



## August 2022 at LVPEI

This year, and this 15th of August, is an important milestone for India as we celebrate our 75th Independence Day (*'Azadi Ka Amrit Mahotsav'*). Before I begin this month's newsletter, let me pay tribute to all our forebears who fought for our freedoms. As a citizen of India, I take special pride in the LVPEI family's active contribution to nation-building through our mission of sight restoration and rehabilitation for all. Our impact is not limited to addressing vision impairment alone; it finds its highest expression when we restore dignity, instill confidence, and hope for a brighter future. This is true for the people we care for, and for the many thousands we train and employ. It is my privilege therefore to lead this wonderful team and we will continue to play our role in the progress of our nation.

"Technology Innovation" is one of the ten functional arms of LVPEI. I dedicate this month's newsletter to this aspect of our work and its impact on improved eye care.

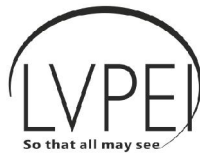
### Exciting innovations

The cornea is a transparent dome of tissue on the front of the eye. It helps focus light and an opaque cornea impairs this critical function. Corneal opacity from a variety of causes is a leading cause of blindness, especially in the developing world, with more than 1.5 million new cases of corneal blindness reported every year. Corneal transplantation using human corneas donated after death is the current standard of care for corneal opacity. Unfortunately, there is a huge gap between the demand and supply of donor corneal tissue in India and most developing nations primarily due to inadequate and sub-optimal eye banking practices.

A team of researchers from LVPEI, the Indian Institute of Technology Hyderabad (IITH), and the Centre for Cellular and Molecular Biology (CCMB), Hyderabad, have collaborated to develop a 3D-printed cornea from human-donor corneal tissue. The researchers used a decellularized corneal tissue matrix and stem cells derived from the human eye to develop a unique, biomimetic hydrogel for the 3D-printed cornea. Developed indigenously through government and philanthropic funding, the product is completely natural, contains no synthetic components, is free of animal residue, and is safe to use in patients. This innovation has the potential to offer a solution to the shortage of donor corneas for transplantation and has great clinical significance. The printed corneas will need to undergo further clinical testing and development before they can be used in patients. I think this is the best gift for the month that marks the beginning of National Eye Donation Fortnight (August 25th to September 8th) – a two-week program observed every year to create public awareness on the importance of eye donation.

Another innovation announced this month is an illuminated microcatheter developed indigenously by our glaucoma colleagues. This is for an improved surgical technique, 'IMPACTT' (Illuminated Microcatheter Passage Assisted Circumferential Trabeculotomy and Trabeculectomy), for the treatment of primary congenital glaucoma - a blinding condition that affects neonates and young children.

Such innovations are made possible and accelerated by an appropriate ecosystem of support, collaboration, and funding. Fortunately, the state government of Telangana fully backs this excellent ecosystem in Hyderabad. LVPEI became a part of this larger support system a few months ago through its BioNEST incubation centre. In August, LVPEI hosted the Hyderabad Incubators Forum's monthly meeting in partnership with the Research and Innovation Circle – Hyderabad (RICH), International Institute of Information Technology – Hyderabad (IIIT-H), IKP knowledge Park and the Atal Incubation Centre of the Centre for Cellular and Molecular Biology (AIB-CCMB). During the meeting, the LVPEI Eye Innovation Centre signed an MoU with AIB-CCMB to support our respective start-ups. I am confident that through such efforts, an excellent ecosystem, and growing partnerships and collaborations, we will play host to many exciting innovations in the health sector in the near future.



## **Anniversaries**

In the month of August, LVPEI's first overseas partnership centre, the Liberia Eye Centre in Monrovia, Liberia, in West Africa, celebrated its fifth anniversary. The Hon'ble Minister of Health of the Republic of Liberia, Dr Wilhelmina Jallah was the Chief Guest for the event attended by prominent dignitaries, partners, and team members. Over the years, the centre has served more than 58,000 patients and performed 4,700 surgeries. It has emerged as a referral centre in the country, providing affordable and high-quality eye care services. The centre was also recognized as the "Best Executed Project" among the various projects supported by the Lions Club International Foundation (LCIF). Please join me in congratulating the entire team running the Liberia Eye Centre for this wonderful achievement.

Another eye centre that celebrated its anniversary in August is located in a remote tribal area in the Rayagada District of Odisha. The Naraindas & Morbai Budhrani Eye Centre celebrated its 7th anniversary this year. This secondary centre is making quality eye care services accessible and affordable to some of the most disadvantaged communities in the region. Supported by the Naraindas and Morbai Budhrani Trust and the JK Centre for Tribal Eye Health, the centre has provided outpatient services to over 108,850 patients and performed 10,343 surgeries, with over 74% of services provided free-of-cost. This year the centre also completed screening of the entire population of the Dongria community – a most backward tribal community of the region.

## **Other highlights**

The Standard Chartered-LVPEI Academy for Eye Care Education conducted 10 training programs benefitting 677 participants.

Anil Mandal of our glaucoma team was honoured with the "Seva Ratna Award 2022" by the Mother (Teresa) Foundation and Agimanailiu K from our research team was awarded the Lady Tata Memorial Trust Junior Research Fellowship.

As I wind down this newsletter packed with stories of innovation and promise, Rukma Bai's story reminds us of the pyramidal model's impact, and grounds us to our true purpose. 90-year-old Rukma Bai was brought to LVPEI's secondary centre in Mudhole, the Bhosle Gopal Rao Patil Eye Centre, with vision loss in both her eyes. She was diagnosed with an advanced cataract in her left eye, and a complicated ocular surface tumour and tear drainage duct infection in the right eye. This scenario was further complicated by her several systemic diseases including hypertension, diabetes mellitus and heart ailments. Realizing the challenges and her inability to travel to a tertiary eye care centre, a team from LVPEI's Kallam Anji Reddy campus in Hyderabad was roped in. A team of physicians from Hyderabad, in collaboration with a local physician, Arjun Desai, thoroughly evaluated Rukma bai and gave a go-ahead for cataract surgery in the left eye. Pratima Vishwakarma, the ophthalmologist at this centre, performed the surgery with Arjun monitoring the patient's vitals. When the eye patch was removed, Rukma Bai lit up with a smile—she was thrilled to be able to see again. Soon, the entire team and Rukma Bai's family joined her in celebrating her regained vision. Rukma Bai's joy is the end-result of a network of committed, excellent teams and their coordinated efforts across our secondary and tertiary centres. My congratulations to all the teams involved in restoring Rukma Bai's sight and dignity, for that is the *amrit* that keeps us going.

-Prashant Garg