

## THE LIONS EYE INSTITUTE

# An enduring relationship with Indonesia

The Lions Eye Institute (LEI) is proud of its long-standing and mutually beneficial relationships with Indonesian universities and health care providers that are improving the quality of life for Australians and Indonesians.

Through surgical skills transfer, knowledge sharing and the co-designing of treatments for blinding eye conditions, LEI and Indonesian peers are saving people's sight and building a collaborative knowledge bank that will benefit millions.

## A HISTORY OF COLLABORATION

The LEI has a long history of teaching surgical and other skills in Indonesia. Founding Managing Director and LEI Patron, Professor Ian Constable AO, started practising throughout Asia in the 1970s, and in 1976 became a Board member of the Asia Pacific Academy of Ophthalmology.

In that year he travelled throughout South East Asia and did the first vitrectomy surgeries in cities including Jakarta. Professor Constable's interest in restoring sight beyond Australian borders saw Perth doctors regularly travel to Asia to run clinics and, importantly, train local doctors.

*"To operate on a blind person restores sight once, but to teach an intelligent young eye specialist from an area of need new surgical skills provides a lifetime of sight restoration to thousands," he said.*



Indonesia became a major focus for the LEI because of the severity of blindness there – more than three million people are blind, largely due to glaucoma and cataract. "Blindness has a devastating impact on the economic welfare of these communities and it was the inaccessibility to eye care that formed the LEI's collaborative efforts in Indonesia," Professor Constable said.

The strong bond between the LEI and Indonesia was highlighted in the aftermath of the Bali bombings, in October 2002, when a young Indonesian woman was treated by the LEI's Professor Ian McAllister. When the Australian government subsequently committed to funding the Australia-Bali Memorial Eye Centre in Bali, it called on the expertise of the LEI to drive its development.

## BUILDING ON LONG-STANDING TIES

The LEI's Managing Director, Professor Bill Morgan, first went to Indonesia as a young ophthalmologist over 20 years ago, accompanying Professor Constable to Surabaya to do teaching and demonstration surgery.



Professor Morgan has been at the heart of exchange programs between the LEI and Royal Perth Hospital, and Indonesian ophthalmologists for many years. He has also worked with the John Fawcett Foundation, a humanitarian not-for-profit organisation that assists disadvantaged people in Indonesia, particularly in the field of sight restoration and blindness prevention.

In Indonesia, glaucoma is the second most common cause of blindness, after cataract. For Professor Morgan, it quickly became apparent that cataract disease was being brought under control by training surgeons and more accessible surgery, however glaucoma was another matter.

## INDONESIA AND GLAUCOMA

Glaucoma blinds at least 0.2 per cent of the population (this compares to less than 0.07 per cent in Australia). It affects six million people, with an estimated 0.5 to 1 million being blind. Those people's vision could have been saved had the Virna GDD been invented earlier.

In Indonesia, glaucoma is often more severe than in Australia, with patients presenting very late in the course of the disease, often with a blind eye and relatively poor vision in the other eye.

*Professor Morgan said: "By building cost and culturally appropriate techniques, through our experience and research we can amplify our efforts on a scale not seen before in relation to glaucoma. And we can take this experience to other blinding conditions both in Indonesia and Australia."*

## GLAUCOMA IN INDONESIA

**>3 million**

people are blind in Indonesia

**6 million**

people are affected by glaucoma

**0.2%**

of population blinded by glaucoma

**Glaucoma and cataract**

are the two main causes of blindness

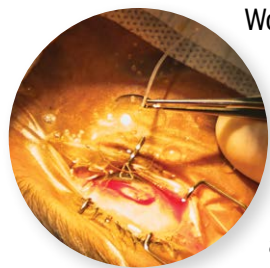
**UP TO 1 million**

people are blind due to glaucoma

### THE VIRNA GLAUCOMA DRAINAGE DEVICE (GDD)

In 2007 a young Indonesian ophthalmologist, Dr Virna Oktariana, came to Perth to work with Professor Morgan and learn trabeculectomy and glaucoma drainage surgery. Through Dr Oktariana and others, Professor Morgan learned that trabeculectomy frequently failed in Indonesian patients with both angle closure and open angle glaucoma, and patients often went blind as glaucoma drainage devices were so expensive. Dr Oktariana sought to do a PhD with Professor Morgan, and took on board his suggestion to design an affordable and easy-to-manufacture glaucoma drainage device that could be readily taught and used by other surgeons.

*Professor Morgan and Dr Oktariana saw the critical need for a cost-effective drainage device to tackle the Indonesian glaucoma crisis that has resulted in blindness for more than one million people.*



Working together with a team from Universitas Indonesia, in 2011 they started work on the Virna Glaucoma Drainage Device, a tube implanted in the eye that drains away fluid and relieves intraocular pressure – a frequent cause of glaucoma and the result of a blockage in the eye’s drainage system. The device comprises a silicone tube attached to a plastic plate, which acts as a soakwell to drain fluid.

With a design brief that stipulated the Virna GDD should be made of obtainable materials that could be manufactured locally in Indonesia, the Virna GDD has revolutionised glaucoma treatment there. It stops approximately 90 per cent of severe glaucoma patients from going blind, and costs just \$150 – in comparison with standard devices costing approximately \$1,500.

Since its launch in June 2019, the Virna GDD has been successfully implanted in more than 400 people, with many Indonesian ophthalmologists now trained in the surgical procedure.

The experience with the Virna GDD has enabled the LEI to appreciate the notion of being able to provide affordable, good quality eye care to major populations, while also proving the efficiencies of trialling devices in patients in a fast and ethical manner.

“We can learn as much from Indonesian ophthalmologists as they can from us,” Professor Morgan said. “For example, the sheer volume of surgeries for glaucoma being done over there is staggering, and the frequency of the advanced and complex eye conditions with which they are faced is enormous. We are learning clinical tips that will be very helpful in the context of Australia’s ageing population and increasing vision challenges.”

### FORMAL LINKS

In November 2019, the LEI signed Memorandums of Understanding with Universitas Indonesia in Jakarta and Universitas Udayana in Bali. The MOUs will strengthen ties and foster more innovations and training opportunities in the future. The LEI also has a long-standing MOU with Universitas Airlangga in Surabaya, signed in 2003.

