

# Note: Innovation at LVPEI

*“When I first landed in Hyderabad with my classmate Eli, I knew that I was entering a new world and opportunity to grow. I had never been to India before, and my first reaction while on the highway to L V Prasad Eye Institute was: How are so many people able to travel the roads at the same time and in such a graceful manner?”*

*...[T]he size and dynamics of Indian traffic leads me to reflect on several questions more directly related to my trip. What does it look like to deliver eye care to such enormous, widespread, and dynamic populations? What type of ambitious planning processes are involved in creating an eye care system at the scale and mission of LV Prasad? How do the unique conditions of LV Prasad enhance the clinical and academic excellence of the ophthalmology, public health, and health economics work that are produced there? The magnificence of the L V Prasad Eye Institute mission fully hit me during our daytrip to the primary and secondary centers outside the main city.*

*In the U.S., I have often gotten the impression that medicine is a fragmented system. Although there are primary, secondary, and tertiary levels of care, these are often separated by institutional barriers. An American primary care physician may not be in the same network as the secondary community hospital, or the tertiary, academic urban hospital. In the context of L V Prasad Eye Institute, I see that the integrated nature of the system makes it more difficult for patients to fall through the cracks and miss important care.*

*By having an in-house Innovation Center, L V Prasad takes personal responsibility and initiative to improve itself while saving some of the costly resources required to entirely outsource a design solution. I think that this combination of innovative design and mobile community care is revolutionary for eye care.”*

These are a few excerpts from Young Sheng’s reflections on his trip to LVPEI and Hyderabad. Young is a MD/MPH student from the Thomas Jefferson University, Philadelphia, who visited us in December 2022.

## Innovation unlocks access

Despite dramatic medical advances, today’s healthcare systems are proving inadequate to address our population’s needs and any emerging challenges. There are glaring gaps and inequities in health care--both within and between nations--exposing our collective failure to share the fruits of health care innovation equitably. The COVID-19 pandemic exploited several such gaps to terrifying effect. The situation is worsened by a lack of priority for ideas and approaches that focus on bridging such inequities. In particular, ideas addressing the complexity and costs burdening our health systems will be key to ensuring equitable access to health care advances.

Young beautifully captures the many challenges LVPEI has had to tackle and overcome in delivering eye care to the teeming millions under our watch. Our institute's ethos is to provide excellence without compromising on equity. We strive to ensure that appropriate and affordable eye care is available to all. To achieve that, we bring eye care closer to those in need so that access to top-quality care is within reach. Further, we deliver the complete spectrum of eyecare: from health promotion to treatment of complex eye conditions, as well as rehabilitation services for those with incurable blindness. We can fulfil these aspirations – aspirations many countries can only dream of—with a relentless focus on innovation, in procedures, processes, and technology.

LVPEI's eye health pyramid is one such innovation, the product of a large public health study – the Andhra Pradesh Eye Disease Study. This model, endorsed by both the World Health Organization and the International Agency for the Prevention of Blindness, seamlessly connects different levels of eye care. Our electronic health record system, eyeSmart, built fully in-house and with close collaboration between technology experts and clinicians is another key innovation. The eye health pyramid and eyeSmart are essential elements of the infrastructure that ensures that patient information and referrals work to provide a seamless experience as the patient passes through the LVPEI network.

### [Ideas and products for change](#)

During the COVID-19 pandemic, country-wide lockdowns left people in no position to visit our centres. In record time, my colleagues built a telehealth application, ConnectCare, which provided tele-consult and video-consult services to people seeking eye care. Today, the product is a mainstream application in our network and will soon be available to other eyecare providers.

Some of our patients cannot visit the network due to disability, or an advanced age. HomeCare, a service first started at our Mithu Tulsi Chanrai campus, Bhubaneswar takes eye care services to such patients' homes. Here again, we had to overcome major logistical challenges to provide a comprehensive eye examination in non-clinical settings. Our teams conceived and deployed a bouquet of tools to meet LVPEI's standard of care. These include the Folding-Forofter to assess refractive error; Grabi or Grabi Plus to capture high-quality images of the eye; a simple, handheld modular slit-lamp to capture and transfer live images and videos for telehealth and synchronous consultation; and tools to assess the field of vision such as OM. HomeCare continues to spark newer innovations.

### [An exciting future](#)

L V P Eye Innovation is the hub of change and product development in the network. It evolved out of the LVP-MITRA program, a 2013 collaboration between LVPEI and the Massachusetts Institute of Technology Media Lab. Our technology innovation team works closely with clinicians and patients to create and refine the range of products I showcased today. We also host a health incubator, the BioNest, to draw in new entrepreneurs and ideas that will seed a new generation of healthcare solutions. A vibrant Technology Transfer Office is in the offing, which would facilitate an internal pipeline of inventions, pursue IP protection and facilitate product commercialization. All this change must deliver value to the communities we work with, so that all may see.

- Prashant Garg