEI, a great many people have devoted their lives to restoring vision, with astonishing results. “A hero is an ordinary individual who finds strength to persevere and endure in spite of overwhelming obstacles.” This was said by actor Christopher Reeve, best known for the role of Superman. LVPEI’s heroes and heroines encountered many obstacles but found ways to overcome these.

3.1. Inculcating Scientific Rigour and Temper Among LVPEIans

The stories of LVPEI’s heroes begin, appropriately, with the champions of research.

Sir John Wilson established Sightsavers in the UK about 70 years ago, proclaiming, “We shall provide eye care for millions of people, one at a time.” LVPEI has the same philosophy and goal, says Professor Dorairajan Balasubramanian (Dr. Balu), former director of the LVPEI Research Centre.

No matter who you are, where you are, and how poor or rich you are, an eye is an eye and at LVPEI, you will be treated for eye problems regardless of your ability to pay. This has been the primary goal of LVPEI, and it is possible to achieve it, asserts Dr. Balu.

Even at the pinnacle of his success in the USA, Dr. Rao felt an overpowering desire to do something about treating eye diseases irrespective of economic abilities, especially in rural areas, Dr. Balu says. There are over 30,000 ophthalmologists in India; hence, addressing this problem should be feasible. However, the challenge is that the care should be accessible, affordable and available—and most importantly, equitable. Sadly, there is also a need for cultural change in the rural hinterlands, as it is the man of the household who gets medical care first, and the woman is often neglected.

Aravind Eye Hospitals was one of the first in the world to come up with the revolutionary idea that eyesight will be restored even to the abysmally poor, especially those suffering from avoidable blindness, such as cataract. They, along with LVPEI, popularised inserting an intraocular lens (IOL) into the eye that has been affected by cataract.

The concept of the “bottom of the pyramid” promoted by the noted management thinker C.K. Prahalad was that there is a fortune that can be made at the lower layers of the socio-economic pyramid, if only companies would tap into this potential. However, for LVPEI, it is about providing services to this section of the society, not about necessarily generating a profit. Dr. Govindappa Venkataswamy, the founder of Aravind Eye Hospitals, showed that this was possible. That institute alone had treated some 25 million patients, more than half of them free-of-charge. An important innovation of Aravind was to set up its own manufacturing facilities to manufacture IOLs—the Aurolab lens is priced at only Rs. 100 against a typical price of over US \$100 (about Rs. 7,000) for imported lenses. Starting with one hospital in Madurai, the Aravind Eye Care System has now expanded to over 10 hospitals in the southern part of India, mostly in Tamil Nadu.

Dr. Rao’s brilliance manifested in a different form. According to the first LVPEI-led epidemiological study Andhra Pradesh Eye Disease Study or APEDS conducted from 1996 to 2000, 70% of the visually impaired live in rural areas. The study also provided many important insights about the nature of eye diseases in the geographies where it was carried out.

Dr. Rao based his strategy on the premise that a doctor is not needed to provide basic eye care. The eye care provider at a primary centre does not have to be an ophthalmologist, nor does he need to have a medical degree to conduct a basic eye examination, prescribe

the power for corrective eyeglasses or provide suitable eyeglasses. Instead, this work can be done by trained vision technicians in the LVPEI primary eye care centres (vision centres), which are largely located in remote rural areas. One such centre is in Leh, Ladakh, in the Himalayan region; another on Majuli, a small island in the Brahmaputra river region in Assam, in the northeastern part of India. The vision technicians who run these centres are local high school passouts who have been trained at LVPEI.

It may be surprising to know that most of the major causes of visual impairment across the world—near vision loss and refractive errors—can be corrected with a pair of glasses, which do not require the intervention of eye doctors. If a significant percentage of visual impairment can be eliminated with a pair of glasses, the problem of scarce visual eye care can be solved to some extent, says Dr. Balu. With this simple yet profound innovation, eye care becomes suddenly accessible. “If we have a vision centre in a village, we have a mini LVPEI there!” he notes.

For poor patients in rural areas, the cost of savings is significant, both in terms of treatment and livelihood. For LVPEI, the value of running the rural eye care centre is not only in providing eye care that is affordable and available, free of cost for the under-privileged. There is value in access to big data, which can help in planning eye care services. Running the vision centre also provides data for research in case of infection: to study the various kinds of infectious agents and their adverse impact on vision, and to find possible solutions.

In the field of eye care, Aravind Eye Care System (AECS) (Madurai), Sankara Nethralaya (Chennai) and LVPEI (Hyderabad) have created different eye care and service delivery models, each with their own distinctive approach.

The LVPEI model has been working and evolving for the past 33 years, treating diseases relating to the cornea, retina and glaucoma on a large scale. Biology and technology are required to find solutions and better treatment techniques for some of the more difficult blinding conditions, which is where scientists like Dr. Balu contribute enormously.

Dr. Balu taught chemistry at the Indian Institute of Technology (IIT), Kanpur. His area of interest is proteins. He joined the Centre for Cellular and Molecular Biology (CCMB) in 1982. When Dr. Rao started LVPEI, Dr. Balu jointly worked with LVPEI on lens proteins. LVPEI and CCMB (of which Dr. Balu was director from 1992 to 1998) did collaborative research in this area.

Dr. Balu found that working with LVPEI was very different from his prior research assignments. Before joining LVPEI, he had worked for many years in the field of lens proteins. However, this research was limited because it was far removed from the reality of the patient who was vision impaired. There was no chance of seeing a single cataract patient in the basic research labs that he was previously associated with. That changed after he started working with LVPEI.

After his retirement from CCMB, Dr. Balu was invited to formally join LVPEI to give a boost to its research activities. Setting up a research centre at LVPEI was a great opportunity for him. The research centre (governed by a registered society, the Hyderabad Eye Research Foundation or HERF) was named after Professor Brien Holden, a strong supporter and advocate of LVPEI. Dr. Balu was its first director. The centre now has all the major components needed for eye research, including genetics, microbiology, vision science, technology, cell biology, stem cell biology and innovation in these domains.

LVPEI is at the forefront of stem cell transplantation for corneal diseases. There are several ongoing research projects at the institute. One group of researchers in the vision science subspeciality looks at synchrony between the two eyes—addressing the important question of how both eyes work in tandem. The neurophysiology of the eye is also studied here. For instance, a child born with bilateral cataract must cope with the world using the remaining four senses. Experiments are conducted to check how the child copes, by investigating specific areas of the neuro circuit. Another study looks at the process and duration of the normalisation of vision that occurs following surgery.

One reason why LVPEI has been very successful in its research output is the 7 a.m. classes that bring scientists, physicians and technicians together several times in a week, Dr. Balu believes. Taking his own case, he feels that he no longer does pure chemistry *per se*, but he works on the chemistry of the eye. Research at LVPEI has successfully focused on taking treatment solutions “from bench to bedside,” that is, the results of the laboratory work are translated to treating eye conditions. His work now is very application-focused.

Talking about the advantages of working with clinicians, Dr. Balu says that there are questions clinicians ask that basic scientists do not ask. Dr. Virender S. Sangwan, a cornea specialist, wanted to know if there was a source of stem cells in the region around the cornea to treat corneal burns. It required scientists to investigate this question in the laboratory environment. After the possible solutions were identified in the laboratory, the clinician placed the reconstructed cornea in the patient’s eye to restore vision.

The LVPEI Research Centre was the first to ask the question whether stem cell transplant could be done *in situ* and *in vivo* as

opposed to cultured cells from the lab, and if the eye could act as a “stem cell lab.” Dr. Sangwan and Dr. Sayan Basu have been extensively involved along with LVPEI’s basic research team in stem cell research. Based on the resulting synergy, until now, over 1,500 sight-restoring surgeries have been performed at LVPEI. This is in the realm of cutting-edge research from a global perspective.

Dr. Balu feels that, going forward, the institute should have a full-fledged neurobiology laboratory. According to him, vision neuroscience is the next frontier for research at LVPEI. He said that he re-discovered himself after joining LVPEI and dedicated himself to do vision research. Although he is now retired and designated as “Distinguished Scientist and Director Emeritus,” he is still active in research work. According to him, “Everyone at LVPEI works for a wonderful cause.” He listed with pride several of his students who have achieved recognition in their fields. These include Dr. Ashutosh Sharma, secretary of Department of Science and Technology (DST), Professor K. Vijayaraghavan, secretary of Department of Biotechnology (DBT) and Dr. Soumya Swaminathan, currently chief scientist at the World Health Organization (WHO).

Dr. Balu also has a love for writing and contributes regularly to “Speaking of Science,” a bi-weekly column in *The Hindu*.

3.2. The Vision Rehabilitation Evangelist

The Institute for Vision Rehabilitation at LVPEI is led by Dr. Beula Christy. Dr. Christy also works with children who have multiple physical disabilities.

There are many stories at this centre that highlight LVPEI's spectacular innovations in the realm of much-needed rehabilitation. Dr. Christy joined LVPEI in 1992 after completing her master's in rehabilitation science. Her father was the hospital administrator at Joseph Eye Hospital in Tiruchirapalli, Tamil Nadu, where vocational training was offered to the blind. On Sundays, Dr. Christy used to visit the Home for the Blind for voluntary service.

At that time, a new course on rehabilitation science was introduced in Holy Cross College. Dr. Christy wanted to pursue a career in either law or journalism, but urged by her father and by the director of Joseph Eye Hospital, she took up the course on rehabilitation science. Just as she was completing the course, Dr. Rao approached the head of the department in the college for possible recruits to work at LVPEI. Three students in her class were shortlisted, including herself.

Coming from a traditional background with little exposure to the outside world, her family expressed fears and doubts about sending her to a place totally unfamiliar to them. Mr. P.G. Michael, who was the regional representative of Christoffel Blindenmission for South Asia, assured her father and explained why Dr. Christy should be

sent to LVPEI. Dr. Christy says that she did not take the course on rehabilitation science out of love for the subject. Even now, despite her passionate involvement in this field, she still sometimes wonders about how life might have been, had she studied law. Today, she has a doctorate in vision rehabilitation services.

Rehabilitation services at LVPEI started in a single room. Initially, counselling sessions were held for totally blind people to help them cope with their physical condition and assist them in finding ways to adjust to a life without eyesight. Later, local services in Hyderabad started referring patients to LVPEI. The patients who came from these local centres commented on the sub-optimal services in those places. The rehabilitation team realised the need to train the local resources and presented a proposal to Dr. Rao. They managed to convince him, resulting in the introduction of several additional services.

Most of the staff at the Institute for Vision Rehabilitation is from South India. Retention was a challenge, so locals with high school and pre-university qualifications were recruited and then trained in this speciality. One such example is Mahalakshmi Mojjada from Srikakulam, who had only basic schooling when she joined LVPEI, but has since completed her post-graduate degree and Bachelor of Education (B.Ed.) and has several publications to her credit. There are several others like Mrs. Mahalakshmi.

The Institute for Vision Rehabilitation evolved gradually; several new services were introduced that emanated from client requirements. Around 1,50,000 clients have been rehabilitated till now. Rehabilitation services are available in all 184 primary centres and the 20 secondary centres of the LVPEI network, in addition to the three tertiary centres and the Centre of Excellence at Hyderabad.

In primary centres, a trained field worker goes house-to-house to provide services. Mobility training and other daily living skills are imparted. The door-to-door approach is more effective than asking patients to come to an LVPEI facility, as women and elderly people do not go out of their homes in the rural hinterland. Some of the unique services created at LVPEI include the Microsoft-sponsored Mobility and Sensory Stimulation Park at the Vijayawada campus and a HelpLine for the visually impaired to provide confidential support and information on issues related to blindness and low vision.

There are three categories of patients who need these rehabilitative services—those who are totally blind, those with low vision and those with vision impairment-associated disabilities. Like all other patient services at LVPEI, both paying and non-paying patients are offered rehabilitation. However, 90% of rehabilitative services are free-of-charge even for those in the paying category, as most of these cases are ongoing treatments and, in line with its core values, LVPEI would not like to burden the patients and their relatives. Devices costing anywhere between Rs. 8,000 and Rs. 10,000 are often given to the clients free of cost; even field workers can recommend giving away these devices to needy clients for free.

Every staff member in the rehabilitation team visits a secondary centre and its corresponding vision centres at least once a month. In this manner, the team covers all the secondary and primary centres each month. Once a quarter, Dr. Christy visits the three tertiary centres, any two secondary centres and some vision centres in the vicinity of these secondary centres. She also connects with the three tertiary centres through video-conferencing every month. An exclusive review of work at the secondary centres is conducted every quarter to share progress and resolve any issues. In line with the LVPEI Pyramid of Eye Health model, the Centre of Excellence

for rehabilitation services located at the Kallam Anji Reddy (KAR) campus oversees these services across the network and reports to the senior management. After the implementation of EMR (Electronic Medical Records) two years ago, relevant data is now available online.

While Braille services are offered, it is expensive, costing Rs. 8 per page. Moreover, each normal printed page translates into four pages in Braille. Students cannot carry these bulky books to school. To overcome this hurdle, DAISY software (Digital Accessible Information System) is used to audio record the content of books used by students. About 350 volunteers lend their voice and time to prepare these audio books. An audio recording facility with three recording studios has been set up with donor support.

The Institute for Vision Rehabilitation in Hyderabad has a team of 25 members. In addition to their work at the KAR campus, they also manage rehabilitation work at the secondary and primary centres. Outreach programmes are also conducted. One of the most successful outreach activities is in partnership with the Lions Club. Dr. Christy says with pride that their activities have a far-reaching impact. Over 40 of their visually impaired clients have successfully settled down in jobs generally done by people with normal vision.

Dr. Christy explained how her team handles the challenges of convincing clients to accept their situation and motivating them. The clients who come to the centre on their own are willing to learn and be guided. But in the rural areas, it is not easy to generate awareness and motivate people with visual impairment. The rehabilitation team first educates them on the facilities and privileges available in the form of government schemes like scholarships, disability pension and travel pass. They then assist them to obtain those benefits by first certifying them as being vision impaired. This certification

process is time-consuming and cumbersome, and without assistance, many deserving clients give up. By helping them get the requisite certificate, the rehabilitation centre helps such clients to access various government schemes for assistance.

Through its volunteer pool, the centre mobilises clothes, food items and other necessities for needy visually impaired clients. Volunteers offer their time to provide reader service and scribe service and help with fund-raising. The centre does not disburse any funds directly to students and other clients. Donors are encouraged to pay directly for the services and material provided by third parties.

Dr. Christy cited the example of an old man whose eyes were gouged out in the course of a family feud. When he came to the centre for assistance and training in mobility, they noticed him twirl his fingers continually. He was provided with raw material for making mouth guards for cattle, which are made of coir and used to prevent cattle from straying and grazing in other people's agricultural fields. Today, he is extremely productive and not only earns a livelihood, but also fetches a surplus for his family!

One of the major strengths of the rehabilitation centre is its volunteer base. Apart from their time and talent, they also donate money. The volunteers in turn bring in more volunteers by motivating their family and friends to give of themselves. On Saturdays, employees from various companies volunteer their time. The volunteer base includes retired employees, students and housewives. At the KAR campus, there are 25 volunteers who work regularly, and tertiary centres also have good volunteer support.

Each year, the Institute for Vision Rehabilitation conducts a special camp during the summer break to teach social skills to children with vision impairment. These children also participate in a one-day social event, with games and entertainment programmes

open to the public. The families and volunteers are actively involved in organising and conducting these events.

The centre also conducts monthly awareness and training programmes for parents of children with visual impairment on topics like fire and safety and sexual abuse. Laughter therapy is conducted for the mental well-being of the clients. Hitherto, there were no medical insurance schemes for disabled persons; however, because of championing by LVPEI, the New India Assurance Company Limited has introduced a special scheme for this category of people.

3.3. Reaching the Most Under-Privileged: Outreach

The Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye care (GPR ICARE) is named after Mrs. Pratibha Rao in acknowledgement of her initial financial contribution to the creation of LVPEI, and her support in creating and setting up systems in the institute during the early growth phase. The public health, community and rural eye care activities at this centre are the culmination of the final goal of LVPEI to make care available to those “who need it the most.”

Two of the key team members of GPR ICARE are Rajashekar Varda, executive director of GPR ICARE, and Satya Joji Prasad Vemuri, assistant director in charge of the administration of secondary centres.

Mr. Rajashekar was in the College of Social Work when he first heard that LVPEI was venturing into rural areas. He joined the newly launched one-year training programme with the offer of a job in a rural hospital after the training. Out of the three students who joined the programme, including Mr. Rajashekar, two left during the training.

In 1996, Mr. Rajashekar was posted in Mudhole, the first rural secondary eye care centre of LVPEI. By 1998, the community and rural eye health activities at LVPEI evolved into the International Center for Advancement of Rural Eye care (ICARE), with plans to expand its rural footprint in a big way. The five main activities of

the outreach initiative included research (epidemiological study), expansion of the network, consultancy for other NGOs, training in community eye care, and advocacy. Mr. Rajashekar was chosen to be the administrative head to drive these initiatives. Initially, the ICARE was located in KAR campus, but later, it was moved to the campus in Kismatpur—the Gullapalli Pratibha Rao (GPR) campus.

GPR ICARE has been providing capacity-building services to several eye care centres in India and other countries. The team works intensively with partner hospitals in design, construction, workforce planning, training, systems set up and performance monitoring. All cadres of staff are trained at LVPEI. Since its inception, capacity-building services were provided to 10 hospitals in Andhra Pradesh and 20 hospitals in other parts of India. This is an on-going activity, with an increasing number of hospitals benefiting through this initiative. The partner hospitals are encouraged to follow relevant successful practices of the LVPEI model. In advocacy, LVPEI actively participates in national level policy formulation and planning, in the backdrop of the VISION 2020 India programme.

Mr. Joji Prasad came to LVPEI on 15 September 1995, through a friend who was working here. Fresh from college, he joined as a trainee at the same time as Mr. Rajashekar. After training, he was recruited by Smt Rajeswari Ramakrishnan Lions Eye Hospital, Nidadavole as the first administrator of a partner eye care centre of LVPEI until December 1998. Subsequently, he joined LVPEI and his experience here has been diverse. He was, in turn, head of the purchase department, administrator in the operating rooms to improve the systems, and patient care administrator. When the tertiary centre in Visakhapatnam was opened, he was posted there as its first administrator. He returned to KAR campus in 2009 as administrator of patient care services, and later head of operations. Currently, he is the assistant director in charge of 20 secondary centres that are part of GPR ICARE.

For Mr. Rajashekar and Mr. Joji Prasad, LVPEI is like their own home: “We are so attached to this place that we have never thought of moving out,” they say. The recognition they get in society for their work is fantastic. The LVPEI network is extensive. They are often approached by third parties to provide consultancy services to start new projects.

Mr. Rajashekar and Mr. Joji Prasad both believe that the work environment at LVPEI empowers them, and if something goes wrong, solutions are found through discussions. Failures are not punished here, unlike the way other organisations handle failure.

3.4. Giving Wings to the Next Generation: Paediatric Ophthalmology

Dr. Muralidhar Ramappa is a consultant for LVPEI's paediatric cornea and anterior segment services. He specialises in cataract, cornea, anterior segment, laser refractive surgery (LASIK) and paediatric ophthalmology. He also specialises in visual impairment among children and has pioneered innovative surgical strategies. Dr. Ramappa has published over 60 research articles and contributed to over a dozen books.

Dr. Ramappa hails from a business family in the Kolar district of Karnataka. During his residency, he visited LVPEI for a conference and subsequently did a 15-month cornea fellowship before joining the medical faculty. During fellowship, he earned the reputation of being adaptive, accommodative and hardworking and received the excellent outgoing fellow award. His wife, Dr. Sunita Chaurasia, is also on the cornea faculty at LVPEI and heads the eye banking services.

Dr. Ramappa got his basic training in ophthalmology during residency, and he learnt the intricacies of ophthalmology at LVPEI from Dr. Virender S. Sangwan, Dr. Prashant Garg and Dr. Pravin Krishna Vaddavalli. According to Dr. Ramappa, the beauty of the system at LVPEI is that one can choose a field one wishes to focus on and can find an international mentor to improve one's skills in the chosen speciality. After five years as a faculty member, he chose

to learn paediatric cornea and corneal transplantation in young children and spent 1½ years at the Medical University of South Carolina in Charleston, United States. He gained excellent exposure to the professional culture and clinical facilities in the United States.

Ask Dr. Ramappa what keeps him going at LVPEI and without hesitation, he says that it is the freedom one gets as a clinician, teacher, researcher and an innovator. He asserts that he would not get this freedom anywhere else in India. There is no visible hierarchy at LVPEI for a faculty member. “In today’s materialistic world, medical care has become very expensive,” he says. LVPEI is a refreshing exception to money-making, which sadly has become a norm in most hospitals in the country. Coming from a family that had a broad outlook and was ever ready to help the under-privileged, this culture suits him. As an innovator at LVPEI, he derives a good deal of satisfaction. All clinicians at LVPEI are encouraged to be academicians, which he finds to be a great advantage.

After training in the USA, Dr. Ramappa was offered a research position there, but he says, “My soul and heart are with LVPEI.” Even spending those 1½ years away from his patients was difficult for him. It is not money nor research that drives him. At the end of the day, clinical work and providing sight to the poor and needy gives him immense satisfaction.

The work is very demanding at LVPEI. Consequently, his wife Dr. Chaurasia and he have not been very sociable, and have little time for family and friends. However, he says, they get a lot of satisfaction and forget everything when they see the smile on a patient’s face.

As a senior faculty member, Dr. Ramappa typically takes four weeks off every year. He remarks that the issue of work-life balance is universal among knowledge workers across the world, and it is for each person to address this issue in one’s own way. From that

perspective, there is nothing unusual about the work pressure at LVPEI. He claims that in his own sphere, he is very happy and satisfied with all aspects of his life. He thinks that LVPEI is clearly one of the best institutes in the world, with India producing top research publications in the field of ophthalmology, along with Japan, Korea and China.

3.5. The Philosopher Ophthalmologist

Dr. Virender Singh Sangwan was, until recently, the director of the Center for Innovation, Centre for Regenerative Ophthalmology and Clinical Research, and a consultant for cornea and anterior segment, ocular immunology and uveitis services. He had been with LVPEI since 1998, and recently moved on to pursue his various other passions. His work motto is work, vision, bigger cause.

Dr. Sangwan hails from a very small town called Bhiwani on the border of Haryana and Rajasthan. He grew up in a rural environment in a farming community. He wanted to be a doctor, and his parents encouraged him. He completed ophthalmology training in the Medical College, Rohtak.

During his post-graduation at Rohtak, he heard about LVPEI fellowships from one of his seniors. He applied and began his one-year fellowship in LVPEI on 1 April 1992. Dr. Rao and Dr. Satish Gupta interviewed him. Dr. Rao asked him if he could do keratoplasty. Dr. Sangwan responded, “If I knew that, I would not have come to you!” He confessed honestly to an amused Dr. Rao that he had never seen a surgery being performed before, and yet he could flawlessly recount the steps that he had memorised from a textbook. He was selected, and later Dr. Rao told him that he was selected because he was brutally honest.

His early school experiences and his experiences in the medical school at Rohtak had disillusioned him. At LVPEI, Dr. Sangwan

observed that hard work, sincerity and a culture of meritocracy were valued, and he started regaining his belief in these ideals. Starting work early in the morning was not a problem for him, and he enjoyed his fellowship, imbibing a good deal of knowledge along the way. In the early days, there were only 10 examination rooms. Only cornea fellowship was offered in two batches in a year, and one candidate was chosen per batch. Dr. Sangwan's experiences at LVPEI convinced him that there are places where people follow noble values for the good of society.

When he was in the last three months of fellowship, Dr. Rao announced that Orbis International, an international non-profit dedicated to eye care services and training, was looking for young, well-trained doctors to work in its flying eye hospital. The prospect of exposure to different parts of the world excited Dr. Sangwan, and he joined Orbis in May 1993 for 2 ½ years. He had a fantastic experience, going around the world and doing surgeries on board a DC-8 aircraft, and later on, on a DC-10 aircraft. Dr. Sangwan took over as the medical director of the flying hospital, and continued in that role for 1 ½ years before moving on in December 1995.

While with Orbis, Dr. Sangwan developed interest in research and in the complex eye problems of immunology and uveitis, a kind of eye inflammation. He came across these complex problems while at LVPEI; however, there was no proper treatment at that time. He started exploring opportunities in 1996, and backed by LVPEI, he joined Professor Stephen Foster, considered the world's best specialist in the field, at Harvard Medical School.

On his return, Dr. Sangwan had job offers from Sankara Nethralaya, Aravind Eye Hospitals and also facilities in Australia, but he chose to stay with LVPEI as he liked its value system, particularly the inclusiveness it provided to all patients, irrespective of their paying capacity. He also appreciated LVPEI's genuine interest in training people.

Soon, he was given the responsibility of treating uveitis patients and setting up the IT systems, although he was not formally trained in Information Technology. Later, he also volunteered to do administrative work at the institute.

While research was always on LVPEI's agenda, it was after the year 2000 that research at LVPEI really took off and progressed rapidly. Dr. Sangwan developed interest in stem cells after joining LVPEI in 1998, when he came across several cases of serious eye damage caused by chemical burns, with no cure available. He learnt about the possibility of growing stem cells to treat such patients. While he knew about limbal stem cells, he had no exposure to the field of stem cells.

His proposal to grow stem cells to treat severe eye damage did not receive support initially. Dr. Geeta Kashyap Vemuganti, a pathologist at LVPEI, came forward to work with him after she was exposed to stem cell work in the United States. A small layer of corneal epithelium from the healthy eye of the patient was taken to grow the stem cells and treat the damaged eye. The people who had grown these cells used better technology and could grow a stack of cells with multiple layers. At LVPEI, they worked with some basic equipment and could grow only one layer of stem cells. Dr. Balu and Dr. Vemuganti had reservations about using a single layer of stem cells on the affected patient's eye as it had not been previously done. However, Dr. Sangwan decided to take the risk and started doing surgeries using this route; to his surprise, the results were positive.

Using this technique, Dr. Sangwan operated on 20 patients with a grant from the Department of Biotechnology, Government of India. The project was very successful and received a good amount of media attention. However, there were no funds to continue the work.

When he approached Dr. Rao, along with Dr. Vemuganti and Dr. Balu, and presented the progress made on the stem cell work

and the importance of continuing it, Dr. Rao agreed to allocate the institute's funds until they found other sources. Two years later, in 2004, Dr. Rao encouraged them to start a full-fledged stem cell lab, and within a few months, obtained funding from Silicon Valley entrepreneur and investor, Sreekanth Ravi. After this initial investment, funding has never been a problem for ocular stem cell research.

These initiatives have culminated today in the establishment of a world-class stem cell research laboratory, complete with clean room facilities (with Class 100 level of cleanliness) at LVPEI. It is certified under Current Good Manufacturing Practices (CGMP) enforced by the US Food and Drug Administration (USFDA). Such facilities are rare even in the best institutes and hospitals in the world.

Initially, the stem cell procedure required two sittings for the patient. The first sitting was to take the cells from the healthy eye, and two weeks later, to graft the stem cells onto the damaged eye. This long process could not be replicated and scaled to benefit large numbers of people. In 2009, a researcher based at the University of Sheffield, England, Professor Sheila MacNeil, proposed joint research to develop a synthetic membrane to replace the amniotic membrane that was currently used to grow the stem cells. This membrane is derived from the human placenta after a mother delivers a baby. She suggested that using a synthetic membrane would be safer, cheaper and easier to implement at scale, and would simplify the technique. Professor MacNeil also suggested that, in future, these surgeries could be done *in situ* by growing the cells directly on the surface of the damaged eye using the synthetic membrane, instead of growing them in the laboratory.

Dr. Sangwan, however, decided to try this out immediately. Building on the idea of using the synthetic membrane suggested by

Professor MacNeil, which was still in the realm of distant possibility, he decided to do the surgery using amniotic membrane. Using the new technique, the membrane was inserted in the damaged eye. The logic was that, over time, it would disintegrate and only the epithelial cells that had grown in a few days would stay in the eye. The post-operative check-up would be done after one week to ten days, checking for any infections and post-operative complications. The technique was appropriately named Simple Limbal Epithelial Transplantation (SLET).

SLET using the *in situ* procedure can be carried out in any hospital anywhere in the world. It is simple and cost-effective, and also convenient to patients because it reduces the number of trips to the hospital. It does not need expensive infrastructure such as a highly sterile room, because everything needed for growing the cells is provided by nature in the human eye. It is now widely practised in India and in many other countries, including developed regions like the USA, Europe, Australia and Japan. Dr. Sangwan and his team freely taught this procedure to interested ophthalmologists across the world, and he remotely mentored many surgeons across the world.

Simultaneously, the research team also developed a synthetic membrane, which proved to be as good as the amniotic membrane for growing the stem cells. However, Dr. Sangwan's personal experience is that amniotic membrane is far better for sight-restoring eye surgeries.

Using either laboratory cultivation or the *in situ* technique, Dr. Sangwan treated more than 2,000 patients with this technology, including patients from Germany and Australia. This is the largest number of adult patients who have been treated for sight restoration, using any kind of stem cell treatment procedure anywhere in the world. Dr. Sangwan has extensively published the results of his work.

Dr. Sangwan calls himself a social entrepreneur and an experimenter. He believes that he has the potential to do more and better things, and that the time has come to reinvent himself once again. He believes that his interventions may help cure not only eye diseases, but other diseases as well. For him, the key is to continue to explore and continue to challenge himself, stepping out of the comfort zone from time to time.

Sharing his views on the future of LVPEI, he believes that there is scope for setting up multiple LVPEI-like organisations in every state capital and in bigger states like Uttar Pradesh, Bihar and Rajasthan, where eye care for the masses is still in its infancy. In terms of his research at LVPEI, Dr. Sangwan is involved in stem cell and contact lens-related research. He is constantly looking at innovations happening across the world and adapts them to the Indian context, especially those that are likely to be useful to LVPEI in furthering its mission. For instance, for many years now, he has been using a special type of lens from an innovative organisation in Boston, and that scleral lens is now being manufactured for the first time outside the USA—at LVPEI.

Reflecting on innovations, Dr. Sangwan says that the idea of an innovation centre at LVPEI started after he met an MIT professor, Professor Ramesh Raskar, who had worked on building a camera that could see like the human eye. About his stem cell work and SLET procedure, he states that the benefits of his invention will not be fully realised unless it is made available to the masses and not just to a few patients at premium eye institutes.

Dr. Sangwan likes to be easily accessible to his patients and encourages them to contact him freely, assuring them of a response within 24 hours. According to him, this is what is meant by “inclusive care.”

Stem Cell Laboratory and Non-profit Treatment

The stem cell laboratory has a team of 13 that includes scientists, Ph.D. students and project fellows. LVPEI now has an excellent track record of doing stem cell surgeries. SLET is the gold standard for providing a cure for the damaged cornea, and LVPEI is now the clinical leader in the world in this domain. At LVPEI, royalty is not charged for sharing technology and teaching other institutes about these advanced techniques. “We teach others for social good,” Dr. Sangwan says. Until recently, it was inconceivable for ophthalmologists, especially for those based in the USA, that this kind of technology can emanate from India. However, as this technology is unique, innovative and easily adaptable, American ophthalmologists are adopting this technology, publishing widely about their clinical experiences and popularising it.

Dr. Sangwan says that SLET was never considered as an opportunity to make money. Also, when they developed the process of growing cells *in situ*, it did not occur to LVPEI or the team that developed this technique to patent it. Instead of focusing on patents, they were very much clinically focused and published their research extensively to disseminate the technology to the world. This approach fits in very well with LVPEI’s core values and philosophy in disseminating its learnings for the benefit of the world. Moreover, after extensively dispensing the know-how through research publications, it becomes difficult to patent a technology.

3.6. Harvesting Precious Corneas: The World's Largest Eye Bank

Dr. Sunita Chaurasia is a consultant in cornea and anterior segment, refractive and paediatric cornea services, and the medical director of the Ramayamma International Eye Bank (RIEB) at LVPEI. Before coming to LVPEI, Dr. Chaurasia had never witnessed or performed a corneal transplant, nor had she any experience with working at an eye bank. In those early days, despite her advanced degrees in ophthalmology, she believed that patients who had corneal disease would lose their sight.

It was only after joining LVPEI as a fellow that she came to know that corneal diseases can be cured. Dr. Chaurasia says that the core values keep her motivated to work at LVPEI. She feels that she is in a privileged position to do research so that she can better understand eye diseases, which in turn helps her better treat patients. Through her research, she also gets an opportunity to understand the disease pathology. The corneas that are harvested and stored in the eye bank at LVPEI are not all used for transplants; some are used for research which helps in understanding the pathology of the cornea.

Dr. Chaurasia has been the medical director of RIEB since 2014. When RIEB was established in 1989, it had a slow start with only 20 corneas in the eye bank. In 2016, 3,500 corneas were transplanted using the corneas from RIEB. RIEB maintains stringent quality standards. Prior to Dr. Chaurasia's tenure, Dr. Usha Gopinathan had

done extensive work for RIEB. Initially, the struggle was to spread awareness regarding eye donation. There has been a good deal of technical innovation in eye banking, such as the specular microscope and hospital cornea retrieval programme (HCRP). HCRP was first introduced by LVPEI in three hospitals in Hyderabad—the Nizam's Institute of Medical Sciences (NIMS), Osmania Hospital and CARE Hospital in the 1990s.

Grief counsellors were trained and posted at these three hospitals during duty hours. They would motivate donor families (that included the relatives of the deceased patient) and explain to them the ways in which the donation of the cornea of the dead person would benefit the recipient. The eye bank team is also available on call to families expressing a wish to donate the eyes of their loved one at the time of death.

Not every cornea that is harvested is suitable for transplantation, necessitating grief counsellors to go through the medical history of the donor. Doing this has improved the harvesting efficiencies and the transplantation utilisation rates. Earlier, an entire eyeball was collected from the deceased person; however, with the advancement of technology, now only the corneal tissue is retrieved. This has made cornea donation more acceptable for donor families. In the past, the corneas had to be used immediately after harvest because preservation media was not available. Subsequently, technology evolution enabled preservation of the cornea, by storing it in a preservation medium.

To reduce the cost of this preservation medium, LVPEI began manufacturing cornea preservation medium and set up a laboratory for this purpose, with the support of Frederick N. Griffith and the International Federation of Eye and Tissue Banks in the USA. The McCarey-Kaufman cornea preservation medium (MK medium) is

manufactured at LVPEI and distributed across India and neighbouring countries. RIEB was the only distributor in India initially, but now the Dr. R.P. Centre for Ophthalmic Sciences at the All India Institute of Medical Sciences (AIIMS) too has this facility.

RIEB also processes the amniotic membrane used for complex eye conditions. This helps to improve the corneal surface in cases of chemical injuries and burns, and to heal eye injuries. The amniotic membrane is taken from the human placenta and it is not antigenic (a substance foreign to the body that evokes an immune response), explains Dr. Chaurasia.

From 2012, surgical techniques have shifted from full corneal thickness transplants (using all five layers of the cornea) to selective (partial thickness) transplants, and this is considered a more complex surgery, she explains. Only the affected layer of the cornea is replaced. In selective transplants, no suturing is required, which lowers the chances of secondary medical conditions. The five layers of corneal tissue have varying thickness, and selective transplant has less risk of rejection. Tissue preparation takes most of the surgeon's time during an operation. This task was given to the eye bank, which had a pool of trained technicians. It was done for the first time in India at LVPEI, while in the United States, this technique was adopted a decade earlier. Since then, RIEB has made rapid progress and the scale and the quality standards today at LVPEI are higher than anywhere else in the world.

In 2015, LVPEI completed 20,000 corneal transplants cumulatively—a landmark event. There is no other centre in the world that has achieved this volume. This is because of the support from the eye bank team, Dr. Chaurasia acknowledges. LVPEI works in close association with SightLife, which has the largest eye bank in Seattle, Washington, USA.

Dr. Chaurasia did her fellowship in Cornea and Anterior Segment at LVPEI in 2006-2007, followed by a fellowship in 2013 in advanced corneal procedures at the renowned Price Vision Group in Indianapolis, USA. She has specialised in advanced corneal surgery, cataract, refractive surgery, paediatric corneal surgery, infective keratitis and eye banking. She pursues basic research in corneal endothelium, Fuchs' endothelial dystrophy and other endothelial disorders. In 2014, she received the Achievement Award from the American Academy of Ophthalmology. She publishes articles in peer-reviewed journals, authors books, presents papers at international and national forums, and is a reviewer for several national and international journals.

3.7. Ophthalmologist Turned Computer Wizard

Dr. Anthony Vipin Das is a consultant for the comprehensive ophthalmology service at the Kallam Anji Reddy campus in LVPEI. Dr. Das is an ophthalmologist by training and an innovator by choice. He is the team principal and the chief architect of eyeSmart EMR, a revolutionary and award-winning Electronic Medical Record (EMR) and Hospital Management System (HMS) that has been developed in-house at LVPEI.

Dr. Das first heard about LVPEI from Professor Raja Bharat Kumar during his post-graduation in 2007 at Kakatiya Medical College. Professor Kumar had remarked, “We were proud that someone from our land has created one of the best eye hospitals in the world.” Over the years, Dr. Das and others from his college attended educational programmes at LVPEI. It was a big achievement to have a paper or a poster accepted at these meetings. LVPEI showed these students what was possible and inspired them so that someday they could evolve into people who can make a difference.

After post-graduation, Dr. Das attended Duke University in 2009 on the advice of his mentor to spend at least three months observing and learning from leading experts in the field. Some of the good practices he learnt from the USA include informed decision-making, respect for patients and evidence-based medicine.

Dr. Das began building the Electronic Medical Records (EMR) system in January 2010. He was interested in technology and had

a knack for exploring new things. He convinced Dr. Rao about the importance of using an EMR system for the institute. Dr. Santosh G. Honavar, the then-head of ocular oncology, knew that Dr. Das had a flair for technology and supported him.

LVPEI was on the verge of going digital at that time. Multinational firms that sold this technology asked for a hefty price to enable LVPEI to go digital. Dr. Das was at that time selected for a three-year fellowship at LVPEI. Dr. Rao asked him a pointed question: “Vipin, if you were given an opportunity to pursue both fellowship and EMR, will you do them both?” He saw the zeal in Dr. Das to bring technology to ophthalmology.

Dr. Das was 26 years old at that time and accepted the challenge. It was the time to study and the time to build. He says it was the most memorable, yet most stressful time of his life. He was doing surgeries during the day; during the night, he would work on designing the digital future of LVPEI. This would be LVPEI’s first digital system to be built in-house and perhaps the first for any large hospital anywhere in the world that was built from the ground-up.

LVPEI’s first city centre in Madhapur, Hyderabad, was chosen for launching the EMR on 16 August 2010. Dr. Rao continued to encourage the team to dream about even bigger achievements. In February 2011, the EMR was installed on day one at the new tertiary centre that opened at the Kode Venkatadri Chowdary campus in Vijayawada.

Each time a goal was achieved, Dr. Rao would move the goalpost even farther, thus challenging the high performers. The same week, a secondary centre that opened in Paloncha was also equipped with the digital system. Dr. Das recalls his visit to Paloncha along with Dr. Rao. “Dr. Rao is a master architect. He gets into every detail of

any new initiative to think of ways of making it better. Dr. Rao also has a truly audacious vision that greatly inspires me,” says Dr. Das.

In August 2011, a vision centre in Manuguru village was the first to go digital. Thus, in the span of just one year, a city centre, a tertiary centre, a secondary centre and a primary centre—all went digital with the EMR. People were confused about Dr. Das’ role at LVPEI and asked him if he was sure that he was still an eye doctor! He asserted that his calling was to serve his patients—to be a doctor and an excellent surgeon.

“At LVPEI, there are no limits,” he says. “Dr. Rao constantly challenges you to think of the big picture at a global level. ‘What next?’ he keeps asking.”

In 2012, the EMR received the Government of India National Bank for Agriculture and Rural Development (NABARD) Award for Rural Innovation among a field of 1,500 contestants. Dr. Das was due to complete his fellowship in December 2012. He wanted to continue his work on the EMR. Dr. Rao gave him the liberty to join the faculty while continuing to work on the EMR. Dr. Das joined LVPEI in March 2013 but took a couple of months’ break to complete his fellowship at the Royal College of Surgeons and Physicians (FRCS), Glasgow, in 2013.

Dr. Das’ next challenge was to go for the digitalisation of existing centres in the network. He realised that digitalisation was a fantastic tool to standardise processes and increase efficiency. The three tertiary hospitals and the 20 secondary centres went online. However at that time, in the remote rural vision centres, they could not go beyond five centres due to the limited power and telecom facilities.

There was some resistance to digitalisation in the beginning, he admits. People were apprehensive and worried that it might delay

their work and impact patient care. “I do not look at a problem as a problem, I just focus on the goal. One has to keep on moving, and the doors will open,” he says.

After completing the EMR installation across the LVPEI network, Dr. Das had the difficult task of converting the legacy records into EMR at the main campus in Hyderabad. Dr. Das was waiting for Dr. Rao to kick-start digitalisation at the main campus. In 2015, patient care facilities were moved to a new building, and the EMR was implemented in this new facility. Dr. Das wondered at that time whether all the years of effort would bear fruit. New patients were on-boarded on to the EMR system. The plan was to complete scanning the records of earlier patients and make it available on the EMR in six months. Seeing the benefits of the EMR, the patient care team was only too eager to have the digitalisation completed in one month, and it was done! This was a big achievement given the scale of LVPEI’s operations: Nearly 1,500 patients are seen at the main KAR campus every day, and about 4,500 patients are seen each day across the network, all using the EMR!

Next, Dr. Das took up yet another challenge—to get all the data of the network onto a single link for the top management. He began working on this in 2015 and in 2016, he got all the data on the cloud where the top management could access the whole network through a single link. What was missing in the link were the 150 vision centres. Hitherto, this data was not available on the system. He and his team resolved the problem of connectivity and power using cloud computing. Six teams—Information Systems department (ISD), EMR, ICARE, Purchase, Opticals and Finance—worked together. His team set out to work with the remote rural vision centres. Based on these efforts, the whole base of the LVPEI Pyramid of Eye Health was up and live on the EMR. Efficiency in delivery of care, consistency in implementation

of protocols, and quality have been significantly enhanced after the implementation of the EMR. The EMR team works in an entrepreneurial mode.

Dr. Das wanted this model to be replicated at other hospitals. He has been looking at ways to share and teach other hospitals around the world who want to achieve similar goals. Between 2013 and 2014, Microsoft engaged with LVPEI through their CSR programmes. The leadership of Microsoft interacted closely with Dr. Das' team to develop the next frontiers of technology for healthcare. Dr. Juhee Ahmed of Microsoft indicated that the company wished to formally collaborate with LVPEI. This was great news for Dr. Das. Through this collaboration, his team had access to new software, tools, data analytics and actionable insights. From 2014 to 2015, LVPEI started using Microsoft tools to enhance the digitalisation efforts.

Using the technology of cloud computing, Dr. Das unleashed the true potential of the system. Various reports of the LVPEI network are generated daily, which are analysed to find ways to improve. This has helped to stabilise LVPEI's telemedicine offering. The telemedicine facility avoids arduous travel for patients. In 2015, LVPEI's work was chosen as one of the 11 stories of empowerment that were shared with the world by the CEO of Microsoft.

In 2016, LVPEI began a new initiative with Microsoft to find newer ways of using technology. The motive was to assist physicians to better treat patients. Some of the areas of work include:

- A calculating device for predicting the vision of a child over a two-year horizon
- Computing the correct size of an implant for a perfect fit
- Tracking trends in intraocular pressure for glaucoma

In December 2016, LVPEI and Microsoft launched the Microsoft Intelligent Network for Eyecare (MINE). LVPEI invited partners

for the first cohort. The attempt was to get insights on how to make this tool useful globally. The partners include Brien Holden Vision Institute in Sydney, University of Sao Paulo in Brazil, Flaum Eye Institute at the University of Rochester, N.Y., and the Bascom Palmer Eye Institute at the University of Miami, Florida. MINE also helps understand and learn what is happening in eye care in countries across the world.

With technology, it is now possible to conduct studies and obtain actionable insights from real-time data rather than legacy data. Projects on the anvil include a Personal Digital Assistant (PDA) and voice-assisted software, where people learn through PDAs, using live data sets. These systems will provide tailor-made insights to patients. These initiatives fit with LVPEI's core purpose—"So that all may see." In the past, inferences were based on limited data sets such as the insights gained from 50, 100 or 200 patients. Using these new tools, LVPEI has been able to gather data from over three million data sets over the past six years. The world is waiting to learn from the first billion data points that LVPEI will build through the MINE partnership.

Dr. Das and his core EMR team think that LVPEI is different from other hospitals. The focus at LVPEI is on the patient experience. In most hospitals, data is not openly displayed and shared. However at LVPEI, everyone can see the flow of documents. Data that is collected is used for predictive analytics. At LVPEI, the focus is on continuous learning; even senior management and heads of various departments learn and improve their skills continuously. This motivates everyone to learn.

What is seen at LVPEI is breaking barriers and taking up challenges. The general attitude is "Let us do it, and if we do not know, we will learn," or "We just need time, we will make it happen." The attitude of the EMR team is one of optimism. Everyone on the

team possesses a can-do attitude. They believe that everything is possible with perseverance, if enough time is given.

“What I see here is discipline. I have started seeing more patients and have become a good listener, to figure out what the user departments actually need,” says Dr. Das. The EMR has significantly enhanced the network’s productivity. Earlier, 900 appointments were given to patients each day at the KAR campus. Today, it has increased to close to 1,400 patients per day, with the EMR contributing significantly to this enhancement.

The feedback from patients captured through the EMR helps the fellows to learn. The EMR provides a platform to integrate multiple specialities. However, there are still many more challenges. Some of the users are not used to working with software, and stakeholder management continues to be a challenge. According to Dr. Das, “Given the ongoing expansive scope of the EMR project, there is a lot of scope for individual growth. Going forward, there will be profound implications of the EMR software on decision-making. As a team, we are keen observers, looking for new frontiers to help LVPEI achieve its core purpose, ‘So that all may see.’ We are very careful with every step in the process. A wrong decision made based on the EMR system in clinical or surgical areas can result in significant setbacks and potentially lead to legal action from patients. The quality of software that we develop is vital. The EMR has a dedicated team of 25 members who are willing to work 24×7. The team is transitioning to the next level, to become big data analysts from being software specialists.”

Dr. Das’ specific interests in ophthalmology include ocular trauma and community ophthalmology. He is currently pursuing research in regenerative medicine and eyeball transplantation, and has presented widely on national and international platforms. The epitome of a

self-motivated person, he says, “Never let another person tell you what to do. Traditionally, doctors are treated as gods, although this has been badly dented in our country due to the profiteering that prevails in most hospitals in India today. At LVPEI, things are refreshingly different.”

Dr. Das is the founder of Rural Education and Prevention of Ocular Trauma Programme, examining over 20,500 rural children for the prevention of ocular trauma. He is a member of the International Task Force for Emerging Technologies for Teaching and Learning at the International Council of Ophthalmology (ICO) and is passionate about developing meaningful ophthalmic educational content for the Internet. He has served as an advisor on healthcare innovation to the Ministry of Medical, Health and Family Welfare, Government of Telangana.

He is also the principal investigator and mentor for visual rehabilitation projects, such as the Braille Phone, Fittle (a novel Braille toy) and LeChal, a haptic shoe for the blind that gives feedback to the user when walking whenever there are any position changes due to physical contact and motion. Dr. Das is a TED senior fellow (TED Conferences LLC is an American non-profit for ideas worth spreading online) and is named among the Top 35 Innovators under age 35 years in the world (TR35 2012) by the Massachusetts Institute of Technology. Another feather in his cap is a Chevening Fellowship from St. Cross College, University of Oxford, England (2018).

3.8. Engineer-Entrepreneur Turned Ophthalmological Innovator

The Ophthalmic Biophysics Laboratory is a novel concept adopted by LVPEI in its course of innovation. Dr. Ashutosh Richhariya, a mechanical engineer, heads this unit. Dr. Richhariya's interest and work is in core engineering areas that include infrastructure, lighting structures and repairing transformers. He started on his own venture in 1997, slowly built his business and undertook a significant part of the Narmada project on a turnkey basis, involving end-to-end responsibility.

Dr. Richhariya was scaling great heights in his field when his eye problems became serious. In the mid-1980s, he began losing his vision gradually. He came to LVPEI for treatment in 1987, and again in 1992. By 2004, his sight had diminished to a four feet finger count (which means he could count fingers on a hand that was located no more than four feet away). He underwent a cornea transplant in the same year. The transplant was attended by many complications, which led to treatment for glaucoma and then a cataract surgery.

Dr. Richhariya struggled to come to terms with his condition. He reminisces, "Once I began to let go, I came out of my miseries."

Taking a financial cut from his massive personal earnings as a successful entrepreneur, he took up a teaching position on a modest salary. He continued to be a positive hard worker and earned a master's degree in industrial engineering.

His persistent eye problems led Dr. Richhariya to read in detail about the physiology, anatomy and surgical aspects of the cornea. He started analysing the process control aspects of the surgery. He found that there could be gaps in the existing techniques being practised across the world. Encouraged by the Mahakal Institute of Technology where he worked near Ujjain, he pursued a Ph.D. in this area with Dr. Virender S. Sangwan as his medical guide and a professor in Ujjain as his engineering mentor.

In 2009, Dr. Richhariya received the Nehru Fulbright Scholarship and was based at the Ohio State University, USA, for nine months. Dr. Sangwan visited his lab and recommended that he could be hired by LVPEI. He, however, decided to spend time in research at the University of Rochester before joining LVPEI.

Dr. Richhariya presented his work at the Association for Research in Vision and Ophthalmology (ARVO), the biggest meeting in interdisciplinary research on vision. Dr. David Williams from the University of Rochester, which has the world's best medical optics facility, invited Dr. Richhariya to work with him in medical optics. By then, Dr. Richhariya had already decided to join LVPEI. Dr. Rao offered to support his stay in Rochester for 2 ½ years, where he worked with the best in the field. Dr. Richhariya returned in 2012 and joined LVPEI as a faculty member.

His entire relationship with LVPEI and Dr. Rao is based on trust. He received his formal appointment letter from LVPEI only after returning from the USA and joining LVPEI. During the initial years in Hyderabad, he had difficulty accessing the required facilities for his research, as they were quite spread out across the city. In Rochester, everything was within reach and he did three times more work than he was expected to do. Dr. Richhariya had an experimental set-up to demonstrate that what was being predicted matched with

reality. These were the two independent pillars for his research in Rochester—predictive modelling backed by sound experimental research.

According to him, India has plenty of talent but lacks the ecosystem for research. Whereas LVPEI is conducive for research; here, experts from one field talk to experts in another field in the right context, addressing the real need of patients.

Dr. Richhariya's team includes 12 students and 30 technicians. At LVPEI, he is additionally responsible for biomedicine. A state-of-the-art incubation centre has been set up by his team. His department has grants from the University of British Columbia, IIT Madras and several others for doing cutting-edge research. He also has a grant of Rs. 5 crores (Rs. 50 million) to do research on microscopy. To put his work in perspective, Canon, Japan, is also working on these areas.

Reflecting on LVPEI's research culture, Dr. Richhariya says, "What I do is more important than what I earn. My true capabilities are being harnessed at LVPEI. Everything that I have in my brain is being used!" What better tribute to LVPEI's focus on research?

3.9. The Guru of Retinas

Dr. Subhadra Jalali is the director of Newborn Eye Health Alliance (NEHA)—a speciality that she had always dreamt of. NEHA is a pioneering initiative to address the increasing problem of retinopathy of prematurity (ROP) in newborn babies. Dr. Jalali is also the director of the Retina Institute and the head of quality for the LVPEI network. She is the consultant for retina services and the children's eye care centre with a focus on ROP.

Dr. Jalali hails from Srinagar, Kashmir. She completed her training in ophthalmology at the Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh, in 1989. She met Dr. Rao at a conference during her training in ophthalmology and liked his approach to excellence and precision.

When her husband was posted to the neurology department at the Nizam's Institute for Medical Services (NIMS), Dr. Jalali moved to Hyderabad. Dr. Jalali aspired to specialise in retina at LVPEI, but LVPEI did not offer a fellowship in retina at that time. Instead, she was offered a comprehensive ophthalmology fellowship with one year in retina and six months in other specialities.

Dr. Taraprasad Das, head of retina, initially discouraged her from pursuing a specialisation in retina as it was a male-dominated speciality then. However, once she started working, Dr. Das became very impressed by her dedication and recommended her for a faculty position. After she joined, she says several women have been recruited as faculty members in retina. In that sense, she is

amongst the first women retina specialists in the country. “The trend has changed in the country with women taking an active role in several fields,” she opines.

Dr. Jalali initiated and developed a programme for timely and robust screening of premature babies for the blinding disease called ROP. However, her goals for newborn babies goes far beyond ROP screening; she wants to make sure that an eye examination is done for all babies at the time of birth, and she wants to see this happen during her lifetime. She knows that she cannot achieve this goal alone and will need a great amount of support and collaboration, especially from paediatricians and neonatologists. The eye examination requires very simple infrastructure—a camera and a torchlight. She feels sad that the millions of babies born in our country are denied this simple eye health check up at the time of birth. If this could be done, many cases of blindness in babies could be avoided. She feels it is unfortunate that as of now, infant eye health is not in any curriculum of ophthalmology, paediatrics or nursing, even though India has the largest number of blind children.

Dr. Jalali enjoys teaching. The youngsters who come for training to LVPEI keep her active and trendy. She is interested in history, culture and anthropology, and enjoys interacting with the international students who come to LVPEI from all parts of the world. Dr. Jalali enjoys travelling, teaching and learning from people from different parts of the world; these interactions give her innovative ideas. She finds teaching from a book very static; she likes to follow new, creative methods of teaching.

Dr. Jalali states that working at LVPEI matches any prize money. “It is like winning the Nobel Prize!” she says. LVPEI expects the medical and research faculty to be the best in the country in five years, and the best globally in the next few years.

Dr. Jalali recalls that her husband, who is a neurologist, was unhappy when she joined ophthalmology, instead of the more popular and preferred specialities like gynaecology, surgery, cardiology and radiology. But ophthalmology is her passion, with special interest in the retina alone. The retina is the inner and therefore non-visible part of the eye. It is beautiful, pink, colourful and irreplaceable. By looking at the retina, a trained doctor can also identify other problems related to the heart, kidney, and other critical organs. The retina tells so many stories about a person, which is what fascinates her about the field. A person may not disclose some aspects of his/her life, or a disease may not be getting diagnosed, but a retina specialist can see through it.

In the early days, specialising in the retina was considered difficult, and women were not encouraged to pursue this career. However, Dr. Jalali was so passionate about studying the retina that she was focused and willing to work extremely hard to stand out in a crowd and show that she could do it. In the earlier part of her career, she was a cataract surgeon for six months, but this did not interest her. She also trained in cancer of the eye, cataract, glaucoma, corneal transplant and many allied areas like ocular genetics and electrophysiology, and this made her a well-rounded ophthalmologist. She is focused on research that benefits the patients directly and likes to innovate in her approach to disease and processes management. Achieving Efficiency and Excellence are her motivators and these are totally aligned to LVPEI philosophy, making her feel totally at home here.

Catching them Young: Retinopathy of Prematurity (ROP)

As the director of Newborn Eye Health Alliance, Dr. Jalali has envisioned teams that will save the precious vision of premies or

premature infants. Every week, her team visits multiple newborn care units in the twin cities of Hyderabad and Secunderabad, focusing on retinal examination of prematurely born babies. This work is carried out in other LVPEI centres also, with teams led by Dr. Tapas Ranjan Padhi in Bhubaneswar, Dr. Sameera Nayak in Vijayawada and Dr. Bhavik Panchal in Visakhapatnam. This has created one of the very robust models of ROP screening since 1998, which has now been replicated not only in many cities of India, but also in many communities of Asia and Africa.

A private grant from M.H. Dalmia of New Delhi, obtained through the efforts of Dr. Taraprasad Das, gave a further boost to NEHA. This will support the programme in the state of Odisha.

Dr. Jalali is working with Dr. Inderjeet Kaur, a basic scientist at LVPEI, to develop a simple paper-strip test of tears to detect ROP. Under her guidance, Dr. Komal Agarwal and the innovation team at LVPEI have been working on developing a camera to examine the eyes, especially the retina of an infant, that would be safe and easy to use even by a health worker in a village. These innovations will become a game-changer in saving the vision of newborns.

Although according to LVPEI's "Values" there should be no gender bias at work, some male colleagues still have a little difficulty in accepting a woman's point of view. There are many men in responsible positions. They have their own outlook on various issues concerning the institute and visualise things differently. However, Dr. Jalali has realised that once a woman demonstrates her competence over several years—as has been the case with her—her point of view is accepted more readily. It is all about building one's credibility!

3.10. The Poet Ophthalmologist: The Guru of Paediatric Glaucoma

Dr. Anil Kumar Mandal (AKM) is a consultant at the Jasti V. Ramanamma Children's Eye Care Centre and the VST Centre for Glaucoma Care. He specialises in cataract, glaucoma and paediatric ophthalmology. Pure dedication to the chosen sub-specialities is common at LVPEI; Dr. Mandal epitomises this culture.

Dr. Mandal first heard about LVPEI in 1989. He was interested in pursuing an academic career, not just in seeing patients and earning money. An institutional setting would give him an opportunity to learn new things and stay abreast with the ongoing advances in ophthalmology. Dr. Mandal was influenced by Dr. N.N. Sood, his mentor at the All India Institute of Medical Sciences (AIIMS). Inspired by him, Dr. Mandal developed an interest in studying glaucoma. After his fellowship at AIIMS, he joined as a senior resident and member of the faculty there. Dr. Sood advised him to visit LVPEI to get a different perspective.

Accordingly, Dr. Mandal made a visit to LVPEI. The first day of his visit was a turning point in his life. He was very impressed with what he saw, the organisation and the cleanliness. At that time, the LVPEI hospital building was just two floors. The system of care in the outpatient department and the operating rooms were new and very different from what he saw at AIIMS. A unique feature

that impressed him was the care and respect given to all patients without distinction. The teaching and the learning atmosphere was unique.

The glaucoma clinic at LVPEI was started with Dr. Sriram Sonty, Dr. Rao's classmate at AIIMS and colleague in the USA. When Dr. Sonty returned to the United States due to personal reasons, the department was taken over by Dr. G. Chandra Sekhar (Dr. GCS), who had completed his post-graduate training in glaucoma and oculoplastics at AIIMS. With the workload increasing gradually, Dr. GCS needed more hands to handle the growing number of patients. When Dr. Rao approached Dr. Sood for a good glaucoma specialist, Dr. Sood highly recommended Dr. Mandal, who then joined LVPEI after completing his senior residency at AIIMS. Dr. Mandal had enjoyed his fellowship studies at AIIMS so much that he had not taken a single day of leave during the fellowship's three-year period.

On the first day at LVPEI as a faculty member, Dr. Mandal was advised to choose one speciality area to focus on and bring it up to international standards. Dr. Mandal chose congenital glaucoma, and paediatric glaucoma patients were referred to him. Supported by the institute, he underwent a short-term fellowship in the USA where he studied every aspect of paediatric glaucoma. He would read and compile notes at night. He even co-authored a book on paediatric glaucoma, along with experts from Kellogg Eye Center at the University of Michigan and Doheny Eye Institute at the University of Southern California. It is now a standard textbook on paediatric glaucoma used around the world.

Dr. Mandal received the Shanti Swarup Bhatnagar Award for his work on congenital glaucoma in 2003. It is the highest honour for science and research in India, and Dr. Mandal was the first ophthalmologist to receive the prize.

The groundwork on congenital glaucoma was done by research scientist Professor Dorairajan Balasubramanian (Dr. Balu), he acknowledges. Dr. Mandal was doing extensive research in clinical, surgical and rehabilitation aspects of paediatric glaucoma. Dr. Balu encouraged him and advised him to include basic research into his work. Dr. Balu is also a previous recipient of this award, and he nominated Dr. Mandal for his innovative new surgical techniques and holistic care of children with glaucoma, which included working with the parents of the children. At LVPEI, Dr. Mandal was involved in the administration of the children's eye care centre for over a decade.

Dr. Mandal is also doing research on the genetics of congenital glaucoma. There is a high prevalence of paediatric glaucoma in India because of consanguineous or close blood relation marriages, such as between first cousins. Besides research, Dr. Mandal is also involved in the rehabilitation of patients. According to him, despite the best efforts of the doctor, some children cannot be cured of their glaucoma condition. Between 30-40% of the children he sees are blind or moderately or severely visually impaired, and vision rehabilitation is needed for them. He recalls how timely treatment can save vision and cites the case of a child patient who is now completing her medical education.

The sad reality in India is that often eye diseases in babies result in the separation of the parents due to the severe stress that ensues. There are many myths that contribute to the stress, including the one that blindness is passed down to a child by the mother.

Dr. Mandal shared his thoughts on the difference in the perspective of a doctor and a patient on the successful outcomes of treatment. He says that the doctor may feel he has done a great job, which may be quite different from the reality of the patient.

Outcomes of treatment have to be measured not just from the doctor's perspective but from the patient's perspective also, and this has become a necessity now.

Dr. Mandal's wife, Dr. Vijaya Kumari Gothwal, heads the Meera and L. B. Deshpande Centre for Sight Enhancement at LVPEI, and conducts research in the areas of patient-reported outcome measurement (such as understanding patients' perspectives of their treatment or eye condition) and also on the quality of life of children affected by visual impairment. The difference in the doctor and patient perspectives is gradually being acknowledged, Dr. Mandal says. Modern research on drug trials will not be published unless patient-reported outcomes also confirm the efficacy of the treatment.

Dr. Mandal appreciates the transparency and quality of work at LVPEI. "You just choose your area and keep working at it," he says. "Even if there are others working in the same area, you work jointly in cooperation. You are encouraged to do cutting-edge work in your area of interest."

Dr. Mandal has extensively presented his work and published both nationally and internationally. All the recognition that he has received is due to his work in congenital glaucoma, he says. "We work in areas that are unexplored, and where there are large numbers of affected patients."

Dr. Mandal has formed a support group for the parents of his paediatric glaucoma patients. Every year on Children's Day, parents are invited to share their views on the quality of life of caregivers. There were no publications on that aspect earlier. He was the first researcher to publish extensively in this area. For this research that was published in a top journal, he developed a questionnaire and an instrument to measure treatment efficacy from the patient's perspective.

When a child is diagnosed with glaucoma, the child's parents and the entire family are counselled. The family is shattered when they first hear about the disease, and therefore the psychological aspect must be addressed, says Dr. Mandal. The disease can also cause further abnormalities and can result in multiple disabilities.

Dr. Mandal has treated approximately 2,000 children with severe glaucoma till date, and shares the stories of some of his patients. After making a remarkable recovery, some of them did very well in their lives. He stays in touch with them many years after they have been cured. He recalls his patient Saurav Sehgal, who now lives in Canada where he studies computer science at the University of Waterloo. Another patient who has recovered from a serious eye condition is Tillu, who is all of six years old.

He cites the example of Gopi Krishna, who lives in Canada and is one of the first congenital glaucoma patients he treated through surgery. Dr. Mandal remembers that Gopi's parents were going through much angst while the surgery was in progress. In India, glaucoma manifests very severely. Attending such patients was a turning point in Dr. Mandal's life.

Curing paediatric glaucoma can be difficult, says Dr. Mandal. Repeat surgery is often required, followed by rehabilitation. Few surgeons are interested in doing this treatment, as the procedure is very demanding on the surgeon and the patients are often poor. Treatment of such patients must be institution-based; it cannot be done in isolated private practice, he informs. The patients are often infants who are just three days to one week old. Performing surgery on them requires the support of high caliber anaesthetists, commitment from all team members and a strong "can do" mindset from the surgeon.

When glaucoma is diagnosed in young children, the parents are counselled on the situation and informed about the difficult

prognosis. However, when they learn of the cure that is possible in more difficult cases, they usually are convinced to avail treatment for their child.

Dr. Mandal spends two days a week on research. A part of his time is used to examine past patients, now cured, who are yet required to visit the hospital for follow-up examination. In addition to all this focused work, Dr. Mandal also has extensive literary interests. He has composed many poems that have been published.

3.11. The Sherlock Holmes of Microbes

The first doctor couple of LVPEI, Dr. Savitri Sharma and Dr. Taraprasad Das (Dr. Das or TPD), have been with LVPEI since 1990. Dr. Sharma is a microbiologist and the head of laboratory services in the LVPEI network. Dr. Das, a world-renowned retina specialist, is a vice-chair of LVPEI. Before coming to LVPEI, Dr. Das was with the Aravind Eye Care System (AECS) for 10 years. Dr. Sharma helped set up the microbiology lab at AECS. But Madurai was too far from her home in Odisha. When the couple heard about the requirement at LVPEI for a microbiologist and a retina specialist, they moved to Hyderabad.

Ocular microbiology was a niche field with very few doctors specialising in this area. Very soon, Dr. Sharma made a name for herself. During her five-year stint at AECS, she developed its microbiology services and had several publications, including a book on ocular microbiology. While working at AECS, Dr. Sharma and her team diagnosed and reported the first case in India of *acanthamoeba keratitis*, a corneal infection leading to blindness. Corneal infection is a common disease and identifying the organism as *acanthamoeba* helped in the treatment of these patients. Their work received the Best Paper Award from the Madras State Ophthalmological Society Conference in 1987.

Dr. Sharma's fascination with *acanthamoeba* continued after moving to LVPEI. She received her first grant funding from the

Department of Biotechnology (DBT), Government of India, and started a Ph.D. programme in affiliation with BITS Pilani. Along with her team, she published nine papers on *Acanthamoeba* species, and the microbiology department that she heads has published over 250 articles related to eye infections.

Dr. Sharma started the microbiology department in a single-room laboratory at LVPEI in January 1991, and slowly built it up over the years. L.D. Jhaveri, a pearl merchant from Japan, was most impressed with Dr. Sharma's research during a tour of LVPEI conducted by Dr. Rao in 1991. He offered to help, providing significant support to Dr. Sharma's work by funding the microbiology laboratory.

Across the Hyderabad, Bhubaneswar and Visakhapatnam campuses, a 16-member team comprising doctoral students, graduates and a medical biologist provide microbiology services. One of the first technicians in the lab, Doddigarla Venkatesh, joined LVPEI as a patient care assistant. He was later trained in lab work. With just a basic school education up to 12th grade, he is as competent as any other professionally trained technician. Well-versed in all the systems of the microbiology lab, Mr. Venkatesh ensures these are maintained across the LVPEI network.

Dr. Sharma's team identified another infection-causing microorganism called microsporidia. For the first time in India, her team flagged this microorganism as a cause for eye infections. Dr. Sharma's colleague, Dr. Joveeta Joseph, a very bright researcher trained at BITS Pilani, focused on this study and obtained two competitive grants from DBT. Dr. Joseph completed her post-doctoral research on this study in 2006 and published eight papers. Dr. Sharma is therefore rightly considered as the "queen of microsporidia."

At LVPEI, the department of microbiology is involved in a wide range of activities, including patient care, diagnostics, teaching,

research and hospital infection control activities. As the network director of laboratory services, Dr. Sharma travels frequently to the other centres in the network to oversee systems and protocols and to monitor clinical and surgical hospital infection control.

Another area of Dr. Sharma's research in the past several years is the study of what was then considered a fungus named *Pythium insidiosum keratitis*. Her research focused on the diagnostic aspects to characterise the organism, specify its genetic details and work out the treatment protocols.

Pythium insidiosum keratitis was first identified by Dr. Sharma and her team from samples that were collected over a 10-year period at LVPEI. She discovered that there were other researchers who reported on this fungus being found in the eye, mostly in Thailand, although there were a few cases reported in the United States. No prior cases of this fungus were reported from India. Dr. Sharma went on to investigate further and published her findings.

Dr. Sharma and her team learnt to diagnose this fungus in the eye by looking at the microscope pictures of the culture using a procedure that they designed. With further research, experience and data obtained from treating these patients, the researchers concluded that although the microorganism's morphology was like a fungus, it was not a fungus but an oomycete. This was new learning for doctors. As it had looked like a fungus, patients had been prescribed antifungal drugs, which were not effective in treating the infection, leading to cornea transplants as the only recourse.

With this new knowledge, many different treatment protocols were tried under controlled conditions. The team found that Azithromycin and Linezolid proved to be efficacious. Typically, these treatment protocols are used for respiratory diseases, requiring intravenous or oral administration of Linezolid for treating eye

infection. Dr. Sharma's research led to the development of eye drops that contained these drugs. Patients have been responding positively to this treatment, causing much excitement in research circles. This discovery led to many presentations and publications for Dr. Sharma and her team.

Dr. Sharma shares these research findings with eye care providers from across the world. She has undertaken a joint study with AECS and the Asia Cornea Society based in Singapore. All the bacteria samples are preserved, and AECS and LVPEI researchers continue to find even more efficacious treatment protocols to address this eye ailment.

A project to pursue this research further is being funded by the Department of Science and Technology (DST). Animal research is also on the cards, which will follow the stringent ethical norms pertaining to animal testing that LVPEI adheres to. Such tests are monitored by an in-house ethics committee.

Dr. Sharma says that these days, scientists are focusing on the DNA of organisms to make a diagnosis, as there are limitations to what you can do with samples. One of her team members works on DNA-sequencing of different fungi in the eye, which can help in diagnosis.

Dr. Sharma recalls that earlier, LVPEI did not have facilities for DNA-sequencing. The equipment was expensive, costing over Rs. 1 crore (Rs. 10 million). She took samples of acanthamoeba to the Ohio State University to study them, and it resulted in joint publications with researchers there. She says LVPEI encourages researchers to find their own research partnerships. According to her, "While the labs in the U.S. have facilities, we have the patients and samples. However, giving them our samples is not research. It has to be a joint study, resulting in joint publications."

Dr. Sharma spoke about the many challenges she faced during her long career at LVPEI and how she successfully overcame them. She gave an example of a PCR molecular test, which is done after surgery to test for post-operative infection. It was an expensive test. Dr. Rao wanted her to run it for all patients, both paying and non-paying, but she initially had reservations because of the high costs involved. However, the results of this test gave her significant data for research that she could use for publication. Through research, LVPEI was able to considerably reduce the cost of conducting this test.

LVPEI has a very good medical records department, holding a unique record for every patient since the institute started. This data is now available on EMR across the network, making it possible to retrieve reliable data from the past. The LVPEI system emphasises the importance of detailed documentation and accuracy of data. Dr. Sharma's department also has well-maintained records of patients' data from the past 25 years. Consequently, retrospective studies are a major part of the research at LVPEI. In retrospective data analysis, data collected on eye infections over a long period of time is reviewed and studied in detail. Other types of research include randomised trials and case studies.

There is plenty of scope and data for research at LVPEI, with much potential to publish the findings in the world's top journals. Patient data is maintained for both free and paying patients in the EMR.

Dr. Sharma is passionate about research writing, and she receives much encouragement and support from the institute. She feels the best way to write up her research findings is to have a pipeline of research projects. On a typical day, Dr. Sharma plans some work for a new research project and on the same day, she works on a

half-written paper, gives finishing touches to a paper that is being submitted, while also responding to reviewer's comments for a paper that is close to being accepted. By working on several projects simultaneously, which are at different stages of completion, she manages to have one publication each month.

At LVPEI, there is an active collaboration between the research departments and clinical specialities, with many inter-departmental publications resulting from this joint work. The co-authors would often include the principal investigator guiding the research, the person responsible for data collection, a technician who checks data, a post-doctoral student who does the literature review and a clinician involved in devising ways of finding the application of the research. The first draft of the research is sent to the concerned clinician, followed by several iterations with the co-authors. Dr. Sharma chooses the journal to which the paper will be sent.

Being a clinical microbiologist, she feels that her research should ultimately be useful to patients, although she and her team may be pursuing high-end research. Contrasting the work her laboratory does vis-à-vis the work done at diagnostic centres, she opines that these are two different worlds, although to a lay person they may appear to be doing similar work.

A typical diagnostics laboratory provides a superficial report based on the doctor's requirement—they often do not delve into the patient's history. The referring doctor does the diagnosis. At LVPEI, diagnostics are done in a research mode. Details of patients are collected so that from the diagnostics, research questions can be answered. Documentation is done in detail; photos are archived and registers maintained. In this manner, a large number of patients' records have been archived over the last few decades.

3.12. Educating Gen-Next and Transmitting Knowledge

Dr. Avinash Pathengay is a vitreoretinal and uveitis specialist, and the director of Standard Chartered-LVPEI Academy for Eye Care Education. Following residency in ophthalmology, Dr. Pathengay completed his fellowship at Sankara Nethralaya, Chennai, in vitreoretinal surgery in 2001. He is passionate about teaching and wanted to work in a teaching institution. He has been associated with LVPEI since 2001, and currently heads the education centre, succeeding Dr. G. Chandra Sekhar (presently vice-chair) and Dr. Prashant Garg, the first and second directors, respectively.

Expressing his passion for education, Dr. Pathengay says that he gets a good night's sleep only when he does a great job of teaching others. He values the importance of teaching, remembering the struggle he went through to learn as a student many years ago. "Teaching is something where you have to be selfless," he remarks. He also talks about the importance of research at LVPEI; he has authored over 100 published articles.

Education, says Dr. Pathengay, is a catalyst for change, and an investment for both the organisation and the individual. He feels that his role as director of education is akin to that of finance professors for Wall Street. He aims to make LVPEI the best educational facility in ophthalmology.

Dr. Pathengay keeps the department lean to ensure efficiency. Refresher courses are held for those who are already trained. Additionally, training is provided to newly-minted ophthalmologists.

While he heads the educational initiative for the LVPEI network, he has chosen doctors to head the education initiative at the various LVPEI campuses. Each of them is assisted by an administrator. The administrative coordination is done by an optometrist who works closely with him. Dr. Pathengay looks for two qualities in his team—enthusiasm and intelligence. He has initiated structured training programmes for ophthalmologists, optometrists, nursing assistants and eye bank assistants.

Way Forward: Dynamic Change

Educational programmes are open to the whole world today, thanks to technology, says Dr. Pathengay. We can have a wider impact because the recent technological advantages have simplified teaching methods. Now you don't have to be physically present in any part of the world to empower people living there with knowledge or skills. It can be done effectively from the place where you are. One way in which LVPEI has always participated in the global network of eye care education is through its association with several individuals and institutes. Dr. Rao's association with Professor Brien Holden, for instance, led to collaborative education programmes in contact lenses and other areas of vision research training. Professor Holden's position at the University of New South Wales in Sydney, Australia, paved the way for young optometrists and vision researchers at LVPEI to pursue various higher education opportunities in Australia and bring back the learning to India. Today, there is a healthy exchange of scholarship and collaboration

between the faculty and clinicians, not only between LVPEI and UNSW, but also with Melbourne University and other premier institutes in Australia.

Ultimately it all boils down to education, because any transformation in an organisation is catalysed by education

JAM Clinical Pearls: Innovation in Education

To exemplify the reach of education, Dr. Pathengay described the project he spearheaded called JAM (Just A Minute) Clinical Pearls, which were sent out every day for one full year to thousands of ophthalmologists across the world. Several factors were taken into cognizance for designing this learning platform. Dr. Pathengay found that the key limiting factor was the short attention span of the current generation. They want only a gist of everything; the challenge was to produce a powerful learning experience and deliver it in the shortest possible period. These “clinical pearls” can be easily downloaded even in countries and cities where the Internet speed is low. Download, read, assimilate and understand—everything happens in just a minute. These pearls were collected from the LVPEI faculty, and one clinical pearl was sent to over 16,000 ophthalmologists across the globe at 5 a.m. Indian Standard Time every single day.

The clinical pearls are individual experiences, which one cannot find in any textbook. It is just a single nugget of knowledge, with a good deal of clinical experience embedded in it; it is amenable to effortless assimilation by the viewer, who is typically a practicing ophthalmologist. An abundance of imagery is used in crafting this

knowledge nugget and, as images speak a thousand words, the author would be able to powerfully convey the intended message.

Other countries had different time zones and to counter that, about six months later, Dr. Pathengay and his team started an evening session known as JAM Prime. It proved to be very popular as well, and did not cost LVPEI any additional resources. Of the 16,000 ophthalmologists on the mailing list, the majority of them were based in India, and the remaining were spread all over the world. North America had the second largest set of recipients, followed by Europe and Australia.

The JAM inputs are sourced from the LVPEI faculty, who are requested to share nuggets of information they pick up from their practice. The challenge in the case of the pearls is to make each pearl attractive and extremely short, while enabling the reader to make sense out of it with a maximum of three lines and an easily comprehensible picture. Dr. Pathengay's vision for the next 30 years is to scale up this learning initiative to the whole world, wherever it is appropriate. He feels that the best way to go about it is through LVPEI's education initiative that he heads with incredible passion.

Other Innovations in Education

Sharing more innovative ideas in education, Dr. Pathengay says there is a disconnect in classroom teaching, where most students are inattentive and not interested while the faculty makes a sincere effort to teach them. The traditional way of verbal teaching has been supplemented with visual aids like the blackboard over time, and further transformed, through the use of the overhead projector, PowerPoint and animation. It all represents the same objective of teaching, albeit in a different way—a metamorphosis in the process of imparting learning.

The current generation is clued into smartphones most of the time and engages constantly in chats. In this context, Dr. Pathengay wants to revolutionise education and is exploring the idea of having the teaching session in a chat format.

While there are multiple aspects to innovation at LVPEI, such as innovation in product development, Dr. Pathengay believes that innovation in clinical research is extremely important. He believes the three aspects that will be the driving forces for LVPEI to move forward are innovations in product development, clinical research and basic research. Dr. Pathengay has over 100 peer-reviewed national and international publications; however, he does not publish as much now as he used to do earlier because, he says, his focus has shifted to educate across the LVPEI network and to take the lessons learnt at LVPEI to the global platform.

While JAM and JAM Prime are good tools for teaching science and medicine, Dr. Pathengay does not believe their use can be expanded for training in non-medical settings, such as leadership development, because many other qualities are required of leaders. He does not see leadership training and training in other aspects of healthcare (beyond eye care) as a part of his work in education, as that would mean a major change in the mandate of the learning initiative that he is currently heading. “LVPEI is only into eye care, and this is its key domain,” he says. “Once we are fully done with what we do in the best possible way, then we can think of some sort of a diversification into aspects of healthcare beyond eye care.”

3.13. The 24x7 LVPEIlan

Dr. Merle Fernandes is the director of the GMR Varalakshmi Campus of LVPEI in Visakhapatnam. She is a consultant for cornea and anterior segment services. Dr. Fernandes is also the medical director of the Mohsin Eye Bank, a community eye bank managed by the Hyderabad Eye Institute (HEI) and Visakhapatnam Eye Bank and Research Training (VEBART) Trust in Visakhapatnam.

Dr. Fernandes completed her post-graduate ophthalmology training in Goa, followed by a fellowship in cornea and anterior segment at LVPEI in 2001. Her first contact with LVPEI took place in 1998 when she chose to go there for two weeks during a one-month sabbatical that was permitted in her post-graduate training. The exposure Dr. Fernandes had in those two weeks was tremendous; she wanted to come back. She exclaims that she was the first Goan to do a fellowship at LVPEI and the last fellow to train under Dr. Rao. After a 15-month fellowship, Dr. Fernandes continued to work as an adjunct faculty member in Dr. Rao's clinics for three years before moving to Apollo Hospital in Goa.

But Dr. Fernandes missed the academic work and rigour of LVPEI and returned a year later in 2006, when a position came up at the upcoming tertiary hospital in Visakhapatnam. She has been involved in the development of this centre from inception. After coming to LVPEI, Dr. Fernandes did a post-doctoral fellowship in ocular surface immunology under the mentorship of Professor Reza Dana at Schepens Eye Research Institute of Massachusetts Eye and Ear, Boston, in 2015.

She chose and continues to work at LVPEI because most other eye care centres don't have outreach programmes and services for non-paying patients. "For me, that is the most liberating thing, because we don't see that kind of service anywhere else," says Dr. Fernandes.

Care is provided for all kinds of conditions, all kinds of complexities, and just about every problem related to eyes is attended to at LVPEI. The non-paying patients are treated equally as paying patients; there is no differentiation. They get the best kind of service possible, which no other centre in the world would ever do for a non-paying patient, she observes. For her, curing a person who can't afford a corneal transplant and helping that person to get her vision back is most gratifying.

Imparting knowledge through training is another thing that Dr. Fernandes likes to do. You can guide somebody to do cataract surgery, help someone do their first corneal transplant, work together on a research project—that is the kind of work she gets to do at LVPEI. She does not think she could get such diversity of activity at any other hospital.

While treating poor patients, the doctors at LVPEI give them the best they can offer, which they wouldn't be able to get anywhere else, says Dr. Fernandes. She is touched by all the suffering in their lives, and it gives her immense gratification to give them the gift of sight and to know that after the care provided by LVPEI, they are no longer helpless and can hope to lead normal lives.

Dr. Fernandes performs many corneal transplants, and she especially likes to treat children. "You get very emotionally involved with the transplant patients because they are with you for life," she says. The transplants can get rejected anytime, so the patients need regular follow-ups at frequencies of six months to one

year. In contrast, in the case of cataract surgery, it is only short-term intervention, and after about three visits spread across five weeks, the cataract patients don't need to come back unless they have some other problems or complications. Some of her patients lose their vision because of lack of knowledge and ignorance, which pains her greatly.

Dr. Fernandes is amused by the title given to her—the 24×7 LVPEIan—and says that while she doesn't know who gave her that title, she is a workaholic and enjoys her work.

About managing the work-life balance, Dr. Fernandes says that she isn't married. "Because of being part of LVPEI, I am still single," she quips, adding that she has no regrets. At this point of time, her work at LVPEI is everything to her; although sometimes, she does wish that she had a different lifestyle, especially when she sees other people going on holidays and enjoying long breaks. When asked about her hectic work schedule, having to prepare for review meetings and travelling on holidays to attend meetings, she laughs and says, "That is the way the cookie crumbles."

Sharing her views on the management structure, she says many doctors at LVPEI are at a senior level with many years of work experience, and the management structure is diverse. Initially, the Executive Committee of which she is a member comprised only the senior faculty and was an elite group. Some years ago, Dr. Rao made a radical shift and now some of the second-generation leaders have been inducted into this committee. Based on this experience, another shift was made by inducting even younger third-generation faculty members into the Executive Committee.

Thus, the LVPEI management has a range of people from all levels, from the youngest to the senior-most; it is an 18-member group. This group is involved in policy-making. The culture is one

of collegiality, and decisions are not taken by one person. They meet twice a month; everyone puts forward their views on the way forward.

The directors' group is another important group where all the campus directors and directors of services get to meet through video conferencing. It is a smaller group but more diverse and involves operational heads, heads of education and ICARE. Operational issues are discussed and sorted out right then, without escalating these matters to a higher level. Dr. Fernandes is the campus director for the Visakhapatnam campus, which is also responsible for 30 vision centres in the three districts of Visakhapatnam. Srikakulam and Vizianagaram.

Dr. Fernandes admits she has not published as many research papers as she would have liked because she divides most of her time between administration and clinical work. LVPEI has a truly meritocratic set-up with people from different religions, castes and regions coming to live in South India. Such a culture is a rarity in India. While many organisations tend to get clannish, Dr. Fernandes believes that the culture of meritocracy is truly unique at LVPEI. Performance is judged by the work one does; many people at LVPEI get accelerated promotions because they do a fantastic job.

3.14. Exorcising Cancer

Ocular oncology is a highly specialised service that treats complex eye tumours, with special attention to children who are afflicted with a life-threatening disease called retinoblastoma. The ocular oncology service at LVPEI is a world-class facility led ably by Dr. Swathi Kaliki.

Dr. Kaliki is a consultant for ophthalmic plastic surgery, orbit and ocular oncology, with specialisation in ocular oncology. Her interest in ophthalmology was sparked one day in 2005, while reading aloud a newspaper article on LVPEI to her blind grandfather. It made an impression, and Dr. Kaliki's interest shifted to ophthalmology from orthopaedics. She trained in ophthalmology in Tirupati, a region where LVPEI was famous. After post-graduation, she was sure that LVPEI was the place to go for fellowship.

Following a one-year fellowship in ophthalmic plastic surgery, orbit, and aesthetics at LVPEI, she pursued a one-year fellowship in ocular oncology, then a year's fellowship in ophthalmic pathology at the Wills Eye Institute in Philadelphia, USA. When she wanted to return to India, she felt LVPEI was the best place to come back to. She joined the oculoplasty department with oncology as a focus area. Each of the other three members in the department focus on a different area: Dr. Mohammad Javed Ali (lacrimonal), Dr. Milind Naik (aesthetics) and Dr. Tarjani Dave (socket).

Speaking about her work, Dr. Kaliki says that there are various types of eye cancer affecting adults and children. Retinoblastoma

is caused by genetic mutation and is most common in children. The disease can manifest in several forms, and if undetected and untreated, it can spread to the brain and sometimes lead to death. If one of the parents has cancer of the eye, there is a 50% chance of the child getting it.

In the early stages of retinoblastoma, treatment can be done by laser, cryotherapy or freezing of tumour, or chemotherapy; however, in advanced stages of the disease, the eye must be removed. The patient must come for check-up multiple times over five or more years to complete the treatment. About 8,100 retinoblastomas are diagnosed annually worldwide; over half of these cases are in China and India. In India, there are about 1,500 new cases every year. Of these, about 1,000 cases might seek treatment.

At LVPEI, about 250 patients are treated each year for retinoblastoma. Within six cycles of treatment, the cancer reduces in 80% of the cases; for the rest of the cases, additional treatment is required. The treatment costs can quickly add up; it is not uncommon for a typical treatment to cost Rs. 2,00,000 or more, which is not affordable for most patients. However, Dr. Kaliki happily informs that LVPEI's philosophy of providing free treatment to those in need ensures that no one is denied high-quality treatment.

In adults, several types of eye cancer can occur. The effort of her team is to try to save the eye and the patient. "Cancer is about life," says Dr. Kaliki.

Her work starts early in the morning every day with little children to be examined under anaesthesia. The department has a tie-up with Apollo Hospitals and works with their radiology department for treatment of these patients.

Dr. Kaliki's research interests lie in retinoblastoma, eyelid tumours and orbital diseases. She has presented papers at various

national and international conferences, has over 70 peer-reviewed publications to her credit, and currently serves as a reviewer for many international journals. She is a member of the executive committee of LVPEI and the youngest faculty member to head the oculoplasty service.

3.15. Blending Passion With Compassion

The Jasti V. Ramanamma Children’s Eye Care Centre (CECC) set up in 1997 at the Kallam Anji Reddy campus in Hyderabad is the first comprehensive paediatric ophthalmology centre in Asia. It provides treatment for an entire spectrum of paediatric eye conditions, including refractive error, squint, paediatric cataract, glaucoma, cancer and retina problems, by experts who specialise in these areas. Along with rehabilitation services, it brings complete eye care under one roof for children.

Dr. Ramesh Kekunnaya, the current head of this centre, specialises in paediatric ophthalmology, strabismus and neuro-ophthalmology. Dr. Kekunnaya joined the faculty in paediatric ophthalmology service in 2003, following a three-year fellowship training at LVPEI. He claims that this was life-changing in terms of personality development, clinical skills and research skills. He saw the LVPEI values at work during the fellowship, and “they are keeping me here,” says Dr. Kekunnaya.

While the facilities allow him to practice good paediatric ophthalmology, he says LVPEI is also a very good platform for research and innovation. Dr. Kekunnaya was encouraged to pursue a fellowship at the University of California in Los Angeles (UCLA) to enhance his skills. There, he learnt about the true essence of paediatric eye care. In the United States, many doctors provide this service for children, but in India, paediatric ophthalmology is not a well-developed field.

The Children's Eye Care Centre (CECC) has flourished over the years and is now being upgraded and renamed as the Child Sight Institute. Explaining the difference, Dr. Kekunnaya informs that an eye care centre provides clinical and surgical care and carries out research, while an institute encompasses prevention, promotion, advocacy, as well as international presence. LVPEI has full-fledged children's eye care centres in Hyderabad and at its three tertiary centres; these paediatric services have also commenced in the secondary care centres. The teams at the centres perform door-to-door screening and school screening in rural areas.

Thus, the services are spread across the network from primary to secondary to tertiary care. "Through the Child Sight Institute, we want to impact the children in India and the world," informs Dr. Kekunnaya. The facility will also train fellows from Nigeria, Myanmar, Mongolia and other developing countries. The goal is to be a global resource centre in paediatric ophthalmology. The institute will provide capacity building support such as infrastructure requirements, design and human resource training, and will provide a model that can be localised and scaled.

Various paediatric subspecialties in the CECC are represented by Dr. Subhadra Jalali for retinal diseases, Dr. Anil Kumar Mandal for glaucoma, Dr. Muralidhar Ramappa for corneal diseases, Dr. Niranjana Pehera for cortical visual impairment and cerebral palsy, Dr. Virender Sachdeva for neuro-ophthalmology, Dr. Vivek Warkad for paediatric ophthalmology and strabismus, and Dr. Ramesh Kekunnaya for paediatric cataract, squint, neuro-ophthalmology, refractive error and visual development in children.

Dr. Kekunnaya has provided long-term training in paediatric ophthalmology to over 60 ophthalmologists, in addition to training many ophthalmologists through short-term programmes, both in India and in other countries.

Training in paediatric ophthalmology is provided not just to ophthalmologists, but to the entire team, including nurses, technicians, anaesthetics and the support staff. Paediatric eye care is important because providing vision for the child impacts world development.

Dr. Beula Christy, head of rehabilitation services, provides support for those with blindness and visual impairment. All these services are part of the Child Sight Institute, along with screening at primary and secondary centres.

Eye care delivery in children is very different from adult care. According to Dr. Kekunnaya, better coordination is needed between primary, secondary and tertiary centres. Poverty is one of the main deterrents that stop a patient from going from the primary vision centre to the secondary and tertiary centres if the disease warrants this escalation. A workable procedure is needed to ensure that patients who require treatment move up to the next level. The patients may not be able to go on their own, and the challenge is more pronounced in the case of children. Very few children referred from the primary centres to the secondary or tertiary centres actually go there and seek treatment.

During screening programmes, Dr. Kekunnaya and his team come across children suffering from malnutrition mostly in the rural areas. While this challenge needs to be addressed, it is beyond the scope of eye care. It is part of universal care. While he and other doctors at LVPEI are aware of these challenges, providing treatment in areas outside eye care has practical limitations. The same is true for vaccination. LVPEI is not geared for delivery in these areas. Malnutrition is a major ongoing problem, not a one-time challenge, says Dr. Kekunnaya.

Genetics, Dr. Kekunnaya believes, is a very important part of paediatric ophthalmology. It helps to get to the root cause and

addresses preventive aspects. “In this area, we are lagging behind the Western countries,” observes Dr. Kenunnaya. Much research still needs to be done in this area. However, in clinical care, LVPEI is at par with other developed centres.

There is much scope for research on the genetic profile of Indians, and for identifying the causes of diseases and their treatment. However, the costs of conducting this research can be prohibitive, with genetic tests to be administered to entire families, not just the child.

Paediatric ophthalmology also offers a window of opportunity to identify other diseases in the child, as a problem in the eyes can be related to problems in other parts of the body. However, this cannot be done by just clinical evaluation, informs Dr. Kekunnaya.

Dr. Kekunnaya’s patients include children from different socio-economic backgrounds, and some cannot afford even a pair of glasses. He adds that it is not just about providing spectacles, these glasses may break and must be replaced. “India is a land of paradoxes; addressing the problems that poverty creates and going beyond is a big challenge,” says Dr. Kekunnaya.

Dr. Kekunnaya talks about his experience with patients and their parents, and reveals that patient care must go beyond the treatment of just the disease. “Most of the complex diseases occur among the poor,” he says. “The ophthalmologist’s practice becomes more of an art and less of science.”

While some parents are willing to do anything for their children, some just abandon them. He gives an example of a child with cataract. The child’s parents do not have enough money and during the next visit, the mother comes alone with the child as her husband abandoned her after the first visit, mistakenly believing in the myth that the mother passed on the disease to the child.

While the institute provides free treatment and the staff try to help, he says, “We could develop better infrastructure and support systems to guide such parents and help them through these trying situations. Some of the mothers of the patients cannot visit as they have no money and support. Every mother will have her own heart-rending story to tell. We get to know what happens at the ground level by going to the villages. It is all about empathy; this cannot be monetised.”

Dr. Kekunnaya’s empathy for the realities of poor people comes from a rural upbringing. It makes him more receptive to their problems. Dr. Kekunnaya’s wife is a veterinary doctor. “Both her patients and mine cannot speak!” he jokes, referring to his infant patients. Dr. Kekunnaya enjoys his time spent in the clinic and with children, and he actively pursues research in paediatric cataract and strabismus.

Reflecting on the salary levels at LVPEI, he says that the income gives them a decent life, and they are willing to forego some of the luxuries that come with money. At LVPEI, there is a need for our services and we can make an impact, Dr. Kekunaya says. “In the USA, in a city like Los Angeles, there could be 100 paediatric ophthalmologists who see about 10 patients in a day and perform an occasional operation on some of them,” he says. “In contrast, in Hyderabad, there are perhaps five paediatric ophthalmologists; each of them sees 75 patients in a day. That makes all the difference to me.”

3.16 The Wizard of Excessive Tears

The Govindram Seksaria Institute of Dacryology, the first of its kind in the world, was established in October 2016 and is headed by Dr. Mohammad Javed Ali, a global expert in dacryology and lacrimal sciences. Dr. Ali was instrumental in establishing this centre, with generous support from the family of one of his patients. Lacrimal sciences are receiving attention and importance only in the last five years.

Dr. Ali hails from a middle-class family. With an enduring love for reading, Dr. Ali decided to become a doctor when he was a child. He persisted in visiting a neighbourhood clinic for two years, until the doctor allowed him to watch the treatment process. He always had a determination to make a lasting difference and impact on this world, in whatever work he did; he was confident that he was going to do something very different.

On the very first day of ophthalmology residency, he knew he was more inclined towards ophthalmic plastic surgery. He believed that one must be focused on what one wants to do. After residency, he was looking for a place that allowed him to do both research and clinical work, with a focus on ophthalmic plastic surgery. It was suggested to him that LVPEI is the only place to achieve his objective.

Dr. Ali's journey with LVPEI started in 2008 when he got through the interview on his second attempt (his first attempt failed because

his approach was perceived as arrogant and audacious!) and was selected for a fellowship in oculoplasty. His mentor at LVPEI, Dr. Santosh G. Honavar, supported his inclination towards lacrimal sciences. The lacrimal apparatus plays an essential role in eye health. His other mentor, Dr. Milind Naik, soon became his close friend, encouraging him to make this his niche area and excel in it.

With this encouragement, Dr. Ali decided to dedicate himself to the study of tear ducts—a subspeciality called dacryology. The tear pathways begin in each of the eyelids and go right up to the lower part of the nose and serve to drain the tears from the eyes. All through his fellowship, Dr. Ali developed keen interest in this subject.

At the end of his fellowship, he was offered a position on the faculty, and Dr. Rao asked him, “Can you promise me that in the next 10 years you will be among the top 10 people in the world in the area you choose?” Dr. Ali shot back, “Ten years is too long a period in one’s life. Give me five years, and I hope to make it to Number 1.”

The next question was about training, to help him learn from the best experts in the world in his chosen subspeciality. Across the world, ophthalmic plastic surgeons and ENT surgeons treat various lacrimal disorders in their own unique ways. When one of the top lacrimal experts at that time in the Asia Pacific region rejected LVPEI’s request to train Dr. Ali, he felt challenged and his resolve strengthened. He decided that in five years from that date (7 March 2016), he would do his best to be recognised as “the leader” in Dacryology in the world. Dr. Rao told him to start his work and prophesied that he would achieve recognition much sooner if he kept this fire raging within himself. “Dr. Rao is 100% of all that a leader should be, and much more beyond that, always stirring, always challenging me,” says Dr. Ali.

When Dr. Ali heard renowned glaucoma surgeon from the UK, Sir Peng Khaw, deliver the special lecture at the Champalimaud Research Symposium in 2016 (held jointly by LVPEI and the Champalimaud Foundation of Portugal) he was spellbound at how research, clinical excellence and compassion came together in the presentation. After the lecture, Dr. Rao asked Dr. Ali if he could deliver this kind of lecture three years hence. Dr. Ali knew he couldn't compare Sir Peng Khaw's experience to his own; yet, he resolved to take up the challenge. That same evening, he started preparing a presentation with 10 PowerPoint slides, titled it "The Science of Dacryology," and delivered it as a lecture for the 2016 Rhinocon Medal.

Talking about the science of dacryology, Dr. Ali says it did not receive much attention in ophthalmology, because the tear ducts are partly located in the eyes and partly in the nose. There was a need to combine both sciences of the eye and nose to deeply understand and treat problems related to lacrimal drainage.

The next challenge for Dr. Ali was to get training in the science of the nose. He did not need to study the entire course in ENT, but he just needed to learn rhinology (related conditions affecting the nose) as applicable to dacryology. He approached multiple ENT doctors in India, but they just advised him to refer patients to them instead.

Once again, strongly determined, he approached Dr. Peter-John Wormald, the undisputed world leader in rhinology based in Adelaide, Australia. He wrote to him explaining that he was looking for training in rhinology to help him with his interest area, which is a cross between ophthalmology and rhinology. He was accepted.

When training with Dr. Wormald, Dr. Ali wanted to learn clinical skills and also do some research. Dr. Wormald felt that four months was too short a time to work on any research project, but Dr. Ali

delighted him by completing an astonishing 23 projects in that brief period. “Professor Wormald and his deputy Dr. Alkis Psaltis played a very crucial role in my understanding of rhinology, and I would rate their contribution as a major milestone in my career,” Dr. Ali says. Today, Dr. Ali demonstrates live surgeries at ENT conferences and enjoys interacting and learning from his rhinology colleagues.

Dr. Ali’s father, Mohammad Dawood Ali, a retired senior administrator in Saudi Arabian Airlines, was very supportive of his career and helped him in multiple ways at every step along the journey. Dr. Ali also credits his mother, Qaiser Yasmeen, and says that she is an eternal optimist whose positive attitude made a very strong impression on him. While she could not study beyond sixth grade because she came from an orthodox Muslim family that did not believe in educating women, she ensured that her children were well educated. Living in a joint family with her son while her husband was away on his job, his mother brought him up against all odds, bravely facing many challenges.

With a penchant for studying the Bhagavad Gita, Dr. Ali says that even if one is a great person, if the situation warrants, one should let go of the ego for the larger interest. “Although it is very difficult to practice these things, it is the constant effort in the desired direction that matters,” he says.

For his outstanding research, Dr. Ali has been the recipient of the prestigious Shanti Swarup Bhatnagar Prize, as well as the Experienced Researcher-Alexander Von Humboldt Research Fellowship, one of the most esteemed research awards. Very few ophthalmologists have ever received it. He is also the recipient of the prestigious Merrill Reeh Pathology Award in 2015 from the American Society of Ophthalmic Plastic & Reconstructive Surgery

(ASOPRS) for his path-breaking work on the causes of punctal stenosis (narrowing of tear duct entrance). The recent recognition by the American Academy of Ophthalmology & ASOPRS with the Lester T. Jones Award for outstanding scientific contributions, and his selection as editor in chief of the famous ophthalmology journal *Seminars*, is testimony to Dr. Ali's academic prowess.

Today, Dr. Ali is completely focused on dacryology. He says with humility that many clever people came before him and laid the foundation, and many more will come after him who will take this science to dizzying heights. He feels lucky for having been given an opportunity to work on lacrimal sciences, and he hopes his contributions will help patients of today and of the future.

3.17. The Thinker and Vitreo Retinal Diseases Specialist

At LVPEI, research is considered an important activity to be conducted for the benefit of humanity, and education is also accorded very high priority, shares Dr. Raja Narayanan, who is the director of clinical research, a retina consultant at LVPEI's Smt. Kanuri Santhamma Centre for Vitreo Retinal Diseases, and head of operations at KAR and KVC campuses. It is fashionable for small hospitals to have a teaching arm, mostly to create another avenue of money-making, he comments. But in LVPEI, education comes from the heart of experienced teachers passionate about teaching and its benefit to the world, Dr. Narayanan says.

After his ophthalmology training in New Delhi, Dr. Narayanan undertook the preceptorship programme in ocular immunology and uveitis at the Massachusetts Eye and Ear Infirmary, Harvard Medical School. He followed it up with a fellowship in medical retina and vitreoretinal diseases at the University of California in Irvine, USA. He says he never had an incentive to stay back in the United States. He believes that whatever work he does in India will add more value to the hospital and community. In the United States, he would have earned more money, but the perceived value of the work he does would have been less.

LVPEI has many things to offer outside healthcare, states Dr. Narayanan. Its emphasis on cleanliness and hygiene (which aligns with the current government's Swachh Bharat—Clean India

cleanliness drive), discipline, punctuality, a dress code, are some examples. These values are passed down from one generation of LVPEIans to the next. At LVPEI, there is a relationship of trust between the patient and the doctor. This is uncommon—in most cases in India, there is a trust deficit in this relationship, and patients generally get several opinions or go through a friend or a friend of a friend to seek a doctor’s appointment.

At LVPEI, one does not need to do this, as the patient is assured of excellent care, asserts Dr. Narayanan. The lack of trust with care providers is the single biggest challenge to healthcare in India. “Because of lack of trust in this pivotal relationship between the patient and the doctor that is widespread across the country, we have doctors going to the courts, or being beaten up by patients, or going on strike,” says Dr. Narayanan. High levels of trust between doctors and patients is of utmost importance at LVPEI. In the West, trust levels are high as well, and there is also better legal protection.

Medical ethics and building trust in healthcare cannot be done through edict. One cannot write a chapter on how to build trust among doctors and patients and how to improve medical ethics. It cannot be taught through student-teacher interaction. It should be through role modelling by a leader and receptive followers. Every doctor should look within, into themselves. A conference on medical ethics cannot successfully teach these skills. LVPEI, Dr. Raja claims, is an oasis in a desert where the patient comes confidently to the doctor for his opinion and treatment, even though the outcome may end up not being good. Many hospitals have fancy equipment, but the soul is missing, in terms of trust between the patient and the doctor.

Dr. Narayanan was a visiting faculty member at the University of California, Irvine and a visiting scholar at the Massachusetts Eye and Ear Infirmary. He is currently adjunct associate professor of

ophthalmology at the University of Rochester in New York. He is the recipient of the Sir Ratan Tata Fellowship in cataract surgery from Sankara Nethralaya Medical Research Foundation, Chennai. He received the Senior Honour Award from the American Society of Retina Specialists in 2015 and the International Ophthalmologist Education Award at the 2007 American Academy of Ophthalmology meeting. He has published widely in peer-reviewed journals, written chapters for books and is a reviewer for many journals, such as the *Investigative Ophthalmology and Visual Science*, *Retina*, *Journal of Cataract and Refractive Surgery*, *Archives of Ophthalmology*, *European Journal of Ophthalmology* and *Current Eye Research*. He is on the editorial board of PLOS ONE and *International Journal of Retina and Vitreous*.

3.18. Curing Children With Multiple Disabilities

At the David Brown Children's Eye Care Centre, Kode Venkatadri Chowdary (KVC) Campus in Vijayawada, Dr. Niranjana K. Pehera until recently treated children with problems related to strabismus (misaligned eyes), neuro-ophthalmology and other paediatric conditions.

After his post-graduate training in ophthalmology, Dr. Pehera underwent a fellowship supported by the International Council of Ophthalmology. He then completed a two-year fellowship in paediatric ophthalmology and strabismus at LVPEI and joined the medical faculty in 2010. More recently, he has moved to Liberia to work in the eye care centre set up by LVPEI in Monrovia, and develop eye care services for that country.

Dr. Pehera is interested in curing children with multiple disabilities, such as in cognition, hearing and vision. Very few doctors in India do this kind of work, informs Dr. Pehera. In many hospitals across the world, different specialists offer their respective treatment protocols, but they are often disconnected from one another. In the LVPEI model, different therapists work in tandem, under the same roof. He thinks this model is difficult to replicate even in developed countries because these specialists are scattered, and communication and interaction between them is poor. Moreover, there is no profit in this kind of work, as most patients cannot afford to pay for the services. However, at LVPEI one can pursue specialities in line with one's passion, as the institute allows tremendous freedom.

At LVPEI, if someone is passionate about teaching, there is plenty of opportunity to teach, Dr. Pehere elaborates. Trainees are selected through stringent processes. There are four fellows posted at the KVC campus, and they work with the faculty in clinics. Some of them are comprehensive ophthalmology fellows. In LVPEI, one can choose a niche and every opportunity is given to excel in that area and attain international stature. The institute provides full support to develop world-class expertise. Dr. Pehere cites the example of Dr. Virender S. Sangwan, who was backed completely by the institute when he pursued stem cell research and developed a new technique to treat corneal diseases.

Dr. Pehere believes that one's upbringing has a role in one's later development. His family went through much financial hardship, and his parents worked very hard and took loans to educate their children. However, earning money has never been a motivating factor for Dr. Pehere; his parents taught him that money does not give one lasting happiness. Instead, it is good work, good reputation and good relationships that provide inner joy and peace. According to him, while money is important, it should not be the primary goal of our work.

Dr. Pehere publishes research articles regularly and attends international conferences where he presents his work every year, all of which along with clinical care gives him a good deal of satisfaction. When he first moved to the Vijayawada campus, developing the facility took precedence over research. In the KAR campus, the faculty gets two days a week for pursuing research, which is truly unique. At the Vijayawada campus, Dr. Pehere got one day a week for research, and he used this one day to take care of children with special needs and devoted his personal time to research.

In upcoming places like the Vijayawada campus, it takes time for the patient base to grow. However, given the large patient

volumes in all the LVPEI hospitals, there is plenty of opportunity to collect patient data and use it for research. “The Bhubaneswar and Visakhapatnam campuses of LVPEI are picking up well on research productivity,” he informs.

Dr. Pehere says he studied in small village schools until the fourth grade. His mother was a district school teacher, and he would go to school along with her. He was always comfortable with whatever facilities they had. The glitter and glamour of big cities does not attract him. He likes clean air, less traffic and better interaction with people. Given the love and affection he and his family received in Vijayawada, he never felt that he was away from his native state of Maharashtra. He confides that he likes to spend time with his children, goes swimming with them regularly and takes them to dance lessons. He opines that even in the very work-oriented culture that prevails at LVPEI, it is possible to find good work-life balance.

3.19. Faculty Couples Dedicated to LVPEI

There are several married couples who are dedicated to the work of LVPEI. Some examples follow: Dr. Savitri Sharma and Dr. Taraprasad Das; Dr. Beula Christy and Jachin Williams; Dr. Swathi Kaliki and Dr. Jagadesh C. Reddy; Dr. Sanchita Mitra and Dr. Soumyava Basu; Dr. Anasua Ganguly Kapoor and Dr. Aditya Kapoor; Dr. Swati Badakere and Dr. Akshay Badakere; Dr. M. Bhavatharini and Dr. Rajat Kapoor; Dr. Tarjani Dave and Dr. Vivek Dave; Dr. Inderjeet Kaur and Dr. Subhabrata Chakrabarti; and Dr. Sameera Nayak and Dr. Aravind Roy.

Dr. Sameera Nayak and Dr. Aravind Roy are based at the Kode Venkatadri Chowdary (KVC) Campus in Vijayawada, Andhra Pradesh. Dr. Roy is a consultant in cornea and anterior segment services, and Dr. Nayak is a consultant in vitreo retinal and uvea services, doing trailblazing work in retinopathy of prematurity.

The couple had their first contact with LVPEI when they attended the one month Zeiss training programme designed for residents. During the Zeiss training, Dr. Roy and Dr. Nayak were exposed to many new advances in ophthalmology and to the excellence that could be achieved in the medical profession as demonstrated by the three global giants of ophthalmology based in South India—the Aravind Eye Care System, Sankara Netralaya and LVPEI. The couple recognised the need for education beyond completing a residency in ophthalmology, and they both decided to pursue

a fellowship—Dr. Nayak in retina and Dr. Roy in cornea. They saw in LVPEI an organisation that believed strongly in fairness and ethics, and provided opportunities to anyone willing to work hard. The institute was like a beacon in the dark and gave them an opportunity to see the excellence that could be achieved in the field of ophthalmology.

Both doctors were selected for the LVPEI fellowship programme. “It is probably destiny,” they say. “Fellowship at LVPEI is a unique experience; not only does it give knowledge, it also makes you a better human being. The 3Hs—hands, head and heart—are strengthened in every step of the fellowship.”

Their fellowship started in the Bhubaneswar campus and was followed by postings in nearly all secondary centres in Andhra Pradesh. After a year of rural postings at a secondary centre, the couple came to Hyderabad for the final phase of the fellowship. When they were done with the fellowship, things changed from good to better and almost as a logical step, they were offered faculty positions at the Vijayawada campus.

Dr. Roy and Dr. Nayak believe that selection of the faculty is based on talent exhibited during the fellowship, their sense of commitment and their ethic of hard work. It is like penance; to become a faculty member at LVPEI, you must be dedicated to service. The care is the same across the network, irrespective of paying capacity. “If someone is interested in administration, research, education and care, LVPEI is the place for them,” they assert. It is a proactive and bilateral decision between the institute and the fellow. The couple thinks that if one starts liking LVPEI, it would be difficult to work in any other organisation. What they like most about LVPEI is that the individual doctor has the decision-making power to waive charges, if they feel that a patient cannot pay.

About innovation at LVPEI, Dr. Nayak and Dr. Roy believe that innovation should not take place merely in healthcare; it should also enable social justice. According to them, LVPEI does as much as the government for social justice. However, in the LVPEI model, the ills of the government are eliminated and care is provided with an attitude of service to people who need it. The unique service delivery model is the best thing that LVPEI has contributed to the world. It does not end with healthcare; rather, its services extend into research, rehabilitation, education and community eye care, irrespective of the paying capacity of the person receiving those services.

LVPEI levels the playing field, they observe. The family you come from and your pedigree does not matter; talent is nurtured, provided you are willing to work hard. Very few organisations have the conviction and dedication to take people with diverse backgrounds and nurture them to be at par with the best in the world. This is a very significant feature of LVPEI, they state. If you have a brilliant idea, are willing to work for it and have the right attitude, you are given all the encouragement and opportunities.

The fellowship programme at LVPEI was excellent for this doctor couple. Both Dr. Roy and Dr. Nayak gained much confidence, and now they train others. Dr. Rao thinks a fellow should be as good as the faculty who trained him/her. Dr. Nayak and Dr. Roy agree: They believe that the role of the teacher should be to make themselves expendable, so that one does not feel the absence of a teacher.

Dr. Roy is just starting his journey as a teacher. He says he learns more than the student through the process of teaching. According to him, induction as a faculty member at LVPEI depends on the person's attitude, fairness, and willingness to learn and teach; medical and surgical skills are a smaller part of the selection process. The top

management team involved in recruiting faculty members from the cohort of graduating fellows mainly considers whether the person being selected can uphold the values that LVPEI believes in.

Sharing their observations on the leadership style, the couple observe that it is good to have many leaders; however, if everyone becomes a leader, we may have a dearth of followers! LVPEI is run in an atmosphere of collegiality. The LVPEI hierarchy is not very rigid, and everyone is encouraged and expected to express their views—everyone has a voice. “We do these things as a matter of routine; however, this may be a bit overwhelming to an outsider, especially as we seem to be eulogising the institution that we are part of,” Dr. Roy remarks.

Dr. Nayak and Dr. Roy have their own responsibilities and goals, and each is focused on their respective growth. While their routines are interdependent, being married and working in the same institute does not affect their work.

“We are ultimately working for a common purpose, irrespective of the position we hold. It is a sense of responsibility that drives us,” they say. If one of them slackens, the other corrects. “It is like living with more than one conscience—yours, your spouse’s and the organisation’s,” they say.

3.20. Far-Reaching Impact of Technology Innovation

“At the LVPEI Center for Innovation, our mandate is clear. Cut down the cost of healthcare solutions by 90% or improve existing gold standards by 10 times, or ideally achieve a combination of both. My focus is on ventures which leverage data and infinite computing to increase efficiencies in verticals that benefit society,” declares Raghav Gullapalli, executive director of Emerging Technologies and Business Development, and son of Dr. and Mrs. Rao.

Sharing glimpses of his personal life, Mr. Gullapalli says he and his sister, Vaidya Gullapalli, would often joke that the L V Prasad Eye Institute is their third sibling. While they disliked this sibling as children, it has grown on them and is now very much part of the family. “It is like an investment for society, and we know that we as the next generation must continue to participate in it,” he says.

Mr. Gullapalli recently joined LVPEI as the director of Emerging Technologies, and his sister is advisor at the Indo-American Eye Care Society, the U.S.-based organisation that supports LVPEI’s activities.

Mr. Gullapalli was only 12 years old when the institute first began operations. He grew up interacting with many of the clinicians here, all of whom he considers as extended family. Medicine did not resonate with him; he was far more interested in spatial thinking. He studied packaging engineering and industrial design at the

Rochester Institute of Technology, and thereafter gained experience in various areas of technology design, sportswear industry, wearable technology and venture capital industry. He returned to India in September 2017 with his American wife Raelene and three young children, a challenging move for the entire family.

Mr. Gullapalli shares his views and aspirations on various aspects of technology innovation at LVPEI aimed at increasing the reach of advanced and quality eye care, making it ubiquitous.

On Democratising Medical Care

“Our thoughts on price reduction come down to the very concept of democratisation of medicine,” he states. For medicine to be truly democratised, it must be something that can be shared; that is, eye care in the remote areas should be the same or at least as close to or as equal as possible to what is offered at the main campus, aligning with the three pillars of the organisation: equity, excellence and efficiency.

“Using innovative techniques or technology solutions, we believe that we can flatten healthcare,” he explains. “So that even if we can’t necessarily bring clinicians or doctors to the rural environment, what we can do is bring their minds or their intelligence, through intelligent machines or intelligent services, as close to the doorstep of patients as possible.”

In a study done by the WHO, it was found that patients from remote areas spend more than 50% of their annual income making the trip from their villages to the urban centres for medical care! “By flipping the model and providing care for those at the rural level, we can see more women—our ratio is 60:40, women to men, 90% of eye diseases, such as refractive error, cataract and diabetic

retinopathy, can be handled within 50 kilometres of where they live, versus having to come to one of the bigger centres, as the expense would be prohibitive,” Mr. Gullapalli states.

Innovative Devices

The idea behind many of LVPEI’s innovations is to put these solutions in the hands of not only ophthalmologists and optometrists, but also any other medical personnel—nurse practitioner, general physician—so they can do most of the early screening and then refer people on to specialists if necessary, says Mr. Gullapalli.

The Pediatric Perimeter: This device measures the visual fields of an infant lying supine in a kind of “tent.” It is the brainchild of Dr. PremNandhini Satgunam, who works with the innovation team. While the infant focuses on “fixation lights,” their eye movements are precisely recorded (gaze-tracking) through a customised circuit board. Using currently available devices, it is difficult to check the visual fields of children under the age of four; even many adults are uncomfortable sitting on a chair for a long time. This device allows older people to remain in a supine position and undergo the visual field test. Some of the existing devices cost roughly \$36,000—the pediatric perimeter costs about \$2,000.

The Owl: The Open Indirect Ophthalmoscope (OWL) is an alternative to expensive retinal cameras. The device is embedded with machine-learning [a form of artificial intelligence], so a patient’s retinas or glaucoma eye disease can be graded on the spot. The device does not require Internet or connectivity to other devices as it is a network edge computing device, one that captures and processes client data irrespective of the patient’s location and without depending on a distant processor for central storage or

analyses of the patient data. So in remote areas where connectivity is hindered by low bandwidth, early stage retina grading can be done using this device, without the data travelling long distance.

The team is trying to put together innovative strategies as quickly as possible. The OWL was picked up by a local company, who will bring it to commercial markets. This is an open source project and anyone can take it up if they wish. “What we are trying to do is to democratise this technology, and thus help healthcare become more equitable,” Mr. Gullapalli informs.

The Folding Foropter, Innovation for Cost Reduction: The Folding Foropter is a device that measures refractive error to determine an individual’s spectacle lens prescription. The conventional phoropters are very expensive; they are non-existent in remote regions. LVPEI Innovation Center’s Folding Foropter is made of cardboard! It costs just a small fraction of existing devices and is highly accurate.

Cyclops, An Agile Innovation: Sandeep Vempati, who works at the Center for Innovation, explains about the Cyclops, an agile innovation. The primary vision centres in the entire network have a tablet with a camera embedded to send clinical information to the main campus at Hyderabad. The innovation team made a casing that sits on the slit lamp biomicroscope (an instrument consisting of a high-intensity light source that can be safely focused on the eye), shining light on the blocked anterior pathways of the eye that cause glaucoma. Using this Internet-based steady camera innovation, the vision technician can transmit quality images to the main campus, and any doctor can watch the video, arrive at the diagnosis and give the necessary prescription.

Dr. Vipin Anthony Das thinks that this device can be used on multiple platforms. There are already five prototypes which are in place. Mr. Vempati says it took him one week to develop a prototype, while all the other manufactured parts have been outsourced.

Cost Reduction and Import Substitution: The Late Bhooshan Bagga (who unfortunately passed away in 2019) was a mechanical engineer with expertise in operations management. At LVPEI, he worked on innovations in bio-medical devices, cost saving initiatives, product improvements and preventive maintenance. He also conducted training programmes for the bio-medical and vision centre technicians, and ophthalmology trainees. He used to work on the cost reduction and import substitution programmes.

The engineers solve seemingly “trivial” issues at the centres in the network. These may be trivial for engineers, but not so trivial for the hospital. For instance, something that cost Rs. 4 or Rs. 5 per piece could eventually be made for Rs. 0.80; if you look at 20,000 units annually, it results in significant savings.

A Common Language for Imaging: Dr. Kiran Kumar Vupparaboina, an electrical engineer, joined LVPEI in 2014. He is the technical lead in the signal-processing lab. His team is developing a kind of catalyst to bring together the community of data scientists, imaging scientists and medical doctors. They are attempting to create standardised datasets for images, for image analyses for medical care and for eye care. It is like developing a language for identifying, classifying and analysing images.

Financial implications: Mr. Gullapalli explains that the LVPEI Center for Innovation is a profit centre and not a cost centre. “We don’t manufacture, but we license our innovations to industry,” he says. Similar to the MIT Media Lab model, corporations are taken on as members with a subscription fee, and those companies can gain access to “first refusal” to commercialise the products and solutions created in this centre. He says it allows for an asymmetric risk. The membership model covers the associated risk, as well as the operating expenses; any success is pure upside.

“LVPEI is one of the largest eye care centres in the world. We have access to massive amounts of data from patients who undergo our screening process. We have a clear policy on patient privacy; patients can opt in or opt out regarding whether we can use the images we gather from their eyes for research purposes, and thereafter, we utilise these images for our research on early detection of disease conditions. About 60% to 70% of our patients opt in and allow use of their images,” informs Mr. Gullapalli.

3.21. A Global Thought Leader on Corneal Infection

Dr. Prashant Garg is one of the emerging leaders of LVPEI. He came to LVPEI in 1996 for a fellowship in cornea, and later joined the cornea faculty in 1997.

When Dr. Garg's father was wrongly diagnosed with glaucoma instead of edema of the brain, Dr. Garg understood the need for evidence-based medicine. That became his life motto, taking him into the field of medical research, clinical practice and surgery. Five years after joining LVPEI as a faculty member, Dr. Garg was invited to present a paper to an audience of 5,000 ophthalmologists in the United States. Since that meeting, he has received multiple accolades through the years.

Today, Dr. Garg is a global authority on corneal infections. He admits that this has been possible because Dr. Rao constantly challenges his high-profile faculty members to be the best in the world in their specialisation. Dr. Garg was the first Indian and first non-American to become the president of the U.S.-based Ocular Microbiology and Immunology Group in 2013.

Presently, he is the director of the KAR campus (Kallam Anji Reddy campus) in Hyderabad, which is the Centre of Excellence for the network, and the director of the Kode Venkatadri Chowdary campus, Vijayawada. He is also the network head of eye banking at LVPEI.

Dr. Garg has received a large number of research grants from various agencies to pursue further research. With more than 250 scholarly papers to his credit, he publishes his research at a furious pace, in addition to his clinical work and surgeries in ophthalmology. If one pools a sample of 100 typical doctors in India, collectively they may have less than 250 papers over their lifetime. That is the kind of prolific output among doctors in LVPEI, which makes it a globally premier institute for ophthalmology.

Expressing his views on the relevance of LVPEI in the broader Indian context, Dr. Garg says, “In a five-kilometer radius in a typical large metro like Hyderabad, there may be a dozen corporate hospitals, each vying with the others for patients and business. However, that is not the case with the hinterland in India. People must typically travel long distances to get to a primary health centre, with little equipment, and contend with unmotivated staff.”

Reflecting on the success of LVPEI, he says that creating hardware (buildings, equipment, etc.) is easy. Anybody who can garner Rs. 100 crores (Rs. 1 billion), which is relatively easy to do today, can put up an LVPEI-like infrastructure. Software is a little bit more difficult to replicate; what one sees at LVPEI, however, is even more intangible, the soul-ware (or heart-ware) that is in place.

Dr. Garg says his exposure to the institute changed his perspective completely. The rigor of the training was so intense during his cornea fellowship that he and his fellow students felt that once the training was completed, they would have had enough, and would go back to their hometowns to practice ophthalmology. Instead, when Dr. Rao offered him a position on the faculty, Dr. Garg accepted and never looked back. On Dr. Rao’s advice, he focused completely on corneal infections, exploring new areas in this field. He published about 15 papers each year, and over time, he became the pioneer in this field.

Dr. Garg is very passionate about teaching and underwent training in health education at the Harvard Macy Institute.

Thoughts on the LVPEI Pyramid of Eye Health

Reflecting on the success of LVPEI's pyramid model, Dr. Garg states that high quality training is required to make this system work. LVPEI created a team-based approach for eye care and conducts training across the entire spectrum of staff involved in patient care, from the modestly placed vision guardian for surveillance of a cluster of villages, to the highly regarded ophthalmologist in the network.

LVPEI's programme for allied eye care personnel is accredited to the International Joint Commission for Allied Health Personnel (IJCAHP), he informs. "In line with the increasing intensity of knowledge required for various roles, the training for the vision guardian is of one-week duration, vision technician is of one-year duration, and ophthalmic assistant training is for two years. Thus, LVPEI not only created the Pyramid Model of Eye Health, but also ensured that there is an appropriate training model for all the cadres of healthcare professionals," Dr. Garg explains.

He observes that the changing social and economic conditions will add to the burden of age-related blindness, which includes diabetic retinopathy, cataract and age-related macular degeneration, and the country should prepare for this. Telemedicine, he hopes, will help address this problem to a significant extent, making advanced care easily accessible in rural and under-served locations.

With diabetes on the increase, and because of the close link between diabetes and diabetic retinopathy, LVPEI is now integrating early

detection and possible treatment of diabetes at the grassroots level. The idea is to equip field-level workers to conduct blood glucose assessments and identify diabetic patients. At the same time, it is essential for LVPEI to carefully choose the areas to diversify into, as reckless diversification may result in loss of focus, he adds.

In general, LVPEI does not rely on financing schemes from the government due to the time and effort that it entails. Instead, approaching local philanthropists is far more effective in raising resources, as they have a huge stake to ensure that the centres they promote in the community are successful. Most of the primary and secondary centres that LVPEI operates are at locations where good quality eye care is either non-existent or of very poor quality.

Major Strides to Treat Corneal Infection and Launching One of the World's Largest Eye Banks:

Corneal infection is becoming increasingly common in India. If not treated on time, the infection could result in ulceration and loss of vision. Treatment sometimes requires corneal transplantation, replacing the diseased cornea with a donor cornea. This requires an elaborate and effective supply chain to harvest corneas from the eyes of patients who die in hospitals. The need for this supply chain prompted LVPEI to get into eye banking in a big way. Enhancing public awareness about the need for organ donation requires major effort. LVPEI works with a variety of stakeholders, such as the government, religious leaders, etc., to raise awareness.

While there are significant numbers of well-trained cornea surgeons in the country, there is not enough supply of corneas. Convincing the relatives of the deceased person to donate eyes (cornea) when death occurs is a major challenge. Wrong beliefs and myths about eye donation make it even more difficult. It requires

changing the mindset of people through extensive counselling at the hospital after the patient dies.

Even then, all corneas may not be suitable for transplantation; the health of the donor cornea has to be checked based on the donor's health and cause of death. After successful harvesting, the next step is to transport the healthy cornea to the eye bank and to store it until it is used for transplanting. Also vital is the time lapsed after death; corneas harvested beyond six hours after death are not fit for transplantation.

Unfortunately, eye banking in India is not professionally managed. The number of corneas that eye banks collect is miniscule, and the unprofessional manner in which the whole process is managed makes the corneas unfit for transplantation. There is also no procedure to have a patient ready if a suitable cornea is available. As a consequence, there is a big gap between the demand for corneas vis-à-vis the number of corneal tissues actually collected. This despite the large number of eye banks that are registered in the country!

To tackle this challenge, Dr. Garg and his team created an effective and extensive network, whereby LVPEI's eye bank would identify, harvest and transport the corneas through stringent processes, and make them available to corneal surgeons across the city and elsewhere. Hospitals are a reliable source for donor corneas, as they can provide the medical record of the deceased patient. In partnership with the non-profit organisation SightLife of USA, LVPEI has set up a central cornea distribution system; surgeons/eye care providers from other centres in the city and state now forward their requirement for corneas through this IT-enabled system. The corneas are effectively delivered in the sequence in which the

request was received, subject to cornea tissue availability and the urgency of the medical condition.

Another big challenge for eye banks in addition to the unsteady supply of good quality corneas is the unskilled harvesting by untrained people. Several eye banks have inadequate infrastructure and poor quality procedures. LVPEI engaged in training and certification of eye bank technicians and accreditation of the eye banks to address this problem.

Eye banking is heavily dependent on voluntary eye donation made by the relatives of the dead person whose cornea is to be harvested. LVPEI had a creative solution to this problem. As most deaths occurred in hospitals, it was decided to use hospitals as a platform to motivate people to donate corneas of their dead relatives—the hospital cornea retrieval programme (HCRP). To run the programme, a small team including a full-time grief counsellor was posted in the Nizam's Institute of Medical Sciences, a multi-speciality government hospital in the neighbourhood of LVPEI. This helped increase the number of corneas being harvested. The programme has now been expanded to encompass several other hospitals in the city of Hyderabad and other centres.

Another challenge was to store these corneas for a sufficiently long time, to be available when a patient required transplantation. With the support of the U.S.-based International Federation of Eye Banks, LVPEI started to manufacture its own preservation medium called the McCarey-Kaufman medium to store the corneas, thereby increasing the storage time of the cornea to four days from the time it is harvested.

Due to these initiatives, by 2002, LVPEI was able to collect enough corneas so that there was no waiting time for surgeries at the institute. With further growth and innovation, close to half of

the corneas harvested are now sent to other corneal surgeons/eye hospitals in the city and other parts of the state of Telangana. The eye bank technicians have been trained to evaluate corneas and decide if they are suitable for corneal transplant. By 2003, the eye bank at LVPEI was recognised as a global centre of excellence in eye banking and corneal transplantation. LVPEI is now working with the governments of Andhra Pradesh and Telangana to create an eye bank network similar to the LVPEI Pyramid of Eye Health.

Innovations Galore

The innovation LVPEI has made in the realm of vision rehabilitation, enabling it to provide the complete spectrum of eye care, is fulfilling, says Dr. Garg. Innovating to create affordable equipment and consumables needed for eye care, to bridge the gap between developed and developing nations, is a major contribution of LVPEI. The tele-ophthalmology model rolled out at LVPEI enables a specialist in the tertiary eye care centre to manipulate the robotic instrument in a remote village and treat the patient there. LVPEI is also piloting the manufacture of previously imported high-end scleral contact lenses at low cost to treat patients suffering from dry eye disease.

Dr. Garg believes that LVPEI's core values have helped the institute to be recognised among the best eye care providers in the world.

3.22. The Humane Strategist

Dr. Pravin Krishna Vaddavalli is the director of The Cornea Institute and head of refractive surgery, cataract and contact lens service. From the time he was a child, Dr. Vaddavalli had aspired to be a doctor and save lives. Ophthalmology to him dealt with a tiny part of the body, until his father's ophthalmologist friend explained to him how vision could be life-changing for a person. Dr. Vaddavalli was myopic, and he wore glasses from childhood onwards.

When he started ophthalmology training in medical school, he was discouraged by the poor facilities and standards of training. He almost gave up ophthalmology, even contemplating changing his speciality and moving to the UK.

Dr. Vaddavalli's interest, however, was revived when he met some members of the LVPEI faculty during a training session at Sarojini Devi Eye Hospital in Hyderabad. He soon joined the one-month Zeiss programme at LVPEI. That one month completely changed his perspective about eye care and ophthalmology. He was astounded that optometrists and optometry students were better equipped at evaluating patients, identifying and diagnosing diseases, and handling ophthalmic equipment than he was and perhaps his professors were. An optometrist being better than an ophthalmologist was something totally unexpected. He was determined to come back for a fellowship to LVPEI, and he hasn't looked back since.

After fellowship, Dr. Vaddavalli joined the medical faculty at LVPEI, and over time, took up contact lens work, specialised

in paediatric cornea, and later took up laser surgery. With the opportunities available, he worked on infections and investigations, then moved on to contact lenses and paediatric cornea and, realising that you cannot become really good in three or four things at the same time, he decided to focus mainly on laser surgery and corneal partial thickness transplantation.

With the institute's support, Dr. Vaddavalli underwent advanced training in refractive surgery and corneal partial thickness transplant surgery at Bascom Palmer Eye Institute in Miami, USA, and returned in 2011. He continued to receive his salary during this time, which is something quite unheard of, he remarks.

LVPEI stands apart in its commitment to treat any patient at any level and with whatever kind of treatment, whether the patient can pay or not. That judgement would be purely medical, rather than based on what that patient could pay. Dr. Vaddavalli does not think this commitment is possible in any other practice in any other part of the world.

Another important aspect is the opportunity to teach. He says, "One of the things that really ties you to the profession is the ability to nurture and to shape the careers of the next generation, and the satisfaction that is derived from that is immense." Research is very similar to education, because it is all about sharing with others what you have discovered and done.

Dr. Vaddavalli likes to work on instrumentation and new surgical techniques and understanding their dynamics. He has about 75 publications in the last several years, which is again an opportunity to share what you do with everybody else. Another aspect that keeps him here is the ethos and the work ethic. One of the things he has learnt during his time in LVPEI, probably more than ophthalmology, is discipline. That is something that doesn't exist to this scale nor

is it given such importance anywhere else, he says. He would not be able to adjust to a system that does not have some amount of discipline in it, he says.

He is concerned about the decreasing interpersonal interactions as the organisation grows in scale. He also believes the focus on specialisation narrows the scope of ophthalmologists, for a comprehensive ophthalmologist would be able to take care of a patient more holistically than would a specialist ophthalmologist, he says.

Sharing his vision for the future, Dr. Vaddavalli opines that LVPEI should focus more on speciality care. “Speciality work is the area where we are probably going to be able to lead the world. And speciality care in rare diseases is probably going to differentiate LVPEI from most of the other places in the next few years,” he says. However, fewer patients seek speciality care, making sustainability of speciality clinics a challenge. Considering viability, he sees three directions for LVPEI in the next few years. The first direction would be further developing the segment that provides care for common conditions like cataract and refractive surgery because this area of care is definitely revenue generating. Dr. Vaddavalli believes that by combining care for these common conditions with treatment for speciality care, the clinics can be made viable.

The second direction would be ensuring that speciality clinical care, research and education stay on the cutting edge; the third direction, the direction that is least visible to the public, is LVPEI’s spread into remote areas where no other health care provider would go to treat patients.

These are the three levels at which LVPEI should continue to operate—one is the steady bulwark doing most of the work in the centre; the primary and secondary level care which needs to be spread over and influence a much larger area; and then at the

pinnacle, the kind of speciality care that continues to be the best in the world. LVPEI has been able to provide quality with honesty, which is the reason why many people come here for treatment, and that will continue, Dr. Vaddavalli observes.

Talking about innovation, he says that the topmost innovation in LVPEI is the pyramidal model of eye care—the Pyramid of Eye Health; the second is the breakthrough surgical procedure SLET (Simple limbal epithelial transplantation); and at the third position are the teaching programmes, especially the fellowship programme, for their approach to training, interactions and opportunities given to trainees.

When people ask what keeps him at LVPEI when he could make more money elsewhere, Dr. Vaddavalli's response is that LVPEI has shown him the way and opened his world in ophthalmology. "I wanted to give back and I am still giving back, because the amount of change that it has given me is incalculable, something I can never give back completely, and that is why I am here," he says. His wife is a paediatric surgeon. They live with his parents, and all of them have imbibed the LVPEI system as much as he has, he says.

Reflections on Leadership Transition and Challenges

Dr. Vaddavalli believes that leadership change probably is the biggest challenge for LVPEI in the near future. However, he does not see the period of leadership transition being a difficult phase because nobody feels qualified to take over the position of Dr. Rao, so actually, the people who don't get selected may be somewhat relieved, he remarks. He says that the next rung of leaders who will take LVPEI forward in the future get along very well with each other and actually are good friends, so he does not think the transition will be a major problem.

Dr. Vaddavalli also believes that the transition will not change the direction of LVPEI. Once you cross 10 years or more as an LVPEI employee, you imbibe the direction in which you are going and you come to believe in the vision. That is one reason he does not see a radical departure from LVPEI's direction, one that could happen if someone from outside the institute who may be close to the stature of Dr. Rao takes over, which will not work for LVPEI, he thinks.

However, with leadership change coming from within the institute, he does not see a major shift happening. Over a longer period of time, there may be some change in direction and policy, but not in the short term. LVPEI is an organisation that is running on the momentum built over several years, and that momentum will not slow down during the leadership transition, Dr. Vaddavalli asserts. The momentum is just going to carry it forward. He believes that the template has already been laid; we already know what works and what doesn't work.

Success or damage will take many years to show up, so the trick is to recognise what is going on early enough and duly make the course correction, he says. While the culture of collective leadership exists, he thinks it is important to empower the senior leadership with the ability to make that course correction and not just talk about it. Also, because there is no single person who stands above the rest to take Dr. Rao's place, and there are people with different strengths (and weaknesses), the collective strength is what is going to take this forward.

Replication of the LVPEI Model

When asked about the difficulty behind replicating demonstrable models like LVPEI and Aravind, Dr. Vaddavalli says the difficulty

is on account of individualism and the lack of collective action in the field of medicine. Doctors tend to ignore the power of collective leadership and the change that they could bring about in society with a leader who can harness their collective force. Such leaders who lead by example are rare, he opines.

3.23. Living Intensely in the Present

Dr. Rajeev Kumar Reddy Pappuru is the head of patient care services, and oversees all patient care activities at Kallam Anji Reddy (KAR) campus and Kode Venkatadri Chowdary (KVC) campus. He is on the clinical faculty at KAR campus and specialises in vitreoretinal diseases, uveitis and ocular immunology.

Dr. Pappuru hails from an agricultural background. His father had a transferable job with mostly rural postings, resulting in his growing up in villages during early childhood. He spent a considerable part of that period at Bukkapatnam, near Anantapur, Andhra Pradesh. He realised that at these places, the doctor is quite far away from the villages, and medical care is rarely accessed by the rural population.

In his early years, as is normal in villages, he would sleep on the terrace at night. Looking at the stars and the various constellations, he would ponder about basic questions of life, such as, “Who am I?” and “Why am I here on this earth?” He had no answers at that time. And then as he grew up, the answers began to manifest progressively. His early education was in Telugu, all the way to Grade 10. He was reluctant to pursue medical education, and initially joined undergraduate studies in geology-physics-chemistry. However, when he got through the medical entrance exams, he accepted his calling and joined. As he progressed in his medical studies, he realised that he could “make a difference to the lives of people,” and this became the driving impetus in his life.

Dr. Pappuru developed an abiding interest in medicine and surgery. When he missed getting into the post-graduate course by one rank, he did not want to give up. He decided to pursue ophthalmology in the meantime at Sarojini Naidu Eye Hospital, hoping this would give him some free time to make a second attempt. However, during his ophthalmology training, he began assisting his professor in the evenings in his clinic, and gradually, he developed an interest in the field, especially in retina. That year, he went to Sankara Nethralaya, Chennai, to pursue his retina fellowship. The path he has followed in life is best summarised in his own words: “I would get into a particular field without really wanting to pursue it, but eventually, after exposure, end up liking it!”

After completing his fellowship, Dr. Pappuru joined as a faculty member at the same institute and settled there. When Dr. Avinash Pathengay of LVPEI, with whom he was professionally associated, asked if he would like to move to LVPEI, Dr. Pappuru was not initially interested. However, when Dr. Pathengay broached this subject again a few months later, he relented, agreed to attend the interview, and was selected as a faculty member at LVPEI.

LVPEI also creates a nurturing environment to continually grow academically in one’s chosen field, Dr. Pappuru says. In contrast, a private practitioner can only increase the size of the practice and make more money. Dr. Pappuru does not place much value on money, beyond a point. According to him, what one sees behind the building façade at LVPEI is far deeper: the richness of human values.

What Dr. Pappuru likes about LVPEI is the way every patient is treated with respect. There is great freedom to do whatever is best for the patient, but along with it comes huge responsibility, he states. As a doctor at LVPEI, one can decide on a course of action based on

the medical condition without worrying about the financial status of the patient, and get that done without much effort. He fully realises the supreme privilege of treating free of cost those who cannot afford to pay for the treatment.

Dr. Pappuru has been with LVPEI since 2006. His foray into administration started in 2012, when he was given the responsibility of heading the retina speciality. He points out with distinct pride that there has been much growth in the retina speciality across the LVPEI network between 2012 and 2018. The number of faculty members has doubled from six to 12; the faculty numbers in the KAR campus alone have increased from two to four. In 2018, spurred by his rural background, Dr. Pappuru wanted the challenge of driving rural eye care in LVPEI. However, when Dr. Rao suggested that he should consider heading patient care at the KAR and KVC campuses, in Hyderabad and Vijayawada respectively, he took up that challenge.

From the time he began occupying leadership positions, Dr. Pappuru realised that to make people grow, he should stand behind people and encourage them, rather than do micro-management. This attitude led to his nomination as a possible candidate by colleagues at LVPEI, when the search for the next chairperson of LVPEI commenced in 2018. Although Dr. Pappuru had never visualised himself in leadership and administration positions, he started enjoying these roles.

Asked to comment about his vision for himself, he said that he had no specific goals, except that his life should be spent helping others. At a personal level, he does not think too much about the future, nor does he harbour dreams such as, “I should be a top ophthalmologist in the country or the world!” On a lighter note, he reflects: “I did not want to be a doctor in the first place!”

His philosophy of life can be neatly summarised in one line: “Do what is required and right today. The rest will be taken care

of by The External Force.” When asked to elaborate, he said, “God is present everywhere. I would like to keep doing what is important.” He has no intention to move out of LVPEI, irrespective of the decision on Dr. Rao’s successor as the next chairperson. He considers himself to be more of a clinician and less of a researcher. This has become a reality, especially after he took over leadership and administrative roles from 2012 onwards. He is not obsessed about getting his name as an author on publications just for the sake of having a long list of publications on his resume. Instead, if he is able to solve a problem or find answers to intriguing questions, it gives him a sense of accomplishment.

In closing, Dr. Pappuru reflects back to his childhood days of sleeping on the terrace at his rural home, staring at the stars. “I am a small particle in the universe,” he says. “If I look at all the billions of stars in the universe, what is known is indeed little. I realise we are all insignificant in the grander scheme of things. We give too much importance to ourselves. All we can do is do our bit as best as we can and move on when the time comes to go.”

Dr. Pappuru’s dream for LVPEI is for the institute to directly or indirectly touch the lives of everyone in the four states where it operates (Telangana, Odisha, Andhra Pradesh and Karnataka). In research and education, LVPEI should be among the top five active ophthalmology groups in the world.

3.24. Photographs



Aesthetics are very important at LVPEI. The boulders depicted in this picture have given the institute enormous strength—these rocks are 2.6 billion years old! That means LVPEI is resting on a foundation of 2.6 billion years, even though it is only a 33-year-old organisation!



(From right) Professor D. Balasubramanian, Dr. Rao, with Champalimaud Foundation President Ms. Leonor Beza and Vice President Mr. João Silveira Botelho who supported LVPEI's Translational Research Centre.



Dr. Beula Christy gives a talk on centre-based vision rehabilitation, Low Vision Awareness Programme, LAP 2016.



Mr. Rajashekar Varda, executive director of GPR ICARE, and the late Mr. Sam Balasundaram, former head of public relations and fundraising, seen with the President of Liberia, Nobel Peace Laureate Her Excellency Dr Ellen Johnson Sirleaf, representing Dr. Rao to take forward the Liberia Eye Health Initiative, February 2014.



Mr. Satya Joji Prasad Vemuri, assistant director of administration of LVPEI's secondary centres, gives away the Eye Health Management Course certificate to Mr. A. Emmanuel Kanneh, a participant from Africa, 14 July 2018.



Dr. Mukesh Taneja trains Dr Revathy Yerramneni, an LVPEI alumna, as Nurse Manohara assists her at the DSEK Wet Lab workshop, 11 December 2017.



Dr. Ramappa holds a patient whom he had operated for corneal transplant in both eyes.



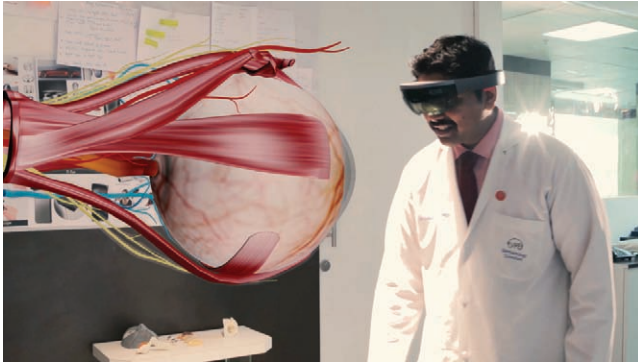
Dr. Virender S. Sangwan seen here in OPD, November 2016.



Dr. Virender S. Sangwan receives the Shanti Swarup Bhatnagar Award, 2006.



Dr. Sunita Chaurasia makes a presentation at LVPEI's 30th Foundation Day, 17 October 2017.



L V Prasad Eye Institute developed the first Holo Eye anatomy demonstrated here by Dr. Anthony Vipin Das, 2018.



Dr. Ashutosh Richhariya leads the tele-ophthalmology project in Paloncha, 2018.



Dr. Subhadra Jalali examines a child under anaesthesia in the EUA room, 2017.



Dr. Jalali receives the Pabitra Basari Memorial Award from the Association of Community Ophthalmologists of India (ACOIN) 2017.



Dr. Anil K. Mandal speaks to a patient, 2017.



Dr. Anil Mandal during a child's eye examination for glaucoma treatment.



The Dr. Savitri Sharma Chair of Ocular Microbiology being unveiled by Mr. Ajit Rangnekar and Dr. Shivaji Sisinthy, 17 October 2017.



Dr. Avinash Pathengay gives a lecture to post-graduate students during EyePEP 2016.



Dr. Merle Fernandes examines a patient in the eye clinic, 2016.



Dr. Swathi Kaliki speaking to the audience during Retinoblastoma Network Workshop, 9–12 June 2017.



Dr. Ramesh Kekunnaya examines a patient in the eye clinic, 2017.



Dr. Mohammad Javed Ali demonstrates the tear duct during microsurgery for viewing with 3D glasses in Three Dimension space, 2017.



Dr. Raja Narayanan examines a patient in the eye clinic, 2017.



A book for children being released during an international meeting to commemorate the completion of 20 years of the Jasti V Ramanamma Children's Eye Care Centre, 1 December 2017.



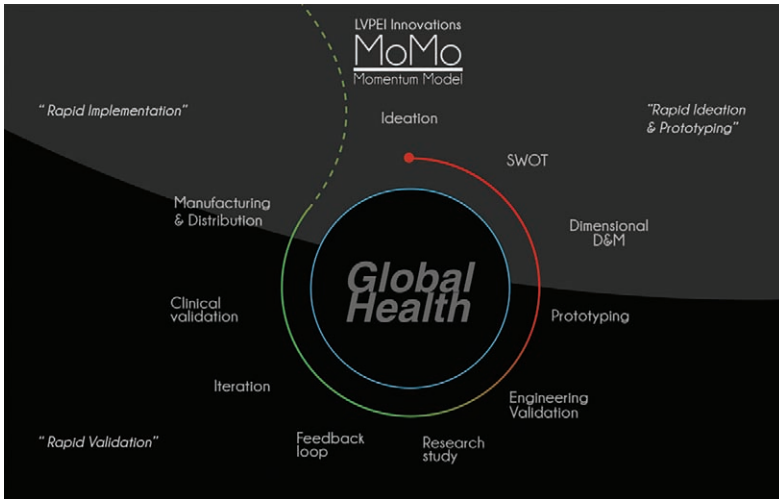
The faculty couple Dr. Sameera Nayak and Dr. Aravind Roy negotiate a tough work-life balance.



Dr. Aravind Roy listens as Dr. Jalali talks animatedly at the researchers powwow “Crosstalk,” 2017.



Delegates at the ‘Eye On The Future 2020’ Symposium conducted by the Child Sight Institute learned to unravel the mysteries of complex squint, 12 January 2020.



Momentum Model or MoMo, from idea to implementation—conceptualised by Mr. Raghav Gullapalli. This approach has been adopted by the Center for Innovation.



Dr. Prashant Garg gives a lecture at the University of Cambridge, United Kingdom, 2014.



Dr. Pravin Krishna Vaddavalli performs a complex eye operation at Edward and Soona Brown Eye Centre, LVPEI's secondary centre in Dhulipalla, Sattenapalli, Guntur. (At right) Dr. Varsha Rathi, Head of Clinical activities, Secondary Centres, (seen in pink scarf seated third from right) presents the pioneering team's success at a Press Conference, 28 March 2016.



Dr. Rajeev Kumar Reddy Pappuru gives a talk during the Medical Retina Preceptorship programme, 22–23 October 2016.

PART – 4

Stories of those Who Aspire and Inspire

“We think in generalities, but we live in detail.”

—A.N. Whitehead

A.N. Whitehead, a great mathematician and philosopher, was skilled at thinking in the abstract. All mathematicians and philosophers are. But we ordinary people? We think in the concrete and live in it. We think as real people, with events and places linked in meaningful and memorable stories. This is how we learn too.

This section features such stories—stories of patients, volunteers, faculty, fellows, alumni, staff and donors, whose association with LVPEI has changed their lives. Through their stories, we are best able to understand the true nature and achievements of the caring institute that is LVPEI.

4.1. Patients

The field of education was revolutionised with the realisation that the student is the centre of all effort put in by the system. Likewise, a shift in focus to patient-centred care would revolutionise healthcare. To make this happen, the need of a patient should take precedence over medical expertise—from the point of entry to exit. Patient care staff and faculty at LVPEI—from the parking attendant to a superspeciality consultant—are encouraged to understand and work from the patient’s point of view. The fears and expectations of patients from a village in Adilabad district of northern Telangana would be very different from those of a wealthy businessman from the city of Mumbai. The LVPEI team understands this concept and strives to practice it. Their joint effort makes the patient experience at LVPEI special, as these stories illustrate. Please note that all patients are referred to only by their first name to protect their privacy.

* * *

Paying Patient

Suman has been travelling by train, an overnight journey of about 15 hours, from Malad in Mumbai to Begumpet in Hyderabad for the last 17 years. When she first began this journey, she could not see at all and needed an escort; today, after five surgeries and a cornea transplant, Suman travels alone. A single mother having bravely parented her growing daughter, now 23, she manages her home and life with *himmath* (great courage).

The 45-year-old Suman shares her story:

“I had perfect vision until I began wearing contact lenses to make a fashion statement. As I was going out one day, I put on my lenses. My eyes began to burn, water and pain. I removed the lenses and found that they had a white film on them. I rushed to the doctor only to be told that the fluid in which the lenses were soaked was a toxic chemical that had damaged the cornea of both my eyes. I was blinded and grappled with my condition every day after that incident.

“I began treatment with Dr. Vinay Agarwal in Mumbai and had four operations where the amniotic membrane was inserted for protection, but I still had no vision. In 2000, I was referred to Dr. Virender Sangwan of LVPEI for a cornea transplant. He gave me confidence and hope. My right eye accepted the transplant instantly, and I have fairly good vision now. However, the acceptance level of the left eye has been low and even after five surgeries, I have very poor vision. Considering my financial situation, I was charged only a basic fee, something I could never have imagined in Mumbai.

“I am now under Dr. Anil Kumar Mandal’s care at LVPEI and visit him every six months for a check-up. Sitting in the waiting area for my appointment, I am often struck by the service to humanity that LVPEI is doing for the masses. Where would people like me go to for treatment, if not to this institute? Here, patients are treated with dignity. From the moment I step inside the gates of LVPEI, everything is organised for my convenience, everyone is there to help; even doctors forego their fee to make it affordable. People talk of Hyderabad being a high-tech city; for me, what makes any city high tech are hospitals like LVPEI that attract patients from all over the world. Truly, LVPEI is a jewel in the crown of Hyderabad!”

Although she is now under the care of Dr. Mandal, Suman continues to share a special emotional bond with Dr. Sangwan and has tears in her eyes every time she meets him. She says that these are not tears of sorrow but happiness, because no one else could empathise more with her journey from blindness to partial vision, from hopelessness to reason, and from struggle to survival. He has stood by her through it all, helping her get a grip on the things of life that matter.

* * *

Non-paying Patients

A hallmark of LVPEI is that many of its patients who cannot pay do not have to pay. Here are some of their stories.

Maekla is a bright seven-year-old patient of Dr. Swathi Kaliki. She playfully says, “I only speak Bangla, my father Babul Miya and mother Shumakta can speak to you.” A doting father, Babul Miya has an electronics shop in Dhaka, Bangladesh and Shumakta is a housewife in complete control of the situation. Shumakta narrates that Maekla was diagnosed with a cancerous tumour in her eyes at the age of 15 months. Her left eye was operated in Dhaka, but unfortunately, Maekla lost her vision. She was administered 14 chemotherapy sessions, but in vain.

Devastated yet determined, her parents took the referral of LVPEI from the Islamiah Eye Hospital, Dhaka, and consulted Dr. Kaliki in 2013. Treatment began in LVPEI and in 2015, Maekla had her right eye operated upon. A lens was fitted in her eyes to maintain the vision that she had left. She had to take six chemotherapy sessions. Her left eye was also operated upon. The entire treatment was done free of cost.

Shumakta says there is no hospital like LVPEI in her home country, Bangladesh. Dr. Kaliki makes Maekla very comfortable; hence, they don't mind the long journey from home. Their travel from home is 35 hours—5 hours by bus from Dhaka to Kolkata and 30 hours from Kolkata to Hyderabad by train. All this they do, so that their *laadli* (darling) Maekla can get back to school, play with her friends and be a happy child. Ask Maekla what she plans to become when she grows up, “*Police officer banoongi* (I will become a police officer),” she announces without hesitation!

* * *

Desika is a tiny nine-month-old baby girl who was born prematurely. Prominent on her face is a pair of glasses that are firmly secured around her head so that she doesn't yank them off. Her parents are daily wage earners from Karad in Kolhapur, Maharashtra, with a paltry monthly income of Rs. 200. Desika was diagnosed with retinopathy of prematurity (ROP) in Pune and was referred to LVPEI when she was three months old. Her parents were delighted that their doctor, Dr. Subhadra Jalali, spoke to them in Gujarati, making them feel at home. Her father chips in, “Even though the surgery was free, we had to spend Rs. 1,000 to travel to Hyderabad and sleep on the footpath, but we are happy to come here for our daughter's eyesight. We have recommended LVPEI to other families from our village.”

* * *

Naziabi is an agricultural worker from Badnapur village, Jalna District, Maharashtra. Her talkative mother-in-law reveals what brought the family to LVPEI. “My three-month-old grandson **Parveez's** right eye suddenly became blue. We were very worried and found no solution in our village. On the recommendation of

one of our acquaintances, we were directed to LVPEI. Dr. Mandal operated on Parveez’s eye when he was four months old and assured us that baby Parveez will have vision. Today, we have come for a check-up, and his eye is fine. Here, we have paid nothing; in Maharashtra, we would have had to pay a lot of money for such a surgery. In all my life, I have never seen such a clean hospital with staff that treats everyone with so much respect. *Mashallah*, LVPEI *bohat accha hai!*” (“What Allah has willed/By the Grace of God, LVPEI is an excellent place!”) exclaims Parveez’s grandmother.

* * *

Vision Rehabilitation Clients Who became Employees

Walk into the Vision Rehabilitation Centre’s HelpLine, and you will find two smart “wonder women” who have answers to all your queries, and if they don’t, they sure will find out soon enough. Confident, well-informed, noticeably courteous and efficient, both Priya and Aishwarya have to be seen to be believed. Theirs has been a fulfilling journey, one of transformation from being visually impaired patients into empowered vibrant professionals, walking hand in hand with caring LVPEI’s firm support all along. Life has not been easy for them, but they consider LVPEI’s Vision Rehabilitation Centre as the source of sunshine in their lives, and Dr. Beula Christy as their chief mentor who helped them transform into confident earning members of society today.

Priya Varghese spent her early years growing up in Bhilai, where her father was employed with the Steel Authority of India Limited. The youngest of three siblings, the teenage Ms. Varghese was diagnosed with retinitis pigmentosa. With this disease, the field

of vision narrows progressively. As the tunnel vision gradually deteriorated to a sliver, Ms. Varghese would never again see a wide area without having to move her head.

Despite her vision impairment, Ms. Varghese says she was a happy-go-lucky child. With the help of her mother, who taught at her school, and her friends, she completed her intermediate education (equivalent to Grade 12 or junior college).

Later, when her parents moved to Hyderabad, relatives suggested taking a second medical opinion. During the initial visit to a public hospital, Ms. Varghese overheard the doctor declare that she would lose all vision by age 40. Keeping her hopes alive, she came to LVPEI for consultation and treatment. She was introduced to the Vision Rehabilitation Centre in 2003, instantly feeling at home. The staff were helpful and the barrier-free environment was easy to navigate. Ms. Varghese recollects being counselled and meeting the head of rehabilitation services, instantly striking a lasting friendship with the cheery Dr. Christy, whose guidance she values immensely.

Though she paid infrequent visits, it was at the Vision Rehabilitation Centre that Ms. Varghese picked up her computer skills and learned of special devices for the visually impaired. Soon, she completed her bachelor of arts and was ready to embark on a career. She undertook LVPEI's mobility training and joined a medical transcription firm. After three years, the job began to affect her already weak eyes, and Ms. Varghese decided to explore jobs in Botswana, where her brother resided. She liked the country and joined the family business there, until she faced the fact that she was not being productive nor being worthy of a salary. She returned to Hyderabad with a burning desire to be independent, searching for a job that did not require her to have vision.

First, Ms. Varghese upskilled to a master's degree in public personnel management, eyeing a job in the government sector. When

that seemed unlikely to come by, she studied for a master's degree in psychology—having shown an aptitude for active listening, counselling many friends through school and college. Her brother, her pillar of strength, felt that counselling is where she could excel. After this, her family encouraged her to get married and settle down. Ms. Varghese had equipped herself with skills from the home management programme at LVPEI and was well-prepared to handle the kitchen and her child when she became a mother.

When her marriage did not work out, Ms. Varghese decided to be a single mother. Once again, her search for jobs began. When she was asked to work for the new Vision Rehabilitation Centre's HelpLine, her joy knew no bounds. LVPEI had been her second home, and she had always wished she could have a role in its perfect set-up. Ms. Varghese contributed with her cheerful presence at the HelpLine desk, answering calls on best career moves, urging callers to listen to the innumerable options. She moved on to a different position after a few years, for family reasons.

* * *

T.V. Aishwarya Pillai was a bubbly 11-year-old when her family moved from Khammam to Hyderabad for her mother's cancer treatment. Ms. Aishwarya was a bright student and went on to pursue her bachelor's in mass communication with the dream of becoming a film director. She was full of spirit and would often be seen zipping around town on a two-wheeler with friends. Her passion was watching films, and horror films at that.

“Life, however, took a complete turn for me when in the year 2000, I lost my mother,” Ms. Aishwarya relates. “Later in my third year of graduation, I began getting severe headaches and developing double vision. I was diagnosed with a brain tumour, which affected

all my sense perceptions. I was told that I would live for not more than three months, and surgery meant only a 10% chance of survival. However, homeopathy offered some hope. I went in for the treatment and within nine months all my senses were restored, except my sight.

“My days were miserable. I was confined to the house and did not know what to do with myself,” says Ms. Aishwarya, an epitome of a balanced and composed individual.

In 2011, Ms. Aishwarya came to LVPEI as a patient of Dr. Ramesh Kekunnaya. She was recommended for treatment at the Vision Rehabilitation Centre and undertook computer training in 2012. Her world opened up; she realised that immense possibilities were at her disposal. She was offered the opportunity to join the Rehabilitation Centre’s HelpLine in 2013. This role was a perfect fit for Ms. Aishwarya; her confidence and patience are easily communicated to callers, and in turn, she has the satisfaction of rescuing many like herself, who are on the verge of giving up on life.

Ms. Aishwarya had always wished that there were films in which stories such as hers could be narrated for the visually impaired. Dr. Christy supported her dream of bringing out an audio film “I Am Possible,” a 16-minute audio movie, followed by many more awareness films to help the visually impaired.

Ms. Aishwarya now trains clients in soft skills and smartphone usage. She coordinates workshops and does content writing. She represents LVPEI at job seminars, making people aware of the special needs and diverse talents of the visually impaired. Ask her about the role of LVPEI in her life, and the answer is instant, “This is my first home, and my colleagues are my family. I am happiest at work and derive a lot of satisfaction working at the Vision Rehabilitation Centre.” Ms. Aishwarya is pursuing her bachelor’s

degree in psychology from Osmania University and comes in to work every morning, brimming with enthusiasm. Her take on her future, “When you make the present the best, the future will fall into place.”

Clearly, LVPEI does not stop at just restoring sight. Where sight is beyond their skilled hands, it excels at restoring hope, building limitless vision in people, and inspiring patients to run the race alongside their sighted counterparts.

* * *

Other Vision Rehabilitation Clients

Venkatesh was diagnosed at birth with optic nerve hypoplasia, which essentially cuts out all (perception of) light. His parents lived in Hyderabad and brought Venkatesh to Dr. Mandal at LVPEI when he was three months old. There was no medical treatment for his problem, and he was directed to the Vision Rehabilitation Centre. Therapies began and as a toddler, Venkatesh knew the rehabilitation staff of LVPEI as his own family. They helped to get him admitted into a regular school.

“Besides my ever-supportive parents and sister, Dr. Beula, Deiva Ma’am, Lakshmi Ma’am and many others have been instrumental in my basic learning, be it braille, abacus or mobility training,” Venkatesh relates. “I am sure they put in significant effort to teach me when I was young. In all these years, going to LVPEI never felt like hospital visits. With Dr. Mandal, I’ve never felt the dread of going to a doctor. LVPEI adds such a personal touch and has a special place in my heart. Over the years, I developed a special bond with the rehabilitation team that has played a vital part in shaping me.”

Venkatesh went on to do his B. Tech and masters by research in computer sciences from the International Institute of Information Technology, Hyderabad. He dedicated the research component of his work to improving accessibility of mathematics content by using speech and non-speech cues such as pauses and spatial audio. He interned at Microsoft, Hyderabad, for nine months. He was part of a team that was responsible for the accessibility of Microsoft Office apps such as Word, Excel and PowerPoint for Android.

Venkatesh applied for the much-sought-after research fellowship at Microsoft, Bengaluru. Having competed with several other candidates, Venkatesh was thrilled to have been selected. “My role at Microsoft allows me to explore and innovate. I consider how the productivity of the visually impaired can be improved. My current focus is on improving accessibility of developer tools for the visually impaired. I also work on improving accessibility for the visually impaired at ATMs to help them do their bank transactions without any assistance,” says a confident and articulate Venkatesh.

At a workshop called Engineering the Eye, organised by LVPEI’s Center for Innovation, Venkatesh presented a paper titled “Possibilities in Assistive Technology.” He has lent his voice to a short film for the visually impaired and is proud of the moment he shared the stage as a drummer with A.R. Rahman, one of India’s musical greats.

In addition to technological advancements, Venkatesh believes that it is very important for people to be aware of the ways in which technology can empower people with disabilities. He has conducted training workshops in assistive technology for patients, rehabilitation counsellors and people with visual impairments. He now lives in Bangalore and loves his independence and freedom.

He admits, “There are many challenges that I have to face living on my own, but that’s exactly what makes my life interesting!”

* * *

Afroz is all of 23 years old and has lived with low vision since age 16. Today, she commutes on her own within Hyderabad from Vidyanagar to Banjara Hills by public transport, covering 11 km. There was a time, however, when she had to be brought to LVPEI coaxed by her mother. After her high school, her mother enrolled her for a three-month computer training programme. Initially, Afroz had no clue that Mohan Kumar Bandi, the IT instructor at the centre, was also visually impaired like herself. When she became aware of this fact, Afroz was inspired immensely. Soon she grew more confident, took to computers easily and was assured of her opportunities to display her talent. After completing her bachelor’s degree in psychology, she came back to enlist with Ganapathi Karuppaiah, the placement officer at LVPEI. She took personality development classes and grooming sessions, brushing up her communication skills and learning to confidently attend interviews.

Now a qualified accessibility tester, Afroz works from home. She is an earning member of her family, making her parents proud of her achievements. Afroz travels alone, goes out with friends and is tech-savvy, using mobile apps for the visually impaired.

“The team at the Vision Rehabilitation Centre gave me the confidence that I can do anything and that I am no less than anybody,” she says. “At home, I help in the kitchen and manage all my chores independently. The mobile phone and new apps available have made me very independent. My parents are considering getting me married now. I often think of going back to my school to guide others with low vision, who struggle with studies like I did. I would

like to open a training institute for people like me. I plan to enter the Princess India competition, an event organised by the National Association for the Blind and Blind Dreams to celebrate non-conventional beauty standards.”

* * *

Kiran Kumar was an active 12-year-old living in Vijayawada when his right eye was injured in an accident. The local doctors advised him that he just needed a pair of glasses to fix his vision, so for the next four years he used just glasses, totally unaware that his retina had detached. He was passionate about cricket and played for the under-16 team despite his vision impairment. However, playing for the team affected his left eye too, and he had to stay home from school as he could not face sunlight. He soon mastered home and financial management, and thus helped his parents. He came to Hyderabad for treatment and underwent 10 surgeries at Sarojini Devi Eye Hospital.

In 2011, he approached LVPEI for fitting an artificial eye to replace his damaged right eye, after which he was recommended to rehabilitation. He was introduced to Hemalatha Arunachalam, a senior vision rehabilitation consultant, who in turn suggested a three-month computer course for Kiran. The world of computers was like life-giving oxygen for Kiran. This was something he enjoyed and mastered. He took up a marketing job for a short time before he was offered the job of an accessibility tester in 2015. His self-confidence has been restored, he dabbles in chess and is determined to get back to his childhood passion of cricket.

“The vision rehabilitation team is very supportive, and they have given me back my identity,” Kiran says. “I would love to run my

own business someday. My motto has been to never give up, accept myself as I am and stay hopeful forever.”

* * *

Sumakanth comes from a simple family of daily wage earners in Warangal. Sumakanth was diagnosed with glaucoma as a child but managed to attend a normal school despite the low vision. He chose electronics and computer science for his undergraduate studies. Unfortunately, he began losing vision rapidly in his second year of college and was asked to opt for lighter subjects. Sumakanth shifted to commerce and completed his bachelor’s degree in commerce from Gitam University.

It was in 2008 that Sumakanth came to LVPEI for treatment. In 2013, he joined the Vision Rehabilitation Centre and enrolled for computer training. In his words: “I was zero when I came to the Vision Rehabilitation Centre but with everyone’s help and guidance, I was placed by the placement cell at the Dialogue in the Dark (the Hyderabad restaurant where persons with visual impairment serve food in total darkness).

“This was life-changing for me. I never realised that with such low vision, I could get a job, and that too at a place that helps normal people understand that 85% of our response is vision-dependent. I had the opportunity to meet interesting people and conduct many training programmes such as team building. I was sent to other cities too. I was proud to be the first one in my family to travel in an aircraft.”

Sumakanth relocated from Warangal and learnt to live independently in a hostel and commute by public transport. After two years, however, his doctor was concerned about his spending

a large amount of time in the dark spaces of the restaurant. He suggested that his eyes needed exposure to light. Sumakanth says, “I was back again looking for a job when Vision Rehabilitation Centre helped get me into accessibility testing. Accessibility testing is a type of systems testing designed to determine whether individuals with disabilities will be able to use the system in question, which could be software, hardware, or some other type of system. The flexibility of being a tester gives me ample opportunity to prepare for government jobs. I get all the support from my rehabilitation family and always discuss my career plans with Priya and Aishwarya. I hope to secure a good job, earn well and treat my entire family to an air travel experience like I was lucky to have.”

Feedback from Parents of Rehabilitation Clients

If you think of the front wheel of a bicycle as the rehabilitation client and the back wheel as the eye doctor, then the parents of rehabilitation clients are the two pedals that initiate forward thrust with equal inputs of love and patience. Listening to their emotional stories and their trials and tribulations makes one want to put each of these parents on the number one position of the victory stand—winners all the way!

Kanchan sits in the waiting room of LVPEI’s Vision Rehabilitation Centre, waiting for her daughter Kriya who is undergoing the mobility training programme. Kanchan is keen for her 18-year-old visually impaired daughter to become independent and gain confidence to use public transportation, now that she is in the second year of her high school studies. The journey of informed parenting began for Kanchan when Kriya was delivered prematurely in Mumbai and soon developed severe visual problems due to retinopathy of prematurity (ROP). Kanchan immediately underwent training to acquire the

skills for parenting a visually challenged child. She stoically decided that Kriya will be like any normal child, and no one was going to tell her otherwise—no relative, no school, no principal.

Kanchan moved to Hyderabad, and when it was time for schooling, admitted Kriya into a regular school, assuring the principal that keeping Kriya at par with her peers was entirely her job. She visited the Vision Rehabilitation Centre first in 2005. “In over 10 years of association, LVPEI has offered varied professional services and given me practical guidance,” she says. “The regular meets for parents are very informative and connect us to parents of other visually impaired children, and we in turn support each other. Kriya learnt Taylor Frame for Mathematics (a technique to help the visually impaired learn mathematics) and computer software for the visually impaired.”

Kanchan has put in many hours, learning the tools herself to teach her daughter. She learnt Braille and took online courses to be able to assist her daughter. “I sometimes forget that Kriya has visual impairment. Like other young girls, Kriya learns Hindustani music, does art and is working towards her dream of owning a chain of cafés one day,” says Kanchan.

* * *

Manasa accompanies her seven-year-old son Bhuvan to Vision Rehabilitation Centre every morning for four hours. In the afternoon, she and her husband rush off to their software jobs in HITECH City, Hyderabad, to earn their livelihood. Bhuvan was delivered in the eighth month due to rupturing of the amniotic sac. He was born with Chromosome 6q deletion, which causes developmental delay. Therapies were as regular as milk for Bhuvan, even as an infant, spanning various treatment centres around Secunderabad, where Bhuvan lived earlier.

Manasa shifted her home to Srinagar Colony and came to LVPEI for vision rehabilitation services for Bhuvan. She shares her experience, “I find the staff very focused and like the fact that I can choose the therapist to work with my son. The therapists are skilled, track development well and treat clients from all backgrounds equally. Bhuvan has made progress and is now responding to therapies. He loves music, which is why his favourite music is played when he goes through his physiotherapy session. Guruppa, his physiotherapist, is excellent; he is very patient and gives a lot of time to make sure Bhuvan does all his exercises.”

Asked what she would like to see changed at the Vision Rehabilitation Centre, she has this to say: “I would recommend that staff meetings for the Vision Rehabilitation Centre staff should be held later in the day, so that they are available for clients during the peak morning hours. I have also come across uneducated parents struggling to answer the complex queries from the staff, as they themselves are not aware of the answers. It would also be good to have a dietician on board to guide us with our child’s dietary requirements.”

* * *

Nitignya is a young mother who looks on dotingly at her two-and-a-half years old son Samarth. He suffers from ADHD (Attention Deficit Hyperactivity Disorder), in his case caused by severe gadget addiction, which was noticed due to delayed speech. Samarth came in for physiotherapy, speech and special education in August 2017. Nitignya spends two hours each day and sits in at therapy sessions so that she too can learn and implement similar practices at home. Having gone earlier to other centres, she got to know about LVPEI’s Early Intervention Services on Nayi Disha, an information resource

that rates vision rehabilitation services around the city. Nitignya says, “At LVPEI, the atmosphere is warm and welcoming. The environment is comforting, and the staff deal with my son with a lot of love and patience. In just two months, I have seen good improvement in Samarth.”

With a full-time job at Deloitte in Hyderabad, Nitignya was hard-pressed for time, the very reason perhaps for having kept her son occupied too long with cell phones, iPads and television. Now she has become a stay-home mum and is determined to see that Samarth goes to a normal school with help from the competent therapists at LVPEI’s rehabilitation centre. She recommends that occupational therapy too be made available at the Vision Rehabilitation Centre for the convenience of parents like herself.

Nitignya has chosen to take the special package for Samarth, in which the fees she pays for her son can help pay for therapy for another child whose parents cannot afford it. “Why should not another child benefit along with my son?” she asks.

4.2. Volunteers

The Vision Rehabilitation Centre is dotted with individuals who commit a few hours of their time each week volunteering their services. Happy, enthusiastic and aligned with LVPEI's professional culture, these volunteers seem to have caught the drive to selflessly give—be it their time, care, talent or monetary contributions. Their feedback is an eye-opener as to how much can be achieved if we choose to channelize our energies for an unselfish cause, and how LVPEI has facilitated unconditional giving. Volunteers come from all walks of life and range from retired civil servants and homemakers to high school students on their summer break, all wanting to make a difference.

Dr. K.H. Sunitha Das and Dr. M. Surya Kaladhar are senior citizens and colleagues from the teaching fraternity. They have retired from Kasturba Gandhi College for Women after giving more than three decades of their prime years to a nine-to-five job. Apprehensive of how they would spend their post-retirement years and keen to give back to society, they came on board as LVPEI volunteers.

Dr. K.H. Sunitha Das retired as a reader (equivalent to associate professor) in library sciences, clocking 35 years of service. Even before retiring, Dr. Das had a deep desire to contribute to society, something she was unable to do outside her workspace. Encouraged by her ophthalmologist son, Dr. Anthony Vipin Das, she visited LVPEI's Vision Rehabilitation Centre. Instantly moved by the work done here, she had no doubts that this was the place where

she would spend her retirement years. She offered to lend her voice for digital audio academic books that would be used by visually challenged students appearing for various competitive exams, and for textbooks for law and post-graduate studies. Dr. Das remembers she was nervous on the audition day, but her years as an All India Radio announcer on Yuva Vani channel saw her through. It was not long before she started doing more than just lending her voice. She began helping with summer camps and fundraising.

As Dr. Das' involvement grew, she felt that just reading for the visually impaired was somehow insufficient. Although it helps students, it keeps them dependent. She decided to learn Braille so that she could translate books that could empower visually impaired children to read on their own. Although an uphill task, she is giving it her best shot, all for her young visually impaired friends who amaze her each time with their intelligence and spot-on ability to instantly recognise people by their voices.

* * *

Dr. M. Surya Kaladhar was introduced to the Vision Rehabilitation Centre by her friend of many years, Dr. K.H. Sunitha Das. Having taught public administration to graduate students for years on end, Dr. Kaladhar too felt the need to be in the social service space. As a recipient of the Best Teacher Award and as an active National Social Service (NSS) coordinator, Dr. Kaladhar was not new to giving her time to social work. At 60 years, monetary returns were not a priority. Being a cancer survivor, she often wondered what the purpose of her survival was. She discovered this purpose at the Vision Rehabilitation Centre by lending her voice for recording of audio books and engaging in activities revolving around visually impaired children. Recently, Dr. Kaladhar began storytelling

sessions for young children and teaching the staff to knit at the Vision Rehabilitation Centre.

“I have taught all my life, but I find the visually impaired kids have fantastic grasping power and concentration, and are ever grateful,” she says. “The Vision Rehabilitation Centre has dedicated staff, and I feel respected and loved. My days here are most rewarding and give me immense joy and satisfaction through being able to serve society, even though in a very small way.”

* * *

A graduate of science from Chennai, **Dr. S. Praveen Joseph** was eager to enter the arena of stem cell research. He was very keen to join Dr. Indumathi Mariappan’s team at LVPEI, known for their path-breaking research in Pluripotent Stem Cell Research. This youngster was among the lucky five who made it to the Ph.D. programme from 50 applicants, and it was here that Dr. Joseph’s journey began in 2012.

Relocating to Hyderabad and foregoing Chennai biryani took some getting used to for Dr. Joseph. But what took even longer to get used to was showing up at LVPEI’s trademark “morning classes” that commence at 7 a.m. However, it wasn’t long before the keen researcher realised the value of these early sessions. Researchers like himself receive the much-required doctors’ clinical feedback, both for a better understanding of LVPEI’s case studies relevant to their area of speciality, and for a constant update about eye care from around the world.

Dr. Joseph earned the Fulbright Nehru Doctoral Research Fellowship and was sent for nine months to gain an understanding of functional studies on stem cell-derived retinal cells at the National

Eye Institute in Maryland, USA. “I’m happy to state that the facilities at LVPEI are at par, if not even more modern, than the labs in the United States,” Dr. Joseph claims.

Almost the same time that he joined the Ph.D. programme, Dr. Joseph enrolled for volunteering at LVPEI’s Vision Rehabilitation Centre, which has been a great learning space for him since 2012. He helps with the making of audiobooks, and often volunteers as a scribe for visually impaired graduates applying for jobs. He even played the role of a physics teacher for a while to a Vision Rehabilitation Centre student. “Volunteering at the Rehabilitation Centre has been very fulfilling for me,” he says. “I am blessed with all faculties, and this gives me the ideal opportunity to help others. I greatly admire the centre’s holistic approach, where all the needs of visually impaired individuals are addressed under one roof.”

* * *

Akhila Ravi felt lost when she relocated from the big “Delhi Shahar” (big city of Delhi) to the “small town” that Hyderabad was 17 years ago when she moved here. Residing in Banjara Hills, she walked over to the eye bank near her home and asked if she could be of some help. They directed her to LVPEI, and for close to 17 years now, Ms. Ravi has felt no need to look further. With spare time on her hands, she immediately took to the Vision Rehabilitation Centre like a duck to water. She began with voice recording for audio books and being a scribe, and she soon found herself involved with fundraising and organising the annual camp.

“Volunteering has taken me to a whole different world, one that gives me the satisfaction of doing my bit for society,” Ms. Ravi says. “Half a day spent at the Vision Rehabilitation Centre makes one realise how lucky one ought to feel to have sight. Seldom are there

days when I leave here without getting goosebumps, interacting with patients, parents and other volunteers.”

Ms. Ravi works five days a week and does audiobook recording for about two hours a week. Over the years, she has watched many a child make progress at the rehabilitation centre, become independent and embark on a career. She can think of nothing else that can be more meaningful than volunteering for the visually challenged.

* * *

Salma Shahid has been passionate about working for social causes. She often supported orphanages and spent time with children there. Ms. Shahid had been bringing the needy to LVPEI for many years. She would convince her maids to use LVPEI’s services and often accompanied them for moral support.

It was only in 2015 that Ms. Shahid, at a friend’s suggestion, came to volunteer at the Vision Rehabilitation Centre—this was just up her street, just what she was looking forward to doing. It would give her ample opportunity to raise funds for a worthy cause and work for humanity, which she believes is far more important than any religion. After she sees her daughter off to school, Ms. Shahid heads to LVPEI. She often goes home and narrates her experience with the Vision Rehabilitation Centre kids to her children, to sensitise and inspire them.

“Volunteering at the Vision Rehabilitation Centre for the last two years has been a spiritual experience for me,” Ms. Shahid says. “I feel blessed each time I’m here and humbled too, to see the talent of the visually impaired and their amazing sixth sense. I think every able-bodied individual ought to volunteer here for experiencing it firsthand.”

4.3. Faculty

The clinical and research faculty at LVPEI are a diverse group, representing both home-grown (institute-trained) talent and those who have come with experience from elsewhere, attracted by the opportunity to grow and develop their interests here. Many have become trailblazers in their specialities, pioneering methods and approaches to patient care and new ways of looking at eye diseases and their management. The hours are long and the work is extremely demanding, but the attrition rate at the higher levels is extremely low. There must be something that keeps them here—challenge, opportunity and reach.

* * *

Dr. Sayan Basu is a consultant and scientist, specialising in cornea and anterior segment services. He has recently been appointed as the director of the Brien Holden Eye Research Centre.

Like several of his colleagues at LVPEI, Dr. Basu comes from a simple and humble background. Usually in the medical profession, the hierarchy is rigid. After completing his post-graduation in ophthalmology in Kolkata, Dr. Basu wanted to specialise in cornea, and his mentor told him about LVPEI. Dr. Basu also heard about Sankara Nethralaya through medical tourism, but his mentor advised him that a fellowship at LVPEI would be essential to pursue a career in cornea. The selection criteria is tough and it is difficult to get in, he was warned. LVPEI preferred to take those who had interest in

research and published highly. The selection process consisted of a written exam and a face-to-face interview. He was selected.

The first thing that Dr. Basu noticed when he came to LVPEI was the emphasis on quality. Sometimes, it is ridiculously uncompromising, he says. There is no compromise on quality at any level. People are trained to do things in the best possible way. He found this impractical. How can it be sustained at every level? He found it difficult to believe that it can in fact be sustained.

At one time early on in his fellowship, at the end of a long day, a child with a serious injury was brought in at 10 p.m. Dr. Basu had not eaten all day, and his energy had run out. It was a trauma case, and he asked his senior if they could close for the day and see the patient the next day. He was told that his exhaustion wouldn't matter to the child and the prognosis would change drastically if he waited till the next day. His senior had acted on the values learnt at LVPEI.

With regard to paying and non-paying cases, in other hospitals, consultants handle the paying cases and trainees handle the non-paying cases. At LVPEI, this is not the case, says Dr. Basu. Only if the consultants have confidence in you, will they let you attend to patients. If it is a complicated case, even if the patient can't pay, a consultant may take it on.

LVPEI has made Dr. Basu a much better person than he thought he was capable of being. After two years of fellowship at LVPEI, he felt that he should work there. He developed a deep interest in research; LVPEI provides a platform for both clinical and research work. If you are good at clinical work and not interested in research, you become a misfit as the system expects you to do both, he says.

Dr. Basu says the main reason he likes to work at LVPEI is that there is true equity in the way a patient is treated. If a consultant comes across a patient who cannot pay but is on the verge of losing

sight without treatment, then the consultant has complete freedom to decide whether the patient should pay or not. “In the last seven years, I have given recommendations to waive fees for hundreds of patients,” he claims.

Some patients take advantage of this policy, but you can tell easily by looking at the person whether his or her need for a fee waiver is genuine or not. Dr. Basu says he has not met anyone in his career who thinks the way Dr. Rao thinks. “I might not have the courage to do what he does if I were running my own hospital, because Dr. Rao has strong convictions,” he admits.

About 25 to 30 years ago, the government donated land to LVPEI in Kismatpur, but had the institute been built there, LVPEI would not have been as successful, Dr. Basu believes. With the growth of the IT industry, the city of Hyderabad expanded to Banjara Hills. In two of the three tertiary campuses, at Bhubaneswar and Visakhapatnam, built over a decade ago, the city has not expanded around these campuses. The Vijayawada campus is way outside the city. Dr. Basu feels that this distance inhibits the flow of patients.

There is no compromise on quality and patient safety—surgeons scrub after each surgery, and the surgical trolley is prepared afresh after each operation, he continues. To many observers from other eye care facilities, this may seem unnecessary. However, at LVPEI, the leadership believes that this is essential to avoid cross-infection; these systems were instituted by Dr. Rao at the time of its founding, learning from systems that prevail in the USA.

Dr. Basu observes that patients with serious complications in need of complex surgical procedures and that patients in need of free treatment come to LVPEI. The paying patients have several other options available to them in Hyderabad. Poor patients from Hyderabad and patients from Andhra Pradesh or Telangana regions are the ones who mostly seek treatment at LVPEI.

According to him, the pressure on revenue generation is more on the tertiary centres. In Hyderabad and the three tertiary hospitals, there is more attrition because many other eye hospitals often poach talent from LVPEI. He thinks that LVPEI needs to replicate models that will inspire other healthcare entrepreneurs, both in India and in other countries. He gives the example of cricket player Sachin Tendulkar. It is because of this cricket great's inspiration that we now have Virat Kohli, who is another legend in cricket, Dr. Basu says.

LVPEI can be a role model for eye hospitals across the world, just like Narayana Hrudayalaya was when it was founded, he feels. Dr. Rao keeps saying that if doctors do not take control of the hospital, then the MBAs will take over. Dr. Basu thinks that he could not have expressed his views freely if he was working at other hospitals. His spouse is a gynaecologist and works in a hospital where the work culture is very different from that of LVPEI. In general, the margins in healthcare are huge and arbitrary. It is based on what the doctors feel you can afford. Commissions are not legal, yet they are rampant. Quality of care in government hospitals is abysmal, resulting in frequent violence against the doctors by irate patients or their relatives.

Due to the emphasis on faculty to be good at both clinical and research aspects, doctors who are good at one and not the other may find it difficult to stay on at LVPEI. "Being good at both is the holy grail at LVPEI," he says. Perhaps with the steady growth of the institute, this policy may need to be re-examined, as there may be doctors who excel at one of them and not the other.

Another area that would need improvement is inculcating management skills and leadership qualities in doctors. The culture at LVPEI is so unique that some doctors are not happy after they leave

the institute, because they find it hard to adjust to the very different culture in the other places they join.

Dr. Basu feels that before adding more centres to the network, the financial viability on a stand-alone basis must be carefully thought of.

In his view, every organisation has positives and negatives. Whether a doctor fits into the organisation or not depends on whether the personal core values match with that of the organisation. There are certain uncompromising core values at LVPEI, and if one's core values match, one is able to grow at the institute. For him, what's important is having an ethical practice, helping patients and possessing the time and resources to do research. How much he gets paid, the number of days of leave he gets in a year, and other aspects that may not be to his liking are not so important to him.

According to him, there is scope at the institute to create a safe environment where leaders can have difficult conversations. However, this requires the senior leadership to improve their accessibility.

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Dr. Nikhil Choudhari is a consultant at the VST Centre for Glaucoma Care at LVPEI, with specialisation in glaucoma and cataract. He hails from Maharashtra and completed his early education there. While he wanted to specialise in general medicine and qualified for the specialisation, he did not get a seat due to some confusion in the selection process. He was selected for DNB Ophthalmology at Sankara Nethralaya in Chennai, liked the place, and decided to continue there. After DNB, he did a long-term fellowship in glaucoma at LVPEI to gain a different exposure.

He then returned to Sankara Nethralaya as a glaucoma and neuro-ophthalmology consultant from 2006 to 2010. He was also a co-investigator in several population-based glaucoma studies. He has made several international and national presentations, won many awards, published in peer-reviewed journals and is one of the co-authors of “The Sankara Nethralaya Atlas of Neuro-Ophthalmology.”

When Dr. Choudhari was working at Sankara Nethralaya, his father developed a neuro-degenerative condition and needed expert medical support. His condition worsened, however, and doctors advised supportive care at home. But his father was not willing to move to Chennai. Dr. Choudhari decided to move to Hyderabad, which was closer to his hometown, to be with his father. He started looking for a suitable place to practice, and LVPEI was a natural choice as he had done a fellowship here. There was no vacancy in the glaucoma department, so Dr. G. Chandra Sekhar offered him neuro-ophthalmology. “That is how I came to LVPEI,” Dr. Choudhari says. For the past decade, he has been working in two sub-specialities at LVPEI—glaucoma and neuro-ophthalmology.

LVPEI runs many secondary centres in rural areas. All the faculty members are expected to take ownership of one secondary centre to improve it and visit it once a month. Dr. Choudhari found that the prevalence of glaucoma was high; the network of secondary centres and primary centres was not sufficient to handle it. He observed that elderly glaucoma patients could not travel due to a variety of reasons. He started an experiment to address this issue. He started visiting secondary centres twice a week to train doctors and additionally, to treat patients.

He chose four centres with good equipment and good patient flow, and started training the doctors there. Wherever required, Dr. Choudhari intervenes and helps the resident ophthalmologist with

the treatment; he also performs surgeries at these centres. Now, he travels to secondary centres thrice a week, and the remaining three days, he focuses on clinic, surgery or research at the Kallam Anji Reddy campus.

There is so much to do in society given that 60% of patients are on the verge of blindness, he exclaims. The need for medical or surgical intervention is high; also, glaucoma patients are difficult to treat. He sees over 80 patients with glaucoma on his outpatient department day, and the next day he performs surgeries. He is happy that he is reaching out to people who are the most in need. Glaucoma patients should take proper care for at least one month post-surgery, adhering to the doctor's instructions to control vision loss due to their glaucoma. This becomes a challenge in the rural hinterland due to the prevailing poor conditions of hygiene and the false belief that there is no cure for glaucoma. The intervention can prevent further vision loss but cannot restore the vision that is already lost due to glaucoma. By treating such complex cases, Dr. Choudhari has been able to put all that he has learnt to good use. Some of the secondary centres are part of an epidemiological research project that he is leading.

Dr. Choudhari admits that he is much attached to his mentor Dr. GCS (Dr. G. Chandra Sekhar), learning immensely from him. For him, the most significant aspect of working at LVPEI is the freedom and ability to do what is required for the patients without worrying about their ability to pay for the treatment. He has never experienced this mandate in any other hospital. The atmosphere is proactive for research, which too is something that he greatly values at LVPEI.

Dr. Choudhari says that he gets his attitude to life and work ethics from his father. He is a spiritual person and reads works by Swami Vivekananda and practices Kriya Yoga. He does his work as a

service to the people and does not bother about how much money he gets. He appreciates the systems at LVPEI, and the well-structured system of primary, secondary and tertiary care. Most healthcare providers in the country are essentially tertiary hospitals, where the primary-secondary-tertiary linkages are missing.

Dr. Choudhari has now divided glaucoma into low, medium and high risk in his practice. The fellow doctors handle the low and medium risk cases, leaving him to focus on treating the patients who are at high risk.

Dr. Choudhari says that working at LVPEI gels well with his spiritual advancement. The only problem is the volume of work, he admits. “Here, we can work without worrying about generating money. We do not hold back treatment and quality for those who cannot pay.” He strongly feels that spirituality is for one’s own upliftment; adopting a meditative approach helps him do his patient-related work without compromising on his personal values. Importantly, he has also received much encouragement and support from his family. He is very happy and satisfied with his work and has no regrets.

The idea of spending three days a week at a secondary centre came to him during his meditation sessions, he says. While it is undoubtedly a tough call, Dr. Choudhari is happy that he is volunteering for such a tough call. He is grateful that God has given him an abundance of good things—a great family, good parents, good education, good mentors, colleagues, a very happy marriage, a welcoming home, a decent car and a happy child. Now he is committed to giving back to society, reckoning that the money he makes is sufficient to meet his needs. Each person should set his own limits on expense, he says. Addressing his fears during the tough fellowship at LVPEI and then gaining invaluable competencies have strengthened him on his journey, he affirms.

Along with Dr. GCS, Dr. Choudhari is part of a group doing research on glaucoma. He is involved in a large-scale epidemiological research project on glaucoma. The other activity of interest to him is biomedical research, wherein he provides the required clinical inputs to Dr. Ashutosh Richhariya, who then works on the engineering aspects. The two doctors also work together on improving instruments that measure eye pressure. Most instruments measuring eye pressure have calibration errors, Dr. Choudhari informs. He published this work in a top journal of ophthalmology and is continuing his research. When glaucoma is intractable, we put a miniature plastic tube in the eye, he says. It was when he was grappling with the problems in this regard that Dr. Richhariya initiated a research project to provide him a solution.

Of the various activities that he is involved in, Dr. Choudhari best enjoys patient care and teaching fellows. He modestly admits that he is popular among fellows, with quite a few opting to be posted with him.

Dr. Choudhari gives his 100% whether the patient is paying or non-paying, and cares for the patient irrespective of whether he is a VIP (very important person), without expecting anything in return. At LVPEI, he can practice the principles that he has learnt at the Self-Realization Fellowship (a global spiritual organisation). He feels he will not have an opportunity to practice these principles in any other organisation. “Offer all to God and do not take any credit” is his motto.

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Dr. Rohit C. Khanna is the director of the Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye care (GPR ICARE). He specialises in cataract, comprehensive ophthalmology and glaucoma services.

Dr. Khanna has been with LVPEI since 1996, when he came here for a fellowship. When he first came to LVPEI, the building was only three floors high and the exterior walls did not have its first coat of paint. At that time, Dr. Rao was active in the clinics. The Andhra Pradesh Eye Disease Study (APEDS) was conducted by LVPEI during this time; the evidence on blindness prevalence that came out of this study was translated to policy. Dr. Khanna believes that evidence should be used either for the benefit of the patient or for help in influencing policy or changing practice. If it does not do any of these things, it is just a paper on the shelf, he says.

Dr. Khanna completed his fellowship in 2000; he then worked in Rajasthan for three years, but he was not happy there. He met Dr. Rao during his visit to Jaipur and approached him. He joined as a junior ophthalmologist on 1 February, 2003. He rose to the rank of assistant, then associate, then ophthalmologist over the next eight years, after which he was named associate director and then director of ICARE.

In his current role as head of ICARE, Dr. Khanna schedules one day for outpatient clinics (OPD), one day for surgeries (OR), and four days for public health work. He has a masters in community eye health from the London School of Hygiene and Tropical Medicine (LSHTM). In the clinic, patients are seen one at a time. We can try to understand what is happening in the community by taking every patient's case, he says. For example, when a child comes wearing glasses, the question has to be answered about why children have to wear glasses, the causes and factors, etc.

Initially, Dr. Khanna was doing four days of clinic. He says he was the first person to start getting involved in secondary centres. In 1996, the first secondary centre was started in Mudhole and in 1998, the second centre was inaugurated in Thoodukurthy. Based on the

APEDS data, a full-fledged International Centre for Advancement of Rural Eye care (ICARE) was conceived by Dr. Rao to take eye care to the rural areas, and ICARE was started in 1998. Dr. B.R. Shamanna, who has a postgraduate qualification in preventive medicine from AIIMS, and Dr. Praveen Nirmalan together were heading the programme at that time. Dr. Khanna was looking after the operations of all rural eye centres. When they left in 2008, he took over as head of ICARE.

ICARE, which connotes eye care and also that you care as a person, involves service delivery through secondary and vision centres in the rural areas. A Village Vision Complex (VVC) comprises 1 secondary centre linked to 10 vision centres and 100 vision guardians. It is an innovative model of LVPEI. In 2002, the first rural vision centre was built. Though the term vision centre was not coined yet, the first such urban centre was started in 1993 in Ramnagar, Hyderabad, supported by Vazir Sultan Tobacco Company (VST) Industries Limited. The term vision centre was first used in 1999.

ICARE has four wings—patient care, research, education and innovation (for testing in the field). The team includes Dr. Khanna as director, Rajashekar Varda as executive director and Ashalatha Mettla as operations head for the campus. Primary eye care aspects, public health education and research are looked after by Dr. Srinivas Marmamula. Niranjan Kumar takes care of operations of the primary eye care network. Dr. Varsha Rathi and Satya Joji Prasad Vemuri are respectively the medical and operations in-charge of the secondary eye care network. The ICARE network is somewhat similar to the government system, consisting of a district hospital linked to primary health centres and sub-centres.

During his involvement in ICARE, Dr. Khanna developed an interest in public health research. He was sponsored by LVPEI for a masters at Johns Hopkins University in USA, which has the world's best public health programme. In London, he started developing an interest for the subjects that he would study at Johns Hopkins. He learnt that care is not about treating a single patient. There are many people who are not able to come to the hospital. The problems you see in the clinic are only the tip of the iceberg. There is a bigger problem outside, and these patients are not able to reach you. How do you make sure that eye care reaches them at their doorstep? Dr. Khanna believes that healthcare and education are everybody's rights.

“What will I do with that extra money, maybe get a bigger car or a bigger house,” he says, referring to his earnings. “There is enough money for everyone's needs, but not for a few people's greed.” How much is enough, and when you go away, what have you left behind, he muses.

Dr. Khanna feels that what he sees in the clinic is a reflection of what is there in the community. Non-paying patients that come here look upon you as their last hope, he says. When they get their vision back, they are so happy. That gives more satisfaction than operating on a rich patient.

He operates on complex cases like cataract, glaucoma and one-eyed patients. Complicated and high risk cases are done by faculty and not trainees. After a day's work helping patients, he can sleep well at night. His day is measured by “How many people have I made happy today?” Working here, there is no need to check the bank balance at the end of the day. It is internationally a very professional organisation, and there is less politics. In India, each person is trying to pull the other down, but in LVPEI, everyone has his or her own

track. This is the freedom we have, he says. After you earn a certain amount of money, your targets may not increase much. In the end, even if you have loads of money, beyond some amount it does not make any difference, he says.

His wife also works as an ophthalmologist and in a hospital where she can do service. They decided that she would not be in LVPEI, because someone has to take care of the home. ICARE is somewhat similar to LAICO at Aravind Eye Hospitals. While LAICO does more consultancies and education, ICARE does more service delivery and research.

ICARE is not involved in management education. The team here is smaller compared to the LAICO team. We do a good deal of epidemiological research, while LAICO does not have much in public health research, Dr. Khanna informs.

The main challenge for LVPEI is leadership, he opines. People do not see anything other than Dr. Rao. That is a challenge for LVPEI to leapfrog. Whoever the successor will be, he will be compared to Dr. Rao. The successor should have the 3Hs—hands, head and heart. If a leader is not able to take care of all people from top to bottom, they cannot be a leader, Dr. Khanna feels. Unless they can do that, people will not give 100% commitment. They should be able to frame policies.

Some of the problems at LVPEI, according to him, are the long waiting time for patients, and that general and complicated cases can get mixed causing delays. There are some operational challenges, but these are day-to-day challenges that you keep working on, he says.

LVPEI has to sustain the same values and quality of care now with the new leadership, says Dr. Khanna. The main KAR campus earns 60% to 70% of the revenue. ICARE gives Rs. 15 crores from

secondary centres. The primary and secondary centres are expected to break even. Salaries here are high, he says. Most people who have a secondary centre job also have a second income, such as from farming. About 30%-40% of the total cost of secondary centres goes to salaries.

Every eye hospital can do this non-paying service if it has good leaders. The reason it works in ophthalmology is because diseases like cataract and refractive errors, which are major causes of visual impairment, have very simple and cost-effective interventions. But other eye hospitals don't provide this because of the greed of owners. The cost of surgery has to be worked out. The cost to us at LVPEI for cataract is Rs. 3,000, Dr. Khanna says. He thinks it is possible to explore low-cost interventions in orthopaedics or coronary bypass surgeries—possibly six paying patients could subsidise one non-paying patient. This became possible in gynecology for delivering babies, he informs. A person can live only upto 100 years, and the money has to come out of somewhere. Everyone has a right to education and health. Now there are sponsors who support dialysis procedures at CARE Hospital, he says.

“When your heart is clean and mind calm, you can do better work, be more productive, and be of use to more people, and your organs function better!” Dr. Khanna declares.

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Dr. Siddharth Dikshit completed his diploma in ophthalmology from Christian Medical College, Vellore and joined LVPEI for his Diplomate in National Board (DNB) post-graduate degree. He specialised in glaucoma and completed his long-term fellowship at LVPEI. He is now a consultant in the VST Centre for Glaucoma Care. His main areas of interest are stem cell research in glaucoma, angle

closure glaucoma, paediatric glaucoma and secondary glaucoma. He has a special interest in innovating modifications in glaucoma surgery to make it more effective and safe for patients. His work has been presented in papers and videos in national and international conferences, and published in international journals.

Every doctor is happy when they see the patient smiling at the end of the day, says Dr. Dikshit. It is difficult for people to understand that a day's work can give so much satisfaction. Many people come to LVPEI as the last resort. They need help but there are not many organisations who can help them. "Your work starts where everyone else's work finishes," he says. "Each piece of work is an opportunity, and you are immersed in it."

Working here, he feels, is like investing in a good purpose. "Sitting here, I do not have to think about anything else other than how I can help; I do not have to worry about how much money to earn for myself or for the institute," Dr. Dikshit says with satisfaction. The independence one gets is immense. In other places, you may see a patient on the first day at work as a junior doctor, but it is someone else's patient. Nobody here will say you cannot do this surgery because you are a junior; each one feels responsible enough to ask for help. Nobody stops you from becoming popular among patients or at conferences. The junior-most doctor is the face of the team and interacts most with patients. This is the culture here. The opportunity that you can capitalise on depends on how much you can handle; nothing else stops you.

At other places, people must work hard to go to the USA or elsewhere for a high-quality fellowship, he says. Here, the institute gives you the opportunity to go to the best institutes in the world and learn. The support Dr. Dikshit got as a fellow and as a resident was immense, he recalls. People from the USA are surprised at the

range and variety of exposure trainees at LVPEI get—clinical work, publications, spectrum of diseases seen in clinics, and non-clinical skills like how to handle patients and talking to patients in the right way.

The work is very tiring, but Dr. Dikshit says he does not feel happy if he is not tired at the end of the day. The challenge that he's been facing in the last few years is not being able to give enough time to his family. His wife is a radiologist and works part-time from 9 a.m. to 3 p.m. He has now struck a balance, although he knows it may result in some compromise on work. He spends four hours at home on his research work.

Dr. Dikshit shared the story of a patient in a secondary centre. Dr. Rao started an initiative of sending a faculty member to a secondary centre for a day each month. Initially, this looked like a big task. For example, it is a seven-hour journey to Markapuram in the coastal district of Andhra Pradesh. Two days are spent on travelling, and Dr. Dikshit was very hesitant during the first few visits.

However, the doctors posted there are relatively junior or sometimes fellows, and they were happy to see that consultants from Hyderabad are available to help them. One of the patients he saw was a lady who had had surgery in a tertiary hospital elsewhere, and there had been no proper post-surgery follow-up for 10 years. When he first examined her, he found that she had few chances to recover sight. She had not even seen her youngest child, who was then nine years old. She was brought to the hospital for treatment. Three operations later, she could see her child and read. He feels very happy whenever he goes there and meets the mother and child duo.

Dr. Dikshit thinks that there are many misconceptions about doctors. Most doctors go to government colleges for training, and it

is not true that most of them cheat or take shortcuts, he says. There are many excellent human beings among doctors, he opines. He says that he is paid well, and he has his own office space and air-conditioned room. He may not be able to buy a BMW, but he can afford a Maruti Suzuki, and that is good enough for him to drive around.

Speaking about Dr. Rao, he says Dr. Rao interacts with everyone. Each one feels that they have a personal rapport with him. Each time he meets anyone or attends a meeting, Dr. Rao keeps a diary and notes down highlights of the meeting. He is very much a “people person” and relates to everyone at a personal level and does not restrict to just work-related discussion. Dr. Rao points out mistakes only to make people better. If you have done something good—a happy patient, a good word from a senior, a successful surgery—he promptly appreciates it.

Dr. Rao has a wide network of contacts, which is important for a leader, says Dr. Dikshit. LVPEI depends on grants for its developmental work, and many national and international organisations support the work. Dr. Rao knows the right person for everything, and that is very important for any organisation, observes Dr. Dikshit. LVPEI gets the best people because of their strict entry criteria. At LVPEI, there is no personal agenda or groups, he remarks.

About future challenges, while he is not aware of numbers and statistics, Dr. Dikshit thinks it is important to make sure that the institute is financially sustainable. The other challenge, he says, is to have the right kind of workforce. If the doctors’ salaries are low, the salaries at the working level are even lower. It is a big challenge to have the right motivation for the workforce.

He also feels that the amount of work needs to be reduced for both doctors and staff to maintain their energy levels. Many people have been complaining about the amount of work at LVPEI. Time given

to patients at LVPEI is quite long. Each patient has a room in which he or she is examined individually. The initial evaluation is done by a competent professional such as an optometrist, followed by a doctor. The chair time each patient has in each room is comparable to the chair time in the USA, he observes. A non-paying patient gets the same quality of treatment vis-à-vis a paying patient. A doctor who goes to the patient who is comfortably seated in the outpatient examination room is unusual in India, where usually the patient must go to multiple places in the hospital and wait at each place to get the diagnosis done. “The doctor is not the boss at LVPEI, the patient is!” Dr. Dikshit remarks.

LVPEI has a comprehensive outpatient department for more complex cases. “I realise in any big institute, there are two arenas—one is the circle of influence and the second arena is outside my circle of influence. In my work, I focus on things that are within my circle of influence,” he concludes.

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Dr. Umesh Chandra Behera is a consultant in retina vitreous services at LVPEI’s Bhubaneswar campus. He hails from Berhampur, a small town in Odisha where he grew up and had his medical training. He visited LVPEI in 2002 for a one-month observership as part of his post-graduate training. He was awed by the work done at the institute. The work schedule, commitment, punctuality and detailed documentation impressed him. This was completely new to Dr. Behera, as all these values or work ethics were lacking at government institutes and other training institutes. He hoped to return after completing his education. However, Dr. Behera was selected for a two-year fellowship at Aravind, and he continued in a consultant position at Aravind for another six years,

with a keen interest in treating retinal diseases in the paediatric age group, diabetic retinopathy and endophthalmitis.

During these six years, he became a skilled retinal surgeon and was popular among fellows and trainees. Dr. Behera reviewed his strengths and wished to return to Odisha and serve his people. Coincidentally, LVPEI also started a centre in 2006 in Bhubaneswar, and Dr. Behera kept in touch with Dr. Taraprasad Das for a possible opportunity, which came up in 2012. He says making money was never his aim. In fact, he left Aravind and came to LVPEI on a lower salary. He came with a passion to do something different and with the sole intention of making a difference to the lives of others.

“Since I was trained in a military school, I was punctual and disciplined. In fact, these qualities are in my genes, as my parents believe firmly in these values,” he shares. Dr. Behera feels close to the Odiya community because of his roots there, and he also knew that there was a need to improve eye care in Odisha.

While he is primarily a surgeon, he is also a teacher and a researcher. He admires the work freedom and equity of LVPEI. Although he is at a junior level, everyone treats him as an equal. He is the junior-most among the three retina specialists on the campus; the other two are Dr. Soumyava Basu and Dr. Tapas Ranjan Padhi.

Dr. Behera says that while LVPEI is a premier educational institute with one of the best fellowship training programmes, fewer students are opting for fellowship because they are expected to spend more years in the programme as opposed to in the past. Currently, the fellowship is for two years with an additional three-year posting in a rural centre, which is considered by many as a long time for training. He thinks some innovative thinking should be done on ways to retain people.

Another challenge is the small segment of paying patients the hospital banks on, and a large percentage of the non-paying patients. He has not seen any other hospital in India that does that. For an institute of LVPEI's stature, more revenues are needed to sustain it. He opines that there could be some nominal charge, because anything that is given free of cost is not valued. It is the human psyche; we value what we pay for. He agrees that there is some misuse of the facility by patients. With increasing costs, even a nominal fee would help in improving income and maintaining sustainability.

Dr. Behera believes that LVPEI is already the best eye care institute in India, and it should make its mark in the world of eye care. The faculty are attuned to research, and that is the channel to reach the world. He has no concerns or opinion related to the upcoming leadership change. He has offers with bigger salary and flexible timings, but he has gotten used to the work pattern at LVPEI that he has followed for nearly 10 years after his fellowship. "Outside LVPEI, I will be deprived of many things which I enjoy, and being a retina specialist, I might be seeing just one-tenth of the patients that I am seeing at LVPEI," says Dr. Behera.

However, there is something in the work culture that is keeping him at LVPEI. If you compare LVPEI with a government system or with a corporate setting, there is a stark contrast. Government staff are more lethargic and unwilling to move a paper beyond a point. At LVPEI, everything moves just as you want, and an original idea is always received with encouragement. LVPEI provides ample opportunity to pursue new ideas. Most other places are purely clinical, and they want to make profits.

4.4. Staff

There are organisations and more organisations, non-profits, corporates and run-of-the-mill workplaces—in all these entities, employers strive to maximise output, some at the cost of employees, some by keeping their employees happy and some by dangling lucrative sops. Few organisations, however, achieve the ultimate goal—where employees believe the organisation’s vision is their personal mission, where all pitch in for the common good, where employers and employees become family, where everyone feels equally responsible for all that goes on in the organisation, where every employee is motivated to do his best, do more than is asked, and often does this without even being asked. This is the reality that wafts through the LVPEI air and subtly touches everybody who enters the gates of this innovative healthcare centre of excellence.

Vijaya Ramam was the administrative head of LVPEI until her retirement, after which she took on a part-time role of a management consultant. With a master’s degree in economics, she worked for the State Bank of Hyderabad for six years until her marriage, after which she moved to Kolkata with her husband. She lost her husband when she was just 37 years old. She moved back to Hyderabad (where her elder sister lived) with her two little children, and took up a job.

Her brother-in-law, legal expert Kolluri Rama Rao, suffered from corneal problems and had corneal transplantation surgery in both the eyes in Vienna. In 1982, when the problem recurred, he consulted Dr. Gullapalli N. Rao in the USA on the advice of his sister, who

was an ophthalmologist. Dr. Rao invited him to the United States, offering to do the surgery free of charge. He accommodated him at his own house. Mr. Rama Rao underwent corneal transplantation in one eye. For his other eye, Dr. Rao advised him to wait until he returned to India.

In 1985, Dr. Rao sought out Mr. Rama Rao's legal opinion about setting up an eye care centre in Hyderabad. When the L.V. Prasad family donated five acres of land in Banjara Hills, construction of the institute started. Mrs. Ramam met Dr. Rao when she attended the ground-breaking ceremony as a guest on 17 October, 1986. At that time, Dr. Rao had his office in the neighbouring Prasad Film Labs, and had just hired his first employee Lalitha Raghuram (who currently works with Mohan Foundation) on 1 October, Mrs. Ramam recalls. Dr. Rao wanted to start a non-profit organisation and provide high quality eye care on par with the Western countries with 50% services free of cost to those who could not afford to pay. The institute was totally committed to quality, ethics and values.

Mrs. Ramam initially did not believe that Dr. Rao's vision would work in India. She thought he would soon give up and go back to the United States, where he had a brilliant and successful career. Dr. Rao felt that many Indians were going to western countries for quality care. He wanted to provide the same quality care in India. Dr. Rao is obsessed about quality, right from housekeeping to operation theatres.

Encouraged by her brother-in-law, Mrs. Ramam forwarded her résumé to Dr. Rao. With her experience in banking, he asked her to head the accounts and finance department, and although she was initially reluctant, she was persuaded by Dr. Rao and her brother-in-law to join LVPEI as finance head on 1 May 1987. Over time, she was so impressed with the work being done at LVPEI, she promised Dr. Rao she would stay with the institute until he asked her to leave.

The person appointed as the administrator of the institute could not fit into the institute's culture and left within three months of joining. Mrs. Ramam was asked to take over the administration in August 1987. Her role progressively expanded, and she was made in-charge of human resources, administration, finance and accounts, patient care, maintenance and housekeeping, ensuring that the highest standards were maintained. In the initial years, Mrs. Pratibha Rao, Dr. Rao, Mrs. Uma Nath, Mrs. Raghuram and Mrs. Ramam used to train the housekeeping staff.

In 2004, Mrs. Ramam decided to shift to a part-time consultant's role. She is now a resource person in an advisory capacity. Mrs. Ramam says that her own perspective on life changed after she started working in LVPEI. She believes that money is well-earned if one does good for society. Being very highly trained, most LVPEI staff would earn considerably more if they left for greener pastures than what they would get by staying on at LVPEI. And yet, "We are happy with the impact we make here, and the work we do," Mrs. Ramam says. "We are happy with the money we get; we are comfortable. Faculty members, too, are happy as they get international recognition over time, and they get to publish in peer-reviewed journals."

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Call it chance or just destiny—**G. Vijaya**, LVPEI's chief nurse, landed at LVPEI by accident and has stayed on for 29 years by choice. In 1988, a young Ms. Vijaya came from Mehbubnagar to attend an interview at Apollo Hospital, Hyderabad. She dropped by at the LVPEI cafeteria to catch up with a friend, when she was spotted by the then admin in-charge, Mrs. Ramam. One thing led to another, and Ms. Vijaya found herself being interviewed by Dr. Rao, blissfully unaware that he was the founder and director of the institute.

Ms. Vijaya joined as a junior nurse. Her work shift was six hours, but she happily worked round the clock, as both staff and patients soon became a sort of extended family for her. In the short span of 12 months, Ms. Vijaya became the chief nurse and has stayed at the helm of nursing ever since.

“I never missed home,” she muses. “In those early days, everyone was multi-tasking. Sometimes, I would even help security!”

“I found the quality of work excellent, and everything was maintained meticulously. Our challenge was to come up with one complaint to present to Dr. Rao at weekly meetings. Everything was so perfect, that it was impossible to find any fault,” says Nurse Vijaya, nostalgic of the days gone by.

In 1993, Ms. Vijaya caught the graduation bug. She put in her resignation papers, wanting to pursue higher studies. Dr. Rao tore up her resignation and helped her draft a leave application for two years instead. This cleared the decks for employees after her to be given a break to go in for higher education—an offer made to all who joined LVPEI.

Ms. Vijaya returned with even more zeal and was looking after non-paying patients. Her empathy would often extend to providing them with meals, paid from her own pocket. When this reached the attention of Dr. Rao, Ms. Vijaya was asked to justify her generosity. “Non-paying diabetic patients need to eat breakfast, and could not wait until noon for the free lunch served by the hospital. Dr. Rao immediately introduced free breakfast for diabetic patients,” says Ms. Vijaya, who initiated such conveniences for the non-paying patients by bringing their needs to the notice of the management.

Giving an example of Dr. Rao’s caring and encouraging nature, Ms. Vijaya says, “Even in the early days, Dr. Rao gave all the women employees support to stay and work on the then-lonely

and deserted five-acre campus. He never allowed us to feel vulnerable—he was friendly, yet strict.

“I admired his principles and his intention of serving the needy. It is because of him that I imbibed leadership qualities. At LVPEI, our high standards are our strength. Our focus is on patient care, never differentiating between treatment given to paying and non-paying patients. For me, LVPEI is not an organisation but my family where we all look after each other. It has been a wonderful journey of growing with the institute. We are always encouraged to upgrade our knowledge and are given a free hand to attend seminars and conferences to help us to keep up with best practices. My idea of encouraging orphanages to send their girls for the Ophthalmic Nursing Assistants (ONA) programme too was well-accepted and has gained popularity.”

Today, as the nursing administrator, Ms. Vijaya heads in-patient wards, and supervises network administration and hospital infection control. She is a faculty member and mentor for students in the Diploma in Eye Health Management (DEHM) programme and manages a part of the ONA programme. While she is content, she is not complacent and is determined to innovate and keep the LVPEI flag flying high. She is very professional when it comes to her responsibility as head of nursing. No wonder, when she is invited to the wedding of some nurses, both family and friends are as curious to meet “the famous Vijaya” as they are to meet the groom!

* * *

Vanita Ganesh is a patient care counsellor and the first point of contact for many of the patients who come to the clinics in the outpatient department (OPD).

Ms. Ganesh joined LVPEI in September 1987. She is one of the earliest employees (Employee number 9) who continue to be part of the institute. She had only a high school qualification (10th standard) with some knowledge of English when she was interviewed by Dr. Rao and offered a position as a nursing assistant. When she came here, she found everything different from her conception of a conventional hospital—everything looked and smelt different. The administrator of the institute at that time was M.L. Narasimham.

Before she joined LVPEI, Ms. Ganesh worked in a school. If you want to work with patients, you should have patience, she says, and Ms. Ganesh has an abundance of that. There were very few patients in the first few months, and she helped with preparing discharge summaries. Later, she was moved to the doctors' office, and she learnt to transcribe referral letters and discharge summaries, dictated by doctors on a dictaphone. She had the opportunity to work in all the departments of the institute at that time. She was then posted as secretary to Dr. Taraprasad Das. She assisted in all his activities, including organising meetings. In the initial days, public transportation reached only upto Punjagutta. There was no proper transport from Punjagutta to the institute, and on several occasions Dr. Rao would come to pick up the staff from there.

LVPEI, Ms. Ganesh says, catalysed everything around. Everyone is respected whatever their rank; women especially are treated well. There is a lot of camaraderie here, and employees get a lot of support from everyone, including monetary support when required. She says no one questions you as long as you do your job.

After working with Dr. Das, Ms. Ganesh gained experience and moved up the ladder; she is now an associate administrator. She says LVPEI is like home for most employees, and it is a privilege to work here. For sincere and hardworking people, this is the place, she says.

Ms. Ganesh has important responsibilities of addressing patient complaints and training patient care staff. She educates the front desk staff and counsellors on the correct behaviour in dealing with patients and talking to them. There are about 100 staff members in the OPD. Different sub-specialities have their own team, with an administrator who manages the doctors' schedules. Ms. Ganesh organises induction and training programmes for new recruits. In addition to OPD procedures and behaviours, recruits are also trained in soft skills. Following training, she observes them at work and corrects them regularly. She says Dr. Rao is always very approachable.

What she likes about this place is the equal treatment and respect given to paying and non-paying patients; everyone, from counsellor and optometrist to the doctor, gives the same treatment to patients. While the institute is rigid on values, there is no harassment and all employees are respected. None of the staff accepts bribes, and there is no compromise on punctuality. Values are personalised; if she is one minute late, she would feel she has committed a crime.

LVPEI is like home, she reiterates. Many of the patients have become friends; even today, they invite staff to their homes for functions. When she was assistant to Dr. Das, she had the privilege of meeting many VIPs and senior people, and getting to know them. She has learnt professional behaviour and values like cleanliness, punctuality, etc. She also does not use a mobile at work. Ms. Ganesh has a great sense of ownership and takes a good deal of pride in her work.

* * *

E.S. Manjula is the administrative head of the patient care department at LVPEI. Ms. Manjula is a post-graduate in hospital

management. She was 23 years old when she joined LVPEI in 2000 as operating room (OR) manager. She managed the operation theatres for four years, and has interacted with hundreds of people inside that area. She oversaw the operations and maintenance of nine theatres, where about 80-90 surgeries were done each day. The new operating room complex now has 14 theatres staffed with 100 employees, where about 140 surgeries are conducted daily.

Dr. GCS was her mentor and helped her to settle down comfortably in her job. That gave her a good start. She imbibed the work culture from the doctors who worked along with the staff; they would meet patients and push wheelchairs when required.

She was also inspired by the personal touch the doctors had with the staff in her early years at LVPEI. She quoted examples of Dr. Bansal and Dr. Das who were polite and respectful with the staff; they would take permission if they wanted the help of the nurse or if they needed any equipment, and they waited for their turn. She said she was moved by that behaviour, and she used to share her experience with friends. The doctors would ask permission even to go for lunch. She was touched by all the respect she received. She said with pride that there was no distinction inside the operation theatre between a paying and a non-paying patient. The only difference was the colour of the dress; paying patients wore blue and non-paying patients had green. Doctors call patients respectfully by name. She was surprised to see non-paying patients getting so many privileges. Her father worked in an Indian railways hospital, and the treatment there for patients was pathetic.

For Ms. Manjula, LVPEI is first and foremost her home. She said she would feel lost if she did not come to work for a week. She recalled the personal touch and support she received during her pregnancies. She now has a 12-year-old daughter.

When she was managing the operation theatres, Ms. Manjula had 60 people reporting to her. She implemented several measures for the smooth running of the OR. But, due to health reasons, she wanted to move out of the OR department to the OPD. No one was willing to let her go! The OR department was a high stress area, with about 80-90 operations conducted daily at that time. Every doctor had a different working style and requirement. Comparatively, the OPD was a calm place; she had to monitor the counsellors here. The five years of hard work in OR helped her in the OPD.

In 2008, Ms. Manjula also worked in the quality department with Dr. Usha Gopinathan towards accreditation from National Accreditation Board for Hospitals and Healthcare (NABH), which LVPEI received in 2011. She proudly said that in Andhra Pradesh, LVPEI was only the third centre to receive this accreditation.

In 2012, Ms. Manjula was made overall-in-charge of the patient care department, which had grown substantially by then. It took her a month to settle down. Dr. GCS, who was director and head of patient care, mentored and supported her. It was a big responsibility, and she was worried that her family responsibilities would be compromised. But she learnt to balance it all and enjoyed her work even more.

Now, she is totally committed to patient care and does not want to leave. She enjoys her meetings and interactions with the doctors and the staff of over 100, which includes counsellors and technicians. Training sessions are held for staff on Sundays, and she is always there. She gets to meet VIPs in the course of her work.

While several of her colleagues have changed multiple jobs for higher salaries, she says with pride that she doesn't work at LVPEI only for the salary. Although she has had several tempting offers over the years, money has ceased to be important. The satisfaction that

one gets here cannot be matched anywhere, she says. She proudly states that most senior employees donate 50% of their salary to the hospital.

According to her, the comfort everyone feels here, including the staff and the patients, has no match at any other facility. Financial background is of no consequence, everyone is treated with the same respect. In other organisations, she would not have met non-paying patients, and she realises what a privilege that is! At the end of the day, she is happy if she could take care of a patient or a doctor or a staff member and make them happy.

During her training at Apollo Hospitals, Ms. Manjula saw a huge gap between the employees and the management, which is absent here. Here in the canteen, everyone sits together and talks about families, careers, patients. She says she personally knows every housekeeping person and every staff member by name. Most of the senior staff knows the names of the outsourced employees too. She says this builds a strong bond among employees. For any function in the institute, there will be 150 people attending, which shows how much they care. This is an organisation, she says, that cares for people and is moved by people.

* * *

Nobody visits LVPEI's Vision Rehabilitation Centre and leaves without meeting or hearing about **Mahalakshmi Mojjada**, also called Lakshmi. In fact nobody should, simply because the achievements of this slender, soft-spoken lady speak volumes not just about her, but also about the way LVPEI nurtures its employees, truly making them into "sought after limited editions."

Mrs. Lakshmi came to LVPEI as a timid, newly married 18-year-old from Srikakulam, who had completed her 10th grade. The newlyweds came to Hyderabad looking for better prospects, and fate

navigated Mrs. Lakshmi to enter LVPEI in 1996 as a field worker. Conversant only in Telugu, with no skillset or knowledge of the city, she was prepared to do any work assigned to her. What better way to start than at the Vision Rehabilitation Centre with Dr. Beula Christy as her mentor?

After an initial training on the job for three months, Mrs. Lakshmi dived deep into the ocean of the sightless. She began travelling by buses on routes she had no idea about in an alien town. But, work hard she did—on door-to-door programmes, school programmes and home-based rehabilitation, obtaining disability certificates for patients and a lot more.

Mrs. Lakshmi enrolled for courses in Braille. She was certified in Nemeth Braille Code, the human eye programme and the independent living programme from the Hadley Institute for the Blind and Visually Impaired, and felt enriched like never before. Simultaneously, she was absorbing everything in the LVPEI environment like a sponge—the work ethic, the intricacies of rehabilitation of the visually impaired, and teamwork. The team meetings and achievements of her colleagues motivated her to pursue higher education. She did this with a zeal to complete not only her Intermediate (high school) studies; she also went on to complete her graduation, post-graduation and a bachelor's degree in special education.

“I was able to grow because of the opportunities given to me at LVPEI,” Mrs. Lakshmi says. “Dr. Beula, the head of the department, is an excellent leader and has guided me from day one. At LVPEI, we continuously add to our responsibilities without dropping old ones, which is a great way to keep in touch with all the skills acquired and remain open to learning from youngsters, who often have much to impart to us. My job gives me immense satisfaction. Many of ‘our’ kids from rehabilitation whom we had taught are now independent, and it makes me proud to see them.”

On the personal front, Mrs. Lakshmi admits emotionally, “My entire family has benefitted from LVPEI. I have been able to contribute financially and help my husband educate our two daughters. I am ever grateful to Dr. Rao, who has given me all the support whenever required. Sometimes, he even went out of the way to do so. I have learnt the meaning of punctuality, cleanliness and savings, and incorporated these at my home too. In fact, I have become a role model to many of my relatives, and my brothers encourage their wives to be like me.”

Ironically, her role at the Vision Rehabilitation Centre is assisting clients reach age-appropriate milestones, while she has had to sacrifice witnessing some milestones of her own children. Every achievement comes with a price, and Mrs. Lakshmi too has paid it through hard work, focus, dedication and commitment to a cause she considers far more meaningful than herself.

Today, as a vision rehabilitation consultant, Mrs. Lakshmi walks, talks and breathes rehabilitation. She still does early intervention programmes, counselling parents and doing client assessments, with the added responsibilities of community-based rehabilitation (CBR). She is on the teaching faculty for the Diploma in Eye Health Management course, and she is also involved in teaching parents of vision rehabilitation clients, field workers, interns and fellow doctors. She also monitors CBR at Berhampur, Rayagada and Rajgangpur secondary centres of LVPEI in Odisha. LVPEI, without doubt, facilitated her transformation on all fronts.

* * *

The late Sam Balasundaram was associate director of fundraising and donor relations. His life was a series of tragedies with multiple eye problems and loss of his dear ones; however,

he left this world in harness, working on the development of eye care in Liberia, his pet project!

Mr. Balasundaram came to LVPEI because of problems with his eyes. His family moved to Hyderabad in 1967, and he studied and worked here. In 1978, he developed eye problems and was treated at Sankara Nethralaya. He suffered from diabetic retinopathy, with bleeding in the retina. One in 100,000 young people get this disease. One night he could see, and the next day he had no sight in the right eye.

In 1990, Mr. Balasundaram met with a road accident in Delhi and injured his left eye. The eyeball was sinking and the orbital bone was broken. He had to undergo plastic surgery, but his vision was affected, and he had retinal detachment for which he was operated again. Three years later, he developed cataract; as intraocular lens implantations were not available in the early 1990s, he had to wear aphakic glasses. He tried contact lenses, but he developed corneal problems.

Mr. Balasundaram came to LVPEI in 1994. He was advised corneal transplantation, but corneas were not readily available, so he went to the United States for treatment, with friends donating part of the expenses. It was then that “I learnt the power of giving,” he said. He returned to LVPEI and followed up on his treatment with Dr. Rao. His left eye was perfect at that time.

In 1999, his wife developed cancer. After she passed away, Mr. Balasundaram gave up working. But he had two sons and needed income. Through Dr. Dorairajan Balasubramanian (Dr. Balu), he was given the task of designing brochures and quarterly and annual reports, and was asked to develop stories for donors at LVPEI.

Mr. Balasundaram took a long time to come out of his shell. Dr. Rao and Dr. Balu were understanding and so good to him, he

recalled. He just had to knock at their door if he needed anything. This was in 2000; there was no communications team then and Mr. Balasundaram ran a one-man office. There were an abundance of patient stories, and content was growing with the secondary centres and vision centres coming up.

In 2006, Mr. Balasundaram's left eye got infected. He had to undergo a second cornea transplant. The results of a second corneal transplant are generally not as good as the first transplant. He then got an infection in the right eye. His vision was very low, and his lens became loose because the bag in which the intraocular lens sits lost its elasticity. He also had uveitis. The vitreous chamber was cleaned, and he got back some vision.

Mr. Balasundaram says that the understanding he has gained from managing one problem after another has meant a lot to him. For a person like him who had restricted vision, he was still able to give back to the institute. He introduced all patient care and disease management brochures written in a simple language. He developed formats for pre-printed stationery. He worked on quarterly and annual reports. The demand for a communications team was growing. It was getting difficult for him to do this kind of work. He was getting more involved in fundraising and taking care of high-end patients.

In 2009, tragedy struck again in his life when he lost his younger son. He felt this was more reason to give back to society. "I feel for the patient," Mr. Balasundaram said, after all the pain he went through with his own eye problems. He was a patient champion. For him, the patient was important; he was not here to make anyone else happy. The communications department was later taken over by Dr. Usha Raman followed by Dr. Sreedevi Yadavalli, nine years ago.

At 65, Mr. Balasundaram was happy, with his son settled, and he enjoyed his time with his grandson. He was glad that he had

an excellent assistant in Mahaveer Jain at work. “He is my eye; he does the writing, and I do the talking,” he said. With the new corporate social responsibility (CSR) law, it became easy to talk to people. He knew what was happening at LVPEI, and he could make a presentation one on one. CSR has become mandatory for companies, so they are interested, he said. They have their own preferred charities, but more or less everyone sets aside a bit for healthcare, he informed.

The project in Liberia owes its development to Mr. Balasundaram, who initiated the dialogue when he introduced the son of the then President of Liberia, Ellen Johnson Sirleaf, to Dr. Rao, when he came to LVPEI for treatment. Moved by the conditions in Liberia, Mr. Balasundaram pursued the link with passion and succeeded in the creation of this partnership and of development of a centre there. As the project evolved, he frequently visited Liberia along with Mr. Rajashekar, but Mr. Balasundaram passed away on one such visit there.

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Dr. Srinivas Marmamula is the section leader for primary eye care, community eye health education and research at Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye care (GPR ICARE). He is also a faculty member at the Bausch & Lomb School of Optometry and the Brien Holden Eye Research Centre. Dr. Marmamula came from a financially weak background. After he completed 12th standard, he wanted to get a job and settle down quickly, although he nursed an ambition for higher education. He heard about a three-year diploma programme in ophthalmic techniques (now optometry), a full-time programme for higher education with a monthly stipend of Rs. 300, big money in 1993.

When LVPEI started the Andhra Pradesh Eye Disease Study (APEDS) in 1996, Dr. Marmamula joined the team and worked on this research project. He worked in four areas—Hyderabad, Warangal, Adilabad and Mehbubnagar—under Dr. Lalit Dandona.

Dr. Marmamula wanted a career that was different from that of others. At that time, an optometrist's job was to help doctors in clinics, work in optical outlets or help with contact lenses fitting. The APEDS was a good opening. He was interested in working in rural areas. He decided to focus on public health. His research work on the APEDS received appreciation, and he also published in journals. It also gave him an opportunity to do a masters in public health with the aid of a scholarship at the London School of Hygiene and Tropical Medicine in 2002-2003. While other people in the APEDS project kept changing, Dr. Marmamula continued as the main clinician. The outcomes of this study gave LVPEI the basis to launch public health programmes and to go to remote communities.

After completing his masters in the UK, Dr. Marmamula went on to do a part-time Ph.D. in Australia, and published five papers from his Ph.D. work and from his post-doctorate at Wilmer Eye Institute and School of Public Health in Johns Hopkins University. He completed several courses on bio-statistics and epidemiology, and wrote many papers. In 2015, he was awarded the Wellcome Trust/DBT India Alliance Research Fellowship for his research project on visual impairment in elderly populations. The fellowship came with funding to support his work for five years. Dr. Marmamula works closely with Dr. Rohit Khanna on this public health-related research project.

LVPEI is dear to me, says Dr. Marmamula. The institute provided him with opportunities to pursue his education and personal growth, and he did not have to write a bond. He claims that

Dr. Rao recognised his talent many years ago. LVPEI provides a very supportive environment to work, and Dr. Rao is the easiest person to communicate with. Dr. Marmamula feels he got so many good things from the institute. It becomes a moral responsibility to do something good in a small way, he says. The institute supported him in tough times, and now it is time to pay back.

Dr. Marmamula is mainly into research at ICARE, and he works with Dr. Khanna on various projects. He is also involved in training programmes, including a six-month diploma in community eye health, a two-week certificate course in eye health management and a one-month certificate course in community eye health. He provides technical support for vision centres. He also looks at public health indicators, and looks into policy related to vision centres.

When compared to other organisations, the extent of politics at the institute is at a bare minimum, he states. People are too busy doing their thing, and everyone has clarity in their roles and responsibilities. About the future, Dr. Marmamula is confident that LVPEI will not fall apart after Dr. Rao steps down from his role. In the last five years, he has seen the emergence of good leaders among the young faculty, says Dr. Marmamula. He names some of them—Dr. Somasheila Murthy and Dr. Pravin Krishna Vaddavalli in the cornea department, and Dr. Ramesh Kekunnaya in paediatrics. The institute is in good shape in terms of its finances, HR and global recognition, and continues to do well in clinical care, he observes.

The main concern now, he says, is about the willingness of future leaders to put money into research and public health, which Dr. Rao is passionate about.

One big difference between Aravind Eye Care System (AECS) and LVPEI is the need for necessary talent to move forward, according to Dr. Marmamula. At AECS, family resources are mandatory to move forward. The only big stars are from among the family members. Their philosophy is different. They are more focused on numbers, while LVPEI is focused on quality and research. AECS is a global leader for cataract volumes and expertise. LVPEI has expertise in complex problems like oncology, paediatrics, glaucoma, etc.

* * *

Prakash Chandra Das is the assistant director in charge of administration at LVPEI MTC campus in Bhubaneswar. He hails from a remote and under-developed village in District Kendrapara in the coastal belt of Odisha. After graduation, Mr. Das took up the company secretary course but had to give up half-way because of financial constraints. He started looking for jobs in accounting and worked in chartered accountant firms. A chartered accountant in the firm where he worked asked him if he would like to go to an NGO eye hospital in Bhubaneswar, recently inaugurated by former Indian president Dr. A.P.J. Kalam. Mr. Das had not heard about LVPEI, but he wanted to return to Bhubaneswar, so he applied and was selected.

After a brief training, Mr. Das officially joined the Bhubaneswar campus on 1 October 2006, three months after its inauguration. He was initially posted in the accounts department. Mr. Das feels he has been part of the growth of the campus; he has witnessed the campus garden flourish from little saplings to big trees. There were few patients in the initial years, and he would go around the gardens along with Dr. Taraprasad Das. Dr. Das noticed his interest and asked him to supervise landscaping, along with accounting. Mr. Das started imbibing the culture of LVPEI, and slowly got involved in

other administrative areas like stores, purchase, guest relations and patient care administration. Around 2011, he was promoted as the administrator of the campus.

Mr. Das says that the non-paying services at LVPEI are not found anywhere else in Odisha. Even in government hospitals, doctors collect fees unofficially, he remarks. In this scenario, people can't even imagine that LVPEI is doing all types of surgery for free. It makes him feel proud to be part of such care. When poor people come from villages and get free treatment, they spread this message. It is not about the respect Mr. Das gets, but about the positive reputation gained by the institute.

Almost 15 people from his village and neighbouring villages were operated upon here in the last 10 years. Mr. Das sees people with no money coming here; they don't even have money for the auto rickshaw fare, and they walk two-and-a-half kilometres. These people get the most expensive and critical surgeries, like retina and oculoplasty, free of charge.

Another aspect about LVPEI that Mr. Das likes is the opportunity given to the lowest cadre employees, who have had no exposure, to reach leadership positions if they perform well. His colleague with a degree in commerce, who started as an accounts assistant, is now heading the accounts department! In his role, Mr. Das oversees every aspect of the institute's work, including all administrative areas, accounts, research and education.

Mr. Das says that leaders like Dr. Das and Dr. Rao, with whom he directly interacts and works, are rare.

* * *

Vimala Pillai is in charge of patient care at the first secondary centre in Mudhole. You can tell by Mrs. Vimala's cool and composed

disposition that she is completely in control of all situations at Mudhole. Clocking 21 years at LVPEI, Mrs. Vimala has gained confidence to handle any and many issues that could possibly occur at this secondary eye care centre, which was the first to be opened by LVPEI in 1996. She had been trained in Hyderabad for nine months and moved to Mudhole right from inception as junior administrator and counselling in-charge.

Mrs. Vimala recollects, “In the early days, there were many challenges. Mudhole being a small mandal, awareness was very poor, language was a barrier, and it was difficult to make people here understand what eye care was all about. Now, people come from a radius of 200 kilometres, with 50% of patients coming from Maharashtra, which is on the border. My responsibilities are to take care of admissions, patient counselling, guidance and discharge. Over the years, many patients have treated me as a daughter, and some have insisted that I accompany them to the operation theatre.”

Mrs. Vimala explains that since LVPEI is not commercial but focuses on patient care, patients have referred others, thus increasing the institute’s reach over the years. Here, all employees are experts in all departments. This way, even if an employee is not present, work does not suffer, and nobody hesitates to do any job.

On a personal note, Mrs. Vimala nostalgically recounts, “When I was an Intermediate student, I had come as a patient to LVPEI, never imagining that I would work here one day. When I joined, my supervisor mentioned that if I can follow the discipline of my husband who is in the army, then working in LVPEI would be easy. Likewise, I have enjoyed my years, appreciating the punctuality and the call of duty and serving my people—Mudhole happens to be our hometown too. Here, I feel I am doing a special service, I have the joy of satisfying patients and am able to explain procedures to

them using words they understand. I also initiated reconnecting with dropout patients to investigate why they did not go in for a surgery. It was found that many a time, they just needed to understand better, with the advantages of surgery explained to them again.”

After two decades, Mrs. Vimala still looks forward to coming to her centre. There was a time when she believed she was not good at speaking; that’s mostly what she does now! She has no regrets that she is in a small place like Mudhole and that her children had to move to the city for their education, for Mrs. Vimala firmly believes her contribution is optimum at this rural centre. She is especially caring towards patients who come alone and need hand-holding. Surely LVPEI has trained her just as well as the army has trained her husband!

* * *

Sreenu Kumar is a vision technician at the vision centre in Echoda. Mr. Kumar comes from the Vadoor village in Adilabad and belongs to a family of cotton growers. However, his parents were keen for Mr. Kumar to pursue education instead of agriculture, and they encouraged their son to do his graduation. After this, Mr. Kumar joined IKP Labs, a training centre for village youth, where he heard about LVPEI’s vision technicians course. It was being offered free of cost, and Mr. Kumar took the opportunity. This was a milestone for Mr. Kumar. In his one year at the Bausch & Lomb School of Optometry in Kismatpur, Mr. Kumar encountered his first hurdle, which was the English language. With a little help, he became more confident and comfortable.

An enthusiastic Mr. Kumar had his first posting at the vision centre at Ongole. He then moved to Utnoor and is now at the vision centre at Echoda. His job entails conducting screenings, identifying vision

conditions and explaining both the problem and the solution to individuals. He is able to address basic eye care issues at his centre. Cases that require the next level of care, like cataract, glaucoma, eye injuries, etc. are referred to the closest secondary centre at Adilabad. Mr. Kumar is happy to place on record that he has completed 40,000 screenings and is eagerly working towards the required 50,000 mark competing with the other 10 centres in the Village Vision Complex (VVC).

Like all of LVPEI's vision technicians, Mr. Kumar has to maintain a systematic record—of patients, services undertaken, centre accounts, etc. He says, “I'm very keen that I develop my centre and in the process enhance my development. LVPEI encourages us VTs a lot, and Venkata Ramana, our supervisor, motivates us to keep learning and improving our skills and performance. At LVPEI, the focus is on putting the patient first, and this has earned me a lot of respect in my village. In fact, I'm called 'doctor' by most of the locals and feel privileged to be doing a service to my people. As employees, we are made to feel like a family, and this gives me a lot of job satisfaction.”

Many, like Mr. Kumar, are taking care of the eye health of rural India, which would otherwise have been neglected for want of trained personnel and the convenience of a secondary centre in close proximity. Surely, Mr. Kumar needs to be saluted like the soldier who guards the border, for a country of sighted people translates into a country of self-sufficient people.

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4.5. Photographs



Dr. Vijaya Kumari Gothwal gives a talk at the Low Vision Awareness Programme LAP Plus, 15 September 2016.



Dr. Sayan Basu in the Cornea clinic – Sight was restored after 12 long years for his patient.



Rehabilitation specialist Mrs. Mahalakshmi Mojjada trains a blind person to independently cook in the kitchen.



Ms. E. S. Manjula, Ms. Vanita Ganesh and Ms. G. Vijaya participate in the Children's Day celebrations, 14 November 2016.



Dr. Srinivas Marmamula demonstrates his involvement in community eye health research, 2006.

PART – 5

The Anatomy of Leadership

This section of the book is about leadership at LVPEI. A well-known management principle is that the first task of a leader is to begin to choose and train successors. Some leaders do the exact opposite; they focus on eliminating the most competent successors. And then there are some leaders who simply let succession happen organically over time. Succession is a matter of importance to LVPEI. Dr. Rao and his team have strong views on this issue, described later in this section.

What is leadership? In their seminal book on the subject “Leadership on the Line,” Ronald A. Heifetz and Marty Linsky describe the risks and dangers of being a leader:

“To lead is to live dangerously because when leadership counts, when you lead people through difficult change, you challenge what people hold dear – their daily habits, tools,

loyalties, and ways of thinking – with nothing more to offer perhaps than a possibility. Moreover, leadership often means exceeding the authority you are given to tackle the challenge at hand. People push back when you disturb the personal and institutional equilibrium they know. And people resist in all kinds of creative and unexpected ways that can get you taken out of the game: pushed aside, undermined or eliminated.”

However, they continue the argument to explain why good leadership is worth the risk. The fruits of strong creative leadership are immense, as LVPEI reveals.

“Leadership is worth the risk because the goals extend beyond material gain or personal advancement. By making the lives of people around you better, leadership provides meaning in life. It creates purpose. We believe that every human being has something unique to offer and that a larger sense of purpose comes from using that gift to help your organisations, families or communities thrive. The gift might be your knowledge, your experience, your values, your presence, your heart, or your wisdom. Perhaps it’s simply your basic curiosity and your willingness to raise unsettling questions.”⁹

Later in this section, we will recount numerous markers or hallmarks of the LVPEI leadership. One of the key elements of leadership is that it is measured by and judged by the followers. Leaders inspire followers to do great things, far greater than they would have done on their own. True leadership is about how leaders relate to their followers. So in this section, we offer not just the views of LVPEI’s leadership, but also of the followers.

⁹ Ronald A. Heifetz & Martin Linsky, “Leadership on the Line.” HBS Press 2002, pp. 2–3.

Dr. Rao is well-read and likes to cite a book and article titled, “How Will You Measure Your Life?” by Professor Clayton M. Christensen, a pioneer in disruptive technology. Here is a short passage from Christensen’s famous article:

“If your attitude is that only smarter people have something to teach you, your learning opportunities will be very limited. But if you have a humble eagerness to learn something from everybody, your learning opportunities will be unlimited. Generally, you can be humble only if you feel really good about yourself and you want to help those around you feel really good about themselves, too. When we see people acting in an abusive, arrogant or demeaning manner toward others, their behaviour almost always is a symptom of their lack of self-esteem. They need to put someone else down to feel good about themselves.”¹⁰

The LVPEI leadership blends its core of strength and decisiveness with the humility of those who are on a journey of lifelong learning.

¹⁰ Clayton M. Christensen. “How Will You Measure Your Life?” *Harvard Business Review*, July–August 2010.

5.1. Creating a Pipeline of Leaders

In an interview with *Ken* magazine a few years ago, Dr. Rao spoke about the leadership succession issue, stating that six people of the senior management team, all ophthalmologists, have been identified to succeed him¹¹. They are being groomed for the leadership role. One of them will be declared as his successor in a couple of years, he then said. Dr. Rao has declared that whoever succeeds him will be free to run the institute in the manner that the new leader deems best. However, all organisations have transition challenges, and LVPEI must cope with it.

Commenting on the future leadership of LVPEI, Dr. Rao says that he is not unduly worried, contrary to the perceptions of those at LVPEI and those outside LVPEI. He states that there is enough talent internally across three generations of leaders: those in the 50+, 40+ and 30+ age groups. There are about 15 potential leaders who can step in when required, and the current leadership is planning to do the transition in a very orderly manner. In fact, the process has already begun.

Policies for the organisation are made at the group level by a body of senior leaders that is referred to as the Executive Committee (EC), also known as the Friday Discussion Group. The EC comprises people from among the three generations of leaders. Dr. Rao recalled

¹¹ Singh, Seema. "A healthcare business model that most could follow (but don't)." *Ken* magazine, The Interview, Feb.17, 2017. <https://the-ken.com/story/healthcare-business-model-follow-dont/>

that he deliberately selected people from different age groups so that they can all participate, learn the process of leading the institute in the years to come, and pave the way for a smooth transition. What is unusual is that leaders in the 30+ age group are included in the EC, resulting in building a leadership pipeline that will serve in the next several decades. These leaders are trained on the job by actually getting them involved in running the institute right now, crafting policies and enabling them to learn how things are done.

During this period of accelerated learning, each member of the EC has the complete freedom necessary to develop oneself. If the members want to take up advanced training elsewhere or complete an MBA, they are free to do so. Whatever training they want, they can go and seek it, whether these are short-term or long-term learning programmes. If they want to take a break from clinical work and join the management for one year, they would have the freedom to do so. These are all the possibilities, and Dr. Rao had outlined this plan to many groups, including to the faculty and senior staff.

The plan is to narrow down the field from six potential leaders to about two, of whom one would be chosen to be his potential successor. What is unique about this process is that it is transparent and known in detail to all those who are concerned. “My vision is that a competent leader should be taking my seat,” Dr. Rao confides. “I will continue being on the board. I will assist as needed and provide help in fundraising, if I am still able to do so physically and mentally. If I can, I want to be actively engaged and support the institute without getting involved in the day-to-day running in any way.” Despite being flawlessly planned, some problems will be inevitable during the change of guard.

Dr. Rao believes that people understand that leadership change is inevitable, because the management has been discussing and

communicating this for quite some time. The process is already underway and being tested at the new Institutes of Excellence that are in various stages of development. He quoted some examples in the recent past of LVPEI's experience in selecting a leader. When there was a need for a leader for The Cornea Institute, Dr. Rao did not jump in and choose that leader. Instead, he went to the entire cornea group of about 14 faculty members across the LVPEI network and told them to each give their top two choices for the director of The Cornea Institute, which they did. Then, he asked the heads of other services in the institute and other senior executives about their top two choices for The Cornea Institute. In this manner, a wide spectrum consensus-building process was set in motion.

The choice of all the people who were asked was unanimous. The person picked was Dr. Pravin Krishna Vaddavalli. The process was very transparent, with no glitches. If there was a tie, Dr. Rao may have had some difficulty, and then he would have had to jump in and use his judgement to break the tie. The process deployed was much like an election for senior positions, in a body of professionals. It was not a selection. So, Dr. Pravin Krishna Vaddavalli was made the director of The Cornea Institute, and there was no grumbling about it. No cornea faculty left the institute after the announcement was made; everyone concerned accepted the decision in the right spirit.

Similarly, for heading the Child Sight Institute, Dr. Ramesh Kekunnaya was chosen almost unanimously; there was nobody close to him in the selection process for this position. Likewise, Dr. Rao sought to know the interest among the faculty members to head the Institute for Eye Care for the Elderly. This was outside the mainstream specialities of glaucoma, retina and cornea, spanning all these specialities. The only person who came forward and expressed interest to head this centre was Dr. Avinash Pathengay. He took it up as a challenge. He designed a beautiful facility and was very

innovative in creating this institute, the Aurobindo Geriatric Eye Care Centre. It is now fully functional. Again, there was no problem in identifying the leader for that centre. Similarly, there has been no dissent in identifying leaders for the other Institutes of Excellence.

A similar and more elaborate process has been set in motion for the selection of Dr. Rao's successor, as detailed in the next chapters.

“When I started the institute, my dream was that I would remain the head of the institute for 10 years and then pave the way for a competent successor. I would then become one of the members of the faculty,” Dr. Rao informed.

He confided that at that time, he had considered two people who were with LVPEI since the beginning and had the potential to head the institute. However, both left LVPEI. Then, a few people recommended Dr. Ravi Thomas as a good candidate. Dr. Rao did not know too much about him, except that he was a professor running the eye department at Christian Medical College in Vellore and that he was a world leader in the field of glaucoma. Accordingly, he was recruited with the idea that he would take over from Dr. Rao. The leadership transition was done in 2004 with a big celebration announcing the first big leadership change. Unfortunately, this did not work out due to a cultural mismatch, and Dr. Thomas moved on after two years.

Dr. Rao believes that the next leader would have to be a leader within LVPEI and an ophthalmologist. Dr. Rao confesses that this time around, he has not been able to identify anyone from outside LVPEI, both from India and outside, who had great leadership qualities and could be the custodian of the hardwired values of LVPEI.

Dwelling on the burden of taking over the leadership from the institute's founder, Dr. Rao says that irrespective of the choice of

his successor, there would be the inevitable comparisons being drawn between the incumbent and the predecessor. To counter the apprehensions of the team, he always points out to them that, undoubtedly, they are all brighter than him. He claims that he was just an average student in medical school. Though he did not top the class, he did well in residency training at the All India Institute of Medical Sciences. That is where, he says, his transformation began.

While in the United States, he had made the most of every opportunity that had come his way, and that had made all the difference for him. He had worked very hard during those 12 years, which gave a solid foundation for his future. “All the faculty at LVPEI have much better backgrounds, and they went to better schools and colleges,” he remarks. “I went to a Telugu-medium school in a village; they went to English-medium schools in big cities and received good exposure and education. I have no doubt that the identified leader would do better than me.”

He recalls his remarks to the faculty at an internal research meeting called “Crosstalk” held in September 2017. It is an annual event organised by LVPEI Vice-Chair Dr. G. Chandra Sekhar, a get-together for the entire faculty of about 100 members from across the network. In the concluding remarks, Dr. Rao told them that he would like to see in LVPEI the type of exemplars one sees in America. That country has great examples of smooth leadership transitions. There are examples of people who have become heads of the ophthalmology departments in their universities the day they completed their residency training, without even doing a fellowship or being an assistant professor!

These are exceptional people because of the work they did and the leadership qualities they demonstrated, or because of the original breakthrough research that they did. He asked the faculty,

“How come there is nobody among our fellows knocking at my door for my job, while we all say that we are as good as the Americans and the Europeans, that we are brilliant and a superpower?”

About the vice-chairs’ and senior leaders’ response to the leadership change, Dr. Rao says that they too understood that this change is inevitable. This discussion has been going on for a while in LVPEI. Dr. G. Chandra Sekhar and Dr. Taraprasad Das, both vice-chairs, know that somebody younger than them is going to become the next chair. In the reorganisation, they will not remain as vice-chairs. They will move into emeritus status and mentor the next generation of leaders.

Some of the young faculty may become vice-chairs in the new structure that will emerge. Commenting on the off chance that the existing leadership will jump back into executive roles after the transition, he admits that it could very well be a problem. “I hope that I will have the wisdom to refrain from doing so,” he laughs.

He explains the way he approaches the challenge of leadership transition. “I did certain things earlier and when I finished my work, I cut myself off completely from what I was doing earlier. I hope I will be able to do that even in the context of handing over the institute to a new leader.”

He recalls that in 1992, he had become the chief editor of the *Indian Journal of Ophthalmology*. When he took up this responsibility, the journal was in bad shape. There was no money, and it was two years behind schedule. He took it up as a challenge because he wanted that to be his contribution to Indian ophthalmology. With his wife Mrs. Pratibha Rao’s help and support, he transformed it. Mrs. Rao herself acted as the managing editor and completely turned around the management and administration of the journal, all the way from the mailing list onwards. They approached the ophthalmic industry,

convinced them to support it, mobilised resources and made it into a good quality journal in a matter of six years. Dr. Rao served as the chief editor of this journal for two terms of three years each. The journal came to be respected around the world.

Dr. S. S. Badrinath of Sankara Nethralaya wrote to him, asking if he could propose to the All India Ophthalmological Society to make Dr. Rao a lifetime editor. Dr. Rao politely refused this offer. He firmly believes that nobody should sit in any leadership position for life. The day he finished six years, Dr. Das was elected as editor. He asked Dr. Rao to help him, which he politely refused. He decided that he will not be on the editorial board, will not review a paper for this journal and will not even enter that office anymore. So, he stepped out of this role completely.

Likewise, Dr. Rao was deeply involved with the International Agency for the Prevention of Blindness, running the global VISION 2020: The Right to Sight programme for 12 years—first as secretary-general for six years, and then as CEO, president and chair, the only person ever to hold all three positions at the same time in that organisation. By 2008, when his term ended, he was requested to be the chair for another term, which he politely refused. Two years before his term ended, he informed that he would not take up a second term and that they should think about how they would want to continue—whether to have one person in a combined role of chair and CEO the way he did, or have two separate people for these roles. He advised them to make these decisions so that they would be ready for the transition when his term ended. Till date, from the time he completed his term in 2008, he has not attended a single IAPB meeting. This was a deliberate decision, so that he does not influence the decision-making of the current leadership.

He hopes that such a smooth transition, giving leeway to his successor, will happen even in LVPEI. Dr. Rao has already got an

office ready in LVPEI's Kismatpur campus in Hyderabad, which is situated away from the main campus. He says it is very peaceful there, being outside the city, where he can sit in a corner quietly and do whatever supportive work he can for the institute. "At least that's my dream, and I hope the next person will do what it takes to ensure continuity in terms of what LVPEI stands for. Therefore, the selection of the right person is very important," he concludes.

He admits that he has the advantage of growing with each brick of LVPEI, so it was not difficult for him to lead the institute. Everybody knows him and everybody respects him because he is the founder of LVPEI. He understands the disadvantage the next person will have. From that perspective, that person has much to learn in the first place. So if the next chair can't immediately handle this massive work by himself or herself, there will be support from a strong operations person, who may be a non-medical person. There may also be a managing trustee from the board to assist the new leader, if required. The kind of support from these two people will depend on how strong the leader is.

If the new leader is quick to grasp leading LVPEI's complex services and does not require support, then LVPEI will continue to be managed singly, the way Dr. Rao has managed for decades. If that person needs some time to grapple with the complexity of LVPEI's wide-spanning footprint and operations, then the support structure that Dr. Rao has envisaged will help the leader, so that the institute continues to travel along the path that has been set.

Dr. Rao's leadership style has brought LVPEI to its current enviable status, and the institute is now zeroing in on the next leader. Over the coming months, Dr. Rao hopes that they will

be able to identify the two most promising persons who may succeed him. He admits that he does not know of any better way of identifying the next generation of leaders. He is open to suggestions from other organisations that have been successful in leadership transition.

5.2. Challenges of Leadership

Explaining the trajectory of any institute, Dr. Muralidhar Ramappa (a consultant in paediatric cornea service) opines that every institute has what can be called its “golden era,” and then it crashes. In 33 years, LVPEI has done phenomenally well, but we must make sure it continues to run for many more years. “Institutes should be ageless,” says Dr. Ramappa. The question he asks himself is this: How long will the LVPEI magic last? It is a constructive paranoia. At LVPEI, decision-making is collegial and inclusive. He also observes that LVPEI may be transplanting cultures from other organisations through lateral recruitment at senior levels that may dilute the home-grown “LVPEI” culture.

Dr. Ramappa is also concerned about the effect having a new leader will have on fundraising. Fundraising for Dr. Rao is easy, he opines, giving the example of Dilip Shanghvi, a prominent entrepreneur in the pharmaceutical industry, who made a major financial commitment to support LVPEI on its 30th anniversary. “As LVPEI transitions from its current first-generation leadership, donors who support LVPEI should be able to have visibility into the third-generation leadership succession, if not into the fourth-generation leadership,” says Dr. Ramappa.

This chapter provides a summary of some of the challenges the future LVPEI leader will face, based on the views and ideas shared by some LVPEI faculty and staff members.

Employer-employee Relationships

One of the challenges the organisation faces is the employer-employee relationship in the 21st century. Ultimately, an organisation is built by its employees. The expectations from the employees in the 1980s and 1990s may not be applicable in today's context. For example, in the past, if someone made a mistake, you could shout at the person, punish him or even throw him out, but that may not be the case today.

An example in this context relates to the sensitive issue of overtime. Nurses have a 9 a.m. to 4 p.m. job; they do a fine job of assisting the surgeons very well. However, at LVPEI, surgeries on a typical day go on till 8 p.m. With the changing world, employees expect parity in compensation with other opportunities they may have, better benefits, etc. While LVPEI provides world-class training to fresh recruits, people should not see it merely as a training ground to move on to greener pastures. This is another on-going challenge for the institute to address.

Developing a pipeline of leaders at every level and making specialists look beyond their immediate speciality is another challenge. To ensure continuity of culture, it would be necessary for the next line of leaders to be reflective, take corrective action, see things to their completion, and subsume their individuality for the collective good. These were major traits of the first generation of leaders, which the next generation of leaders must emulate.

Leadership after Dr. Rao

Given the world-class caliber of the LVPEI faculty and staff, the outside world will go to great lengths to woo them to get them on board. Hence, the next generation of leaders must have a connection

with the ground level, to get a pulse of what is going on in the trenches and take appropriate corrective action. Rotation among directors between the campuses may help to broad-base leadership competencies of the leaders.

Leadership Style

A charismatic leader, Dr. Rao has the skill to inspire people and make things happen. While he has his shortcomings, these pale into insignificance in the light of his phenomenal inspirational leadership style and extraordinary leadership qualities. His successors will do well to develop their own unique style rather than merely copy his style, which is unlikely to work for their personalities. Successive leaders will have the challenge of stepping into Dr. Rao's big shoes. Ability to take decisions in complex situations is a skill his successors should learn, especially as they may not have done so in the past.

Financial Sustainability

While the three tertiary centres at Bhubaneswar, Visakhapatnam and Vijayawada are self-sustaining, and the Hyderabad Centre of Excellence campus makes a significant surplus, the challenge is to ensure that the many secondary centres in rural and semi-urban areas and several primary centres in villages are also self-sustaining. Revenues in the primary centres are generated primarily by selling glasses. The ability of people to pay for other services at this level of the LVPEI pyramid is limited. Financial sustainability across the entire LVPEI network is a challenge that the next generation of leadership has to grapple with: balancing the paradox of doing good and doing well. Identifying appropriate locations for future expansion at every level in the LVPEI pyramid, to match community needs, would continue to be a challenge, going forward.

Style and Working Conditions

Dr. Rao genuinely cares for people, and people feel connected with him. He is very thorough in what he does and tries to confirm facts and takes time to come to a decision, rather than jump to spot conclusions, especially when the decisions relate to doctors and executives. He also gives an opportunity for people to correct themselves. This is a skill that the next generation of leaders must quickly learn.

Challenges for the Future

Given that the values of society are changing fast, accessing an adequate pool of fresh recruits who could potentially succeed at LVPEI's demanding work culture will continue to be a challenge, primarily due to the very high standards that are expected of employees in the institute.

While undoubtedly the doctors and staff at LVPEI are among the best in the country, it is important to also be grounded and desist from looking down on other people and other organisations in the country. Additionally, to continue to be the best in the world, continuing to strengthen a culture of transparency is essential.

Work-life Balance

Much can be achieved by having a good work-life balance, by facilitating building of long-term relationships both inside and outside the organisation, including with families. The leaders succeeding Dr. Rao should find ways to continue to enhance the psychological ownership of the institute among all stakeholders, especially among senior leadership and the faculty, to create a common sense of purpose, values, mission and vision.

Challenges and Key Success Factors Going Forward

Looking ahead, a healthy amalgamation of the past, the present and the future is vital. The past cannot be ignored, because the values of the organisation emanate from the past. Adherence to the core values of LVPEI makes decision-making much easier. At the same time, it is essential to continually innovate, keeping the present and the future in perspective, rather than be stuck in the past.

There are two aspects to education—intangible and tangible. The intangible aspect relates to compassion, passion for teaching, understanding a person’s capabilities and strengths, and appreciating, encouraging and correcting the learner as required. The tangible part comprises technical skills, technology, etc. It is important to have a balance between both these dimensions.

Leadership Values

The three most important values for the next generation of leadership would be integrity, intelligence and enthusiasm. The organisation’s values have been built on this basis with great care over the past three decades; these values are truly non-negotiable.

Transmitting Values for Replication of the Model

Replicating LVPEI’s innovative pyramid model across the country and even across the developing world, while perhaps being the right thing for LVPEI to do, is a huge task whose feasibility on a large scale needs to be considered. Accomplishing this replication requires a massive scale-up of available talent and large-scale expansion of an incredibly committed workforce, which will be a

major challenge. Hence, finding other innovative pathways to grow, without necessarily greatly increasing headcount, would require a new wave of innovation.

For the LVPEI pyramid model to continue to evolve, perhaps new competencies of partnering have to be developed, while making sure that excellence and equity are maintained, and that important aspects of the organisation such as research and rehabilitation are not side-lined by the next generation of leadership in their quest to grow the organisation.

Leadership Succession

The new leader should have the grand vision to be able to take LVPEI forward over the next 30 years, while having the ability to ensure translation of the vision at the ground level. The LVPEI culture is much stronger than the corporate cultures of business houses such as the Tata group and Infosys; they tried to induct top leadership from outside their groups and failed. Based on the failed attempt in the past at LVPEI to induct the leader from outside the LVPEI system, the next generation of leaders have to be home-grown ophthalmologists.

5.3. View From the Desk of the Three Vice-Chairs

Vice-Chairs and their Roles

The three vice-chairs have defined roles—Dr. Taraprasad Das looks after patient care policy, new projects and quality across the network. Dr. G. Chandra Sekhar oversees education and research, and had been managing the main campus of LVPEI in Banjara Hills, until recently handing it over to the next generation of leaders. ICARE and the community eye care programmes are directly monitored by Dr. Rao. Ramam Atmakuri, who is the executive vice-chair for operations across the network, oversees the administrative staff. There are directors for education, research and other functional areas who report to the respective vice-chairs.

* * *

Dr. Taraprasad Das (TPD as he is called) is a vice-chair of LVPEI and consultant at Smt. Kanuri Santhamma Centre for Vitreo Retinal Diseases. He is also a professor of ophthalmology at the Sun Yat-sen University, Guangzhou, China, adjunct professor of ophthalmology at the University of Rochester Medical School, USA, and a fellow of the National Academy of Medical Sciences in India. Dr. Das holds multiple leadership positions, both at the national and international levels, in the broad field of ophthalmology. In 2013, the government of India conferred one of its most prestigious civilian honours, the Padma Shri, on Dr. Das.

Dr. Das worked at Aravind Eye Care System (AECS) for 10 years before joining LVPEI. He had the good fortune of being associated with two great visionaries during his professional career—Dr. Govindappa Venkataswamy, the founder of AECS, and Dr. Gullapalli N. Rao. “One taught me how to work with humility, and one taught me how to work with vision and purpose,” says Dr. Das. “I learnt from them that while you live for today, think about the day after tomorrow, with a vision. Both taught me hard work.”

In addition to these two great leaders who greatly influenced him, the former president of India, the late Dr. A.P.J. Abdul Kalam, was a personal friend. Dr. Das learnt from Dr. Kalam that everything one does must have a purpose and must lead into a bigger vision. Dr. Kalam told him that vision has many dots, and you must join the dots. When you move away and leave a place, just move away and do not look back. Do not live life backwards, and do not live life with nostalgia.

AECS has a very able team that manages the system. The replication of this system by any other organisation is not very easy. The challenge for great organisations, such as AECS and LVPEI, is to enable them to succeed in perpetuity. That would be the true leadership challenge. This includes ensuring financial, organisational and cultural sustainability, according to Dr. Das.

Dr. Das first met Dr. Rao in 1981, and he joined LVPEI in 1990. Dr. Das was a good cataract surgeon, also dealing with retina. LVPEI was already popular for cataract and contact lens services. When Dr. Rao asked him to explain his 10-year vision for LVPEI, Dr. Das said he will make this place well-known for retinal care. Soon enough, Dr. Das decided to give up cataract surgery and focus solely on retina. At AECS, he was seeing 80 patients a day with retinal diseases; when he joined LVPEI, there were just 33 patients

for various eye diseases. He was the only retina specialist at that time, so he could consequently structure the speciality the way he wanted and was given total freedom to do so.

In the first 18 months of his tenure, he fully focused on building the retina department. In August 1999, nine years after the retina department started, LVPEI hosted the World Retina Congress. Many big names in ophthalmology from across the world attended the conference. “That is the day I decided my job is done, and now someone else will lead the department,” says Dr. Das. His decision was influenced by Dr. Kalam, whose approach was to do your job and move on; do not overstay.

He believed in Dr. Kalam’s advice to him:

“The world will not improve if you stay on. Lead a life of restlessness, so that mentally you are not getting old. The community will benefit by getting new blood. You do not have to do anything wrong to secure your place. Come with a mission, finish your work and move on.”

In 2002, Dr. Kalam became the president of India. Dr. Das would often take an evening flight to Delhi after his work at LVPEI, talk through the night with Dr. Kalam at the Rashtrapati Bhavan, and take an early morning flight back to Hyderabad to start doing his surgeries immediately after reaching LVPEI.

Dr. Kalam once asked him what he would like to be remembered for. He said: “When you see the Taj Mahal, you remember Shah Jahan, even though he never wrote his name on it. When you see the three lions on the Ashoka Chakra, you remember King Ashoka. In the state of Odisha, the condition of healthcare is abysmal. Go there, and do something permanent and sustainable there, so that

it provides hope in the realm of healthcare for all the people in that impoverished state.” However, he also advised him not to settle down there (Dr. Das hails from that state).

On 4 June 2004, Dr. Kalam and Dr. Das together attended a convocation in Odisha. In August of the same year, the Odisha government allotted land in Bhubaneswar for LVPEI to set up a tertiary hospital. Dr. Das had been contemplating for a long time on what he could do in Odisha, and suddenly everything seemed to fall into place. It was the first big eye hospital outside Hyderabad for LVPEI, after which two more tertiary hospitals of LVPEI were established in Visakhapatnam and Vijayawada. As of today, the Bhubaneswar tertiary hospital is one of the best campuses in the LVPEI network.

Dr. Das says he had two great teachers—B.D. Sureka and Dr. Kalam. Dr. Das was only 40 years old when he met Mr. Sureka, a 70-year-old patient and successful businessman from Kolkata. Mr. Sureka was a well-grounded person and survived in business even in the leftist political environment of Bengal.

Dr. Das learnt several things from both men. They taught him not to get attached to people and events. They advocated to never be selfish for one’s personal benefit, to think about the larger canvas, and to always take things as they come without grumbling. Focus on your vision, they advised.

Reflecting on the difference between LVPEI and other hospitals in the country, Dr. Das had this to say, “The reality of corporate hospitals is, ‘money first and patient next,’ and there is no independence for the practising doctors. Here at LVPEI, the doctors get a lot of freedom.”

Dr. Das has a sticker on display at his office that says, “I am ready!” He claims that he has finished all his worldly activities. “When you are gone, nobody will miss you. When you finish your

work, you should be ready to go away. I am happy with what I do at LVPEI. I have no desire to earn more and more money. I do not have a private practice mentality,” he says, although he could have made a huge fortune with his extraordinary skills in retinal cure. Along with the tertiary centre, he built four secondary centres and four vision centres in Odisha, to develop a network of eye care centres, all in line with LVPEI’s vision to expand in that state.

Having built the Bhubaneswar centre, Dr. Das has a desire to see that it becomes a Centre of Excellence in ophthalmology in eastern India. He would like to see this centre as the last stop for education and research in that part of the country. He hopes that it will spread quality eye care to every nook and corner of Odisha. One of the secondary centres in Odisha is in Rayagada, an area densely populated by Naxalites (affiliated with India’s militant communist party). Eighty percent of the services at the Rayagada centre are offered free of cost due to the extreme poverty of the local population.

Dr. Das sees his job as one of setting the course and not steering the ship. The steering will be done by younger people. Once in 45 days, he visits the centres in Odisha. He also works closely with the government in Odisha as the chairman of the universal eye health programme named Sunetra. Dr. Taraprasad Das is very unassuming, although he has a huge list of accomplishments to his credit. He has published many books, something that Dr. Kalam encouraged him to do. He continues to publish and explore the unknown.

* * *

Dr. Garudadri Chandra Sekhar (Dr. GCS) is a glaucoma consultant instrumental in developing LVPEI’s glaucoma services, and he was also director of education for several years. Dr. GCS

believes that the same recipe for success that worked at LVPEI over the last 33 years will continue to work in the future. He believes that there will always be two kinds of people—the immediate goal-seekers and the people who want to look at the big picture and seek to pursue eternally relevant values.

About leadership succession, Dr. GCS personally does not worry too much about it. The creation and development of an organisation of this global magnitude required the diligence, leadership and multifarious positive qualities of Dr. Rao. LVPEI has people in the next generation who are extremely competent, who have strong values, and who can continue the legacy of the institute. When the institute was created, the vision then was probably a miniscule fraction of the current vision of LVPEI, and it has evolved gradually, Dr. GCS informs. He personally learnt much as he grew along with the organisation.

LVPEI has evolved far beyond Dr. Rao's original vision because of its strong core values, the challenges Dr. Rao successfully faced, and the calculated risks that he took, Dr. GCS says. The ability to take risks at the right time and the ability to focus on reality while not losing sight of values, he believes, is what has brought LVPEI to its current level of pre-eminence and will be required for the journey ahead. The next leader will face challenges stemming from not knowing the organisation as closely as Dr. Rao, as Dr. Rao built the institution brick by brick. However, Dr. GCS is confident that the person who succeeds Dr. Rao as the leader will be able to carry forward the mission. It may have a different colour and flavour to what it is right now, but the fundamentals will not change.

Sharing his thoughts on the challenges of leadership transition, especially in the context of the crises that have unfolded from time to time in some of the large corporations in India such as the Tata group and Infosys, Dr. GCS remarked that in the crises that are

playing out, any opinion probably will not be the complete truth, especially at the time the crisis is unfolding. In such situations, the truth will reveal itself only in hindsight, after the crisis has long passed. He admits that they had earlier gone through a transition process that was not successful, when Dr. Ravi Thomas was the director of LVPEI for two years. He thinks they have learnt lessons from that situation and are wiser now. “So this time, we will be spot on,” says Dr. GCS.

Financial Sustainability

About financial sustainability, Dr. GCS commented that anyone who expresses concern over the financial viability of LVPEI does not know the complete picture. “If you are completely for profit and completely taking care of only the paying patients, sustainability is easy. But if you take the responsibility of taking care of all the patients while remaining sustainable and continuing to grow, it might look to be a challenge. However, it is precisely this model that has made LVPEI successful over the years,” Dr. GCS asserts. Never has a project been shelved at LVPEI because of financial reasons.

About the perception that after Dr. Rao hands over the leadership to the next generation of leaders, funds in the form of donations will not come as easily, Dr. GCS remarked that probably even Dr. Rao worries about that to some extent. A corpus is being formed, and the next leader needs to be a quick learner to build relationships and partnerships with donors.

When the first few secondary centres were being built, land had to be procured and money had to be invested or raised from NGOs to build the infrastructure. The centres at Mudhole and Thoodukurthy were built in this manner. However, over the years, this model of funding has changed. The local community takes the

responsibility to fund the growth initiatives of LVPEI, Dr. GCS says. In Vijayawada, the tertiary centre has been completely built by the local community. All the secondary centres that have been set up in the recent past have been built by the community, whether it is at Paloncha, Dhulipalla (near Sattenapalli) or elsewhere. The three centres in Odisha and a couple of others in the pipeline, such as the one at Balasore, are being funded by the community. So, Dr. GCS does not worry too much about finances constraining the ability of LVPEI to continue to grow.

Innovation

Sharing his perspective on innovation at LVPEI, Dr. GCS too refers to the book by Clayton M. Christensen “How Do You Measure Your Life?” In this book, Christensen talks about emergent strategy and deliberate strategy. Dr. GCS observes that most of what happened at LVPEI has been an emergent strategy rather than a deliberate strategy. Even the Technology Innovation lab was an emergent strategy from his perspective and not a result of deliberate planning. According to Dr. GCS, technology innovation was a result of Dr. Sangwan’s meeting with Professor Ramesh Raskar of MIT who wanted to bring innovation in ophthalmology in partnership with LVPEI.

They decided to give the idea a try. The first two roll-outs of this partnership were called “Hackathons,” which turned out to be very productive. When Dr. Rao, Dr. Sangwan and Dr. GCS were returning from the second Hackathon session at the BITS campus, they felt this was something they could institutionalise. They were happy with the results of the first two Hackathons that were conducted under the mentorship of Dr. Raskar. Dr. Rao decided to invest 1% of the budget of LVPEI on innovation. He gave Dr. Sangwan complete freedom

to roll out this vision. One of the LVPEI board members, Mr. B.V.R. Mohan Reddy, pledged additional support. This investment is now helping them expand the reach of advanced ophthalmology to vision centres by leveraging technology.

The concept of vision centres was not a deliberate strategy in the context of innovation of the pyramidal model to deliver eye care to the remotest areas in the four targeted states of Telangana, Odisha, Andhra Pradesh and Karnataka. It evolved and came about because there was a need for these vision centres. Even after creating secondary centres, it was felt that LVPEI was not reaching the bottom of the pyramid. Based on this need, Dr. Rao envisaged the concept of vision centres. Once vision centres were created, there was a need to link 10 vision centres to a secondary centre.

At the Center for Innovation, the unmet needs of diagnostics as perceived by the ophthalmic profession were combined with the creativity of designers and engineers, many of whom were interns doing their engineering studies.

The standards for the practice of ophthalmology were quite different in India when LVPEI was established in the 1980s. Dr. GCS recollects an incident during the first few months after the institute began operations. During a Journal Club session, there was a power failure, and there was no back-up power in those days. A quick decision was made not to see any patients during the power outage. There were hardly 5–10 patients waiting, and they were requested to come back on the following day, by which time the power was expected to be restored. One of the visiting ophthalmologists at the Journal Club was surprised that LVPEI was sending away patients. He felt that if there was no power, they could examine the patients in torch light instead, and provide treatment to the patients.

However, Dr. Rao believed that such a practice would compromise the quality of the care. None of the patients needed emergency care,

so they were asked to come back the following day. Even when LVPEI was in the nascent phase, the need to educate people on standards in eye care was recognised. Small but important practices, such as the need to wash hands before seeing the next patient, the need for dilating the eyes of the patient, the need to check the eye pressure irrespective of the eye problem, are just a few examples. Therefore, raising the standards of excellence in eye care can be considered as an innovation.

When practicing ophthalmologists wanted to learn sub-speciality skills but could not spare time for a long-term fellowship, a tailor-made three-month fellowship programme was introduced. They learnt by watching different kinds of surgeries being performed, and then followed up with the operated patients in the outpatient clinics. While they did not get hands-on training, they spent an intensive time seeing many patients in that speciality within a short period of three months. Consequently, a training programme was introduced to serve this purpose.

The rehabilitation centre at LVPEI is also an innovation. A need was felt to integrate blind patients into the community, and into income-generating professions wherever possible, and to help them continue their education. With this objective, Dr. Beula Christy, the director of the Institute for Vision Rehabilitation, collaborated with the technology companies to create the Digital Audio Library to digitise books and also a computer training lab for the visually impaired. “Thus, innovation comes out of a necessity; it may not be seen readily by other people,” says Dr. GCS.

Future Frontiers of Innovation

Going forward, Dr. GCS sees the Child Sight Institute and Geriatric Eye Care Centre as the major innovations that will help LVPEI

keep up the innovation momentum. The Child Sight Institute has been around at LVPEI for a long time, although in a different form. It started as the Jasti V. Ramanamma Children's Eye Care Centre; its scope has now expanded under the Child Sight Institute. The Geriatric Eye Care Centre, supported by Aurobindo Pharma, is another innovation to address a large and growing problem of elderly eye care that the country will be facing in the years to come. The idea behind both these innovations is that LVPEI needs to take care of the vulnerable age groups.

Expansion

Dr. GCS does not think there will be more Liberia-like experiments. LVPEI is attempting to demonstrate a working model in Liberia, and will then partner with others to scale up or to replicate those models. In Liberia, despite support from local authorities, getting things to work on the ground has been a challenge. However, LVPEI has taken the responsibility of ensuring the success of the project. While the eye care centre in Liberia has its own staff, the LVPEI team will provide support in clinical care and with training the required human resources. The focus is on enhancing the capacity of the local team, so that they become self-sufficient in the years to come.

While LVPEI will not establish centres in the United States or other parts of the Western world, there is a possibility of extending support through collaborations, and in the process, promoting the successful LVPEI model. While LVPEI has the infrastructure in place for comprehensive eye care across the four states in India where it is operational, Dr. GCS does not think it will go beyond eye care into providing healthcare for non-ophthalmologic ailments.

The idea of integrating basic healthcare into its existing infrastructure is a natural extension. However, the paucity of

medical expertise required in rural and semi-urban areas makes it difficult to succeed. Going forward, providing basic health check-ups by training the vision guardians at the village level is a possibility. Once a health problem is identified, there is no credible mechanism of making referrals to concerned experts outside the eye care speciality, which is a major impediment. Based on this premise, LVPEI's philosophy has been that vision centres will be established at the grassroots only if a secondary centre is nearby and accessible to patients.

Audit of Leadership and Choice of Successor

When asked for an honest audit of the current leadership style, and about Dr. Rao's personality which most people consider as both awe-inspiring and very demanding, Dr. GCS laughs and admits, "I share some of those characteristics myself, in the sense that I am also considered to be very demanding, especially when it comes to patient care. In all honesty, the positives of the leadership are many."

He believes that everybody at LVPEI would acknowledge unhesitatingly the positive qualities of Dr. Rao's visionary leadership. He has the rare ability to see what is happening on the ground and what needs to change. "He has an eye for detail, as well as a big vision for the institute. This has been his strength. He has multiple other strengths, of which the passion for doing good in the community is the foremost," says Dr. GCS. On a lighter note, Dr. GCS draws attention to a display on Dr. Rao's table: "Rule number one: The Boss is always right; and Rule number two: If the Boss is wrong, refer to rule number one."

Ramam Atmakuri is the executive vice-chair at LVPEI. He oversees non-clinical activities across the LVPEI network. Mr. Ramam is a qualified project management professional (PMP), a certified quality analyst, with training in applied statistics and operations research. He worked for three decades in various IT and manufacturing industries, and before joining LVPEI in October 2014, he was the centre head of Cognizant at Hyderabad. Having served in many global management teams, Mr. Ramam has vast experience in building and managing businesses and leading multicultural and multidisciplinary teams. He has received many honours for his services to the IT Industry and for his contributions to the project management profession globally.

After a long and successful career in the corporate sector, Mr. Ramam wanted to move to the service sector and work for the community, which prompted him to join LVPEI. In 2013, during the inauguration of an audio library at the Vijayawada campus of LVPEI supported by Cognizant as part of its CSR, he met Dr. Rao and started getting involved in the management activities.

Thereafter, he took on a formal role as executive vice-chair, responsible for all non-clinical activities in the LVPEI network, which include HR, purchase, stores, technology, finance, maintenance and developing new centres. It is a big change from the industry he came from, and this experience has been very gratifying for Mr. Ramam. In his corporate role at Cognizant, he was managing revenues of US \$850 million and leading a workforce of 18,000 people. He gave all that up to join LVPEI and work for the community. He is a regular donor and sponsors children's education.

In the corporate sector where Mr. Ramam worked for many years, the style is more participative because the employees are led by professionally appointed CEOs. Mr. Ramam says that when he joined LVPEI, it was a mature and successful organisation.

“When I came in, I tried to tweak the culture to bring in a sense of ownership, by organising a series of workshops for all key employees to instil in them the need for each of them to take psychological ownership of their roles,” he says.

The weak areas in the institute, as observed by Mr. Ramam, are performance management and accountability. Cost consciousness is an area that may need improvement. Some of the faculty point out that when Professor Brien Holden, of the Brien Holden Vision Institute (BHVI) in Australia, passed away, his successor cut down the budgets for research, community care and eye banking. Mr. Ramam hopes that this will not happen at LVPEI once Dr. Rao steps down and hands over leadership to his successor.

LVPEI now has a corporate procurement department that has helped save crores of rupees by bringing in efficiencies in purchases. When equipment was bought for the new building, Mr. Ramam and his team realised that the vendors were taking the institute for a ride. This group saved crores of rupees when the new building was constructed and additionally, the department saves a few crores each year on consumables. The criteria used for vendor and product selection now is to minimise the total cost of ownership (TCO), informs Mr. Ramam.

Ramamurthy Vadlamani, an experienced senior procurement professional who joined the team recently, streamlined the procurement systems and processes. Earlier, it was common for vendors, for instance, to make profits of Rs. 1 crore (Rs. 10 million) on a deal and declare that they were giving an annual donation of 25 lakhs (Rs. 2.5 million) to LVPEI. After the rationalisation in procurement was implemented, vendors were asked to separate donations being made to LVPEI and discounts for the items being purchased. Implementation of automation in various key processes in the network has made a great difference to the functioning of the

institute. Both patient care numbers and financials have significantly improved, Mr. Ramam informs.

In a break from the past where only a few people in the organisation knew about the finances, now more people are sensitised to the financial results on an on-going basis. The shift is from data to information to intelligence to insight. From 1 January 2015, the KRA/KPI (key result areas or key performance indicators) approach was ushered in for every key employee, significantly enhancing the discipline in the way things are done. In general, there is an increase in efficacy, and the turning point for that push came with the inauguration of the new building, where widespread automation was introduced right from inception, says Mr. Ramam.

In the corporates, there are knee-jerk reactions of cost-cutting when things go awry. Earlier at LVPEI, people were not sensitive to the need to keep a check on costs. Mr. Ramam says that he has raised the level of financial awareness and ensured availability of information to people in various decision-making roles. He says that the people who report to him directly know 99% of what he knows. Being in the corporate field where senior management is often travelling, the staff is equipped to make the right decisions in the absence of seniors, and the staff is monitored through robust information systems. This is the culture he has attempted to replicate at LVPEI.

With the tightening of systems in the purchase, stores and supply chain functions, the key managers at LVPEI, armed with accurate information, can aggressively negotiate with vendors, helping to significantly bring down costs. To usher in this change, workshops were held for the executive cadre on three themes—ownership, internal customer service and operational efficiency. One of the strong messages communicated is that hiding information in any form is unacceptable and that total transparency is expected.

5.4. The Markers of a Great Leader

In genetic research, a marker is a short or long DNA sequence, useful for mapping genes or linking genes to their specific impact or biological function. In this part of the book, we describe metaphorically the markers of a great leader at LVPEI—markers that define the unique leadership style and character at LVPEI as exemplified by Dr. Rao. There are nine such markers. Dr. Rao is undoubtedly a great leader. He has built the world's greatest and best eye care institute right here in India. As recognition for his contributions to global eye health, he was inducted into the Ophthalmology Hall of Fame by the American Society of Cataract and Refractive Surgery in Los Angeles, USA, in May 2017. Here are some of the markers of his leadership that reveal how and why he is undoubtedly a great leader.

Marker 1: Incredible and Laser-like Clarity of Purpose

Dr. Rao once told a young consultant who had multiple interests and had a hard time pursuing all of them to satisfaction: “Diffuseness is a fatal flaw.” It took a while for the young consultant to understand exactly what Dr. Rao meant. It was not about setting aside one's many interests, but about understanding what one's central and most important goal is and prioritising one's activities around that.

In the case of Dr. Rao, his life purpose is “So That All May See.” His mantra from the outset has been the following: “Just because a person is poor, it does not mean that he needs to get poor treatment.” All that he has done in the last 33 years is to relentlessly work towards that purpose. For example, vendor samples are provided to poor outpatients to the extent possible.

The same clarity of purpose is manifest in every aspect of Dr. Rao’s work in LVPEI—patient care, training, research, rehabilitation, community and public health, innovation, facility maintenance and housekeeping.

Many entrepreneurs are focused on personal wealth creation. Dr. Rao forms part of a small minority of entrepreneurs who do not go after personal wealth maximisation. When asked to comment on his personal trait of not hankering for money, Dr. Rao said he learnt this from his wife, Mrs. Pratibha Rao. “Our feeling is we have enough, and we are fortunate and privileged with all that we have, especially in a country like ours and in the world that we live in, with so many disadvantaged people. Just imagine, even with whatever little we have, we are probably in the top 3% of the world! So, what are we complaining about? We have no right to complain. This has been our philosophy,” says Dr. Rao.

Marker 2: Create, Share and Deploy Knowledge

This has brought tremendous focus on research in the organisation. In LVPEI, if doctors (or faculty members as they are called) are good in clinical practice, but do not do research or train others, they have no place in the organisation. All the faculty members and scientists are encouraged to publish in top international journals in their field. As a case in point, from April 2019 to March 2020, LVPEI had 395 publications. The faculty and scientists are

encouraged to present their research findings within LVPEI and in conferences in India and internationally.

This focus on research is the reason why LVPEI is called an institute and not a hospital. It is for this reason that there is an academic session daily at 7 a.m., attended by faculty and scientists across the network. No one is exempt from attending these daily meetings. Doctors located in the tertiary centres and secondary centres are expected to participate through video-conferencing. A simple objective of this meeting that lasts for an hour is to share knowledge. LVPEI's faculty is sent to the best universities of the world for extended periods to share knowledge and to learn.

Other examples of sharing include learning from great eye care providers about their eye care models and learning from the best practices across the world.

Marker 3: Meritocracy at its Best

There is no place for dysfunctional considerations of caste, community, region, religion and nationality at LVPEI. The diversity of people from different parts of the country who are doing well and occupying key positions at LVPEI is staggering. No one knows (or cares) what religion, caste or region one belongs to. Everybody across the board agrees that Dr. Rao is fair. When people leave, it is usually not due to personal differences with Dr. Rao. Dr. Rao walks the talk; he believes in equity and fair play and lives by them.

At an operational level, this principle translates into the institute encouraging its staff (i.e., non-faculty) to upgrade their skills for career growth or move out. In a typical appraisal, if an employee complains about inadequate salary, they are counselled about the institute's performance-based evaluation. They are asked to review

the work they have done to deserve a hike and the new skills learnt. Employees are made to understand that just because they need more money does not mean that the institute must pay them more. Instead, they are expected to qualify for enhanced salary through performance.

Marker 4: Incredible Time Management and Undivided Attention

Dr. Rao is a very early riser. Most of his work (emails, thinking) happens then. During working hours, therefore, he looks unperturbed. He has time to spend with people, without being preoccupied. Dr. Rao notes: “I have learnt a few tricks and things from observing, learning and reading. For example, in one of the biographies of Hillary Clinton, I learnt that she would never read a letter a second time. The letter was read; the response given and the chapter closed. Just imagine if you can immediately respond to each letter that you get and you don’t have to go back to it again, how much time you could save!

“The second thing relating to time management that I learnt in America through my practice, which was later corroborated by a Harvard MBA who was in healthcare management, was to dictate the referral letter right in the presence of the current patient before moving on to the next patient. It takes about 30 to 45 seconds to prepare a detailed letter then and there, which is much better than doing it at the end of the day or the end of the week. If you don’t want to spend that time, at the end of the day, you must spend 15 minutes for each record; at the end of the week, you must spend 30 minutes for the same record if you want to present the same details in your referral letter, unless you become very cursory in your letter.

So when I finished at the end of the day, I made sure I didn't have anything pending from my patient care on that day.

“When LVPEI started operations, the faculty did not have much assistance—no fellows, no trained nurses. The nurses and the doctors had to be trained gradually. For months, my assistants were senior doctors: Dr. Satish Gupta, Dr. Chandra Sekhar and Dr. Shobha Boghani. They used to assist me, and I used to assist them in their procedures. We had to go and do our own enucleations for corneal donations. In those early days, I would ask the nurse to scrub out at the end of surgery, while I was beginning to put the first suture on the patient's eye. Those were the days when we used to practice extra-capsular cataract extraction on patients. I used to start dictating the operative notes and instructions for medication to the nurse while I was still operating. By the time I finished all my sutures, the operative notes were done and instructions were written. I would then scrub out, sign the requisite papers and go to the patient and talk to the patient and the family. By the time I came back and scrubbed in, the next patient was ready,” says Dr. Rao.

“It is all about staying focused. I would not take any phone calls during my patient time. These are the things I learnt watching and observing others during my stint in the USA. I advise my colleagues not to look at just the techniques and technologies, but also at how individuals function,” he says.

One of Dr. Rao's contemporaries and friends, the late Dr. George Waring III who unfortunately passed away under tragic circumstances, was a prolific author. Every month, he would have one or two publications in journals. He was an outstanding orator. Dr. Rao once asked him how he accomplished these achievements. Dr. Waring said that he would go to work at seven in the morning and work till noon. From noon to one, he would play squash. At six,

he would go home, have dinner with his family and spend time with his kids. At nine, he would be back in the office and write till one in the night. This was his routine every single day. Dr. Rao reflects, “I used to advise our colleagues for many years, although recently I stopped doing it, that at least for two days in a week, or even for two evenings in a week, take out time for writing.”

Many ophthalmologists who are good speakers would say that they used to practice and rehearse extensively before their talks. Dr. Rao took up public speaking seriously: “I used to listen to tapes while commuting in America in the car. I would listen to the best speakers in ophthalmology, as well as great speakers in other subjects. Initially, for many years until it became a habit, I used to record all my presentations, rehearse them, rewrite my talks, record them, and rehearse them again, doing this several times till I was fully satisfied. I didn’t have the chance of going to an English medium school and getting an English medium education. I learnt it the hard way. These are some of the learnings of my life about time management and effective communication,” he says.

It is not only about time management. It is also about giving priority to people during working hours. Dr. Rao gives undivided attention to the people he is with during meetings. In fact, he likes to be intensely focused in everything that he does. “Ekagratha” (intense concentration) is the underlying construct, rather than just time management. Ekagratha can be translated as “laser-like focus.”

Marker 5: Egalitarianism

At LVPEI, world-renowned faculty members or even Dr. Rao himself as the chairman can be seen sitting next to a housekeeping assistant in the cafeteria and engaging with them in a conversation, a rarity

in India. Dr. Rao has no hassles on that score! This is egalitarianism at its best. There is a distinct and visible preference to create an egalitarian culture.

Marker 6: Customer (Patient) First

At LVPEI, everyone uses the stairs, even to climb or get down six floors, leaving the elevators free for patients—this also keeps the body fit. The patient at LVPEI is checked by various specialists in a comfortable examination room. It is the doctors and other specialists who move around from one examination room to another. Patients get the parking slots closest to the buildings, while the senior doctors park their cars at a distance.

When the Vijayawada centre became operational, Dr. Rao visited it almost every week. He would meet the doctors at that centre during each of these visits. At one of the morning chats with them, he said: “Patients don’t care how many qualifications you have, patients don’t care how many international meetings you were invited to, how many papers you published, how many awards you received or how much fame you have. To them, what is important is how well you treat them and whether you can cure them.”

Marker 7: No Special Privileges and Artificial Symbols of Power

At LVPEI, there is no usage of titles such as “Sir” or “Ma’am.” Anyone who addresses others with these titles must deposit a “Sircharge” of Rs. 100! This practice, actively implemented for about a year to bring awareness among staff, helped foster an egalitarian culture that in turn promotes a feeling of empowerment. Consequently, privileges and symbols of power automatically become meaningless.

Marker 8: Giving Credit in Public Where it is due and Celebrating Great Performers

Dr. Rao publicly appreciates the good work of his employees. Such communication greatly motivates the employees to achieve more.

Marker 9: Transparency and Sharing of Responsibility

Transparency is the core of all that is done at LVPEI. The three vice-chairs, all very senior and respected colleagues who handle various portfolios, reflect Dr. Rao's desire to share organisational responsibility and create a feeling of trust amongst top leaders. In such an environment, transparency becomes a natural corollary. A new entrant joining LVPEI goes through quite a cultural transition. There is a high level of transparency in the system. No permission is needed for getting any information for performing one's role. There is nothing to hide, and documents are never doctored. At LVPEI, there are no cash transactions, and there is no direct involvement of the top management in day-to-day activities. The functioning is system- and process-driven.

Ramesh Peddi, the head of finance, admires the transparency at LVPEI. He is impressed by the dedication of the entire team. Everyone stands by the organisation's core values, and the working in the institute is guided by its core principles. "The institute is run by policy and process, and not by one person," says Mr. Peddi.

The atmosphere is employee-friendly and camaraderie exists amongst team members. Mr. Peddi says that compliance is taken seriously. Under the Societies Act, annual returns are submitted for HERF along with IT returns, while only IT returns are filed for the HEI Trust. Good practices as per the Company Law Board are followed even though LVPEI does not come under this purview.

About reporting and sharing, Mr. Peddi says that meetings are held weekly with Dr. Rao and the three vice-chairs. The processes have been digitalised, with the implementation of SAP ERP. A daily report is sent electronically to the chair and vice-chairs. Senior management can view on a daily basis the status of funds flow for the entire network, including daily, monthly and year-to-date reports, inflows and outflows and surplus or deficit for each segment and campus. The reports are automatically generated by the system each morning. This helps them to make a comparison of historical average versus actual average to analyse and interpret data and prepare annual budgets every year. Mr. Peddi sends weekly and monthly reports on the budget versus actual performance to the chair and vice-chairs. Reports are also made on funds received from grants to monitor expenditure and commitments on those grants.

Dr. Subhadra Jalali proudly states that consultants are not bound by bureaucracy and red tape to decide the treatment protocols for each patient. At LVPEI, the doctors can write off any amount of money for any patient, based on their perception of the patient's paying capacity. Both doctors and administrators can shift a patient from paying to non-paying at their discretion. The patient may be more comfortable explaining their financial situation to a counsellor, and the counsellors can make this decision based on certain objective and transparent parameters. According to Dr. Jalali, such freedom gives comfort to the faculty that "we can practice medicine without economic or other barriers."

5.5. The Three Es—Equity, Excellence and Efficiency

The degree to which a thing is important in our lives may differ from one person to another, but there must be a common place where everything culminates and one can agree that yes, these are the values that guide our professional and personal life. The following paragraphs present the three Es that are vital to the functioning of LVPEI, in the words of Dr. Rao.

Equity-Equality

At face value, one tends to interpret that equity has something to do with treating everyone the same. So LVPEI does not turn away anyone who seeks eye care, whether they can pay or not. It means looking at each person in the same way, giving them the same quality of treatment and investing in each human being the same level of concern. It does not mean being “blind” to differences. It means recognising that each person is an individual with different needs and expectations. So, it means being sensitive to differences and adjusting our personal filters so that we react appropriately. It means constantly educating ourselves about the million different ways in which patients live and experience things, so that we give them what they need. It means being reflexive in action and reflective in thinking. It is what truly gives meaning to the term “patient-centred.”

It is not possible to create a system that is equitable unless each person associated with the organisation in any manner is equitable in their way of dealing with human beings in and out of the institute. It cannot be a uniform that one puts on when he or she walks in through the glass entrance door of the institute; it should get under everyone's skin and govern their behaviour. It then ceases to be an imposed value and becomes a value loved by all those associated with the organisation.

Excellence

How do we measure excellence? We should recognise that external benchmarks are not sufficient, because they make us focus more on the outcome than the process. And true excellence is not achieved by focusing on the product—no matter what the management pundits may say—but by focusing on how we produce what we want to produce.

So an equitable way to deliver patient care may not result in *excellent* outcomes when measured by numbers, but will do so if measured in the quality of outcome and the impact one has made on patients' lives. Equity must be built into the process if excellence is to mean anything.

True excellence therefore becomes a habit if it involves attention to detail and an attitude of not compromising on one's own ability to do something to the fullest. This way, one can never blame the system for lack of quality. One can only trace a bad outcome to the way one individually deals with something. Conversely, it doesn't matter if one's work is recognised or not. Excellence is ingrained and expected—in and of oneself.

Efficiency

Efficiency must permeate everything we do, every process we undertake. It is not systems that are inefficient or efficient; it is the way we work in those systems that makes some people efficient or inefficient. Unless efficiency too is inherent in every action we undertake, the system cannot be efficient. And again, equity and excellence feed into the notion of efficiency we should work with. It is not an isolated concept, but one which makes sense only when linked to the other two.

There is no point in being efficient without being caring and compassionate. And one cannot be caring and compassionate unless one focuses both on being good at one's work (within the demands of the context) and doing it in the best way possible—which naturally leads to efficiency. Of course, there is another equally important sense in which the word is understood and must be applied—in the use of resources. If we are to be truly equitable, we need to use resources in the most efficient way possible, so that there is no wastage and everyone has a share of the “resource pie”—both the soft (our attention and skills) and the hard (material resources).

Tying the Three Es together

LVPEI comprises two non-profit organisations: the trust named Hyderabad Eye Institute (HEI) and the society named Hyderabad Eye Research Foundation (HERF). The members of the boards of these two organisations are stellar professionals, drawn from all walks of life, from all parts of India. LVPEI has no external investments nor venture capitalists nor overdraft. This gives the doctors much flexibility as they are under no revenue target pressures, a welcome departure from the way most corporate hospitals in the country perform. The vendors are paid within 24 hours of raising their invoices, and employees get their salary on time.

Despite their stellar accomplishments, doctors at LVPEI cannot afford to have a superiority complex and throw their weight around. The diversity of staff at LVPEI is staggering. Examples include the faculty who joined as fellows after post-graduate training in ophthalmology, like Dr. Virender S. Sangwan and Dr. Rohit C. Khanna. They come from distant parts of India and had to learn the local language, Telugu. Another example is Dr. Subhadra Jalali who heads the quality and retina services. She hails from distant war-torn Kashmir valley.

Dr. Srinivas Marmamula is from a lower-middle class economic background. He joined as a vision technician. He had a phenomenal growth at LVPEI, and over the years, he has earned a master's degree in community eye care from London, a doctorate from the University of New South Wales, and a postdoctoral fellowship from Johns Hopkins University in USA.

LVPEI promotes higher learning and supports consultants who aspire to advance their skills and knowledge by providing them opportunities for further studies in the best institutes of the world. Doctors at LVPEI are not called consultants, but faculty. This is because LVPEI is a teaching and research institute and not just a hospital. The difference between a consultant and a faculty member is that a consultant mainly provides medical care, while a faculty member must also teach and conduct research. In some large hospitals in India, some doctors do conduct research and publish, but they often have to find their own resources for their research and do it during their own personal time.

Whereas at LVPEI, faculty members get strong support for academic and research pursuits. From a patient care perspective, the practice of ophthalmology is not consultant-based at LVPEI, but institute-based. In other hospitals, a patient asks for a consultant, and hence, the practice of medicine is centred on “star consultants” who

have the responsibility to attract patients and are given daily targets on patient revenues. In contrast, at LVPEI, the patient is assigned a consultant unless the patient is on a follow-up visit, in which case the patient may be assigned the same consultant who had treated him or her earlier. Thus, all faculty members are expected to have excellent competencies.

The faculty members are encouraged and guided to obtain grants for international exposure and training. The institute pays doctors their salary even when they are away during the training period. Everyone who has been sent for such advanced training comes back to be part of LVPEI. Money is not the primary motivation for the faculty who have been with LVPEI on a long-term basis.

Most large hospitals in the country have a marketing department and resort to aggressive marketing to attract patients. In these hospitals, doctors are initially paid a fixed salary; once they establish their name and reputation, they get consultancy fees based on the number of patients seen. LVPEI is different in this regard. It is an institute-based hospital and not a consultant-based set-up. The counsellor at LVPEI screens patients and recommends whether the patient should be treated for free or should pay fees, depending on the patient's economic background. Around 50% of the patients of the institute are provided services for free, as they cannot afford to pay for the services. The costs of serving them are covered through income generated from paying patients. Paying patients can choose among the different available packages. The number of poor patients who are cross-subsidised by every paying patient varies based on the package chosen. The patients of various packages are seated in different waiting lounges. Yet, the quality of treatment is identical for all patients.

The highest charge that a paying patient would pay matches the base charge at corporate hospitals. Patients are not charged for

cross-referrals to the faculty within LVPEI. In contrast, at corporate hospitals, patients are charged separately for every consultant. A few decades ago, healthcare was service-oriented, and profit was not a motive for the healthcare providers in the country. Over the past few decades, corporate hospitals brought in the money component to centre stage. From this perspective, LVPEI's practices go back a few decades. It practices medicine in the old, traditional fashion.

LVPEI is a dynamic non-profit organisation with multifarious activities, as evidenced from the monthly newsletters circulated to all members in the organisation, as well as to friends and supporters. In research, LVPEI is involved in several multi-centre trials with prestigious groups around the world. It ranks among the top ophthalmology institutes in the world. It is also a preferred centre for global multi-centre research trials. The institute has several exchange programmes with top universities and organisations around the world. Continuous medical education programmes (CMEs) and international workshops are held regularly to enhance the skills of service providers.

In fact, more work is handled at LVPEI than at other similar eye care organisations. Yet, LVPEI prefers a low-key approach, letting its work speak for itself. As a philosophy, advertising does not suit a non-profit organisation like LVPEI. Even without advertising, simply through the power of word-of-mouth, there is a high turnout of patients, with close to 1,400 patients seen in the outpatient clinics each day at the KAR campus alone. As the KAR campus is a Centre of Excellence, the more complex cases are examined by consultants there.

Funding for the growth of the institute, as well as for research, is not a problem. In fact, many funding proposals that LVPEI gets must be turned away. There is no shortage of moneyed people in the country who want to contribute for a good cause. The problem

is often the ecosystem that must be developed to deliver on the various growth initiatives. Despite this constraint, LVPEI has been reasonably successful in organically growing the scale and scope of its activities.

To control costs and preserve its unique culture, hiring is done with a lot of care. Most people are hired at entry-level and trained on the job. Some of the trained staff leave after a few years for higher remuneration in other hospitals. They are valued in the external job market due to the strong work ethic, value frame and competencies that they carry with them after working at LVPEI for a few years. To provide better opportunities to and retain employees, the staff is encouraged to diversify by learning additional skills.

5.6. Photographs



Dr. Taraprasad Das, Dr. Rao, Dr. G. Chandrasekhar and Prof. D. Balasubramanian greet Liberian President Dr. Ellen Johnson Sirleaf at the launch of the Liberia Eye Health Initiative on 10 September 2013.



Former Dean, Indian School of Business Mr. Ajit Rangnekar and Noted Indian painter Mr. Thota Vaikuntam unveil the Surya Prakash Art Gallery plaque, 17 October 2016.



Dr. G. Chandra Sekhar giving a lecture during the EyePEP 2016 for post-graduates, 21 September 2016.



Dr. Taraprasad Das hands out a certificate at the Medical Retina Preceptorship meeting, 22–23 October 2016.



At the 30th anniversary of the Ramayamma International Eye Bank, an entire village pledged to donate eyes, 27 June 2019.



The RIEB Team receives the A.P. Sah Memorial Trophy at EBAI 2019.



The eyeSmart EMR app on a tab is being used by vision technicians in vision centres.



LVPEI's project "Community-Based Rehabilitation for Persons with Vision Impairment" in Adilabad District won the Project Management Institute India PMI Project of the Year - NGO Category Award, 16 September 2017.



LVPEI partnered with IIPH to implement the ROP project in India supported by the Queen Elizabeth Diamond Jubilee Trust, UK, seen with chief patron of the trust HRH Sophie, the Countess of Wessex, in 2019.



LVPEI conducted the Whitathon, a run to publicise the early symptoms of retinoblastoma, an eye cancer in young children.



Inauguration of the Standard Chartered-LVPEI Academy for Eye Care Education by Mrs. Karuna Bhatia (in purple saree at right of signboard), head of sustainability for India & South Asia at Standard Chartered Bank, 3 October 2019. Dr. Rao is seen along with the education team: Ms. M. Vijaya Laxmi, Ms. Sreelakshmi, Ms. Ruksana Begum, Ms. Yamuna Bollam and Ms. Snigdha Reddy. Also, on the right are Mr. Kartheek Kumar Sangewar, Ms. Sethumathi, Ms. R. Aruna (seen partially), Dr Avinash Pathengay and Mr. Gajelli Srinivas (seen partially).



LVPEI signed an MOU with the government of India for the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, March 2020.

PART – 6

Eyes on The Future

“The best is yet to come.”

—Frank Sinatra, August 1964, lyrics by Cy Coleman

The best way to predict the future, the saying goes, is to create it. LVPEI has sweeping, ambitious plans for its future growth and development. This section describes the future that LVPEI seeks to create.

6.1. Global Surge

LVPEI is currently working in four states in India—Telangana, Odisha, Andhra Pradesh, and to a lesser extent, in Karnataka. While there are no present plans for direct presence in other states beyond these four states, the future leadership, however, may think differently. Dr. Rao believes that there is still plenty of room for the institute to grow in the current four states where it operates. He visualises the creation of an ideal eye care model for the 150 million population that LVPEI serves, which can be replicated anywhere in the world. The size of the population in the four states in which LVPEI currently operates is bigger than the population of many countries. For instance, one wonders why there is a problem in Liberia that has a population of only 4½ million people. However, Liberia has its own challenges such as internal conflict. LVPEI is committed to eye care in Liberia, and everyone who is involved in the creation and growth of the country’s eye health initiative is putting in 100% of themselves to make it a success and create a model for Africa.

Developed Countries

Dr. Rao believes that there is no need of expanding the LVPEI network to developed countries, but he hopes these countries will find value in the LVPEI model. He recounted the suggestions he gave to a friend in Massachusetts who asked him how the LVPEI model would apply to the USA. All that they need is rejigging their thinking about healthcare, Dr. Rao said. Otherwise, all the elements

are already in place in the American eye care system. The United States has very well-trained ophthalmic technicians, optometrists, general ophthalmologists and sub-specialists. They also have primary care clinics, optometry practices, big and small community hospitals, major medical centres and big university hospitals. The main issue, however, is integrating the pieces together and assigning the care to different levels—primary, secondary and tertiary. If one goes to Johns Hopkins for a pair of glasses, the cost goes up, but the same pair of glasses from a community optometrist closer to the patient’s home would be much cheaper.

Elaborating on the challenge, Dr. Rao pointed out that another factor that comes in the way of an integrated health system is alignment between the different professions with proper understanding. If they are competitive instead of complementary, there is a constant problem. This increases the cost of care. The third aspect is to control—at least to some degree—the profit-making motive of pharmaceutical companies and healthcare providers. While the Cleveland Clinic and Mayo Clinic have some features of the LVPEI pyramidal model, the areas of similarity are very few. Moreover, their focus is predominantly on tertiary care.

There is no doubt that LVPEI has had a significant impact on vision care research, practice and community eye health globally. This impact is visible primarily in two ways. Firstly, it is visible through the active and extensive presence of the LVPEI faculty in international meetings. Their work is cited often in the scientific publishing world, whether it is in cutting-edge areas like stem cell research, ocular microbiology and pathology, or in technological innovations and treatment protocols. LVPEI’s collaborative partnerships span the globe from Japan to Colombia, and have shown that knowledge transfer can indeed move from the global south to the north.

The second kind of visibility is through LVPEI's—and more specifically, Dr. Rao's—engagement with global advocacy for blindness prevention and vision rehabilitation. As one of the key players in the VISION 2020 initiative of IAPB (International Agency for the Prevention of Blindness), LVPEI's model of eye care delivery is something to emulate in other developing countries. Dr. Rao has been a forceful advocate with governments both in India and abroad, having helped to bring eye health on the agenda at the WHO and other forums where budgetary allocations and political will are mobilised. As LVPEI continues to refine and re-conceptualise how vision care can reach everyone, there is no doubt that its science and art will have a ripple effect on global eye health in the decades to come.

Facing the Future

Dr. Rao has truly set very high standards of quality in all actions by LVPEI's faculty and the key staff. Maintaining these standards and taking them to a higher level will be a key challenge going forward. Regarding challenges faced by LVPEI, employees get fixed salaries and the faculty do not get more money for seeing more patients. Besides, there is variation in workload across specialities. This results in uneven distribution of work and varying levels of stress; the problems emanating from this unequal distribution need to be managed, keeping in mind that for a multi-speciality hospital like LVPEI, the various specialities need to be given equal importance.

Leadership Transition

According to D. Nagarajan, honorary consultant to LVPEI, the leadership transition will be one of LVPEI's near-term challenges.

The shoes of Dr. Rao are too big for any successor to fit into. Whether this transition will happen smoothly, only time will tell. The institute is run on a holistic shared vision, mission and purpose. Mr. Nagarajan believes that whoever comes in will be a specialist and young, so he will have several decades ahead of him to take LVPEI to even greater heights. Such a leader must grapple with leading a team of world-renowned super-specialists who may be in their 50s or 60s.

While Dr. Rao has developed many people in clinical specialities, developing people who can take up leadership and management roles is a very different challenge. The multi-faceted organisation that Dr. Rao has built should not get diluted, says Mr. Nagarajan. He believes that the successor will not want to do anything that is seemingly controversial; he may therefore become risk-averse. When the next leader takes over, it is likely that LVPEI will lose some of its old-world charm.

Currently, there is considerable lateral recruitment at LVPEI, with the network growing bigger and activities increasing multi-fold. For instance, Atmakuri Ramam has been recently recruited as executive vice-chair, a very senior position. Earlier, most of the staff were developed in-house, as the growth of the network was more measured. The current headcount at the Banjara Hills campus is 939 employees (as of March 2020). It is essential that the lateral entrants get integrated quickly into the LVPEI culture. If not, they would just leave.

Inducting such lateral talent must also be done judiciously. They must be highly self-motivated, less focused on earning big money, and instead be able to discover the intrinsic joy of doing good work. They should learn not to link good work with monetary benefits. While doctors (or the medical faculty) get a better deal with incentives like international exposure and research support, this is

not the case with non-medical staff. While at the entry-level, the disparity between the remuneration at LVPEI and other hospitals is not much, for the middle- and upper-management, the incentives are not at par, and the trade-off of doing good work and earning huge money could be considerable. The management must find creative ways to address this issue.

Ethics and Values

Going forward, one of the biggest challenges is sustaining the standards and values on which the institute has been built. Ensuring that these values are not diluted with the changing societal norms that prevail outside the unconventional confines of LVPEI, will be a challenge. Given the demanding work ethos in the institute, burn-out for some of the key faculty and staff members is likely, and is therefore something that the leadership should recognise and find ways to address.

About financial sustainability, Dr. Rao is confident that the existing financial streams will continue if LVPEI continues to do the good work, retains talent and sustains the kind of quality and standards it has built. There is also an enormous potential for income through international clinical trials, and they have not tapped into this field until now. Large-scale international clinical trials are only beginning in India. He predicts that LVPEI will be one of the most desirable destinations for many companies, when the DGCI (Drug Controller General of India) and the regulatory bodies in the country become more favourable to such trials.

These trials could be for new drugs, equipment and devices. He shares the opinion of many friends of LVPEI in America who think that the institute should be able to make between US \$10–\$20 million (about Rs. 70–Rs. 140 crores) a year through

clinical trials, with the available infrastructure, talent and patient volumes prevailing at the institute. Currently, LVPEI gets about Rs. 2–Rs. 3 crores (Rs. 20 million to Rs. 30 million) a year from this stream, and there is enormous scope to expand it greatly.

Dr. Rao also informs that LVPEI is now seriously focused on scaling up some of the in-house businesses. For instance, opticals can grow significantly. Likewise, several products have started coming out of the center for innovation. A big engineering facility to produce spare parts and do repairs of sophisticated instruments used in ophthalmology across the country is another initiative that is gaining strength and visibility. During 2016 alone, Dr. Ashutosh Richhariya's engineering group saved Rs. 2 crores (Rs. 20 million) from maintenance and spare parts through various innovations. That is going to expand considerably in the next few years. There will also be many new innovative products that will either be commercialised or will have royalty streams that could be generated from them.

Insurance Coverage

A major avenue for future income streams for LVPEI is insurance. Currently, half the patients at LVPEI don't pay anything for their treatment. Dr. Rao predicts that in the next 10 years, almost everyone will have some form of insurance coverage in India. When that happens, it will be an additional stream of money. If the lowest paying category fee is counted as the fee for all the non-paying surgeries, this would translate into additional revenues of over Rs. 50 crores (Rs. 500 million) per year.

Another challenge could be that the founder is usually a great leader who has a personal rapport with all the staff that worked with him in building the institution, and the new leader may not have the same connection with the long-standing staff. On this, Dr. Rao feels

that all the people seen as potential leaders are internal, and the staff know them literally since their training days. Most of the potential future leaders started as trainees at LVPEI, moving closely with the staff. That relationship continues even now when they are on the faculty and moved into more senior positions. He expects these relationships to continue, which will be useful as the leadership transition takes place.

Dr. Rao tells his future leaders, “Several times a week, just go and sit in the cafeteria, have a cup of coffee, have lunch, sit with people across different cadres, not just with other doctors and leaders. Sit with them, talk to them and make them feel comfortable with you. That will help in a big way in the future for your leadership.”

The other biggest challenge that Dr. Rao foresees for growth is recruiting people of compatible standards and values. Getting employees who adhere to high standards of professionalism and work ethic is a challenge in all sectors in India, and consequently getting good people for the growth of the institute will be a continuing challenge. However, in the field of ophthalmology, according to Dr. Rao, LVPEI is probably still fortunate because it gets the *crème de la crème* of the country, and the institute can cherry-pick from among these aspirants. LVPEI is the number one choice for people pursuing a career in ophthalmology in the country. The problem of getting high-caliber talent may, however, be greater with other cadres like management. As LVPEI scales up further, getting the non-ophthalmic professionals and staff to imbibe the values and standards of the institute is going to be a challenge.

Capital

Contrary to what most people think, capital is not at all a problem for LVPEI. Dr. Rao believes that LVPEI has the goodwill, and so it has

become easier now to raise money for any growth initiative that the institute takes up. He gives the example of a recent donor, Rajeev Nannapaneni, who offered to donate Rs. 15 crores (Rs. 150 million). Dr. Rao never asked him for money. He called Dr. Rao one day and offered a gift of this amount to the institute on his 40th birthday. “I joked with him, Rajeev, I don’t mind Rs. 40 crores (1 crore or 100 lakhs is equal to 10 million),” Dr. Rao laughs. Mr. Nannapaneni said he wanted to give 1.5 lakh shares of his company, the value of which he said was Rs. 15 crores. The next week he transferred the shares. “There are people like him coming forward to donate liberally,” Dr. Rao says.

With the CSR (Corporate Social Responsibility) money that is now available, wherein companies are obligated to give 2% of their profit to CSR initiatives, companies are calling LVPEI and saying, “We have this money, please apply for a grant.” This phenomenon is only going to become more commonplace in the years to come. There are so many other opportunities to mobilise resources.

Dr. Rao believes that these resources will not dry up unless an absolutely horrendous or stupid mistake of some kind is made. “The brand name is strong, the reputation is strong, and everybody thinks we are a credible and ethical organisation—one of the rarest ethical medical institutions in the country. That is the reputation we enjoy, and we hope to preserve it,” he says.

About other challenges on the way forward, Dr. Rao thinks the only threat could be the unpredictable governmental regulations, as well as governmental interference in the functioning of LVPEI. Other than that, there is no other threat that he foresees.

LVPEI has been very fortunate. While everybody talks about corruption in the country, during the last 33 years of its existence, LVPEI has never had to bribe anybody at any level, nor did they have to ingratiate themselves to please people.

Dr. Rao believes that there is some fairness in the system if LVPEI could achieve all that it has done so far without having to pay bribes; people respect the values that LVPEI stands for. He confides that many people tell him when he runs into them in social circles that although they may not articulate it often, they have tremendous respect for the institute.

Dr. Rao shared an anecdote about his encounter with a high court judge of Andhra Pradesh on a recent flight to Vijayawada. During the conversation, the judge told Dr. Rao, “You are getting very wealthy. Not only that, you are becoming wealthier with each passing day.” Dr. Rao said he didn’t quite understand and asked why he was saying that. The judge said, “Did you ever think every morning how many people are blessing you when they get up and open their eyes?”

The foundation for a great institute was laid 33 years ago. There has been a lot of growth in this time. However, the same key success factors that took the institute to its current position of eminence may not hold good going forward, as the institute seeks to make a much larger impact in the world. Dr. Rao observes, “When compared with other organisations in India, in ophthalmology or in medicine, both among for-profit and non-profit organisations, LVPEI probably would get a score of maybe 80 to 85 on a scale of 100, on a relative basis. However, when we do our own absolute internal benchmarking of everything that we are doing, we may be at a score of only 60.”

This is because there are several flaws that still must be overcome and corrected. Narrowing that gap between the relative and absolute scores will be one of the most important things for us to address. This becomes increasingly necessary as we move forward, he keeps advising his senior leaders.

Time Efficiency

“The second factor key to success is that everyone in the system should learn to use their time effectively,” Dr. Rao iterates. “Efficiency in all that we do must improve. Everybody is so competent that they could do a lot more than what they are doing now, if only they could work on enhancing their efficiency. They could easily increase efficiency by another 20%.”

Commenting on the general observation among staff that they are already working to their full capacity, with little or no work-life balance, he remarks that it can be traced to poor time management. Inefficient time management and constantly letting the simple things pressure them are the problems. Otherwise, he states, they can easily manage to do much more work than what they do now. “I think in India we are never trained in the organised approach to things,” opines Dr. Rao. “Imagine how many people keep a diary in our country? How many people say, ‘This is what I am supposed to do today’ and at the end of the day tick off things that they have completed, flag things they have not completed and then make a note for themselves as to why they did not complete their planned activities for the day and reflect on what they could do better, going forward. Getting up in the morning and spending 15 minutes thinking about the day ahead, or when the faculty go to the clinic, get everybody together, talk to the team and ask them to ensure they complete their tasks and only then leave for the day; all this would go a long way to enhance efficiencies.”

Dr. Rao believes that there are people in LVPEI who do things in an organised way in the clinics and who are very productive and happy. They do plenty of things. An example is Dr. Prashant Garg. He is one of the potential future leaders. “Prashant does a hundred different things—he completely runs the Vijayawada campus, he is the head of our eye-banking network for the entire system, he gets

grants in basic research related to infections, he is a world leader on infectious disease, he writes extensively and publishes his research. In short, he does everything! And when he goes to the clinics, he sees 80 patients a day. He organises his day so meticulously, finishes on time and gets out on time. You will find him doing the same in the operating room—no time is wasted. He is very well-organised and can accomplish so much. Those are the examples for people to emulate and learn from. Just like everybody else, he works the same hours, nothing more than that, but gets a lot done in a day. So it is up to each of the faculty and staff members how much they want to get from the time they have and how they want to utilise it.”

LVPEI is the only institute in the country to offer dedicated time to the faculty for pursuing their research. It is up to each faculty member how they would like to utilise this time. In most other hospitals in the country, doctors are expected to see patients every day and operate against stringent daily revenue targets to generate money for the hospital. LVPEI puts no such pressure on its faculty members and provides them with opportunities to pursue their interests.

Another factor that has contributed to the success of LVPEI is the constant attempt to improve the quality of the support structure and support staff available to the faculty. While there are good professionals at all levels of staff at LVPEI, focused efforts are needed to transform them from good to excellent. Attrition among staff, especially at the mid-level, is a cause for concern that must be addressed. LVPEI staff is prized among hospitals in the country, and hence, susceptible to poaching.

Technology

Another key success factor is exploiting the best features of technology. While people give too much importance to technology,

Dr. Rao thinks it should be used cautiously. He thinks LVPEI should create a man-machine model for delivery of eye care, one that is not entirely dependent on machines, but instead focuses on machines controlled by competent people. That's the model that they should evolve into, so that the same number of people can provide high quality care to a larger number of people, leveraging the advantages of technology in a smart way.

While the world is moving aggressively towards using machines to replace people, Dr. Rao believes that it will not work in the long run, especially in eye care. Relying exclusively on technology has the potential to do more damage than good, especially in the compassionate care model of LVPEI. While he agrees that technology should be used, he asserts that artificial intelligence should be controlled by the natural intelligence of people.

Retaining Talent/Human Resources

Dr. GCS sees human resources especially in the rural and semi-urban areas as a major challenge in the future. While there is no problem recruiting in big cities like Hyderabad, finding permanent doctors is going to be a challenge for secondary centres, and to a lesser extent for the tertiary hospitals. The best possible care comes when there is retention of high-quality human resources. The support team, like the technician, receptionist and other staff can be taken from that community, trained and put back to work in the local community. However, very few ophthalmologists opt for long-term work assignments in these communities, where the social life and education facilities for their children are limited. Currently, ophthalmology fellows go to the secondary centres on a rotation basis. LVPEI is trying to find creative solutions to retain high-quality ophthalmologists and other high-caliber human resources at these remote locations.

In Dr. Rao's opinion, having a permanent doctor based in the community (for the semi-urban centres) would be desirable from a patient's perspective because the community develops faith in that person. Presently, doctors in the secondary centres change every year. The observation has been that in the first three months, the community tests the doctor. The doctor performs at his peak for the next several months, and then it is time for him to move and someone else comes in his place. "That kind of a transition is not good for the community, as well as for the profession," admits Dr. Rao. "However, this is a challenge that cannot be addressed at this point of time any better than what is currently happening."

A good move in this direction has been that the faculty from the KAR campus in Hyderabad have started going to the secondary centres once a month to take care of complex cases. Most faculty members are motivated to reach out and take care of the community, and several of them have started spending two days a month in a secondary centre.

While the initial plan was to have basic surgical services in the secondary centres, LVPEI now started providing tertiary and quaternary care, with the senior faculty going to these centres regularly. Some of the faculty members have taken ownership of each of those secondary centres and make frequent visits. They also mentor the ophthalmologist from the fellowship programme who is stationed there, and treat any complex problems within their own speciality during those visits. Several complex procedures like corneal transplants, limbal epithelial cell and stem cell transplants, complicated squint surgeries and orbit surgeries have been done in these secondary centres. While the issue can be handled to some extent through this method, having a permanent senior ophthalmologist at the secondary centres is still a challenge. Five or 10 years down the line, as the socio-economic situation improves and these communities become more affluent, things might improve.

At the tertiary level, this problem exists to a lesser extent. While the centre in Bhubaneswar is doing reasonably well, the centres in Visakhapatnam and Vijayawada face issues like staff turnover and retaining high-quality talent.

Dr. GCS provides an interesting insight into this aspect. Being a non-profit organisation, the financial remuneration paid to the top talent cannot be matched with the income from individual practice or a corporate hospital. Comparing the features that attract doctors to an institute like LVPEI and to a private practice or corporate hospital, Dr. GCS explains that in a private practice set-up, incomes for the doctor vary depending on whether that practitioner is on the higher-end or lower-end of the spectrum in terms of competence and reputation. LVPEI has consciously made sure that its salaries are better than the salaries that doctors may earn in government service. LVPEI's salaries are maintained at the median or above median level of earnings of practitioners in the city. There may be some renowned practitioners who may be making more than what LVPEI pays for comparable clinical and surgical talent. What attracts the faculty to stay here is the continuous professional growth they have through research, teaching and continual learning. The freedom to practice medicine with integrity and the ability to grow professionally are the self-selection criteria for long-term retention of the faculty.

Those who aspire to earn a lot of money will not stick around for a long time. They will learn the skills and move on. Over the last 33 years, through this process of self-selection, the required critical mass of people with valuable skills in ophthalmology has been built to sustain the institute, especially at the Hyderabad campus. Going forward, such a process should be replicated in the three tertiary centres and at the secondary centres.

The real challenge is to attract good quality doctors to be part of the secondary centres, and the institute still needs to explore the possibility of providing opportunities for personal growth by developing a model where doctors can rotate between tertiary and secondary centres.

Preserving Founding Values and Passion

Another challenge that Dr. GCS foresees is related to preserving the values and the passion with which the founders and the initial team have created and sustained the institute. Going forward, how much of that passion can be sustained throughout the organisation, across various levels and geographies? What can be done to ensure that the passion and the values are sustained and continue to flourish?

It is with that motive that a few years ago, the leadership along with the LVPEI faculty and staff went through the exercise of crystallising the five values:

- Patient first
- Excellence
- Equity
- Integrity
- Togetherness

From the perspective of preserving and strengthening these values within the organisation, Dr. GCS does not foresee major challenges, as they are consistently and regularly communicated across the organisation. However, with the overall dilution of values in the community and society at large, he wonders whether LVPEI might end up becoming an island with a very different idealistic culture. “How long can that island be sustained without being impacted by

things that are happening outside?” he wonders. The very fact that it is considered an island and respected by the world for its values and all that it does, will probably sustain these values, he hopes.

“I believe that we need to make a conscious effort to sustain and strengthen our values. We should keep talking about them and the possible conflict with the values of the society. We must keep challenging ourselves. Whenever any decision is made, we should ask ourselves whether the decision being contemplated aligns with our values. When we encounter some difficult situations or conflicts, we should honestly ask ourselves if we slipped somewhere,” he says.

In summary, the challenges for the institute are preserving the core values, as well as attracting and retaining high-caliber professionals at the secondary centres. There is a need for more widespread replication of the LVPEI model in the broader arena of healthcare, to make high quality healthcare services affordable to all. To sustain the LVPEI model, Dr. Virender S. Sangwan says, the biggest challenge is to create a pipeline of leaders. This should be a formal process, both in terms of planning and focused leadership training.

Regarding leadership, there is no need for clones of Dr. Rao, but a system to ensure continued availability of future leaders, opines Dr. Sangwan. In this regard, he feels that there is a fundamental conflict: We expect to create the future Dr. Rao, but the real need is for people who are younger and grew up in a different environment, and yet are able to uphold the same values. Basically, the values should be retained, while the rules should be rewritten from time to time. Those kinds of leaders must be nurtured; they should be given the space and opportunity to grow and flourish.

Such a system is indeed rare in organisations. In Aravind Eye Care System, it may be there because of the extensive family

involvement; hence, they would find and nurture leaders internally from within the family. However, in organisations such as LVPEI and Sankara Nethralaya, succession planning is a big challenge.

While leadership is the biggest challenge, Dr. Sangwan says that the second biggest challenge is the human resource base. Having rigid systems can work only when you have a very strong leader. The organisation should pay attention to the issue of work-life balance, if it wants to get good quality talent in different departments, covering both men and women from urban and rural areas. Structures where there is no conflict between family and work must be created. Both these aspects must co-exist peacefully in a cohesive manner, asserts Dr. Sangwan. The institute must be flexible and find innovative ways of addressing the various issues on the human resources front.

One of the key challenges as the organisation continues to grow, as new people are inducted and older employees retire, and as the leadership transitions, is preserving the core values of the institute and making them living values rather than those that are talked about at group meetings and seminars. If you wake up an LVPEIan in the middle of the night and ask them “What is it that drives LVPEI?,” they would rattle off—equity, excellence, efficiency.

But when one walks through the hallways and interacts with people within the institute, must one search for evidence of these values or are they a living force in the hearts of everyone in the institute? As the organisation scales up, the values must remain very much part of everything that goes on at LVPEI. However, the risk that these values fall short of being universally present within the organisation is real, especially as a living organisation responds to the inevitable changes in society. The risk of developing a serious disconnect between the idea of these values and their expression at work is real, unless this threat is recognised and tangible processes are put in place so that such dichotomy is prevented.

Irrespective of the various mechanisms that are set in motion to prevent such a disconnect, it is essential for each LVPEIan to think through these values and see what they mean individually for that person. What does it translate into in one's thinking, in one's work, and in interactions with each other?

It is natural that in mature organisations, along the way, these terms tend to get assigned to the *system*—that amorphous, abstract superstructure that all organisational members are supposed to be a part of, and that has responsibility (somehow independently of individuals) for keeping these core values alive. This system is external to each individual organisational member and holds the individuals within it.

But the truth is that the system does not exist without individuals. To create a system, it is essential to not only have people with vision, but also the will to implement the vision without dilution. So as the organisation grows, the risk is that individuals within LVPEI will be able to parrot the three values when asked what LVPEI stands for—equity, excellence and efficiency. But the real question is, “What does each individual in the organisation stand for? Does each individual independently and inherently stand for these values?” These are not only systemic values, but individual values.

It is not possible to mandate values. One should be open to understanding them and internalising them. Working at LVPEI is about working with LVPEI—not necessarily in the sense of working within its physical structure. The values of the institute should become everyone's own values—either because they always were part of the individual's values and the person just found LVPEI to be a place with a good fit to his/her individual values—or because they were present in a latent form in the individual and are manifested externally through the process of acculturation with the institute.

So whether one is physically in the institute or at home, or interacting with someone on the street, it is essential that each organisational member is fully conscious of the mission. It is essential to find ways of discovering these values within oneself. And unless each LVPEIan feels and acts upon these values, it is likely that collectively, the individuals together are going to fall short of achieving the values and the vision of the *system*.

Research is the Key

Dr. Raja Narayanan thinks that all LVPEIans may not be equally motivated to serve the poor. “What keeps the faculty ticking at LVPEI is the research. Once the success in research is tasted, it is addictive,” he says. LVPEI also has a strong incentive system in place to encourage research. Incentives for the faculty are not just based on patient care, but also on research output. In Dr. Narayanan’s view, the fulfilment of publishing an article in a high-end journal more than compensates for a doctor who may be earning several times more the salary at a private hospital, but with no research output.

Asked to reflect about the system at LVPEI to equip mid-level managers and counsellors to take on leadership roles, Dr. Narayanan says that the system is weak at LVPEI. For doctors, the system to take on leadership roles is streamlined and enables them to polish their leadership and networking skills. According to him, monetary incentives have limited potential. A doctor who is in the mode of seeking such incentives gets into comparison mode, which causes perpetual dissatisfaction. Instead, he feels that recognition is what motivates a professional at LVPEI. For a doctor, being invited as a speaker in a forum of experts is enough satisfaction to keep one’s research agenda going on high gear.

Such a system must be put in place for mid-level and senior-level non-medical cadres, as well.

LVPEI has not been good at structuring the incentive programmes for non-medical cadres; despite this issue, some of them continue working here because they are respected and valued for their work, and have good designations, which they may not get elsewhere. Going forward, it will be essential to find ways for these non-medical mid- to senior-level managers at LVPEI to get recognition, just as in the case of doctors. For instance, it will help to find ways for them to be invited as faculty or panellists or be invited as members of advisory panels to the government or to find ways to improve healthcare systems in the country. In the absence of such an initiative, sustaining their enthusiasm would continue to be a challenge, he says.

According to Dr. Narayanan, the management information systems must be strengthened. While there is an adequate delegation, these systems will help in better planning and monitoring on a real-time basis. There is also a need to bring in more cost-consciousness into the working of the institute. Although SAP (an enterprise resource planning software) has been implemented, it is more a reporting system, with less capability for forecasting and real-time monitoring, and hence, the ability to take mid-course correction is limited.

Governance

The executive committee, of which Dr. Narayanan is a member, meets once in two weeks for three hours. Dr. Narayanan feels that there is a need for a governance document, so that it will be the “bible” that will take the institute forward for the next 100 years. There is a need for high-level rules of governance of the institute

in written form. As of now, governance is done based on the tacit knowledge of the leadership team. However, going forward, there is a need for a supportive structure to work with the new leader.

At present, some of the examples of corrective action with respect to an employee who does not perform to expectation include issuing a memo, asking the person to leave or shouting at the person. However, shouting at the erring employee is not a systematic correction: nothing permanent happens to the person being shouted at in terms of sustainable behavioural change. The effectiveness of issuing memos is also questionable. Progressive forgetting begins to creep in with elapsed time. What is needed, instead, is to find ways of effecting systemic changes when behaviour falls short of expectation. Examples might include re-training and loss of pay.

6.2. Future Frontiers: Toward 2030

Following spectacular growth and overcoming the challenges along the way, LVPEI is now poised for the next 25 years. Under the Next 25 Programme, two strategic pillars have been developed.

One of the pillars is to establish “Institutes of Excellence” in niche areas to address major problems of blindness that are particularly relevant to India and other developing countries. The Institutes of Excellence will become global resource centres for those areas.

Institutes of Excellence

- Standard Chartered-LVPEI Academy for Eye Care Education
- Child Sight Institute
- Aurobindo Geriatric Eye Care Centre
- Centre for Ocular Regeneration (CORE)
- Operation Eyesight Universal Institute for Eye Cancer
- Centre of Excellence in Eye Banking
- The Cornea Institute
- Retina Institute
- Glaucoma Institute
- Institute for Vision Rehabilitation
- Govindram Seksaria Institute of Dacryology
- Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye care

Significant progress has already been made on several of the envisaged institutes. The Aurobindo Geriatric Eye Care Centre, Centre of Excellence in Eye Banking, Operation Eyesight Universal Institute for Eye Cancer, Child Sight Institute, Govindram Seksaria Institute of Dacryology, Institute for Vision Rehabilitation, Standard Chartered-LVPEI Academy for Eye Care Education and The Cornea Institute are some of these.

The second strategic pillar is to create a model for robust high-quality primary care for the population of the three states that LVPEI is primarily involved in, viz., Telangana, Odisha and Andhra Pradesh, and to continue with the rural network in one district of Karnataka. This will be a role model for other eye care providers in the world and more generally for healthcare providers across the world.

Beyond this, LVPEI started partnering with existing ophthalmology residency programmes and also launched an initiative to build the capacity of several optometry schools to improve the standard of education in the country. New areas of research are being explored to sustain and continue to stay ahead among the global leaders in ophthalmology. There will be more focus on curing multiple disabilities, primary health care, product development and commercialisation.

The institute has set its future course on these two main pillars as the strategic thrust areas till 2030. Subsequently, the next steps will be determined by the successors of Dr. Rao. They may branch off, they may go a different route or they may pursue something entirely and radically different—all that is possible. “I hope they do that, because right from day one, I never followed any traditional path. So I don’t want my successor to follow a traditional path. They should be innovative and they should be original, without disturbing the basic values of the institute,” Dr. Rao remarks.

Dr. Rao sums up the vision of LVPEI in one sentence, “To have a positive impact on the eye health of the most neglected people in the developing world.” While LVPEI has already created a certain degree of impact with all the accomplishments in the first 33 years, Dr. Rao says they are now at a stage where they can take off and have a multiplier effect of all that they did in the first 33 years. The stage is all set and the foundation is strong, he affirms. He believes that LVPEI is now poised to create a much wider impact.

Institutes of Excellence

Elaborating on the first pillar of the Institutes of Excellence, Dr. Rao explained that the concept is to identify certain areas, such as the recently started Cornea Institute. Phase One is to consolidate and strengthen the work in this area within the LVPEI network. In the next few years, every loophole in the system should be plugged and the system completely strengthened.

In the second phase, several national centres should be developed, which become partners in that effort, within India. Simultaneously, some international centres must be developed working with partners outside India. While it was thought that the second and third phases would come after a few years, he remarked that these are already underway. LVPEI has identified some organisations within the country to partner with, and half a dozen outside the country for taking this model internationally. These centres will include every area of activity related to eye care, from the matrix of the 10 functions that LVPEI represents, which include clinical care, education, research, rehabilitation, eye banking, community and rural eye health, capacity building, innovation, advocacy, policy and planning. The Institutes of Excellence will then become resource

centres globally. Anybody can tap into them and gain from them. LVPEI, in turn, will gain from the partnerships and the experiences of others.

In addition, LVPEI will collaborate with leading eye institutes in the world from America, Europe, Australia and Japan, among others, in the areas of education and research, so that LVPEI faculty members are at the cutting-edge of developments in the eye care field.

Several Institutes of Excellence are in different stages of development.

- The Child Sight Institute has already been launched. It is in Phase One, consolidating the services in the LVPEI network. The Child Sight Institute is supported by Rajeev Nannapaneni of NATCO Pharma. The Newborn Eye Health Alliance (NEHA) of the Child Sight Institute has global and national partnerships both with governments and private sector companies, with neonatologists and paediatricians in not only the four states, but also in neighbouring countries including Bangladesh, Indonesia, Sri Lanka, Nigeria and others, to set out policies and processes that reduce the burden of newborn eye diseases especially in the field of retinopathy of prematurity (ROP).
- Work on eye care for the elderly has been initiated, with the creation of an institute for the care of the elderly, the Geriatric Eye Care Centre, supported by Aurobindo Pharma Ltd.
- In eye banking, significant progress has been made, and LVPEI's Eye Bank is already a global resource centre. LVPEI supplies corneas and preservation medium to other eye care centres in India and developing countries.
- Standard Chartered-LVPEI Academy for Eye Care Education is another Institute of Excellence, in which LVPEI already has a

global footprint as it trains many people from various countries. It continues to partner with multiple organisations around the world. The director of the Standard Chartered-LVPEI Academy for Eye Care Education is Dr. Avinash Pathengay, a retina specialist based in the Visakhapatnam campus. Education encompasses ophthalmology, optometry, technician training, public health and training support staff. All aspects of education and training are under the umbrella of the Standard Chartered-LVPEI Academy for Eye Care Education. The academy is growing very rapidly. LVPEI's ambition is to triple the capacity of education over the next several years.

- The Institute for Ocular Regeneration is another Institute of Excellence. As a base, it will use the success of LVPEI's work over the years on stem cells and stem cell transplantation. This is going to be a major focus area that will take LVPEI to the next stage of whole eye regeneration, spanning multiple specialities.

Primary Care Model

LVPEI will continue to go out into the farthest peripheries of the states where it has chosen to operate and create a system of high-quality eye care that is available to every single person, irrespective of their ability to pay. The philosophy has always been that everyone gets the same, consistent, high-quality care across the LVPEI network, starting from the vision centres in remote rural and tribal areas to the Centre of Excellence in Hyderabad. The same philosophy was followed for 33 years while doing cutting-edge work at the Centre of Excellence in Hyderabad and in the tertiary hospitals.

“During the past 33 years since our founding, we have never turned away anybody because they could not pay us, and care was provided irrespective of the complexity of the disease and the cost

of the treatment, and we wish to continue that,” Dr. Rao asserts. He envisages a future in which the requirement for non-paying services may decrease compared to the past 33 years because various health insurance systems are emerging. He, however, asserts that LVPEI is committed to continue this mission, whether these insurance schemes materialise and function effectively or not.

In short, LVPEI will focus on patient-oriented work in all its chosen areas. Whether it is in the realm of education, research or innovation, all that is done at LVPEI is focused on providing the benefits of the best of knowledge, technology and care to the poorest people in the world.

Partnerships

LVPEI chooses its partners with the proviso that they follow the standards and quality parameters of LVPEI, even if they are not completely in alignment with all its values. “These institutes may have their own identified values, and we don’t want to force our values on them,” says Dr. Rao. It would suffice if they begin to make a regional impact on the eye health in their geographical region and are willing to work with LVPEI in taking the agenda forward.

Some of the examples where LVPEI has been partnering with other institutes are Dr. Shroff’s Charity Eye Hospital in Delhi, C.L. Gupta Eye Institute in Moradabad and Little Flower Hospital & Research Centre in Kerala. Outside India, LVPEI has partnered with the University of Nairobi, Kenyatta National Hospital, and has started to work with hospitals in Ghana, Mexico, Myanmar, Vietnam and Cambodia, to help in developing cornea services. LVPEI also works closely with Cicendo Eye Hospital, Bandung, which is the biggest eye centre in Indonesia.

Looking at the “gives and gets” in these partnerships, LVPEI provides capacity building services, spending time with the partners to impart skills, train their people as necessary, and share its resources of teaching, education materials and experiences. Wherever feasible, LVPEI will collaborate with them in research and in clinical trials. While LVPEI shares all its resources, expertise and knowledge with the partners, it does not expect any financial returns. All that is required is their commitment to be part of LVPEI’s mission.

“To be like a candle that will light up many more candles” is the philosophy that the Institutes of Excellence would like to follow. These partners give wings to LVPEI’s vision, so that it can expand its reach. Partnership is one way of multiplying the impact.

New Horizons

Robert Frost’s poem “The Road Not Taken” appropriately summarises the journey taken by LVPEI so far and the journey ahead.

Dr. Rao reflects on the next 30 years for LVPEI, “As I gaze into the crystal ball, the next 30 years offer to be even more exciting on every front. We will do more and better; we will work in more geographies, directly and indirectly, and we will continue to influence eye health policy and planning, nationally and globally. We are gifted with great talent for future leadership, who can make this happen incorporating the relevant new trends without ever compromising our commitment to the highest levels of quality and equity.”

Regarding the vision for the next 30 years, Dr. G. Chandra Sekhar, vice-chair at LVPEI, opines that it would be difficult to visualise how things unfold over the next 30 years, especially in a medical institute, because the technology, population profile and delivery mechanisms are likely to change. The socio-economic profile of the community

also will change. One of LVPEI's strengths has been the consistent delivery of high-quality care, however complex, irrespective of the ability of the patient to pay. So, if the socio-economic profile of the population changes due to factors such as insurance, more earning capacity of the country's citizens, etc., then free care may become redundant. He believes that the focus of LVPEI will remain on equity, integrity and excellence.

Even if the socio-economic milieu of the country changes, the core values will not change, and the need for these values will probably only increase rather than decrease, he opines. Dr. GCS, however, agrees that with the economic situation in the country improving over the coming years, integrity as a value will become more important than equity. There may not be any need for equity from a financial standpoint, but integrity in the context of sustaining the kind of care that is not financially rewarding but patient-centric will become the priority. The reach of, and the need for, good education in ophthalmology and top-class research will continue to be important to LVPEI. These are the areas where the institute must continue to excel.

Expanding Reach

About growing the breadth of the organisation, Dr. GCS believes they will just continue with covering the four states where LVPEI is currently involved in, that is, Telangana, Odisha, Andhra Pradesh and Karnataka, and take the best possible care to the lowest rung of the society. LVPEI will continue to go deeper into these states and cater to the eye care needs at the community level.

About Karnataka, where LVPEI has a presence, Dr. GCS informed that they never had any major plans for this state. LVPEI forayed into Karnataka only because a donor who was very passionate about

eye care approached them. He completely funded the creation of a secondary centre there. The current thrust is to go deeper in the three focal states where the institute is already active.

Explaining further about delving deeper into the community, Dr. GCS informed that LVPEI is considering taking advantage of emerging technology to bring care closer to the people. This thought came out of “Crosstalk,” an annual event where the scientists and clinicians across the LVPEI network get together for one-and-a-half-days to talk about their research and their vision for the future. There was a discussion about taking advantage of the innovation that is happening with the development of low-cost diagnostic equipment and the evolution of data analytics and image processing, and applying these innovations to LVPEI’s pyramidal model. LVPEI could change the paradigm of care in the Village Vision Complex by integrating both technology and human resources to provide care for more people and to reduce the travel for them from their homes to the nearest eye care provider.

At present, if patients at a vision centre have a long-standing problem of diabetes or are glaucoma suspects, for example, they must be sent to the secondary centre for further evaluation. So the patients would have to travel to the secondary centre. The immediate goal could be to put technology at the vision centre, so that if the fundus image is done in the vision centre, both the condition of the optic nerve and the retina could be remotely diagnosed and appropriate treatment could be prescribed without the need for patient travel.

Telemedicine

Telemedicine will help extend the reach of eye care to the people because the technology is becoming cheaper; the only limitation is, perhaps, the connectivity. Dr. GCS recounted the work done in this

area by Dr. Mukesh Taneja of LVPEI, who has developed Robotic Slit Lamps with the help of Bascom Palmer Eye Institute. The project was funded by a grant from Grand Challenges Canada, which makes investments of up to Canadian \$1 million to catalyse scaling and sustainability of the most promising global health innovations. Using Robotic Slit Lamps technology, an ophthalmologist in a clinic in Hyderabad can operate the Slit Lamp in a secondary centre to remotely examine a patient. The doctor can then communicate with the patient directly and advise a treatment plan. Although at present, the bandwidth for communication is not adequate, this limitation can be overcome in time, with advancements in technology.

Thus, going forward, the vision for LVPEI would be to reach the bottom of the pyramid in the most cost-effective way, leveraging the advancements in technology, so that the need for patients to travel long distances for eye care will decline.

Liberia

LVPEI's vision does not envisage going beyond the current four states, and ownership of facilities is unlikely in other states inside and outside India, unless there is a unique opportunity and need. For instance, in Mumbai, although there was a very attractive offer made to LVPEI, it did not see the need, as there are many other eye care providers in Mumbai. In contrast, LVPEI accepted the request to partner with the eye care centre in Liberia, because of the dire need there. The difference is that there are several doctors available in Mumbai already, who are giving good ophthalmic care, as against the poor ophthalmic care available in Liberia.

Setting up operations in Liberia was an emergent and not deliberate strategy. The son of the president of that country had a corneal problem and came to LVPEI for treatment. After the

treatment, the Liberian president visited the institute in Hyderabad. During the conversation, she mentioned the need for eye care in her country to be transformed, and requested LVPEI's partnership and help for this transformation. LVPEI helped to generate funds through international NGOs to build and run the services there. In Africa, there is huge international funding available, Dr. GCS observes, and there was a need to develop and demonstrate a good model of eye care delivery.

LVPEI took up the entire responsibility of building the facility, systems and human resources, as well as running the centre at Liberia. Structural changes have already been made on the ground at the hospital, systems have been set up and implemented, LVPEI's electronic medical records system has been installed, and patient care is run on the LVPEI model.

Detailing the plan for Liberia, Dr. GCS informed that the long-term plan is to develop a residency programme, so that ophthalmologists can be trained locally. Currently, members of the LVPEI team are deputed to that centre to provide services there. Dr. Gurcharan Singh is one of LVPEI's faculty members who has been at the centre from its inception in mid-2016, and Dr. Niranjana K. Pehere, until recently at the Vijayawada campus, has also been deputed there. Other doctors from LVPEI, the senior fellows as well as the faculty, make scheduled visits to provide speciality care and also help in developing the training programmes and systems.

Expanding into Africa

Dr. Avinash Pathengay informs that expansion into Africa initially started as a partnership, and based on the current experience, a decision would be made on the steps to take in the future. "We are treading a different path, and Dr. Rao always likes to walk on the

path that no one else has taken. The Liberia experiment suggests our willingness to chart out yet another new path; we should see where it takes us. As the move to Liberia is motivated by a desire to offer selfless service, it is going to have a positive impact,” Dr. Pathengay declares.

Dr. Merle Fernandes believes that in the next 30 years, there should be a replication of the LVPEI pyramidal model on a much larger scale, maybe through partners, and the challenges would be the infrastructure and trying to acquire the human resources. About scaling up, she thinks one of the best things that could be done would be adopting Africa because that is a highly under-served region. India is doing a much better job within the country on the eye care front; there are many eye care organisations in the country that are doing a great job to address the problem of needless blindness. Africa is one place where LVPEI could strive to replicate the LVPEI model and show that it works there. If we can get the Liberia project to take-off and make that model work for the rest of sub-Saharan Africa, that will be the way to go, states Dr. Fernandes.

6.3. LVPEI's Impact: Deep, Far and Wide

A tried and true adage of strong management suggests that good management begins with measurement. What you cannot measure, you will find it hard to manage. But measurement is fraught with difficulty. Often, the way we measure things drives the way the people being measured behave. So choice of key measures must be done wisely and judiciously.

This section blends some final postscript thoughts on the future, with an effort to measure the impact of LVPEI over the years from the time of its founding. While the numbers are impressive, it must always be remembered that LVPEI's true impact is measured one patient at a time, one retina at a time, one cornea at a time, one person at a time who is enabled to say, quietly or loudly, "Doctor, I can see again!"

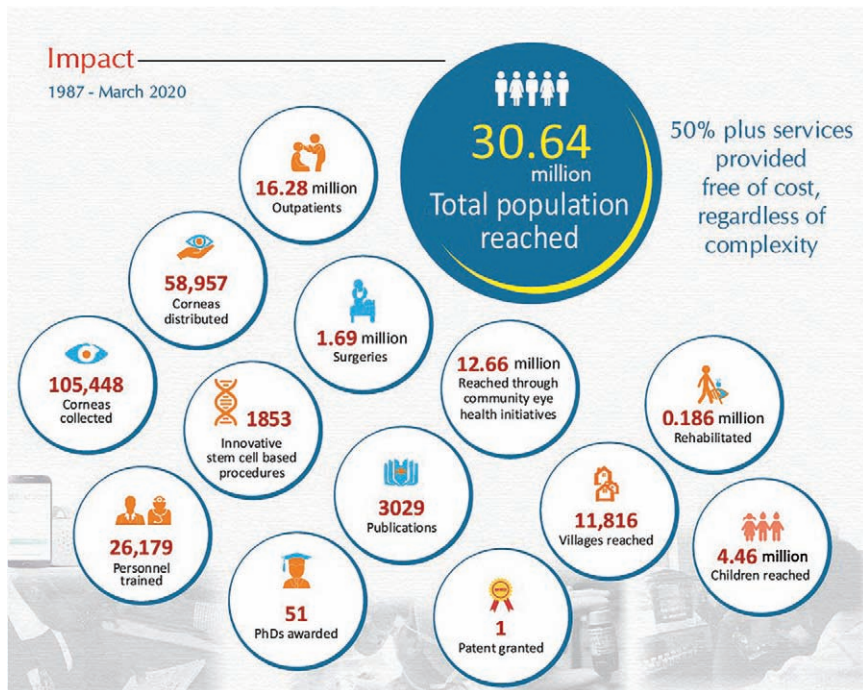
Professor Allen Foster, director of the International Centre for Eye Health in London, speaking on the mission to eradicate avoidable global blindness, used the words "War, Partnership and Ownership" to describe the mindset that would help win this war on global blindness. What he meant is that the problem of blindness is so grave that it requires a war-like effort to address it. It requires partnership of multiple open-minded organisations, institutions and governments to effectively find a solution to the problem. Unless the key people involved manifest ownership, the problem will continue to haunt humanity.

LVPEI is among the institutes spearheading this global mission. “Our only focus is to serve those with vision problems, and to serve them well,” says Dr. Rao. “Serving them well” includes doing what it takes to provide the best possible eye care to people who need it regardless of their ability to pay. The institute, located in Hyderabad, was established in June 1987. Since then, it has grown into a comprehensive eye care facility, education and research centre, along with 3 tertiary, 20 secondary and 184 primary eye care centres spanning Telangana, Odisha, Andhra Pradesh and Karnataka in India.¹²

On an average day in February 2020 at the Centre of Excellence, close to 1,400 outpatients were examined and about 140 surgeries were performed. The institute houses all sub-specialities of ophthalmology—from cornea to retina and vitreous eye diseases. A wide spectrum of patients from the super-rich to the poorest of the poor come to LVPEI, seeking advanced and highest quality treatment, irrespective of the payment capacity. LVPEI is known internationally for its quality of eye care, education for all eye care professionals, its frontline eye research and its pioneering work in vision rehabilitation and treating visually impaired children.

¹² Please note that all numbers and statistics in the book are current up to March 2020.

Assessing how LVPEI has Changed India and the World



From 1 June 1987 to 31 March 2020, L V Prasad Eye Institute has reached approximately 30.64 million people.

Campus-Wise Employee Headcount, March 2020

Campus	Headcount as of 31 March 2020
Kallam Anji Reddy – KAR	939
Mithu Tulsi Chanrai – MTC	271
GMR Varalakshmi – GMRV	200
Kode Venkatadri Chowdary – KVC	117
Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye care – GPR-ICARE	836
Total	2,363

LVPEI's Key Achievements 1987–2020

- Nearly 30.64 million served
- 16.28 million outpatients
- 1.69 million surgeries
- Simplest to most complex eye care treatment protocols
- 50% plus patients treated at absolutely no cost to them
- Excellent gender equity

“One of the things I am most happy about is the excellent gender equity in our rural programmes, because gender equity in healthcare in rural areas is a big challenge in India and other developing countries.”

—Dr. Rao

Vision Guardians

- Public awareness
- School screening
- Community screening
- Spectacles distribution
- Postoperative surveillance
- Community-based rehabilitation

Community eye health—Key achievements during 1987–2020

- 12.66 million reached through community eye health initiatives
- 4.46 million children reached
- 11,816 villages reached

Approximately 11,92,801 people were reached through secondary centres, vision centres and community eye health initiatives during 2019–2020.

Vision Centres

- Refraction and dispensing
- Detection of disease
- Linkage with healthcare
- Postoperative follow-up

Impact:

Over 2.6 million people served until March 2020.

Secondary Centres

Secondary Centres have an ophthalmologist with a supporting team. The services offered include:

- Comprehensive eye care (Secondary)
- Diagnosis
- Surgery (cataract)
- DR, glaucoma, infections
- Low vision and CBR
- Linkage with healthcare
- Training and monitoring vision centres
- Monitor screening at village level

Impact:

Over 2.7 million outpatients served and over 304,00 surgeries performed until March 2020.

National Impact From 1987–2020

- Trained over 23,000 eye care professionals
- Helped upgrade several eye care centres
- Helped formation of Eye Bank Association of India
- Established Indian Eye Research Group
- Ran *Indian Journal of Ophthalmology*
- Put together international groups to improve education
- Spearheaded US-India Eye Research Collaboration Initiative

International Impact From 1987–2020

- Trained over 3,000 eye care professionals
- Secretariat of International Agency for the Prevention of Blindness
- International Centre for Eye Care Education (ICEE)
- International Association of Contact Lens Educators (IACLE)
- High quality eye care model programmes in many countries
- World Health Organization Collaborating Centre for Prevention of Blindness
- Global Resource Centre for VISION 2020: The Right to Sight

Honours, Awards and Leadership Positions

National and International

- BMJ Global Leadership Award (Runner-up)
- 3 Padma Shri Awards
- Third World Academy of Sciences (TWAS) awards
- 4 Shanti Swarup Bhatnagar Awards
- 2 Ranbaxy Awards (Ranbaxy later renamed as Sun Pharma Science Foundation)
- 1 B.M. Birla Science Prize
- Over a dozen American Academy of Ophthalmology awards
- International Blindness Prevention Award
- ARVO Kupfer Award
- ARVO special keynote addresses and awards
- AOI Bernardo Streiff medal
- APAO multiple awards
- AIOS multiple awards
- Multiple national and international awards
- Leadership positions

The LVPEI Pyramid of Eye Health



This distinctive pyramid has been adopted by the government of India, the World Health Organization and the Australian government in its overseas development programmes.

A destitute tribal woman from Rayagada, Odisha



“The most satisfying thing of this experience is that we can touch the life of a lady like that,” Dr. Rao says.

Dr. Rao attributes the multiple laurels that many LVPEI faculty members and the institute received to its building a pyramid of trust from the remotest rural areas to communities, both nationally and internationally. Most importantly, LVPEI reached individuals like this older woman in a tribal village in Rayagada, Odisha, who would never have had access to eye care but for LVPEI's field services and the rural centres.

Dr. Rao feels that LVPEI has significantly impacted healthcare, providing it to some of the most impoverished people in the country who otherwise would have no access to eye care. LVPEI's vision centres and programmes have been set up to make sure nobody in rural areas in the four states where LVPEI is active goes through an ordeal to get necessary eye care. J.K. Rowling's words from her Harvard graduation lecture a few years ago, Dr. Rao feels, is applicable to each of the faculty and staff at LVPEI:

“Your intelligence, your capacity for hard work, and the education you have earned and received, give you unique status, and unique responsibilities. That is your privilege, and your burden. If you choose to identify not only with the powerful, but with the powerless; if you retain the ability to imagine yourself into the lives of those who do not have your advantages, then it will not only be your proud families who celebrate your existence, but thousands and millions of people whose reality you have helped change.”¹³

His call to colleagues at LVPEI: “All of you have this opportunity to change the lives of millions. You have this power to give the gift

13 Rowling, J.K. Speech at Harvard University Graduation Day 2008. <https://news.harvard.edu/gazette/story/2008/06/text-of-j-k-rowling-speech/>

of sight. Use that power, give that gift of sight to as many as you can. And you will be a very satisfied soul in the end.”

Founder's Reflections of the first three decades

As I reflect on the journey of our institute and how it has evolved in the past 30 years, I have a feeling of utmost satisfaction. Pursuing the road not taken, we have contributed significantly to the alleviation of blindness and visual impairment locally where we operate, as well as nationally and internationally. We have set several benchmarks, raised the standards of eye care and eye care education, promoted the culture of research and innovation, given hope of realising their full potential to those with irreversible forms of vision impairment, and created models to reach the most marginalised people. This is made possible by the dedication and hard work of everyone in the LVPEI family and the support of friends from all over the world in many ways. For that, I place on record our gratitude.

In Dr. Raja Narayanan's view, there is not much research work that is being done by clinicians in most eye care hospitals in the country. However, many of them have good service models that are capable of handling high volumes and consequent high productivity. Many of them are also good at managing costs. There may be opportunities to reduce cost at LVPEI, but the institute is not very aggressive about reducing costs, as it has been following a set pattern, he says.

About human resources, Dr. Rao says, “At LVPEI, we bring people with varying education backgrounds, train them in-house, and based on their aptitude and performance, place them in different

cadres. Over-qualified people may not serve the purpose, performing well but costing more.”

Contrasting the medical system in LVPEI and in the United States, Dr. Muralidhar Ramappa says that while at LVPEI a huge number of operations are performed daily, in the United States the numbers are far less. His mentor in the US had operated 1,400 cases in 40 years, while Dr. Ramappa had already operated on over 10,000 patients. The spectrum of patients seen at LVPEI is also very wide, from patients suffering from eye disease in its early stages, to those in late stages. In the USA, doctors usually see early-stage patients, due to access to medical care through insurance.

Training of fellows at LVPEI is very thorough. Patient care is more holistic and patient-centric rather than being process-driven. The fact that there are so many committed ophthalmologists with specialisations in different areas, and the fact that they deal with so many complex problems, has propelled LVPEI to one of the top slots in the world. Patients come literally from all over the world to the Centre of Excellence in Hyderabad. Some patients come from the developed world as well, because of the cutting-edge research that is done in areas such as stem cell, SLET procedure, retina and oculoplasty. LVPEI is at the forefront in all areas of its work and is at par with any other eye care centre in the world, easily ranking as one of the top five. Some of the others are Bascom Palmer Eye Institute in USA, and Moorfields Eye Hospital in London, U.K., which is the oldest eye care hospital in the world.

When asked why the LVPEI model cannot be replicated into other health interventions, Dr. Sangwan opines that the model could possibly span other healthcare initiatives. The challenge is that the senior leaders at LVPEI are all ophthalmologists, which limits the spread of LVPEI to other healthcare specialities. Dr. Sangwan

believes that the reason why similar experiments are not occurring in other areas of healthcare, such as cardiac or neuro, is because these providers may be looking from within. When you think that you are already doing something very well, then you don't see the need to do anything different.

Giving the example of his own stem cell research, Dr. Sangwan says he did not think it was possible to grow the cells in the eye, until somebody who was completely from outside the field gave that idea. Similarly, in the medical field in general, people live with the idea that unless you make money, it is not possible to run an institute. So, instead, they end up doing some sporadic charity: a little bit here and a little bit there. However, with LVPEI, Dr. Rao showed what was possible in eye care; there must be similar strong leaders in other specialities of healthcare who can replicate that model in their own specialities, or even create the next versions of the model. Dr. Sangwan does not, however, see this happening.

“In business, if you look at the McDonalds' model, there you are dealing with eatables, standardising your menu and standardising your procurement, and that is easy. In healthcare, the complexity of the service delivery is so much that one cannot standardise the offerings in such a straight-forward manner,” Dr. Sangwan observes.

Dr. Sangwan feels that focus on profits could be one of the factors preventing widespread replication of the LVPEI model to other healthcare specialities. However, there are multiple factors that prevent more widespread rollout. The ability of many doctors to think beyond themselves is one limitation: human beings think that they would not have enough resources for themselves in the future. Aptly, Dr. Sangwan provides a translation of a saying from his native Haryanvi, “If you have a son who is very able, skilled and talented, where is the need for you to earn for him? If on the other

hand, the son is stupid, what is the use of stashing away money for him? He would lose it anyway!”

Dr. Narayanan believes that to improve healthcare in India, “the orientations of both service provider and patient must improve.” The service provider must learn to respect patients, take more responsibility, and take corrective action in case of deviations from stringent stipulations. Doctors must share most of the blame for issues like giving or taking commissions for referring patients, commissions for diagnostics such as X-rays and CT scans, and accepting disproportionate incentives for performing medical interventions. When corrective action is not taken on erring doctors, everyone tries to break the rules, states Dr. Narayanan.

In most hospitals in India, there are many aberrations that result in sub-optimal results for the patient. If a doctor is paid per patient as is the case with most private hospitals in the country, the doctor will try to take the easiest way out. For instance, they will be tempted to see more patients who can generate volume, and refrain from seeing time-consuming cases. In such a scenario, the doctor does not provide comprehensive care to the patient, as any difficult patient (in terms of the time required) would be deflected to some other speciality. Even with an essential surgery, the doctor may be tempted to postpone the surgery when his list is full, instead of posting the surgery with another doctor. Needless surgeries will also be done to make money. Per patient incentive creates greed; it will be like putting cash on the table and seeing how long you can hold your hand back. The only way to control this behaviour is to have a strong audit and take strict action on errant doctors. The difficulty, however, is that it is never easy to prove such errant behaviour, says Dr. Narayanan.

Again, if incentives are not given to the doctors, they may not want to take on a big patient load. The reason for lack of trust for healthcare providers in the country is due to greed. However, healthcare is no exception, since greed has percolated into every part of the society. In this context, LVPEI stands as a rare and refreshing example of what is possible.

In the U.K. and the United States, however, there are strong audits; there are hardly any effective audits in most hospitals in India, since there is no incentive for conducting these audits. The general rule is that the more surgeries that a surgeon does, the better it is for the hospital. While incentives are fine, unless there is a system of audit, checks and balances, and discipline, the system of incentives will not work, Dr. Narayanan opines.

In contrast, the incentive system at LVPEI works well. Based on rank and seniority, the doctor gets his base salary, and the incentives are based on crossing certain thresholds of holistic performance, rather than being paid for each patient seen or operated upon. At the same time, doctors do not deny surgery to non-paying patients. There are, thus, strong checks and balances at LVPEI.

Doctors who join LVPEI know that the salary structure is not competitive vis-à-vis what they may get in other large private hospitals in the country. However, the biggest incentive for them to join LVPEI is the focus on academics and research. Most doctors join here at an entry-level. Mid-level and lateral entries are negligible, as it would be difficult for them to fit culturally. Someone who has been in private practice would never be able to join LVPEI. The pool of faculty members for LVPEI may come from fellows at the entry-level or lateral recruits from Sankara Nethralaya or Aravind Eye Care System or the U.S. universities.

However, it is most unlikely that anyone from the many private hospitals in the country would join LVPEI.

Once a doctor gets into the mindset of revenue maximisation, it is difficult to adjust to the LVPEI reality in terms of remuneration, as in a private hospital, they would be paid more on average. Those who join LVPEI should have an academic mindset. If one is not interested in research and teaching, he or she is unlikely to be offered a faculty position in LVPEI, and even if one does get in because of an error in the selection process, they would soon find themselves a misfit in the system and exit.

Dr. Avinash Pathengay identifies two important factors that prevent replication of the eye care models developed by LVPEI, Aravind Eye Care System and Sankara Nethralaya. These three exemplars function well because they are disciplined in two important aspects: one is discipline in not being greedy to make money for the founders and managers, and the second is adhering to strong core values. If entrepreneurs in the other health specialities have such discipline, they can certainly innovate in their healthcare speciality and serve fellow human beings, just the way these three eye care providers have demonstrated.

In summary, even in other realms of healthcare, if the founders and management can contain the greed to maximise profits, can reduce selfishness at least to some extent, and can stick to strong core values, they can emulate what LVPEI has demonstrated in eye care. This could happen if the leader has strong conviction and can hold out an umbrella under which people with a similar attitude can come together and provide care for the sake of humanity.

In December 2020, L V Prasad Eye Institute (LVPEI) won the prestigious “Greenberg Prize – End Blindness 2020” Award in the “Outstanding Achievement Prize” category for making profound strides toward preventing and curing blindness. Instituted in 2012, “End Blindness” is a movement to eradicate blindness governed by leading scientists and figures from the worlds of business, politics and the arts. The movement is the life-long mission of Dr. Sanford Greenberg, who himself lost his vision at age 19 years, and his wife Susan. LVPEI shared the award with the Aravind Eye Care System.

6.4. Managing Human Capital and Ensuring Organisational Sustainability

Introduction

As the world reels under the impact of COVID-19, every organisation across various industries and geographies is grappling with serious existential issues, and many people have been adversely affected. At the top of every leader's mind is planning the strategy they would need to adopt once the pandemic ends, and the steps they would need to take to return their organisations to a semblance of normalcy after several months of devastation for their businesses.

Many new organisations in the healthcare space are unable to pay salaries to their employees and have wound up businesses due to losses. The more established organisations are unable to close down due to their long legacy, although closing down appears to be the only rational option open to them. It is an uphill task dealing with the existing challenges of managing human resources, ensuring employee engagement and productivity, and at the same time keeping an eye on the bottom line of their organisations. There are many difficult decisions that the heads of these organisations must make under extreme duress.

This chapter describes how LVPEI responded to the unprecedented situation caused by the pandemic, and how LVPEI's culture of managing human capital and adopting sustainable practices provided

the strength to tide over this crisis. The chapter also presents Dr. Rao's views on the strategic direction that LVPEI and other organisations could take to succeed and sustain in the future.

The ingredients of a robust and healthy organisational culture include creating an enabling environment for the staff to excel, providing them with good quality training and orientation, providing encouragement to high performers, and giving them freedom to pursue their dreams. Such a robust culture is vital in helping the organisation to steer itself to safety from turbulent waters.

Below is an account of a webcast interview that took place on 12 May 2020 with LVPEI founder Dr. G.N. Rao, organised and conducted by Arnaz Dalal and D.V.R. Seshadri, as an activity of the Equitable Healthcare Access Consortium, Indian School of Business, Hyderabad. The YouTube video recording of the interview can be easily accessed.¹⁴

Addressing an online audience, Dr. Rao spoke in great detail about the LVPEI journey in the 10 weeks following the lockdown imposed on the country consequent to the COVID-19 pandemic. He delved into the myriad challenges that the institute faced, such as managing employees, patient care, outreach into rural and impoverished communities in which they were traditionally operating, etc., while at all times keeping an eye on organisational sustainability.

Leading Through Crisis—Managing Human Capital

Dr. Rao spoke about the measures that LVPEI had taken since the crisis began and how all actions taken even during the peak of

¹⁴ You Tube recording of the webinar on Managing Human Capital and Ensuring Organisational Sustainability – <https://youtu.be/MFXUuHee1K8> www.lvpei.org

the COVID-19 pandemic aligned at all times with their five core organisational values of Patient First, Excellence, Equity, Integrity and Togetherness. These values served as a guiding star that kept the organisation true to its core purpose and mission.

Employee and Vendor Communication

One of the first steps taken was to ensure that communication was sent out to all LVPEI employees, across all cadres, assuring them that their jobs and monthly incomes were secure. As LVPEI had “Equity” as its core value, the practice of fairness was not limited to just the employees, but also included vendors. Thus, the institute ensured that no vendor payments were delayed. Some vendors who were considerate to LVPEI owing to the extraordinary circumstances offered to wait for their payments until the situation improved. However, such offers were respectfully declined. All pending payments to vendors were thus made, to enable the institute to start operations from a clean slate after resumption of normalcy.

To reach the stage LVPEI is at today would not have been possible without a strong and committed team. The above relief measure, assuring the employees of their financial security, was the organisation’s way of expressing its gratitude to the team for the long years of commitment and selfless service to the institute.

Patient Safety

- **Emergency care:** All normal patient care services at LVPEI were promptly closed down and limited only to Emergency Care. The management did not want to put at risk any patients, visitors or attendants of the patients. Presently, there is not enough known about treatment options for the COVID-19 disease. Hence,

measures were quickly put in place to ensure that no patient was unnecessarily exposed to the risk of the coronavirus.

- **Protocols followed:** The LVPEI staff was vertically divided into teams, comprising ophthalmologists and staff across various cadres. Each of these teams was asked to work for two days a week. It was ensured that the teams did not mingle with each other. Precautions were taken, infrastructure created and tight processes were put in place spanning all patient touch-points in the institute: patient arrival at the entrance gate, patients check-in area, patient care area, etc. To protect everyone, social distancing and maintaining personal hygiene was strictly enforced within the campus. Every patient and the accompanying person had to wear a mask. Their hands were sanitised and body temperatures checked before they were allowed inside the campus. Each member of the staff was provided appropriate protective gear: face mask, visor and different types of personal protective equipment (PPE) depending on the areas they were working in and the extent of risk of exposure.
- **Telemedicine and consultation services:** Tele-consultation had been done to a limited extent in the past. However, the pandemic gave LVPEI the opportunity to enhance their tele-ophthalmology services to reach out to patients and provide necessary care. The process ensured that communication was sent out to each patient through all possible communication channels, their health conditions were discussed, and inquiries were made about how LVPEI could help them. Patients were also educated on the preventive measures that they should follow. Counselling was provided to patients to allay fears about getting COVID-19.

LVPEI used a variety of technologies for telemedicine. The basic technology deployed was a simple tablet-based application that was used to connect rural centres to their secondary centre (SC), which had a telemedicine team that took care of patients through tele-consulting.

Another technology used at the SCs was deploying cameras that clicked pictures of the eye, which were then sent to the specialist at the tertiary centre for expert diagnosis and advice, based on which treatment was provided to the patient at the secondary centre.

The Electronic Medical Records (EMR) system, built in-house, was vital in handling patients during the COVID-19 pandemic. Patient data was linked all the way from the field level to the primary and secondary levels, through which the patients were given comprehensive information and advice. The benefit of using the EMR became evident during the lockdown, and LVPEI was able to conduct several thousand tele-consults using their “eyeSmart” EMR system.

- **Community care:** The colleagues in the rural network and secondary centres (SC) contacted past patients on the mobile phone network and enquired about the status of their health. These are patients who had been seeking care over the past several years at these centres, and they were offered help beyond eye care. Several of the SC staff pooled resources on their own and voluntarily supported many poor families in the areas where the SCs were located. This initiative taken by the staff was truly commendable, since the management had not asked them to do so. It demonstrated that the LVPEI staff was part of the community that it served and not just an eye care provider.
- **Working from home:** In healthcare, working from home has its limitations. Many colleagues used this time to sharpen their skills or increase their productivity in other areas. Given LVPEI’s tremendous focus on research, faculty members from across the network produced many more manuscripts of scholarly articles based on their work than would have been possible during normal times. Even those who had not come out with a single manuscript in the past, were doing so now, which was a welcome development from the institute’s perspective.

Another area that had a big boost because of the time available to the faculty was the education department. Nearly 500 world-class lectures have been prepared by the LVPEI faculty since the lockdown started. These will be made available to the entire world very soon. The innovative and proactive education team did a remarkable job in accomplishing this goal. This new content was produced even while the education team continued to conduct online in-house educational programmes for all cadres of staff.

The above actions demonstrate the idea of finding “Opportunity in Adversity.” Rather than collapse under the weight of the burdens put forth by the pandemic, LVPEI demonstrated that it was possible to look for opportunities for growth, even in the midst of very trying times! The focus of all the faculty and staff during the crisis was, “What can we do now that would take LVPEI to the next trajectory?”

Organisational Sustainability—Dilemmas in Decision-Making

Building a corpus for a rainy day

Dr. Rao mentioned that he had been fortunate to gain knowledge through his association with a variety of esteemed leaders of various organisations. He was closely associated with the International Agency for Prevention of Blindness (IAPB), which is an umbrella organisation of international NGOs and institutes across the world that works with WHO on global eye care policy and planning. Whilst working with them, Dr. Rao came to understand that to enable research in a non-profit organisation like LVPEI, they needed to build a reserve of a minimum of six months of operating expenses, and if possible, up to 12 months of reserves. This was based on recommendations of British best practices and British law.

Keeping that learning in mind, the management team at LVPEI decided to set aside a reserve corpus at all times to cover operating expenses for six to twelve months, to help tide over crisis situations. Never did the top management imagine that everything that they were familiar with would collapse because of the pandemic!

The revenue model of LVPEI had factored in a possibility that in case all the grants and donations stopped, LVPEI would be able to continue its operations uninterrupted, based on patient care revenues. The management, however, had never anticipated that patient care revenues would collapse the way they did during the COVID-19 crisis. However, by following the learnings from IAPB, LVPEI had assiduously built reserves over the past 10 years, which helped it to tide over the situation posed by the pandemic.

Being Self-Sufficient

Since the inception of LVPEI, given that over half of its patients are treated absolutely free and provided world-class eye care, many observers had the impression that the institute was perpetually dependent on donations/grants. However, the reality is that within just four months of commencement of its operations, LVPEI was never in the red for operating expenses, which was met from the revenue that was generated from paying patients. Costs were also monitored carefully, to avoid any form of wasteful expenditure. This was akin to the typical middle-class mentality of not spending money that the institute did not have!

Research Funding

Capital expense for research was funded by philanthropy; operating expenses were funded through competitive research grants.

Additionally, the institute supported research from its internal resources and paid the salaries of those scientists that were not supported by research-granting agencies. Dr. Rao is optimistic that even in the future, once the lockdown is lifted and normalcy restored, LVPEI will not have difficulty in following the same philosophy.

Identifying New Revenue-Generation Streams

To offset the revenue losses that LVPEI may incur, the team is now looking at some new areas of possible revenue generation. The Technology Innovation Group (TIG) till date had not been a big revenue-generating stream, although it had developed several promising innovations. For instance, during the COVID-19 crisis a simple visor was developed by one of the engineers at LVPEI, the design of which was given away as open source, for use by all those who are interested. This device has helped protect thousands of healthcare workers, both in LVPEI and many other organisations all over the world.

Similarly, the LVPEI Electronic Medical Record (EMR) system was gaining significant traction. Many organisations from around the world were seeking this technology for patient care. There could be an opportunity for LVPEI to commercialise this product. There were innovations in the areas of biology, stem cells, artificial cornea, etc., that could provide LVPEI with opportunities to bring in new revenue streams. The Engineering Group, which manufactured contact lenses, could usher in additional revenue streams. Then, the way forward would be to use the revenues from these newly identified streams towards helping address possible deficits in cash flows during future crises.

Dr. Rao pointed out that LVPEI practiced frugality in its expenditures, enabling it to build the reserves required for a rainy

day. These reserves helped tide over the current crisis. The institute was also successful in building competencies that enabled creation of parallel revenue streams that could be triggered at short notice. In his view, going forward, only those organisations that are constantly looking at the next big thing and continuously innovating, would be able to survive the uncertainties that organisations would have to grapple with in the future.

Redefinition of Eye Care Delivery Models— Changing the Game

According to Dr. Rao, the opportunities for growth in the community eye care area will become better in the years to come. LVPEI has set up the network of secondary centres and vision centres with the idea of touching the lives of poor people in far-flung rural communities. Going forward, that foresight is going to help LVPEI, since it now has a well-established network of eye care centres with permanent infrastructure and facilities to provide eye care. In Dr. Rao's view, due to fear of catching the COVID-19 disease, eye camps will become a thing of the past, as people will not want to gather in large numbers for getting their eyes checked in these eye camps.

As patients will also be hesitant to travel long distances for eye examinations, Dr. Rao expects that the demand for care in these centres will increase in the months and years to come. The areas where LVPEI intends to provide services are close to the villages and small towns. Primary centres are within 10-12 km and secondary centres are within 50-75 km of these communities. With this kind of a robust system already in place, LVPEI management believes that their rural eye care network will become busier once the COVID-19 crisis abates, and life reverts to normalcy. The ongoing engagement that they have with the community and the community support

that they have received will significantly help LVPEI weather the COVID-19 storm, and help it to grow to greater heights in the years to come.

Hence, the way forward to reach out to the vulnerable population is to develop permanent facilities in rural areas. Dr. Rao hopes that the government will work quickly to establish many such facilities throughout the country. They do not have to be eye care centres in isolation; instead, they can be a part of an integral approach of setting up general health centres for the under-served. It is the need of the hour to have many well-functioning, high-quality, comprehensive health centres in rural areas. Given the COVID-19 pandemic and the constraints around it, which will stay with the world for a long time to come, people will not want to travel to big cities in large numbers for relatively minor health ailments that can be locally treated.

LVPEI will re-start operating the centres in rural areas, but not without taking the same precautions that they would take in their tertiary centres. No one really knows where the danger is lurking—whether in rural areas with a low number of COVID-19 cases today or in urban areas with a high number of cases; hence, LVPEI believes in taking utmost precautions as it begins to resume operations.

Way Forward for Delivery of Rehabilitation Services

LVPEI has been very fortunate to have a dedicated rehabilitation team. In the past eight weeks, the incredible work that team members have accomplished, using technology to support all their patients with various disabilities in addition to blindness, was an incredible example of what commitment can achieve. They already had systems in place to provide care to people with visual disabilities, without the patients being physically present at the institute.

Going forward, these models of care will be extended to more patients. It will be possible to offer rehabilitation services without the patients being present on campus at any of LVPEI's centres. This will bring big relief to the harried parents of these patients, who are mostly children. In addition to grappling with blindness and other health setbacks of their children, parents often have to cope with grinding poverty, let alone commuting long distances from their homes to reach LVPEI's facilities. Through technology enablement, this struggle would be obviated, and it will be possible to provide rehabilitation care at the homes of the patients.

Viability of the Cross-Subsidisation Policy of LVPEI going Forward

In terms of how LVPEI will support the vulnerable population going forward, Dr. Rao does not see any significant changes taking place vis-à-vis what LVPEI has been doing for the last 33 years. They will continue to be able to provide eye care to the under-served populations. LVPEI has been treating people free of cost in the rural vision centres. In the secondary centres, the percentage of non-paying surgeries is 65% to 70%, which will continue uninterrupted.

With the use of telemedicine and technology innovations, LVPEI will be able to penetrate deeper into these communities and innovate on how to target a population cluster of 1,000 people. The institute is privileged to have a committed community eye health team which is constantly looking for ways to reach out to people to provide them with the best quality service.

In the case of other organisations that want to provide subsidised eye care to the poor but do not have the means to do so, they often depend on the government for funding. Many organisations also depend on the government to extend subsidies for providing eye

care and other healthcare services. Such dependence makes these organisations vulnerable to the availability of funding from the government.

Dr. Rao hopes that this pandemic will bring about a completely different way of thinking within the government on allocation of budgets. He feels that healthcare should be given as big a share of the budget as defence. No war has killed as many people as this pandemic has! The government must create a healthcare system with adequate funding that would protect the health of everyone in our country.

Within the corporate and philanthropic sectors, Dr. Rao hopes that more organisations and people will come forward to support healthcare and open their purse strings to donate towards healthcare activities in the country. These kinds of approaches would ensure that we provide the much-needed support to the under-served and vulnerable populations of our country.

LVPEI has been on a good wicket as they have never had to depend on the government for funds to support their operations. The ratio of paying and non-paying patients will continue as in the past, and hence, LVPEI will not face much disruption in providing free services to the vulnerable populations.

An Eye to the Future

In summary, Dr. Rao feels that in the immediate future, eye care will go through some painful and possibly tough times. Some organisations will suffer, some solo practitioners regrettably will have big problems.

What is worrying is that the younger generation of ophthalmologists, who are coming out of training programmes just

now, will find it tough to find suitable opportunities to work. This will likely be the situation for the next few years, not just in India but across the world. The duration will depend on how long the impact of the pandemic will last.

Branches like ophthalmology and eye care, dentistry and ENT, will face some problems in the near future. The medical branches in great demand will be internal medicine and its various sub-specialities, emergency medicine and intensive care.

India already has a tradition of public-private partnerships (PPP) in eye care. This has contributed significantly in blunting the magnitude of visual disability in India. Going forward, there could be greater harmony and transparency in these partnerships. Such a change will lead to better outcomes.

Traditionally, the area of public health has always been neglected in the medical profession in the country. It is about time for this speciality to wake up. Due to the widespread nature of the pandemic in the country, this was the first time we saw a semblance of understanding in doctors and healthcare providers on the importance of public health. Dr. Rao hopes that many more medical professionals will get into the area of public health, as this is an area where huge opportunities exist.

Integrated healthcare is an ideal that we in India should strive for, with eye care as a strong part of it, not just in the current situation, but in the future, as well.

Areas where medical professionals can think outside the box include technological innovation, biological innovation, time series-based research, etc. There is ample opportunity today in areas of vaccine development and research on drugs to deal with viruses like the new coronavirus that causes COVID-19. It is the need of the

hour to look into these new opportunities, rather than the traditional clinical specialities that we have been following in India for all these years.

Medical professionals will have to be willing to accept lower remuneration in the immediate future. For some time to come, incomes of doctors and allied professions will not be as high as they were before the COVID-19 pandemic. This is a good time for mankind to reflect on the debt we owe to society for all the benefits we have received from it and suitably recalibrate expectations on honorariums.

Pharmaceutical companies also need to step up to the current challenge by helping to accelerate the development of the entire gamut of drugs needed for battling COVID-19. This would make medical care cost-effective. They could get into more collaborations with medical professionals to identify their real needs and direct their drug development efforts towards that end. Going ahead, pharma companies need to invest more into research and development to enhance indigenous innovations.

The government should come up with a robust telemedicine policy, in close consultation with practitioners, which would also help make it easy to practice telemedicine legally. At present, regulations in this realm are fuzzy.

Although vaccines and treatment protocols for COVID-19 are now available, going forward, it will be essential to adhere to strict prevention measures for COVID-19 by following the advice of experts.

6.5. The Unique Process of Leadership Transition at LVPEI

Over the last 33 years, LVPEI has grown into a non-profit organisation of international repute, with a network of 200+ centres covering four states in India. Dr. Rao spent the best part of his life building LVPEI to its current stature, and he did so by leading from the front. At 75, he is now ready to hand over the reins to the selected successor. In this chapter, we describe a unique process adopted by LVPEI for selecting the successor to Dr. G.N. Rao, founder chairman of LVPEI—a process that is elaborate, fair and transparent.

Dr. Rao had two vital thoughts on the successor: the first related to the process, the second to the person. While Dr. Rao could probably have nominated someone and got that person accepted by the rest of the organisation, there was a chance that it could have turned out to be a wrong choice. He, therefore, did not want to take that chance, as the person who will succeed him would be very critical for the long-term future of the institute.

This is the reason why Dr. Rao embarked on an elaborate process of getting the top six choices from the internal stakeholders, as described in the following paragraphs, and then subjected these six to a rigorous process of external evaluation. Dr. Rao believed that the resulting process of selecting the leader was the best they could do. Such a process would not only give the institute a leader, but a cohesive senior leadership team, as well. It is his belief that a

leader so selected would be acceptable to most, paving the path for a harmonious and promising future for the institute.

With regard to his clarity that the future leader had to be an ophthalmologist, Dr. Rao just followed the tradition of every major eye institute in the world, without any exception. These great eye care institutes were conceived, built and grown by ophthalmologist leaders over generations. Moreover, studies in the USA have shown that the most successful hospitals are the ones run by medical leaders. He felt that there was no reason why India should be any different. While Dr. Rao was open to the idea of a “non-medical” leader during the early stages of the selection process, and had some discussions with his top management team on this possibility, he had not come across any such leader that he was impressed with.

The conversations related to leadership transition at LVPEI began towards the end of 2018. Dr. Rao and the vice-chairs held multiple conversations with people in different cadres to gauge the views of the staff about the future leader who could take over the reins of the organisation. As discussed, the accepted premise was that the future chair of the institute would be an ophthalmologist only, and preferably an internal person who knows the culture and history of LVPEI. The framework for the process was conceived by Dr. Rao and the three vice-chairs. Ramam Atmakuri, executive vice-chair, was asked to drive the actual process, considering his past experience in management and leadership roles.

In December 2018, Dr. Rao announced the decision to commence the search for his successor at the faculty meeting in KAR campus, Hyderabad. This was followed by a written communication from Vice-Chair Dr. GCS to clinical faculty across the network seeking applications from interested persons and nominations of potential candidates. The information was also circulated globally among the fraternity of ophthalmologists, alumni and supporters.

Externally, there were three nominations from India and two international nominations. During the ensuing individual conversations, these five potential candidates either expressed their inadequacy for the job or said that they would not be interested in relocating to India or Hyderabad. Internally, 51 consultants responded to the invite, and some sent multiple nominations. A total of 19 unique names were nominated, out of which six had nominated themselves and 13 were nominated by others. The two vice-chairs among those nominated dropped out on the plea that they were of the same generation as Dr. Rao, and consequently preferred a younger person to give the next leader a long innings.

The remaining 17 candidates were informed about their nomination. These candidates were from across the four campuses (Hyderabad, Bhubaneswar, Visakhapatnam and Vijayawada). They varied widely in years of service and seniority and included relatively junior candidates who had just completed their fellowship. An external agency conducted a survey on the 17 candidates based on 10 leadership qualities identified by the executive committee, namely, integrity, leadership in the field, organisation first, big picture focus/vision, fairness/equity, inspirational, clarity of thought, effective communicator, people person (acceptability) and risk-taking ability. The 10 leadership attributes were arrived at by the executive committee of LVPEI as the most important attributes required for a leader.

Based on the scores from this survey, nine names were shortlisted. The vice-chairs contacted these nine candidates to seek their willingness to participate in the process. Mr. Ramam had individual conversations with each of them, primarily to take consent, followed by individual conversations with Dr. Rao. At this stage, three candidates opted out, leaving six in the field who came to be referred to as the “LVPEI6.”

Dr. Rao, then, met the six candidates to ascertain their commitment to give his or her 100% if finally selected to succeed him. The next steps in the selection process, which would be rigorous and grueling over several months, was communicated to them. Dr. Rao announced the names of the six shortlisted candidates, the LVPEI6. They are Drs. Merle Fernandes, Prashant Garg, Subhadra Jalali, Rajeev Kumar Reddy Pappuru, Avinash Pathengay and Pravin Krishna Vaddavalli.

In January 2019, two feedback surveys were conducted in-house on the six candidates, with the help of an external agency to ensure confidentiality and fairness. In the first survey, 15 leaders and HODs from a cross-section of functions, among the clinical faculty and scientists, scored them on the 10 leadership qualities mentioned above, while ensuring that each of the LVPEI6 could not rate oneself. In the second survey, the respondents were non-clinical staff spanning different levels, representing all functional areas and units of LVPEI, who scored them on the five core values of LVPEI. The LVPEI6 also scored one another. The candidates were also put through a psychometric tool, “Emotional Intelligence at work.” The tool identified their leadership styles. Interestingly, the LVPEI6 leaders represented a wide range of unique leadership styles. With the aid of these scores and assessments, a development plan was made for each of them.

Before the subsequent process commenced, each of the LVPEI6 leaders were introduced to the board of trustees of HEI and HERF that managed LVPEI at the highest level. The LVPEI6 covered both genders and spanned a wide spectrum of ages. The LVPEI6 were asked to arrive at a mutually convenient time to be available for three days each week to prepare themselves for the role, primarily through a process of rapid learning. They agreed to spend Monday through Wednesday in their clinical roles, and dedicate the remaining three

days to jointly participate in an intensive education programme in all areas and aspects of LVPEI, while still continuing all their other clinical, administrative, research and mentorship roles.

Each of these six were already directors of various areas of LVPEI, shouldering other responsibilities across the network, and it was not possible to transfer their role to someone else. The intensive education programme consisted of an immersion programme to learn the history and current operations of LVPEI, as well as learning from other organisations and thought leaders in healthcare.

The process of learning commenced in March 2019. Two of the six travelled each week from Visakhapatnam to Hyderabad to be with the team. From April 2019, they evolved a calendar for themselves, identifying focus areas of learning, scheduling visits to different campuses within LVPEI and participating in interactive learning sessions covering all departments and functional units across the network. The LVPEI6 spent the next two months travelling extensively through the network campuses and facilities for an in-depth understanding of LVPEI. At each of these sessions, they interacted with all cadres of the staff to understand their roles, their journeys at LVPEI, their aspirations and anxieties. This process gave an opportunity to many of the employees to “know their LVPEI6.”

The six leaders had several meetings with Dr. Rao to discuss the schedule. The planning envisaged spending about five months on this learning activity, all the way till August 2019. The plans were flexible, enabling them to make changes so that they could spend more time on areas that required deeper enquiry. September 2019 was kept relatively open to cover areas that may have been missed, and to revisit areas where they felt they lacked proper comprehension. Dr. Rao commenced a daily module on email called “Knowing LVPEI.” An email ID, “AskGNR,” was created so that any of the LVPEI6 team members could send questions to Dr. Rao on any topic.

Each candidate could post any question once in six days early in the morning to Dr. Rao. This mail was copied to the group. Dr. Rao would answer the queries, followed by discussion on email or in person when they met. A total of nearly 100 “Knowing LVPEI” closed group interactions took place over the next six months. This was in addition to intense learning from a series that Dr. Rao started simultaneously called “LVPEI Facts” that he posted daily across the network and to all collaborators and stakeholders. Individuals connected to the “facts” also shared their experiences.

The LVPEI6 considered forming two or three sub-groups to enable them to cover larger ground in a shorter time and share their learning among themselves. However, they realised that all aspects relating to LVPEI were vital, and it was important for each of the six to cover all these aspects firsthand. Consequently, they decided to jointly study both the internal aspects of LVPEI and the outside organisations. Detailed planning followed by visits and meetings within the LVPEI network were completed between April and August 2019.

The education process at LVPEI took them across various functions, including financial management, composition and functions of the boards of the trusts and society (HEI and HERF), focus on research, the education system, facilities management, innovation process, maintenance, bio-medical engineering, eye bank, rehabilitation, community eye care, laboratories, stores and purchase functions, inventory management, engineering function, information technology, communications, human resource management, legal and statutory compliances, strategic partnerships, etc.

The six leaders visited the three tertiary centres, many secondary centres, as well as proximate vision centres, typically spending a couple of days at the tertiary centres and a day at each secondary centre. In addition, they met people associated with LVPEI, including

advisors, consultants, etc. These visits, as well as the observations and interactions with different people, gave them an in-depth understanding of various functions and the practical implications. Additionally, it served as a way to connect with individuals at a personal level in various services.

These learning sessions were interspersed with weekly one-hour meetings with Dr. Rao and the three vice-chairs to report on their observations, seek clarifications and gain better insights. Once a month, the team of six reached out to one of the vice-chairs for a two- to three-hour session to understand how LVPEI has changed over the years. Scheduled meetings with Dr. Rao gave them a deeper understanding of the various strategic moves made over the years, in addition to the daily questions and answers on email for “Knowing LVPEI” to understand the vision, execution of the mission, and the intricacies of handling difficult situations.

The next step was to study several exemplary organisations and meet accomplished leaders outside LVPEI for an external perspective and broader outlook. The three months from October to December 2019 were earmarked for studying these organisations. These visits were scheduled between Wednesday night and Saturday evening each week. Advised by Dr. Rao and the vice-chairs, a list was made of people to meet in Hyderabad and other cities of India. The idea was to cover a wide cross-section of leaders. The Hyderabad-based leaders included Dr. Evita Fernandez, chairperson of Fernandez Foundation; Dr. D. Nageshwar Reddy, chairman of Asian Institute of Gastroenterology; Dr. Ramesh Kancharla, chairman and managing director of Rainbow Hospitals; Dr. Rampapa Rao Ambati, the founder of the first group practice of anesthesiology in India and chairman, Prerna Anaesthesia and Critical Care Services; and Dr. D. Soma Raju, founder-chairman of Care Group of Hospitals.

Typically, one day was spent visiting each of these organisations, followed by a two- to three-hour meeting with their leaders. These sessions were very enriching and often resulted in mutual sharing of information, as the leaders of these organisations were keen to learn from the best practices at LVPEI. These exemplar leaders also got to know future leadership and transition plans at LVPEI.

Outside Hyderabad, the team visited several top eye care providers: Aravind Eye Care System, Madurai; Aravind Eye Hospital, Chennai; Sankara Nethralaya, Chennai; Dr. Shroff's Charity Eye Hospital, National Capital Region of Delhi; and the All India Institute of Medical Sciences, New Delhi. Each of these visits lasted between one to three days. The planned organisations to visit had also included the Sadguru Netra Chikitsalaya, Chitrakoot, Madhya Pradesh and Narayana Health, Bengaluru; however, these visits did not materialise.

The team met with Subroto Bagchi, an entrepreneur, author and business leader, who also works for the government as chairman of the Odisha Skill Development Authority (with the rank of a cabinet minister), at Bhubaneswar, over an afternoon and a dinner meeting, garnering valuable insights on leadership. During the interactions, Mr. Bagchi suggested that the group should engage in an adventure challenge together as a team to build trust and learn how to support each other in a challenging situation. Although the team never got around to doing so, the COVID-19 pandemic did present the team with a unique challenge. Hence, the same objective seems to have been achieved by working together as a group to handle the COVID-19 crisis!

The plan to jointly attend the American Academy of Ophthalmology annual meeting and visit some of the top eye hospitals in the USA also did not materialise. However, one member

of the LVPEI6, Dr. Prashant Garg, who was on a scheduled visit to the United States, met some top leaders of eye care organisations there and debriefed the group about what he learnt from them. Most of these meetings were completed by November 2019, and by December 2019, the number of meetings tapered off. Information from all visits and meetings were compiled into detailed notes with observations and queries by each of the LVPEI6 members. They were also given additional tasks to work on as a group, pertaining to policy decisions and making suggestions for change.

The visits to all these organisations helped the LVPEI6 gain a broader perspective on the healthcare sector and beyond. They gained an understanding of the mission and actions of these exemplar organisations, the vision of their leaders and their perspective on their organisation's growth. The LVPEI6 also gained an insight on the views and perceptions of the leaders of various organisations about LVPEI, which would be helpful in forming future alliances. The team made detailed notes and learnt from each other through a process of intense interactions. Informal evening sessions were held to know each other better and "get into the local LVPEI communities." Informal interactions were also held over dinner with fellows of LVPEI, key staff and others.

This period of intense learning helped the team to understand the strengths of LVPEI, identify major challenges to the organisation, evolve strategies to surmount them, and come up with a strategy for the next 30 years, while preserving the core values and vision. On 18 December 2019, the LVPEI6 made individual presentations on what they had learnt and their vision for the future to 18 evaluators among the faculty, scientists and senior management. The presentations were structured to cover 13 parameters on which they were scored.

On 21 January 2020, a joint presentation was made to the entire institute at a 7 a.m. class. This was open to all people working across the LVPEI network and lasted two hours. It was an immaculate and well-orchestrated presentation by the LVPEI6. A follow-up session was held a week later, for interactions and a question-answer session on their presentation with all the faculty, scientists, administrators and optometrists across the network. It was a cross-functional group, cutting across various levels. With this, the educational journey of LVPEI6 came to a formal close.

The next step of the evaluation process was to choose one among the LVPEI6 for the role of chairperson. In February 2020, each member of the LVPEI6 was individually assessed by 12 evaluators drawn from across the world, including leaders from both medical and non-medical fields. One of the evaluators travelled from Australia! Some of these discussions were conducted online, since some of the evaluators from distant locations of the world could not travel to LVPEI. These were gruelling sessions, a typical meeting with an evaluator lasting two hours or longer. The “interviews” were scheduled based on the convenience of the evaluators. The last of the interviews was concluded in February 2020. Each of the LVPEI6 had an additional session with the three vice-chairs, lasting close to two hours. This was scheduled towards the end of the formal evaluation process.

The entire process, including the assessment scores and the evaluations report from every stage of the process, was summarised and documented. The grand finale of this very elaborate process was scheduled to be done by a three-member selection committee in March 2021. A docket of all the assessments and reports was shared with the committee to review and evaluate all the inputs received. The three-member team would also meet each member of the LVPEI6 personally during the final meeting, interact with them,

and make their own assessment. One among the six shall be chosen to head the organisation as the chairperson of LVPEI. The remaining five will continue to hold key strategic leadership positions. Dr. Rao will continue on the boards that govern LVPEI.

The meeting of the final selection committee was scheduled for 21 March 2020, and the announcement of the selected candidate was scheduled for the end of March. The new chair was supposed to take over in April 2020 and work with the current chair, overlapping until October 2020. However, the last step of the process was paused, and the final meeting had to be postponed, due to the global pandemic.

This situation, however, gave the LVPEI6 an opportunity to show their mettle in handling an extraordinary circumstance like the COVID-19 pandemic. At a meeting during this period, Dr. Rao expressed great satisfaction about the excellent handling of the situation by the LVPEI6, with the cooperation of the faculty and senior members of the LVPEI team. A positive outcome from the entire process is the development and cementing of a strong team spirit among the LVPEI6 and the entire team, leading to an assurance that whoever among the six is finally selected, the LVPEI6 will continue to work together in the future.

This was a very valuable outcome of the intensive immersion and learning process. Each member of the LVPEI6 had an opportunity to undertake this journey individually. However, they were a team from the beginning and in their own words, “This journey helped us to bond and understand each other at a much deeper level.” This is the most important aspect that will help to sustain the leadership transition, making the process smoother, while ensuring that the new leadership team will take overall responsibility and ownership of the whole organisation.

Simultaneously, activities have commenced to identify and mentor the next group of leaders, so that future learning will happen

“on the job” over months and years and will not require a “one-year crash course.” The institute made a significant investment to get the LVPEI6 ready to take up leadership positions. More cost-efficient ways are planned for future leadership mentoring and transitions, by enabling these potential leaders to continually learn over an extended period.

6.6. Photographs



LVPEI demonstrates high standards of patient safety and quality of care—the eye doctor wears a protective face shield while examining a patient’s eye, following strict measures during COVID-19 pandemic.



The Academy for Eye Care Education (launched by Union Minister Mr. M. Venkaiah Naidu on 19 February 2016) now named the Standard Chartered-Academy for Eye Care Education.



Prof Desmond Fonn inaugurates the Brien Holden Institute of Optometry and Vision Sciences (BHIOVS) in the presence of Mr. Daniel Holden and the audience, 15 September 2017.



A research scholar conducts an experiment in the Brien Holden Eye Research Centre.



Advocating eye care for all newborns: Sophie, the Countess of Wessex, interacts with Mr. Raghav Gullapalli, as Dr. Subhadra Jalali and Mr. Ramam Atmakuri look on, 29 April 2019.



Liberia Eye Center, Monrovia—it is the first eye centre outside India where LVPEI is involved in the management.

Epilogue

A global industry veteran's reflections on his nearly three decades of association with LVPEI: Dr. Ramachandra Pararajasegaram

Dr. Pararajasegaram is no more with us. He passed away in May 2020 at age 92. He was a stalwart in the field of ophthalmology, especially community eye health; with his passing, the world of ophthalmology lost an iconic leader and a great humanitarian.

The late Dr. Ramachandra Pararajasegaram (fondly referred to as Dr. Para) hailed from Sri Lanka. After training in ophthalmology in the UK, he joined as an ophthalmology consultant in the only eye hospital in Colombo, and later moved out to the private sector. He was involved in community work and did voluntary service. On weekends, he would drive down to a small branch hospital to do cataract surgeries. He also started the National Society for Prevention of Blindness in Sri Lanka.

About 18 years later, he received a call from Sir John Wilson of UK, who had gone blind in an accident when he was a student, but had worked his way up and started the Royal Commonwealth Society for the Blind (RCSB) later renamed as Sightsavers. Sir John had met Dr. Para during his student days, and now he wanted Dr. Para to help him run the eye unit that RCSB had set up in Ghana.

Dr. Para worked there for three months in very difficult conditions. When he saw the people of Ghana going blind in tragic circumstances, it changed his outlook on the practice of medicine in general and

ophthalmology in particular. That, he said, was a turning point in his life. After he returned, he presented a paper in Indonesia on his experiences in Ghana. Professor Fred Hollows, an ophthalmologist who started the Fred Hollows Foundation in New Zealand, was at the meeting, and he invited Dr. Para to join him in Australia.

They did a survey on the major problem of trachoma in the aborigines of Australia, who were steeped in poor living and health conditions. Blindness prevalence was abnormally high among the aborigines as compared to the white population living there. Dr. Para helped with eye care services there. He then worked in Myanmar, India and Nepal, where they did a survey of blindness. The World Health Organization created a position, the regional advisor for prevention of blindness, and Sir John encouraged him to take up that role in 1982.

Sir John set up an organisation called the International Agency for the Prevention of Blindness (IAPB) and Dr. Para was a founding member. It was basically a conglomeration of NGOs (non-governmental organisations). Dr. Para was elected president of IAPB in 1994. The global initiative for the elimination of avoidable blindness, VISION 2020: The Right to Sight, took concrete shape in 1998, and was formally launched at WHO in February 1999. Professor Allen Foster from the UK suggested that Dr. Rao should be offered the role of secretary-general to steer this initiative. A very successful quadrennial assembly of the IAPB was held in Beijing in September 1999, which served as the platform to propel the VISION 2020 initiative into action.

Dr. Para met Dr. Rao earlier in Berlin in 1994, heard about his work in LVPEI, and convinced him to take on the responsibility of the regional chair of IAPB for Southeast Asia. He was impressed to see this fully qualified person, who had held a responsible and lucrative position in an American institute, give it all up and come

back to work in India in the 1980s when things were so different and under-developed in the country. It was not as if Dr. Rao had any family responsibilities to return to; it was a purposive decision that he had taken, Dr. Para said.

Dr. Rao began to develop an interest in community ophthalmology when he started attending the IAPB meetings, and his innate compassion and empathy led him to reach out to people in rural areas in India. Dr. Hannah Faal from Ghana succeeded Dr. Para as president of IAPB, Dr. Rao was re-elected as secretary-general, and then he succeeded Dr. Faal as president from 2004 to 2008.

Dr. Para was present when the foundation stone was laid for the Kismatpur campus of LVPEI, the International Center for Advancement of Rural Eye care (ICARE) in 1997. Sharing his views on the unique features of LVPEI, Dr. Para said the most important thing is the high quality of the work done here.

In general, doctors are only focused on numbers; nobody talks about how many cases they treated were successful. Dr. Para would advise doctors that measuring outcomes would be good not only for the patient, but also for the doctor and the institute. If you maintain quality in an institute, you will become sustainable. You will have more satisfied customers and the patient volumes will increase, he stated.

In refreshing contrast to the general trend in healthcare, at LVPEI from day one Dr. Rao was certain that quality should be maintained, Dr. Para remarked. The other characteristics that appealed to him at LVPEI are the compassionate care, empathy and sensitivity. As Dr. Para kept repeating at various meetings, “All of us dream, but Dr. Rao is a man who made his dream a reality. In the morning when we wake up, we forget what the dream was during the previous night, but Nag Rao is exceptional. He has put together a great team to work with him.”

Although it is not comparable, Dr. Para said that Aravind Eye Hospital is backed by the founding family, and there is a bonding among the key family members, who run the institute even while there are differences of opinion. But here, Dr. Rao managed to get diverse people to work together, said Dr. Para, sharing his views on the success of LVPEI. Dr. Rao inspired people to join in his dream and his management practices are very sound.

Also, when you see someone doing good work, someone who has left a lucrative practice and returned to serve his country, then people start feeling for that project, Dr. Para remarked. “He has nurtured and sustained his dream project, improved upon it, and many other facets have been added like research, eye bank, etc., over the years. The institute that he has set up is very creditable, and he has received so many honours, including the appointment as the president of the prestigious Academia Ophthalmologica Internationalis that works with the International Council of Ophthalmology. He has recently been inducted into the Ophthalmology Hall of Fame. He could muster support from the L.V. Prasad family, from the government and from other major supporters. People don’t give money just like that. They all saw in him immense potential to change the face of ophthalmology in the country and in the developing world,” he said.

Dr. Para believed that the community aspect of LVPEI’s work evolved progressively during Dr. Rao’s early years of association with IAPB. Before that, he may have had an idea of setting up an eye hospital and doing some community outreach work, but maybe not on the scale of the pyramid model. To the question whether the concepts of cross-subsidisation and giving high-quality care for the poor were always intended by Dr. Rao, Dr. Para believed it was always Dr. Rao’s intention to provide quality care to the poor,

probably influenced by his father, who was also an ophthalmologist. It cannot be cultivated just like that or as a spur of the moment decision, Dr. Para said.

“LVPEI ranks among the top-quality hospitals in the world,” he continued. “There are outstanding hospitals in the United States and in other places too. The Bascom Palmer Eye Institute in Florida has been ranked at the top for the past several years for the quality of its work and academic research, although it is not involved in charity work.

“In India, it is hard for any institute to beat LVPEI’s work in many areas, which include innovation and eye banking. In the global ranking, LVPEI stands out in the present format of comprehensive care, which deals not only with eye treatment, but also rehabilitation, prevention and other aspects of eye care. The focus is about comprehensive eye care; it is not limited to only treating eye diseases. It is a rare and unique model.”

Medicine is not just a curing profession, it is a caring profession, said Dr. Para. Cure is only one part of the care; care includes preventive, promotive, treatment (curative) and rehabilitative (i.e., helping those who require care beyond medical or surgical treatment). The institute established by Dr. Rao is a hallmark of all these aspects, stated Dr. Para. There are very few institutes in the world that have all these four divisions. Promotive means that you promote the knowledge base for the patient. For example, if one is diabetic, he is educated on how to control diabetes and minimise eye complications caused by diabetes. In a different realm of safety such as in an automobile, educating passengers to wear a seat belt is also promotive care, where activists get policy makers to enact a law about wearing seat belts while travelling in a vehicle.

Sharing his thoughts on the factors that led to building a non-profit institute like LVPEI, Dr. Para said that the most important criteria to rate an eye hospital would be *quality and measured outcomes*. Quality is not just the visual outcome after surgery, but it is also the way the patient is treated while in hospital. “The human element is very important,” he said. “People in this part of the world, here in the Indian subcontinent, have implicit faith in doctors; they see them as God. If the security guard at the gate, or the receptionist, or somebody else in the process of providing care is rude to the patient, that can upset the patient. The doctor has been good, the surgery was successful, but they still leave with a bad memory of their experience. So, quality in every aspect of the hospital’s functioning is very important.”

Second is *equity*, he said. You don’t make a distinction between the rich and the poor. Every patient who is treated free of charge should be given the same treatment and dignity as is given to the patient who pays, although physical facilities, such as the extent of comfort provided to them in the waiting lounge, may vary.

Then, the staff should *absorb the mentality and characteristics* of the people who are leading the institute, and that is not easy given that everyone is facing their own personal pressures. Another aspect is *empathy*, which is not the same as compassion. Compassion means being kind to the patient, but empathy goes a little further, Dr. Para claimed. It means putting oneself in the other person’s situation, understanding them deeply and doing something to mitigate the other’s problem.

All these characteristics put together result in a very satisfied community of people who provide care. In such an institute, patients who seek treatment don’t have to wait too long, as the systems and processes are streamlined. Those are the factors that would be

important to rate an eye care provider. The hospital, to be well-run, must be disciplined, and you must get the maximum out of the donor money and use it appropriately.

Research output is also important, because research is science that is moving forward, he noted. Research can be conducted in areas in addition to science, such as enquiring into the most efficient approach to counsel a patient. One of the big challenges when a group of patients is screened is when some of them refuse to have cataract surgery for various reasons. So you need to have trained counsellors who can explain to them the benefits of the surgery and probably get a satisfied customer to talk to these patients. Counselling in person or over the telephone may be compared with a different method, like providing a printed pamphlet, to assess which of these methods is more effective. Such studies would also fall in the ambit of research. In LVPEI, Dr. Para observed, the research is of very high standards, with advanced and newer methods of treatment that may be effective locally and sometimes even globally.

Training at LVPEI embodies all aspects of comprehensive care, informed Dr. Para. Another special feature here is a very strong rehabilitation base. Most ophthalmologists shun the rehabilitation aspect and send away patients saying that nothing more can be done. On the contrary, so much can be done, even if the patient is beyond improvement through medical or surgical treatment, such as providing low vision glasses and other rehabilitation services. Most eye care hospitals do not cover this aspect because there is no money to be made in it; moreover, it is time-consuming. He adds that most doctors are oblivious to the fact that the patient can be significantly helped with low vision devices; by using these devices, even if the patient cannot read, he/she will at least be independent and mobile. So, comprehensive eye care includes vision rehabilitation services too, opined Dr. Para.

Another element is *accountability*; the institute is strictly accountable for whatever is being done not only to the patient (for the opportunity to serve), but also to the donors (for the funds received). As a result, you can better sustain the institute with more donors coming forward to help. Dr. Para informed that he has observed at various events like Foundation Day in LVPEI, when an audience hears Dr. Rao's speech, they are instantly moved to give to this noble cause. Their giving significant donations is testimony that he can rouse positive emotions in people and inspire them. In this regard, he is indeed a unique leader and the institute he has founded is indeed a unique institute, said Dr. Para.

Dr. Para has seen this organisation grow over the last 33 years, and he shared his views on the challenges facing LVPEI going forward. The need for services is going to increase with the population in the sub-continent increasingly ageing. Problems like cataract or diabetic retinopathy are age-related, and obviously, the need for these services will increase. But in a country like India, especially in the rural and remote areas, there is a need to consider the social determinants of health, such as poverty and the individual's ability to pay for health services, Dr. Para said. One of the challenges for LVPEI could be getting remuneration for what you plan to do, so that you can expand. For financial sustainability, the living standards of the whole community must improve, but that is beyond the scope of such an institute, he admitted. He saw that as a challenge for India, despite the claims that the economy is doing well. Vast numbers of people continue to live in dire poverty. There are also issues related to an increasingly well-educated community, and consequently, patients being more knowledgeable.

While he wasn't comparing institutes, he noted that there is the issue of the behaviour of team members, especially at the lower rungs of the team. He observed that it is the biggest challenge the institute

may face, going forward. Unless we insist that these people change their way of working by improving their personal communication skills, it will be hard for the institute to continue to grow.

Patients are now more knowledgeable than ever before; the middle class can access the Internet and knows about many things. Sometimes, they ask questions to the doctor, such as which type of lens will be fitted into the eye during the cataract operation, etc. The caregiver must patiently provide the answer, and not assume that “I, the doctor” knows best, or that there is no need to inform the patient. Dr. Rao, he said, is conscious of these issues and keeps reiterating to his team members this need of humbly giving information using simple words.

Dr. Para recounted the example of a doctor at an eye hospital who was not sensitive to the delay in attending to the patient, and who then walked away without apologising to the patient, answering a call on his mobile phone while holding a conversation with the patient. This, he says, is a real-life situation that is often seen in most medical set-ups. Doctors should be sensitive to these kinds of issues. While they try to justify that the volumes are very high, and they don’t have the time, etc., Dr. Para exclaimed that sometimes they don’t even ask the patient what their problem is. They just tell them to go and get some investigations done. Acknowledging that this is a challenge, he did not think that LVPEI will take any shortcuts in these matters. At LVPEI, even if the doctors cannot spend a lot of time explaining patiently to the patient, they are supported by counsellors who have been trained to patiently discuss treatment details with the patient.

Dr. Para believed that LVPEI will continue to do well even after Dr. Rao completes his tenure as the founder-chair. He mentioned that a major eye hospital in India had to be reduced to about two units,

because the son of the founder did not have the necessary leadership qualities when he took on the mantle. Running a big hospital like that not only requires money and resources, but also requires that the management and mid-level leaders treat the organisation's human resources properly, he remarked. In its heyday, patients used to come to this hospital for eye surgery even from neighbouring countries. Dr. Para affirmed that he did not see LVPEI folding up because capable leaders have been identified, nurtured and are all set for their future leadership roles.

Of course, one must be accountable, he said; the name and stature that LVPEI has acquired with Dr. Rao at the helm will continue to take it forward. The only point is that Dr. Rao does not have successors from his family.

Speaking from his experience at LVPEI and at some other community hospitals, he declared that community support is very important. While there will be leadership to enforce the work plan, the people in the community should support that vision. Dr. Para disclosed the suggestions he gave to the GPR ICARE team at their review meeting of staff in rural centres. Most of the villagers are associated with expatriates in Dubai, America or other places; so he advised the team to identify such people and do some advocacy, inviting them to visit the eye centre in their hometown and seeking their support for the local eye care programmes. He encouraged them to explore new possibilities, citing the example of the founder of Al-Shifa Trust Eye Hospital in Rawalpindi, Pakistan, who would make frequent trips to other countries to raise funds from the Pakistani community there.

Going forward, Dr. Para said that LVPEI should continue to do what they are doing in the way they are doing it, with maybe some variations depending on technological and other advances. About

growing geographically to reach newer states and countries, he iterated that wherever there is a need and if LVPEI could provide services at no charge to the poor, then it could be done, provided the financial support and human resources were deemed adequate.

In conclusion, Dr. Para wished LVPEI well. He believed that Dr. Rao is doing a tremendous job, with good support from his family and Team LVPEI.

Postscript

“Who should be the next head of the L V Prasad Eye Institute? One clear decision has been made—it should be an ophthalmologist. Yet, there was a discussion whether the successor should be from LVPEI or external to LVPEI. Some years ago, an attempt was made with an external person, and that didn’t go too well, so he left and it was back to square one! My attempt to get out of the [chairman’s] seat at age 58 failed miserably, if I may say so,” comments Dr. Rao.

The next idea was to focus on internal people, and then as a first attempt, Dr. Rao initiated a leadership pipeline for the institute, creating a three-layered succession in the age groups 50+, 40+ and 30+ years. Representatives of these three groups were included in policy making within the Executive Committee (a senior management team), which meets twice a month. In these meetings, all policy-related issues are discussed, and new policies are made, with the endorsement of the board. Through discussions at these meetings, candidates were identified and short-listed.

About five years ago, eight people from the 30 to 40 years age group were identified and given the responsibility to head different speciality services. This gave them an opportunity to develop leadership responsibilities—leading small teams and eventually becoming a part of the pool of future senior leadership. But we did not close the door; we continued to keep our eyes wide open for others with potential who are not in that group, says Dr. Rao. Additionally, four others within the institute who showed potential were identified. So overall, there were about 12 people who fit

the leadership role. Discussions were held with these people—individually and as a group—and six of them expressed interest in assuming bigger responsibilities.

The plan was to zero in on one person by March 2021 through a very transparent and elaborate process. Then that person would work with Dr. Rao for six months, and in October 2021, Dr. Rao will hand over the chair. The process scheduled for 2020 was deferred due to the COVID-19 pandemic, Dr. Rao wrote in an email sent to the entire LVPEI network on 7 November 2020. “We hope to resume it in the coming March, with the new chair taking charge from October 2021,” he communicated.

Elaborating on the progress with this process, Dr. Rao says, “That is the vision I have right now, we are working on it, but we don’t know how well we are progressing. At this point, I can’t assess it. Maybe Dr. G. Chandra Sekhar and others may have a better idea; I may be too close to it to visualise it. Also, we tried testing waters by offering suitable candidates a free hand to make changes and improvements. Only a handful of them exploited the opportunity, in a limited way. These are the various measures we have initiated to put in place the succession plan for the next chair.”

The next steps include having an external committee to look at the shortlisted people and assess them. “The person who takes my place will probably have some disadvantage, because I literally know every brick in the nearly 200 places, big and small, where LVPEI is present. Others are not that familiar with the whole of LVPEI, so that’s the disadvantage for my successor. They must go through a long learning curve, and it’s a steep one,” comments Dr. Rao. “But I am sure that the new chair will learn the ropes quickly and take the institute to the next level.”

A Natural Leader

“You say [about Dr. Rao] he is remarkably soft-spoken, low-key and humble. But, make no mistake. At the same time, he is tough, well-connected and a natural leader. His leadership is a quiet one, and as a good and successful director, he puts the interest of the institute before his own self-interest and will do everything to promote LVPEI to the highest level.”

—Professor Jacob Pe’er, Department of Ophthalmology,
Hadassah-Hebrew University Medical Center, Jerusalem,
Israel

Some Reflections of the Founder-Chair

Managing by Walking Around

“I try to visit most places in the network. I go once a year to the primary centres, multiple times to the 20 secondary centres. This is very important because the people working in these centres deserve a pat on the back from the chair or the vice-chair. These kids work in very difficult conditions in remote locations and tribal areas where there are no worldly comforts that the cities offer, so we must go there and encourage them. I think that’s a very important thing to do.”

Replicating the L V Prasad Model

“I strongly believe that every area of medicine can replicate the L V Prasad model for every speciality; there’s no reason why they cannot. It’s only a matter of willingness, and I would always advise private healthcare organisations that medical care can be provided

easily at no cost to at least 25% of people. Maternal and child health, ENT and deafness, oncology and cardiology are just some of the specialities that are amenable to the LVPEI model. In fact, I believe there is no area of medicine where this model cannot be adopted. One must find mechanisms as there are enough resources in this world to be able to support all that.”

Why Not More Imitators?

“LVPEI has had its own set of imitators. However, these are restricted to ophthalmology. In other specialities, there have been no reports of replication. All that is needed is a catalyst. That ‘one’ organisation or an institute which will be progressive enough to adopt LVPEI’s service delivery model. Eye care in India has a rather unusual lineage because for a long time we have had a culture of eye camps for cataract surgeries. These eye camps are under the supervision of medical colleges, where trainees do the cataract surgeries. Hence, every ophthalmologist who has trained in India, has eye camp experience. Although philanthropic, it is not done the right way.”

Early Influences

“I don’t think there is one single enlightenment I have had; probably, it’s all the way through life, including the influence of my family. My father was an ophthalmologist in private practice, but he would never charge a consultation fee from teachers, students, physicians and their families, and of course, the poor. In fact, he would buy them the medicines he prescribed. As he was a private practitioner, he didn’t have to worry about being bankrupt! We had a comfortable life, and my father always said that money comes and goes, but the only thing that sticks with you is your education.

“He detested the thinking that one should try to have a so-called ‘good lifestyle.’ This influenced me a lot, and even though we were not very well-off, I always felt comfortable in my own life and so did my wife, Pratibha, whose background is a lot like my own. I firmly believe that anyone who walks into the LVPEI campus must not be denied care and treatment. They should be able to access all our facilities, no matter how complicated or serious their illness is.”

Sensitivity

As told by Dr. G. Chandra Sekhar, vice-chair, LVPEI

“Nag has a passion to do the best for the downtrodden and the people who are disadvantaged. Here is an incident that touches my heart every time I recall it. Dr. Rao and I were in a meeting with some administrators from LVPEI. The phone rang. Dr. Rao picked up the phone. The person on the other side told Dr. Rao about a patient who left one of the LVPEI centres because he could not afford the cost of the cataract surgery. Dr. Rao was visibly disturbed. He asked me to find out the cost of the cataract surgery in the area from which the patient came. He told me, ‘Somebody from that village had gone to one of our centres and went back because he could not afford the cataract surgery.’ Fortunately, I had visited that area recently and knew that the average practitioner was not charging less than what we were charging. It was a major lesson for us: to challenge ourselves continually to ensure that our services should be affordable to the middle class, and of course, free for those who cannot pay.

“Let me tell you about another recent incident. I was in a faculty meeting, and we were talking about restructuring our charges. After considerable deliberations, we decided not to increase our charges because we did not want the middle class to feel that we are not accessible to them. This philosophy of Dr. Rao has ensured that we do not increase our consultation fee. In fact, we have retained the same consultation fee for more than 15 years. Keeping our charges affordable to the middle class is as important as providing free care to those who cannot afford to pay.”

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This book is the collective labour of love of the entire LVPEI team. The authors thank all the faculty and staff of LVPEI who made this possible. What we as authors have attempted to do is capture the spirit of the organisation and hope that it will serve to inspire future generations of organisation builders. We have met so many extraordinary people in this great organisation, the views of some of whom have been captured in this compilation. We would like to thank Dr. Gullapalli N. Rao for encouraging us in this very fulfilling endeavour. Special thanks to Ms. Padmini B. Patell for conducting some of the interviews of patients, volunteers and others. Ms. Sana Yaseen helped immensely in the layout of the book. Staff members from Dr. Rao's and Dr. GCS's offices helped in scheduling appointments with the faculty, whose interviews form the central part of the book. The Communications team helped with video recordings and with some resources required for the book. Professor Usha Raman provided useful initial inputs to kickstart the book project. Finally, Chennai Publishing Services have done an excellent job of typesetting and getting the book ready for print. There are many others who have helped make this book a reality. Our heartfelt gratitude goes out to each and every one of them. We wish to thank the dean of Indian School of Business, Professor Rajendra Srivastava, and the executive director of Max Institute of Healthcare at ISB, Professor Sarang Deo, for their support and encouragement.

About the Authors

D.V.R. Seshadri

Since the year 2000 until joining ISB as clinical full professor of business in the marketing area in July 2016, D.V.R. Seshadri has taught in various IIMs (particularly at Bangalore, Ahmedabad and more recently, at Udaipur since 2012). For 15 years prior to 2000, he worked in a variety of companies (public sector, family business and entrepreneurial start-ups, the last 10 of them as CEO) spanning a variety of industries (petroleum refining and petro-chemicals, bulk drugs, active pharmaceutical ingredients, precision manufacturing and software).

Seshadri's areas of interest among others include Strategy, Business to Business Marketing, Innovation, Entrepreneurship and Intrapreneurship, and Leadership. He is actively involved with several NGOs such as the Aravind Eye Care System, Madurai; L V Prasad Eye Institute, Hyderabad; Sant Singaji Institute of Science and Management, Sandalpur; and DHAN Foundation, Madurai, in addition to engagement with several top corporates, such as companies of the Tata Group and L&T. He has been engaged in a teaching/consulting capacity with over 100 large corporates, both India-based and foreign MNCs. He has taught a variety of courses/programmes in MBA, executive MBA, long-duration programmes in public policy, short-duration executive education programmes, etc. Courses that he has taught include Strategy Formulation and Implementation, Business-to-Business Market Management,

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He has co-authored several books: “Innovation Management,” with Shlomo Maital, Sage India in 2007; “Global Risk/Global Opportunity,” with Shlomo Maital, Sage India, in June 2010; the Indian adaptation of “Business Market Management (B2B): Understanding, Creating and Delivering Value,” with James Anderson, James Narus and Das Narayandas, Pearson Publishing, in June 2010; and “Smarteronomics for the Global Manager: Simple, Powerful Macroeconomic Tools for Success in an Uncertain World” with Shlomo Maital, Sage India, 2016. He has developed over 100 case studies and authored several application-oriented journal articles in his areas of interest.

Shlomo Maital

Shlomo Maital is a senior researcher at the Samuel Neaman Institute for Advanced Studies in Science and Technology, Technion-Israel Institute of Technology, and professor (emeritus). He was the academic director of TIM-Technion Institute of Management, Israel’s leading executive leadership development institute and a pioneer in action-learning methods, from 1998-2009. He was a summer-time visiting professor for 20 years in MIT Sloan School of Management’s Management of Technology M.Sc. programme, teaching over 1,000 R&D engineers from 40 countries. He is the author, co-author or editor of 12 books, including “Global Risk/Global Opportunity” (SAGE 2009), “Innovation Management” (Sage, 2007; 2nd edition, 2012) and “Executive Economics” (The Free Press, 1994), translated into seven languages. He was co-founder of SABE-Society for Advancement of Behavioral Economics.

Mr. Maital is married, with four children and 11 grandchildren. He completed the New York City Marathon in 1985 in 3 hours and 51 minutes, and in April 2007, completed the Boston Marathon in about 5 hours. In February 2008, he climbed Mount Kilimanjaro and reached Uhuru Summit. In 2010, he climbed Mount Kazbek in Georgia.

Shobha Mocherla is in communications, L V Prasad Eye Institute, Hyderabad, training newcomers in patient care interactions. She joined LVPEI in May 1996, contributing to the production of medical training and patient education videos, before earning a Ph.D. from the University of New South Wales, Sydney, Australia in 2013, researching patient perceptions of doctor-patient communication in the glaucoma clinic.

Sreedevi Penmetcha has been with LVPEI since August 1991 and has been working closely with Chairman Dr. Gullapalli N. Rao, starting as his secretary and providing him with administrative assistance in various capacities. She has since moved to the role of a part-time consultant in the chairman's office.

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॥चाक्षुषोपनिषत्॥

अस्याश्चाक्षुषीविद्यायाःअहिर्बुध्न्यऋषिः।

गायत्रीछन्दः।सूर्योदेवता।चक्षुरोगनिवृत्तयेविनियोगः।

ॐचक्षुःचक्षुःचक्षुःतेजस्थिरोभव।

मांपहिपाहि।

त्वरितम्चक्षुरोगान्शामयशमय।

ममाजातरूपंतेजोदर्शयदर्शय।

यथाहमंधोनस्यांताकल्पयकल्पय।

कल्याणंकुरुकुरु।

यानिममपूर्वजन्मोपार्जितानिचक्षुःप्रतिरोधकदुष्कृतानिसर्वाणिनिर्मूलयनिर्मूलय।

ॐनमश्चक्षुस्तेजोदात्रेदिव्यायभास्कराय।

ॐनमःकल्याणकरायअमृताय।

ॐनमःसूर्याय।

ॐनमोभगवतेसूर्यायअक्षितेजसेनमः।

खेचरायनमः।

महतेनमः।

रजसेनमः।

तमसेनमः।

असतोमासद्गमय।

तमसोमाज्योतिर्गमय।

मृत्योर्माअमृतंगमय।

उष्णोभगवान्छुचिरूपः।

हंसोभगवान्शुचिप्रतिरूपः।

The sun is supposed to give energy and life to the entire planet, and strength to the eyes. This prayer is for relief from eye diseases and for attaining brilliant vision. Its reading/chanting alone is sufficient. The vision is enhanced, and eyes become brilliant. The prayer is addressed to Lord Surya. It is a prayer to relieve people from their own bad karma from the past life, instill light in their eyes and cure all their eye diseases. It is said that people who read this prayer daily will never suffer from eye diseases, nor will anyone in their family be blind. The prayer ends with salutations to Lord Mahavishnu (the protector of the universe).

Broad Meaning of Chakshushopanishad

This Chakshushopanishad is in the Sanskrit language. This is a prayer to God Surya (the Sun God). It is believed that anyone who recites this prayer daily with concentration, faith and devotion becomes free from all eye diseases.

1. Ahirbughnya is Rushi of this Chakshushi Vidya (Science of the Eye). Gayatri is Chanda, and God Surya is devata of this Chakshushi Vidya. I am reciting this vidya for removing my eye disease.
2. Om! O God Surya, let your lustre and light be settled in my eyes. Please protect me. Protect me. Please remove my eye disease immediately. Remove my eye disease immediately.
3. Please show me your gold-like luster. Please show me light which shows your power. Please ensure that I will not become blind. Please think about my welfare. Bestow welfare to me.
4. I had committed sins in my previous births which are resulting in my eye disease. Please make me free from the bad effect of my sins and remove all my sins of my earlier births also.
5. Om! I bow God Bhaskara (Surya) since you are the cause of creating light and lustre in my eyes (and in everybody's eyes).

Om! Very kind God Surya, you are nectar (Amrut). Hence, I bow to you. I bow to God Surya.

6. Om! I bow to him (God Surya) who is lustre of my eyes. I bow to him (God Surya) who is always sporting (travelling) in the sky. I bow to him (God Surya) who is behind everybody's inspiration of doing something useful. I bow to him (God Surya) who has given shelter to darkness.
7. O! God Surya, please lead me to the truth from non-truth. O! God Surya, please raise me to light from darkness. O! God Surya, please make me immortal from mortal.
8. God Surya is representing heat, and He is very pious and pure. His lustre and light is very powerful and beyond comparison. There is nobody as lustrous as God Surya. Anybody reciting this chakshushopanishad every day becomes free from eye diseases. He will never be a victim of eye disease; nobody from his family too will become blind. The efficacy of this vidya (science) is enhanced for anyone who teaches this chakshushi vidya to others.

Thus, here completes this Krishna Yajurvediya chakshushopanishad.¹⁵

¹⁵ Chakshushopanishad, Krishna Yajur Veda. Chakshushopanishad Mantra. Surya Mantra with music by Vaibhavi S Shete | Eye Cure Mantra <https://www.youtube.com/watch?v=ry1abK4uibw>



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