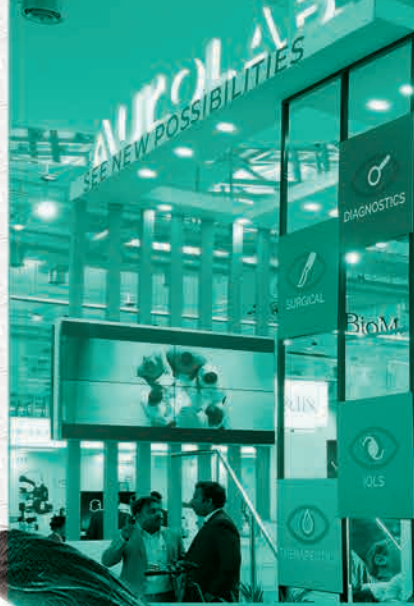


ACTIVITY REPORT

April 2023 to March 2024



ARAVIND EYE CARE SYSTEM
Vision: Eliminate needless blindness



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activity report

April 2023 to March 2024



*I do not want tens of thousands of disciples.
It will be enough if I can get as instruments of God
one hundred complete men free from petty egoism.
I have no confidence in guruhood of the usual type.
I do not want to be a guru.
What I want is for someone, awakened by my touch
or by that of another, to manifest from within his
sleeping divinity and to realise the divine life.
Such men will uplift this country.*

*- Sri Aurobindo
Bengali Writings, p. 372-73*

ARAVIND EYE CARE SYSTEM

Vision: Eliminate needless blindness..



EYE CARE SERVICES

.. by providing compassionate and quality eye care affordable to all



EDUCATION AND TRAINING

.. by developing human resources through teaching and training



RESEARCH

.. by providing evidence through research and evolving methods to translate existing evidence and knowledge into effective action



CONSULTANCY & CAPACITY BUILDING

.. by enhancing eye care through capacity building advocacy, research and publications



OPHTHALMIC SUPPLIES & EQUIPMENT

.. by making quality ophthalmic products affordable and accessible to the vision impaired worldwide



INFORMATION TECHNOLOGY

.. by empowering healthcare institutions through providing Accessible, Innovative, and Affordable digital Solutions

EYE CARE SERVICES

ARAVIND EYE HOSPITALS

Tertiary Eye Care Centres - 7 (Speciality care, Research & Training)

Madurai 1976 | Tirunelveli 1988 | Coimbatore 1997 | Pondicherry 2003 | Salem 2011 | Chennai 2017 | Tirupati 2019

Secondary Eye Care Centres - 7 (Cataract services & Speciality diagnosis)

Theni 1985 | Tirupur 2010 | Dindigul 2010 | Tuticorin 2012 | Udumalpet 2012 | Coimbatore City Centre 2014 | Kovilpatti 2019

OUTREACH PROGRAMMES

Free Eye Camps

3,324 camps were conducted through which 592,297 patients were screened, and 115,508 surgeries performed in the year ending March 2024.

Community Eye Clinics - 7 (Out-patient eye care centres for comprehensive eye examination and treatment of minor ailments)

Melur 2004 | Tirumangalam 2005 | Cumbum 2008 | Madurai City Centre 2009 | Sankarankovil 2010 | Pondicherry City Centre 2011 | Chennai Mylapore City Centre 2023

Vision Centres - 113 (Primary eye care centres for comprehensive eye examination)

ARAVIND INTEGRATED EYE BANK SERVICES

Madurai 1998 | Tirunelveli 2004 | Coimbatore 2005 | Pondicherry 2005 | Chennai 2021

EDUCATION AND TRAINING

ARAVIND EYE HOSPITALS & POSTGRADUATE INSTITUTE OF OPHTHALMOLOGY
LIONS ARAVIND INSTITUTE OF COMMUNITY OPHTHALMOLOGY (LAICO)

RESEARCH

ARAVIND MEDICAL RESEARCH FOUNDATION

DR. G. VENKATASWAMY EYE RESEARCH INSTITUTE

Basic and translational research, Clinical research, Operations research & Product development in eye care

CONSULTANCY AND CAPACITY BUILDING

LIONS ARAVIND INSTITUTE OF COMMUNITY OPHTHALMOLOGY (LAICO)

Sharing best practices of Aravind and Advocacy in eye care

OPHTHALMIC SUPPLIES AND EQUIPMENT

AUROLAB

Intraocular lens, Pharmaceuticals, Suture needles, Equipment, Surgical blades and Special products

INFORMATION TECHNOLOGY

AUROiTECH

EMR/EHR Design, Development and Support, Digital Transformation and Operations in HealthCare, Hospital IT support and management, DevSecops Solutions, Data management, Research, consulting and Training.



One soul at a time

Larry Brilliant, a founding member of Seva Foundation tells the following story of one of his first meetings with Sir. John Wilson, Founder of the Royal Commonwealth Society for the Blind, currently, 'Sightsavers'.

"So Sir John, tell me, exactly how many blind people are there in the world?"

Larry says Sir John turned to look at him then "out of his beautiful blind eyes" and said, "Larry, people go blind one at a time ... one at a time."

It is a hard to forget story, and there is a strangely beautiful paradox here . . .

- the paradox of thinking big picture without losing sight of the details,
- the paradox of being able to think and plan for the future but still live in the Here and Now of each moment...
- the paradox of being able to serve the masses one soul at a time.



Dr. V with Sir John Wilson

Highlights 2023-2024

At Aravind, the past year was marked by the continued expansion of infrastructure, the registration of Aravind's IT wing as an independent entity, Aurolab's rebranding exercise, and the celebration of two decades of service by vision centres as well as Ring of Hope.

Another notable highlight was an Aravind member receiving one of the highest civilian honours from the Government of India. When the news of the Padma Shri award for Dr. Natchiar was announced on the eve of Republic Day, it was a moment of pride and celebration for all Aravind staff alike. As Dr. Natchiar mentioned, "From Aravind, I am the third person to receive it (Dr. G. Venkataswamy in 1973, Dr. P. Namperumalsamy in 2007). This confirms people's trust in the work we do, and we see that as a great recognition."

Construction of the new six-storey building at Aravind-Tirunelveli, covering a built area of over 150,000 sq. ft., was completed, and the grand inauguration was held on 16th April 2023.

The new 440 thousand square feet facility at Aravind-Coimbatore will be completed by September 2024.

In 2011, Aravind-Salem was established in an existing facility modified to accommodate various patient care services. To cater to the steadily increasing patient volume, seven acres of land have been purchased in a nearby area, and the Boomi Pooja ceremony was performed on 22nd February 2024. The new building, spanning 2.25 lakh sq. ft., is expected to be completed by 2026.

The Aravind Eye Hospital at Thanjavur is gearing up for its inauguration, slated to happen by the end of 2024. The building, covering 400 thousand sq. ft., will be the eighth tertiary care centre of Aravind.

The opening of a new state-of-the-art warehouse facility at Aurolab on 1st October 2024 spanning an impressive 1 lakh sq. ft., was a significant milestone. Aurolab also opened a new hostel to accommodate the increasing number of production staff.



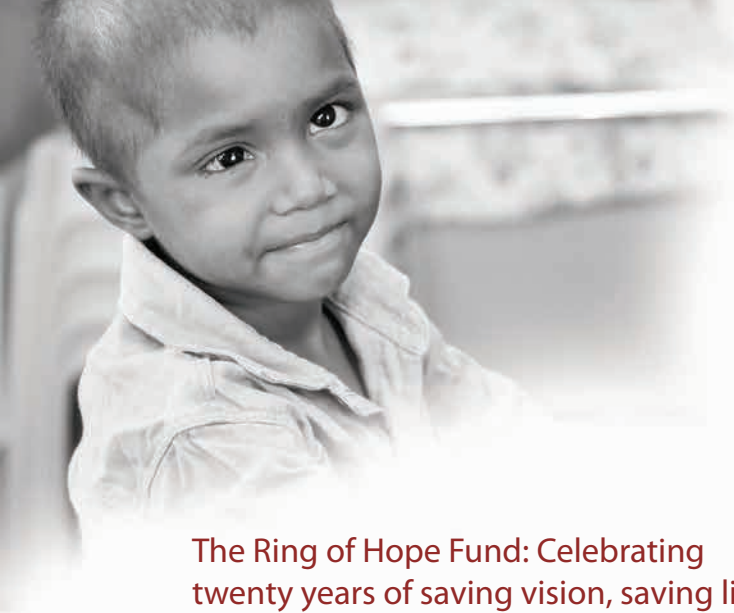
Boomi pooja ceremony for the new facility for Aravind-Salem

Architectural drawing of Aravind-Thanjavur





Aurolab's new state-of-the-art warehouse facility



The Ring of Hope Fund: Celebrating twenty years of saving vision, saving lives

Recognising that 90% of children with Retinoblastoma in developing countries like India die due to the lack of immediate diagnosis and treatment, as well as the high cost of care, Aravind Eye Care System established the Ring of Hope Fund in 2004 to provide free treatment for the underprivileged. Further, to address the inaccessibility and unaffordability of chemotherapy, Aravind-Madurai established a dedicated chemotherapy ward in the same year. The Ring of Hope Fund offers free treatment and rehabilitative services for both children and adults with eye cancer. Over the past two decades, approximately 800 patients have received financial support on their journey to recovery. Aravind honours the resilience of these patients through various initiatives, including the annual survivors' meet, started in 2017. These gatherings bring together patients and their families to share words of hope, offering mutual encouragement and support.

Dr. Usha Kim with a family at the Survivors' Meet



Knowledge sharing session at Arangam

Encouraging Innovations among Staff Members

Arangam 2023 was the first intramural conference initiated at Aravind to provide a platform for staff members, specifically MLOPs and admin staff, to present their innovative practices with scientific evidence in paper, poster and video presentation competitions. This initiative promotes the identification and spread of best practices. By fostering innovation in every department in clinical, non-clinical and supportive functional domains, Arangam encourages continuous improvement.

Vision Centres: 2004-2024

It is over two decades since Dr. G. Venkataswamy, seeded the very first Vision Centre in Ambasamudram, Theni district on 14th April 2004 (currently operating in Kandamanur). His pioneering approach has proved to be the best way of achieving universal eye health coverage and has evolved into a sought-after model, now embraced by various governments and organisations for primary eye care delivery. Over the years, patient visits have surged from 1,639 in 2004 to 996,567 in the year 2023-2024, totalling 7.8 million visits since the inception of the first Vision Centre, benefitting a rural population of over 12 million spread across Tamil Nadu and Pondicherry.

Aurolab 2.0

As part of a rebranding exercise, Aurolab introduced its new logo to reinforce its global reputation as a trustworthy organisation. This initiative was launched during Auro Utsav 2.0, held from 22-25 December 2023. The enhancements in Utsav 2.0, which emphasise customer centricity, a global outlook, professionalism, quality, and innovation, have been integrated into Aurolab's operations to adapt to changing market conditions.

Auroitech

Since inception, Aravind's proactive approach to leveraging technology in healthcare has improved both patients' experience and staff efficiency. The strategy of developing all necessary software in-house and subsequently sharing it with other eye care providers furthers Aravind's commitment to advancing eye care on a global scale. In response to the increasing demand for digital eye care solutions and compliance requirements, the Auroitech Digital Solutions Foundation was established as a separate entity under Section 8 Company on 3rd August 2023. This division started operations on 1st January 2024 with a dedicated team.

Advancing Eye Research

AMRF embarked on a project identifying mutations in myocilin and other causative genes of Juvenile Open-Angle Glaucoma patients at Aravind Eye Hospitals. Notably, clinical glaucoma was detected in more than one member of a targeted family. Additionally, several mutations in myocilin were identified, some of which were deemed pathogenic. The expansion of this study is currently in progress.

Dr. G. Venkataswamy Memorial Oration and Award Ceremony 2023

Aravind Eye Care System conferred the Dr. G. Venkataswamy Memorial Award 2023 upon Prof. Astrid E. Fletcher in recognition of her enduring contributions to eye care and the remarkable impact she has made in the field through her research findings. The grand ceremony was held at Dr. G. Venkataswamy Eye Research Institute, on 30th September. Prof. Astrid delivered the Dr. G. Venkataswamy Memorial Oration on the topic, "Working with Communities: Beliefs and Behavior."

Dr. G. Venkataswamy Memorial Award: Prof. Astrid E Fletcher with Dr. R.D. Ravindran, Dr. G. Natchiar, Dr. P. Namperumalsamy, Dr. Ian Fletcher, and Thulasiraj Ravilla



Patient Care

The heritage of providing quality and affordable eye care services continues to flourish across all Aravind centres. Despite increasing responsibilities, the focus remains on being patient-centric and improving patient satisfaction through innovative strategies. The opening of new hospital buildings and on-going construction projects at new locations exemplifies the hospitals' commitment to its mission of eliminating needless blindness.



EYE HOSPITALS

Infrastructure development

As in the last year, there has been a surge in infrastructure development. At Aravind-Tirunelveli and Coimbatore, newly constructed expansions are much larger than the existing spaces. For over a decade, the staff at both these hospitals have, with great difficulty, made do with the available space to handle the ever growing volume of patients.

At Aravind-Tirunelveli, the long awaited new facility was finally inaugurated on 16th April 2023. With the addition of the new facility with a built area of over 150 thousand sq. ft, Aravind-Tirunelveli can now handle about 3,500 outpatient visits and can perform 300 to 350 surgeries at its 14 operating theatres. The new facility was inaugurated by Padma Shri Nivedita Bide, Vice President, Vivekananda Kendra, Kanyakumari



Dr. R. Meenakshi, CMO, Aravind-Tirunelveli, Dr. G. Natchiar and Dr. R. Ramakrishnan with the chief guests at the inauguration of the new facility at Aravind-Tirunelveli



Aravind eye clinic, Mylapore, Chennai

in the presence of Dr. K.P. Karthikeyan, IAS, District Collector, Tirunelveli.

At Aravind-Coimbatore, the construction of the new facility is in full swing and will be operational from the end of the year. Similarly, the construction of a new facility at Aravind-Salem commenced with the Boomi Pooja held on 22nd February 2024.

Additionally, Aravind's eighth tertiary eye care centre, covering an area of 400 thousand sq. ft, is nearing completion in Thanjavur. This centre will address the long-standing eye care needs of the local population.

Aravind-Chennai opened an eye clinic in Mylapore on 11th September 2023, to make it accessible to the local population.

Initiatives to improve eye care service delivery

A Cataract Education Zone was opened at Aravind -Tirunelveli, on 7th December in collaboration with

The 35 year old Aravind-Tirunelveli building on the left dwarfed by the new facility on the right





Dr. P. Vijayalakshmi inaugurating the low vision clinic at Aravind-Theni

Alcon, to raise awareness among patients and attendants about cataract surgery.

Aravind-Theni opened a Low Vision clinic, focusing on adult rehabilitation.

Aravind-Tirupati has achieved National Accreditation Board for Hospitals and Healthcare Providers (NABH) certification, demonstrating compliance with the standards outlined under the eye care organisation certification programme.

NABH ECO training programme

Aravind-Chennai organised the training programme on 2-3 February conducted by the central team for NABH compliance monitoring. The primary objective was to provide staff members with an orientation to NABH Eye Care Organisation (ECO) requirements, train them to monitor adherence to standards, and execute quality standards in their respective hospitals.

NABH ECO training programme at Aravind-Chennai



Projects to enhance eye care service delivery

Systematic paediatric eye care through sibling screening strategies

Supported by SEVA Foundation, USA, the project was led by Aravind-Tirunelveli to develop an effective system for screening siblings attending tertiary and secondary eye hospitals, as well as vision centres, ensuring the biannual follow up of probands (the first person in a family to be identified as possibly having a genetic disorder) and siblings. During the year 2023-2024, the project teams examined 85,380 paediatric patients, identified 5,278 probands, and counselled 5,936 siblings for eye screening, of which 3,623 siblings have visited the base hospital. This project supported 83 underprivileged patients with surgeries (57 for cataract, 23 for strabismus, and 3 for glaucoma), and provided 281 pairs of spectacles free of cost.

Prevention of blindness due to corneal ulcers

The project aimed to provide awareness about the adverse effects of using traditional eye medicine, and to promote proper methods of applying eye drops. The project involved identification of the prevalence of corneal ulcers, providing prompt medications, and creation of awareness about corneal blindness among the population around Tenkasi district. Aravind-Tirunelveli conducted 12 awareness meetings with around 1,100 participants, and reached 41,778 people. The hospital received 319 calls from the community, with 102 calls (32%) related specifically to cornea. Moreover, a field survey on corneal ulcer was conducted in three clusters to evaluate the community's knowledge attitude and practice (KAP) regarding corneal blindness. During the first phase of the field survey held



Awareness creation through corneal ulcer project

on 7-31 March 2024, 640 responses were collected from six villages.

Integrating school eye health in vision centres

With the support of Aravind Eye Foundation (AEF), USA, the pilot project focused on tackling visual impairment caused by uncorrected refractive errors and other treatable conditions among school and pre-school children in the service areas of Aravind vision centres. This project was implemented in the vision centres around Madurai and Tirunelveli. A total of 40,329 students from 174 schools were screened around Virudhunagar district, and 3,651 children were referred to the nearest vision centres for detailed examination, with 1,676 (46%) visited. Of those referred, 1,146 received spectacles and nine underwent surgery at the base hospital. Further, 174 school teachers were made aware of common children's eye disorders. Apart from this, 47 blind and 37 low vision patients were identified through key informant methods and referred to the

Donna Campbell, Ben, and Vijayakumar visiting the AEF supported vision centre at Cheranmahadevi, Tirunelveli



Smart glass distribution at Aravind-Dindigul

Low Vision Rehabilitation centre at Aravind-Madurai. Four of the vision centres in Tirunelveli district screened 12,079 students from 45 schools. Out of the total, 1688 (15.5%) were referred to the nearest vision centres for detailed examination, with 444 (26.3%) visited. A total of 272 children were provided with spectacles at no cost.

Spectacles for schoolchildren

Supported by AEF, this project aims to provide spectacles for children during the school screening camps conducted by Aravind Eye Hospitals. Last year, 259,555 children were screened, and 12,738 spectacles were provided free of cost.

Eye care support for children with special needs

Supported by Vision Aid, Boston, USA, the Vision Rehabilitation Centre at Aravind-Madurai led various outreach initiatives. Special school screening camps were conducted in October and November 2023 at M.S. Chellamuthu Trust and Balashiksha School in Madurai for children with special needs, benefitting 140 students. In another initiative, nine visually impaired students from Meenakshi College of Arts and Science, Madurai, received comprehensive eye examinations, spectacles, smart vision glasses and pocket video magnifiers. Also, they were enrolled in a digital resource training programme.

Additionally, through the collaboration, 81 individuals received low vision devices, 23 received spectacles, and 20 received smartphones with specialised software, complemented by two days of training sessions.

Further, in partnership with Rotary Club, Madras East, and supported by JM Frictech India, Aravind-Dindigul distributed 50 smart vision glasses to beneficiaries.



Special school screening camp at Madurai

Throughout the year, the vision rehabilitation training initiatives enrolled 269 children in early intervention programmes, benefiting from personalised vision therapy sessions. Moreover, 609 visually impaired individuals received extensive training in orientation and mobility, as well as computer and mobile usage, while 397 were trained in utilising assistive devices for daily activities and independent reading.

Vision For All

Aravind-Theni, with the support from AEF, aimed to conduct comprehensive eye camps, School eye screening camps, Refraction camps, Glaucoma family screening, diabetic retinopathy (DR) screening, and retinopathy of premature (ROP) screening. Over the past year, a total of 1,757 diabetic patients were screened at Theni Govt. Primary Health Centres, with 63 patients diagnosed with DR and referred to the base hospital. Additionally, 1,509 diabetic patients were screened at diabetic clinics, and 62 were identified with DR. As part of the project, 40 school eye screening camps were conducted, screening about 34,000 school children, identifying 4,808 children with eye defects, and providing 1756 eyeglasses at free of cost. A total of 2,606 preterm babies were screened through the tie-ups with Government neonatal intensive care units (NICUs) and private hospitals, with 34 identified as having ROP and referred to the base hospital. Furthermore, a total of 4,309 workplace camps were conducted to detect refractive errors at mills and factories in

Theni district, providing 1,844 glasses and referring 353 persons to the base hospital for further investigation.

Screening schoolchildren

Aravind-Pondicherry, with the support from Trees for Life, USA, has initiated a three-year project to address visual impairment among school-going children in the service area of vision centres in Viluppuram district. This initiative aims to combat the prevalence of uncorrected refractive errors through a vision centre based model started in January 2024. With the aim to screen 70,000 children in the service area of vision centres, the project team has just begun the preliminary activities.

Awareness creation programmes

Aravind actively engages with the community with a variety of methods, including, exhibitions, and awareness programmes, ensuring comprehensive coverage and accessibility to its services.

In an ongoing commitment to raise awareness about the importance of spectacles and proper medication usage among both the public and staff, the Optical and Pharmacy departments at Aravind-Madurai and Tirupati collaborated to organise a one-day optical exhibition on 22nd December and 23rd February, respectively. Similarly, Aravind-Pondicherry organised a five-day exhibition, 'Kannae, Nalamaa,' on 29th November-2nd December, with a focus on educating school and nursing college students, patients and attenders, imparting crucial knowledge about eye care, diseases, and available treatment options.

Optical and Pharmacy awareness exhibition at Aravind-Madurai



Creating Eye Care Awareness in the Community

Kannae Nalamma exhibition at Aravind-Pondicherry



World Diabetes Day



Awarness exhibition, Aravind-Madurai



Awarness rally, Aravind-Dindigul



Awarness talk through FM radio, Aravind-Salem



Diabetes counselling desk, Aravind-Theni

World Glaucoma Week



Glaucoma screening camp, Aravind-Kovilpatti



Glaucoma screening camp, Aravind-Pondicherry



Awareness exhibition, Aravind-Tirunelveli



Awareness exhibition, Aravind-Tirupati

Dr. Sandra raising awareness about Myopia among patients and attendants, Aravind-Coimbatore



PERFORMANCE APRIL 2023 - MARCH 2024

	Total	Madurai	Dindigul	Theni	Tirunelveli	Tuticorin	Kovilpatti	Coimbatore
OUT-PATIENT VISITS								
HOSPITALS								
Paying sections	3,063,055	704,029	103,868	108,283	364,725	65,488	37,623	415,462
Free sections	1,140,815	266,910	20,441	33,870	95,768	17,796	11,645	152,145
OUTREACH								
SCREENING CAMPS								
Comprehensive camps	402,033	102,009	-	16,998	45,998	4,415	2,118	75,535
Diabetic Retinopathy screening camps	26,626	9,680	-	3,266	977	-	-	8,127
Workplace refraction camps	57,803	9,428	-	4,309	14,271	-	-	10,012
Schoolchildren examined by Aravind staff*	72,874	5,897	-	4,462	3,694	-	-	38,907
Paediatric eye screening	7,887	-	-	-	-	-	-	1,045
Mobile van refraction camps	12,955	-	-	-	-	-	-	4,573
RoP-No. of babies screened in NICUs	12,119	2,335	-	1,425	1,901	-	-	4,173
TOTAL FROM SCREENING CAMPS*	592,297	129,349	-	30,460	66,841	4,415	2,118	142,372
VISION CENTRES	996,567	330,895	-	82,057	180,797	-	-	76,581
COMMUNITY EYE CLINICS & CITY CENTRES	216,769	113,809	-	29,999	34,917	-	-	-
TOTAL OUT-PATIENT VISITS	6,009,503	1,544,992	124,309	284,669	743,048	87,699	51,386	786,560
SURGERIES, LASER PROCEDURES & INJECTIONS								
Paying sections	363,330	96,644	7,399	10,006	45,870	4,293	2,117	56,716
Subsidised (walk-ins to the free hospital)	250,349	60,790	3,721	5,665	21,569	2,982	2,131	34,384
Free (through screening camps)	115,508	31,748	704	2,361	11,809	692	458	26,625
TOTAL SURGERIES	729,187	189,182	11,824	18,032	79,248	7,967	4,706	117,725

*While the Aravind team screened 72,874 schoolchildren, an additional 284,766 children were screened by teachers/vision screeners and found to be normal.

SURGERIES

	Total	Madurai	Dindigul	Theni	Tirunelveli	Tuticorin	Kovilpatti	Coimbatore
Cataract surgeries	454,414	111,904	9,878	12,863	43,786	7,006	4,059	64,491
Trab and combined procedures	7,291	1,691	-	30	1,366	2	-	1,402
Retina and Vitreous surgeries	24,060	7,825	-	4	2,524	-	-	6,228
Squint correction	2,941	825	-	-	358	-	-	1,125
Keratoplasty (Incl. Graft procedures, Keratotomies, DSAEK)	4,744	1,491	-	1	968	-	-	880
Pterygium surgery	11,009	2,902	197	311	854	-	23	1,397
Ocular injuries	1,483	411	-	7	138	-	-	338
Lacrimal surgeries	6,076	2,927	-	34	417	-	-	933
Orbit and Oculoplasty surgeries	10,386	2,144	41	145	1,822	35	22	1,678
Refractive laser procedures	11,831	3,129	-	-	1,810	-	-	1,562
Retinal laser procedures	65,602	14,961	-	1,794	9,470	-	-	14,607
YAG laser procedures	58,705	18,043	1,610	1,585	8,204	888	595	6,194
Intravitreal injections (Anti VEGF & Steroids)	48,498	12,186	-	1,157	5,618	-	-	11,375
Other surgeries, Laser procedures & Injections	22,147	8,743	98	101	1,913	36	7	5,515
TOTAL SURGERIES	729,187	189,182	11,824	18,032	79,248	7,967	4,706	117,725

Tirupur	Udumalpet	CBE CC	Pondicherry	Salem	Chennai	Tirupati
62,063	56,618	56,691	314,731	148,679	450,739	174,056
28,519	26,643	-	120,573	64,375	132,738	169,392
6,239	2,872	-	68,754	17,126	41,190	18,779
-	-	-	2,837	1,672	-	67
1,514	944	-	5,237	8,160	3,522	406
-	1,366	-	11,312	5,010	1,748	478
-	-	-	6,462	-	-	380
-	-	-	-	8,382	-	-
-	-	-	469	-	1,466	350
7,753	5,182	-	95,071	40,350	47,926	20,460
22,585	25,968	-	191,338	51,794	34,552	-
-	-	-	33,354	-	4,690	-
120,920	114,411	56,691	755,067	305,198	670,645	363,908
3,581	4,778	4,782	41,602	17,476	53,563	14,503
4,645	6,641	12	30,286	15,324	27,671	34,528
984	581	-	20,129	4,928	8,550	5,939
9,210	12,000	4,794	92,017	37,728	89,784	54,970

This takes the total outreach screening to 877,063.

Tirupur	Udumalpet	CBE CC	Pondicherry	Salem	Chennai	Tirupati
8,037	11,164	3,049	59,361	28,795	52,563	37,458
81	-	34	1,267	57	880	481
-	-	-	2,650	642	2,693	1,494
-	-	-	151	-	289	193
-	-	-	484	42	587	291
141	19	59	1,479	571	1,423	1,633
-	-	-	244	75	106	164
-	-	-	913	18	510	324
46	22	82	1,548	421	1,732	648
-	-	-	1,659	467	2,478	726
-	3	-	8,437	2,310	10,637	3,383
741	703	1,221	5,552	2,424	7,448	3,497
-	-	300	6,181	1,522	6,238	3,921
164	89	49	2,091	384	2,200	757
9,210	12,000	4,794	92,017	37,728	89,784	54,970

In the year ending March 2024, over **6 million** outpatient visits were handled and **729,187** surgeries, laser procedures, and injections were performed across all Aravind Eye Hospitals.



Community Outreach



Annual outreach planning meeting at Aravind-Tirunelveli

Aravind's community outreach initiatives for 2023-2024 impacted patient care. All the centres worked full-fledged to enhance patient care through concerted effort.

During the last year, through Aravind's outreach eye camps, 592,297 patients were screened. Moreover, 115,508 patients underwent surgery for cataract and other conditions.

Sponsors' day

Aravind-Madurai organised Sponsors' Day on 28th October 2024 to honour sponsors for their continuous support in ensuring the uninterrupted operation of the free eye screening camps. 347 sponsors participated in the event. Similarly, Aravind-Tirupati organised this event on 17th December for the first time since its opening, attended by 98 sponsors and volunteers.

Sponsors' day at Aravind-Tirupati...



Annual outreach planning meeting

Hosted by Aravind-Tirunelveli on 4-5 January 2024, the meeting was attended by camp medical officers, camp managers, camp organisers, and admin assistants from all Aravind centres. The team discussed the previous year's outreach performance and planned new activities for the year 2024.

Community Eye Clinics and City Centres

During April 2023 to March 2024, the four community eye clinics and three city centres together handled 216,769 patient visits.

...Aravind-Madurai



Outreach Performance APRIL 2023 - MARCH 2024

	Total	Madurai	Theni	Tirunelveli	Coimbatore	Pondicherry	Tirupur	Salem	Tuticorin	Udumalpet	Chennai	Tirupati	Kovilpatti
FREE EYE CAMPS													
Comprehensive Eye Camps													
Camps	2,015	444	86	263	383	284	31	93	30	26	226	131	18
Patients examined	401,390	102,009	16,355	45,998	75,535	68,754	6,239	17,126	4,415	2,872	41,190	18,779	2,118
Glasses prescribed	86,911	17,367	5,125	10,636	13,363	14,108	2,186	4,223	1,291	737	14,355	3,149	371
Glass delivered	76,133	16,060	4,750	9,298	11,707	12,114	1,912	3,698	1,160	627	11,711	2,759	337
Glasses dispensed on the spot	64,921	14,598	3,968	7,276	10,809	11,092	1,459	2,998	899	453	9,381	1,762	226
Diabetic Retinopathy Screening Camps													
Camps	279	51	79	7	83	42	-	16	-	-	-	1	-
Patients examined	26,626	9,680	3,266	977	8,127	2,837	-	1,672	-	-	-	67	-
Diabetics screened	16,213	5,035	3,266	454	5,034	1,754	-	640	-	-	-	30	-
DR Patients screened	2,117	733	124	113	812	223	-	107	-	-	-	5	-
Refraction Camps													
Camps	272	38	17	65	42	33	9	44	-	4	16	4	-
Patient examined	57,803	9,428	4,309	14,271	10,012	5,237	1,514	8,160	-	944	3,522	406	-
Glasses prescribed	21,728	2,969	1,904	6,364	3,795	1,662	485	3,345	-	135	1,028	41	-
Glasses delivered	19,994	2,872	1,852	6,258	3,328	1,163	396	3,282	-	106	698	39	-
On-the-spot deliveries	15,158	2,592	1,313	4,130	2,614	999	204	2,897	-	51	323	35	-
Refraction Camps by Mobile Unit													
Camps	131	-	-	-	30	-	-	101	-	-	-	-	-
Patients examined	12,955	-	-	-	4,573	-	-	8,382	-	-	-	-	-
Glasses prescribed	3,356	-	-	-	1,154	-	-	2,202	-	-	-	-	-
Glasses delivered	2,606	-	-	-	1,075	-	-	1,531	-	-	-	-	-
Eye Screening of School Children-Base Hospital													
Schools served	592	226	42	84	111	48	-	50	-	5	13	13	-
Camps	359	39	42	59	101	56	-	36	-	4	14	8	-
Teachers trained	635	-	-	-	160	348	-	-	-	-	127	-	-
Total Strength in school	357,640	80,029	25,268	58,391	75,402	58,974	-	36,225	-	4,690	11,312	7,349	-
Children screened by Oph.	72,874	5,897	4,462	3,694	38,907	11,312	-	5,010	-	1,366	1,748	478	-
Children received glasses	14,927	2,473	1,761	2,143	2,504	3,916	-	1,537	-	213	235	145	-
Children identified with eye defects other than Refractive Error	5,764	891	122	957	983	1,567	-	1,101	-	34	65	44	-
Paediatric Eye Screening Camps													
Camps	35	-	-	-	3	28	-	-	-	-	-	4	-
Children Examined	7,887	-	-	-	1,045	6,462	-	-	-	-	-	380	-
Refractive Errors	20	-	-	-	-	-	-	-	-	-	-	20	-
Glasses prescribed	3	-	-	-	-	-	-	-	-	-	-	3	-
Glasses delivered	3	-	-	-	-	-	-	-	-	-	-	3	-
Children id. with eye defects other than Refractive Error	777	-	-	-	13	734	-	-	-	-	-	30	-
RoP Screening													
Screening Visits	2,747	480	131	319	1,412	124	-	-	-	-	236	45	-
Babies screened	12,119	2,335	1,425	1,901	4,173	469	-	-	-	-	1,466	350	-
Babies with ROP	1,315	785	24	118	231	77	-	-	-	-	72	8	-
ROP Babies treated	368	70	21	97	141	20	-	-	-	-	17	2	-
VISION CENTRES													
Centres	113	38	7	19	9	18	3	8	-	3	8	-	-
New + Review	996,567	330,895	82,057	180,797	76,581	191,338	22,585	51,794	-	25,968	34,552	-	-
Out-patients / day	29	29	38	32	30	36	24	21	-	28	14	-	-
COMMUNITY EYE CLINICS AND CITY CENTRES													
Centres	7	3	1	1	-	1	-	-	-	-	1	-	-
New + Review	216,769	113,809	29,999	34,917	-	33,354	-	-	-	-	4,690	-	-
Outpatients / day	106	122	97	113	-	108	-	-	-	-	26	-	-

Vision Centres (VC)

As of March 2024, Aravind's vision centres counts 113, a remarkable rise of 6 vision centres in different regions.

Through the Mission for Vision, 16 vision centres were upgraded with equipment such as fundus cameras and slit lamps, worth an investment of approximately 60.5 lakhs.

Support for scaling up of vision centres, beyond Aravind

In line with Dr. V's mission of achieving universal coverage in eye care services, Aravind has been instrumental in supporting the Government of Bangladesh in establishing vision centres since 2018. In 2023-24 alone, 65 new community vision centres were inaugurated, bringing the total to 200 across the country. The Bangladesh govt. is planning to establish an additional 250 vision centres to cover the entire population.

Eye care awareness programme among rural communities

Several eye care awareness programmes were organised in the areas surrounding the vision centres to educate

rural community members, about general eye care and the facilities available at the nearest vision centres. The Aravind field workers, with support from self-help group members, actively engaged in creating such awareness. Last year, a total of 13 programmes were conducted, with 1,053 participants attending and 113 patients visiting the vision centres.

Health education refresher course for Novartis Arogya Parivar team

27th June, 2023

As part of the collaborative activities between Aravind-Madurai and Novartis Arogyaparivar, an observation team visited the surrounding villages of four vision centres at Natham, Sanarpatti, Vadamadurai, and Thuvarankuruchi to assess the impact of health education provided by the vision centre. They observed variations in knowledge regarding eye conditions and noticed differences in the delivery of health education. These variations have resulted in a reduced impact of health education and referral cards within the community. To address this issue, a refresher course was organised for the Arogya Parivar team at Aravind-Madurai. Field workers from REACH project and vision centre also participated in the programme.

Vision centres inaugurated in 2023 - 2024

Dr. Nandha Kumar inaugurating the VC at Pattabiram, Chennai, on 7th April



Dr. R. Kim inaugurating the VC at Vaiyampatti, Madurai, on 12th October



MJF Ln. Dr. G. Narasimman inaugurating the VC at Vettavalam, Pondicherry on, 22nd November



Dr. R. Ramakrishnan inaugurating the VC at Kalakkad, Tirunelveli, on 8th December

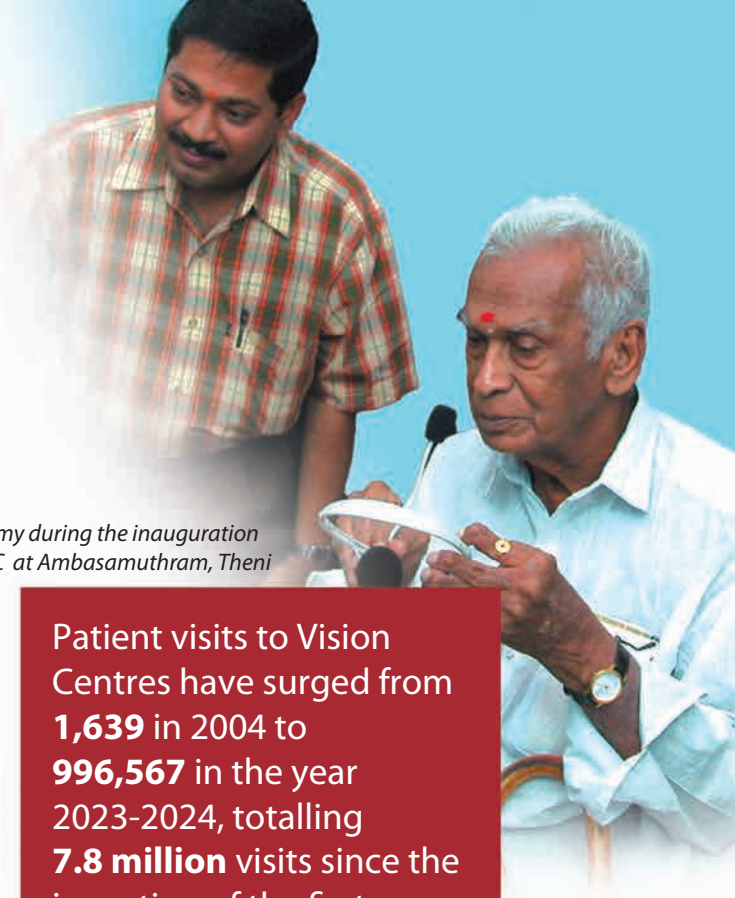
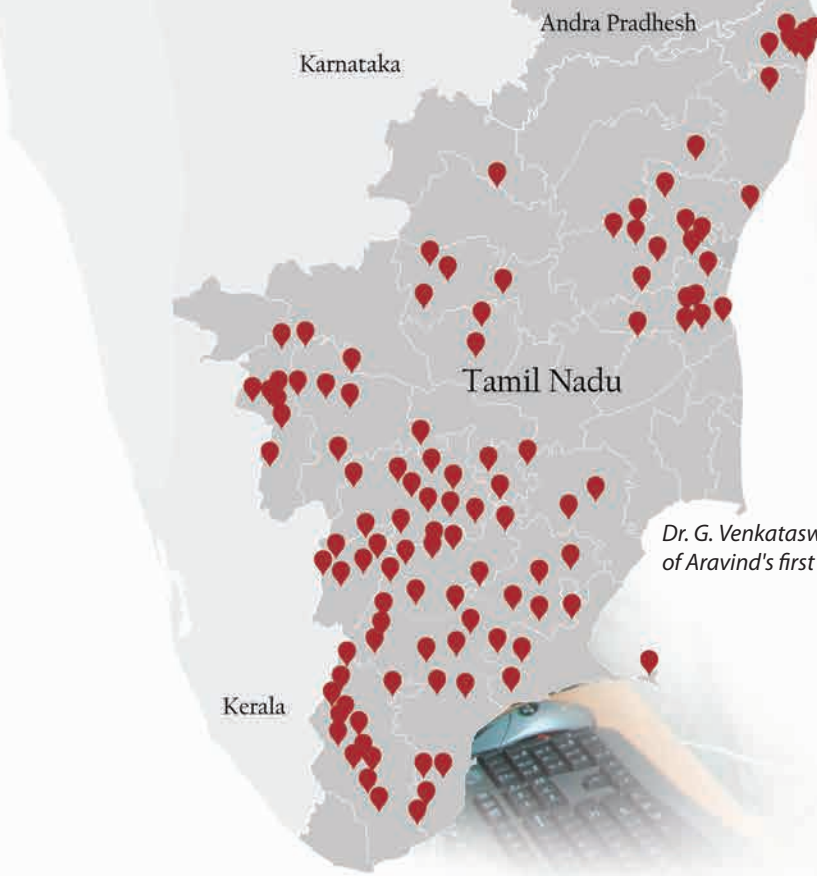


R. Jeyaramkrishnan inaugurating the VC at Komaralingam, Coimbatore on, 24th January



Dr. Usha Kim and the VC team at the inauguration in Samayanallur, Madurai, on, 9th February





Dr. G. Venkataswamy during the inauguration of Aravind's first VC at Ambasamuthram, Theni

Patient visits to Vision Centres have surged from **1,639** in 2004 to **996,567** in the year 2023-2024, totalling **7.8 million** visits since the inception of the first Vision Centre.

Vision Centres: Stepping into 21st year

The popularity of the Vision Centres is evident in the growing number of patient visits. Over the years, patient visits have surged from 1,639 in 2004 to 996,567 in the year 2023-2024, totalling 7.8 million visits since the inception of the first Vision Centre, benefitting a rural population of over 12 million spread across Tamil Nadu and Pondicherry.

Aravind is committed to realising Dr. V's vision of achieving universal eye health coverage by deepening its work in Tamil Nadu and scaling the Vision Centres beyond Aravind and India, through other agencies. Aravind is aspiring to ensure easy access to eye care for one billion people worldwide through vision centres. LAICO has facilitated the establishment of vision centres in several states in India- Tripura (40 centres), Chhattisgarh (12 centres), and Tamil Nadu (232 centres in addition to Aravind's Vision Centres). Furthermore, Aravind and LAICO are providing necessary technical and training support to the Government of Bangladesh to establish vision centres in each of its 420 sub-district (upazila) hospitals. Currently, 255 vision centres have been established in sub-district hospitals, with plans to cover the rest, thus helping Bangladesh to move closer to the goal of universal eye health coverage.

Accessing eye care services has always been a significant challenge for those living in villages and remote areas of Tamil Nadu. Since inception, Aravind has conducted several operations research projects to overcome this barrier so as to make eye care accessible to all. Free eye screening camps have been effective, but only a fraction of those who needed care came for these camps. The introduction of low cost teleophthalmology made it possible for Aravind to reach out to those in remote areas and effectively address the vision issues of local communities. This pioneering approach has evolved into a sought-after model, now embraced by various governments and organisations for primary eye care delivery.

Dr. G. Venkataswamy, seeded the very first Vision Centre in Ambasamudram on 14th April 2004 (currently operating in Kandamanur). Presently, there are 113 vision centres across Tamil Nadu and Pondicherry. These centres work under Aravind's network of tertiary and secondary eye hospitals, which provide clinical support through telemedicine as well as required managerial support.



Aravind Integrated Eye Bank Services (AIEB)

Driven by the vision of providing solutions to corneal blindness, AIEB works with the communities, hospitals, and volunteers in terms of creating awareness, training volunteers, coordinating death notifications, and effectively managing eye donation calls.

In the past year, AIEB has achieved significant milestones. Nearly 55% of the corneas have been collected through community cornea retrieval programme, demonstrating the impact of community engagement. Collaboration with 13 government hospitals, from Tamil Nadu, and two hospitals in Pondicherry yielded 45 % of the corneas through hospital cornea retrieval programme. AIEB has distributed corneas, sclera and AMG to 54 institutions.

With the continuous efforts, for the first time, AIEB has achieved the milestone of crossing 3000 tissues in a year. January 2024 alone witnessed the collection of 362 eyes, another record, marking a steady ascent in the mission to restore vision for those in need.

Last year, AIEB launched the hospital cornea retrieval programme at Government Medical College and Hospital, Ramanathapuram. Further, it successfully renewed the quality certification from Sightlife, USA, which is valid for a year.

Observing eye donation fortnight

Blind walk - Awareness rally, Aravind-Madurai



Drawing competition, Aravind-Kovilpatti



Guest lecture, Aravind-Tirupati



Awareness rally, Aravind-Salem



Training

Rotary Aravind International Eye Bank (RAIEB), Aravind-Madurai offered training to nine eye bank technicians, an eye donation counsellor, and two co-ordinators.

Awareness creation

Aravind Eye Banks regularly organise awareness programmes with support from volunteers, educational institutions, clubs and hospitals. Moreover, the 38th National Eye Donation Fortnight was observed from 25th August to 8th September with a variety of programmes intended to sensitise the public on the importance of eye donation and seek their support.

Statistics

Centre	Eyes collected	Eyes utilised for corneal transplantation	Sent to other institutions
Madurai	3269	1009	201
Coimbatore	887	458	5
Tirunelveli	917	309	15
Pondicherry	734	415	14
Chennai	308	229	0
Total	6115	2420	235

Education and training programmes at Aravind refer to a broad spectrum of training programmes offered through Aravind Eye Hospitals and Postgraduate Institute of Ophthalmology, and LAICO - beginning with skill training of all ophthalmic and allied staff to creating awareness among the public on eye care. Apart from the postgraduate and fellowship programmes in ophthalmology, there are various courses offered to train all cadres of staff needed to run an eye care centre effectively.

Education & Training





In the last year (April 2023 - March 2024), 578 candidates underwent training at various clinical and management courses offered at Aravind.



Aravind's range of courses has been designed to enhance the skills and capabilities of various cadres of staff across the globe, in order to enhance eye care service delivery.

POSTGRADUATE COURSES

Master of Surgery in Ophthalmology (3 years)	20
Diplomate of the National Board (3 years)	23
Post DO DNB (2 years)	29

LONG-TERM OPHTHALMOLOGY FELLOWSHIP

Ant. Segment / Intraocular Lens Microsurgery (2 years)	24
Orbit & Oculoplasty (18 months)	11
Paediatric Ophthalmology & Strabismus (18 months)	13
Glaucoma (2 years)	23
Retina and Vitreous (2 years)	26
Comprehensive Ophthalmology (2 years)	03
Cornea (18 months)	26
Medical Retina (1 year)	07
Uvea (1 year)	02
Fellowship in General Ophthalmology	17

SHORT-TERM OPHTHALMOLOGY FELLOWSHIP (INTERNATIONAL)

Orbit & Oculoplasty (6 Months)	02
Surgical Paediatric Retina Fellowship (ROP) (1 year)	01
Cornea (1 year)	01
Glaucoma (1 year)	01
Paediatric Ophthalmology & Strabismus (6 months)	02
Retina and Vitreous (1 year)	01

SHORT-TERM CLINICAL COURSES FOR OPHTHALMOLOGISTS

Clinical Observership Programme in Diagnosis and Management of Glaucoma (1 month)	07
Neuro-Ophthalmology (3 months)	07
Phacoemulsification (1 month)	63
Small Incision Cataract Surgery (1 month)	62

Training in Virtual Vitrectomy (2 weeks)	02
Management of Retinopathy of Prematurity & Paediatric Retinal Disorders (1 month)	07
HelpMeSee Simulation-Based Training in MSICS (1 week)	05

LONG-TERM PARAMEDICAL COURSES

Fellowship in Optometry (2 years)	03
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SHORT-TERM PARAMEDICAL COURSES

Vision Technicians	04
Fundus Fluorescein Angiography and Ultrasonography	02
Optical Dispensing	04
Short-Term Course in OT Techniques	02
Short-Term Course in Refraction Techniques	05
Training for Ocularist	05
Training for Orthoptist	02

MANAGEMENT COURSES

Fellowship in Eye Hospital Management (1 year)	08
Community Outreach and Social Marketing for Eye Care Services (3 weeks)	27
Eyexcel – Excellence in Eye Care Training (5 days)	18
Management Priorities in Eye Care Delivery (1 week)	24
Management Training and Systems/ Development for Hospital Administrators/ Managers (1 month)	19
Management Training for Eye Care Programme Managers (2 weeks)	20
Online Project Management for Eye Care (1 month)	15
Ophthalmic Instrument Maintenance - For Technicians (1 month)	24
Ophthalmic Instruments Maintenance (Online)	08
Eye Bank Management	03

Aravind Eye Hospitals ensure that doctors, MLOPs, and staff members remain updated with the latest trends in various fields in eye care. The CMEs on a variety of topics in ophthalmology facilitate both internal and external participants stay well-informed about new developments, revolutionary changes, and technological updates in their respective fields.

Continuing Medical/ Professional Education (CME/CPE) programmes

Dacryocystorhinostomy (DCR)

- From inside and outside

Aravind-Madurai, 3rd June 2023

The one-day CME focused on the anatomy, complications and management of lacrimal system disorders. Dr. Devjyoti Tripathy, LV Prasad Eye Institute, Bhubaneswar handled a session, sharing his vast experiences in the field.

Secondary IOL workshop

Aravind-Madurai, 17-18 June 2023

The workshop comprised classroom lectures, video sessions, and hands-on practice using goats' eyes, skilfully moderated by internal faculty members.

CME on Blindness Prevention

- For general practitioners and ophthalmologists

Aravind-Theni, 2nd July 2023

Organised in collaboration with the Tamil Nadu Ophthalmic Association (TNOA), the goal of the CME was to share recent discoveries in the field of

Dr. Devjyoti Tripathy lighting the lamp at the CME on DCR



Participants at the CME on Blindness Prevention

ophthalmology, emphasising the role of physicians in preventing blindness.

Uveitis - Matching the trend with the basic principles

Aravind-Tirunelveli, 9th July 2023

To familiarise the participants with the revolutionary changes and updates in the field of Uvea, a panel of national-level faculty was invited to discuss the recent trends and advancements in Uveitis.

TNOA ARC – Comprehensive Ophthalmology

Aravind-Tirunelveli, 16th July 2023

The CME was hosted in collaboration with TNOA. Dr. R. Ramkrishnan, President - TNOA & Advisor, Aravind-Tirunelveli, delivered the presidential address. TNOA office bearers Dr. Mohan Rajan, the



Participants at the Secondary IOL workshop





Dr. Mohan Rajan lighting the lamp at the CME on TNOA ARC



Dr. M.G. Rajinikanth delivering the presidential address at the Endovision 2023

former President, Dr. Nirmal Fredrick, President-elect., Dr. Sriram Gopal, Secretary, Dr. Ravishankar, Joint Secretary, participated as guest faculty.

Refractive Cataract Surgery - A virtual workshop

Aravind-Chennai, 20-21 July 2023

The workshop aimed to provide valuable insights into the science, preoperative evaluation, surgical factors, and postoperative evaluation of toric, multifocal, and extended depth of focus IOLs.

NeuroInsight

Aravind-Tirupati, 22-23 July 2023

The CME, focusing on the latest developments in Neuro-Ophthalmology in 2023, brought together a diverse group of experts, including neurologists, radiologists and neurosurgeons. The sessions comprised a comprehensive overview of basic neuro-ophthalmic examination techniques and advanced investigative modalities. In addition, a workshop was conducted,

NeuroInsight team at Aravind-Tirupati



featuring various specialised topics, including, Hess & diplopia charting, Visual fields in Neuro-ophthalmology, OCT & FFA, and Neurological evaluation.

Endovision 2023 : 1st Mid-term conference of All India Rhinology Society (AIRS)

Aravind-Madurai, 25-27 August 2023

Aravind-Madurai and Harshini Hospital, Madurai, jointly hosted this CME involving a multidisciplinary group of speakers from various subspecialties across India. The CME focused on advancements on endoscopic orbital surgeries, discussing cutting-edge techniques, technologies, and trends in the field.

Unlocking the Mysteries of Cerebral Visual Impairment : The journey to vision and brain

Aravind-Madurai, 2nd September 2023

The CME was organised to raise awareness about cerebral visual impairment (CVI) and all its aspects. It featured a first-ever hands-on training session on dynamic retinoscopy, functional vision assessments,



Dr. Sahithya at the CME on Unlocking the Mysteries of Cerebral Visual Impairment

and recent technology-driven interventions. Topics discussed included setting up a CVI clinic, the importance of rehabilitation strategies, the availability of facilities for children with CVI, and the impact of rehabilitation on the children and their parents.

Cornea Fest

Aravind-Coimbatore, 15th October 2023

The CME on Cornea included topics such as microbial keratitis, management of PUK case-based approach, and all about ocular allergies.

Keraventure 2023

Aravind-Pondicherry, 8th October 2023

The first edition of Keraventure focused on enhancing keratoplasty practices among budding ophthalmologists as well as established cornea surgeons. A 3D surgical show was presented by the department of Cornea and Refractive Services. Aravind doctors also provided



Dr. J.K. Reddy lighting the lamp at the Cornea Fest - CME

an immersive experience of penetrating and lamellar keratoplasty surgeries like DALK, DSEK, and DMEK.

OrthopTricks

Aravind-Tirupati, 29th October 2023

The CME focused on the basics of binocular single vision, simplifying strabismus, decoding vision therapy, deciding on the new myopia spectacles and a glimpse of all the new technological advances. The highlights of the programme included a quiz contest, exhibiting various evaluation methods and exercises related to convergence and accommodation.

Diagnostic Skill Transfer Course

Aravind-Pondicherry, 5th November 2023

This annual postgraduate teaching meet, focused on imparting practical aspects of various ophthalmic investigations through live demonstrations and small group/one-on-one interaction activities. Participants

Participants at the CME on OrthopTricks



Participants at the Diagnostic Skill Transfer Course





Dr. Sirish interacting with the delegates during the CME on Basics of Glaucoma

were taught to interpret all essential ophthalmic investigations, aided by live demonstrations at multiple stations.

Basics of Glaucoma

Aravind-Theni, 5th November, 2023

This CME was organised under the guidance of the Glaucoma India Education Program (GIEP) with the aim to help postgraduates and fellows understand the fundamentals of glaucoma.

Simulator-Based Training in Manual Small-Incision Cataract Surgery

Aravind-Madurai, 4-5 November 2023

The workshop featured classroom lectures, complex case-handling video sessions, and hands-on practice in the simulator. The sessions were moderated by faculty from both Cataract clinic, and HelpMeSee Inc. Participants from various medical colleges benefited from the workshop.

Participants at the Research Methodology workshop



Participants of Simulator-Based Training in Manual Small-Incision Cataract Surgery

Paediatric Ocular Health: Fostering mutual understanding

Aravind-Tirunelveli, 5th November 2023

The CME aimed at fostering mutual understanding between the two pillars of children's eye health: Paediatrics and Ophthalmology. Experts in the fields presented on recent developments in child care.

Research Methodology Workshop

Aravind-Pondicherry, 7th November 2023

Aimed to benefit the newly joined residents, the workshop provided a comprehensive overview of research principles, guiding the participants from the formulation of a research idea to the development of a solid study protocol, utilising various research tools. The session featured hands-on experience on Zotero, a citation manager, and literature review techniques.

Workshop on the Care and Maintenance of Ophthalmic Instruments and Equipment

Aravind-Pondicherry, 25th November 2023

The 4th workshop organised by the Biomedical Engineering department, featured comprehensive



At the Symposium on Diabetic Retinopathy

training, including powerpoint presentations, instructional videos, and live demonstrations on maintaining, cleaning, and repairing various ophthalmic instruments. Skilled optometrists and biomedical engineers participated in this event.

'Diabetes and I' Retinopathy and Beyond

Aravind-Tirunelveli, 26th November 2023

In connection with World Diabetes Day, the CME was organised on the theme of diabetes and its broader implications. Various insightful sessions highlighted on the systemic manifestations and the latest advancements in diabetes management. Fellows and postgraduates from Aravind, as well as postgraduates from Tirunelveli, and Tuticorin Medical Colleges took part in the event.

Hackathon 5.0

Aravind-Pondicherry, 5-7 January 2024

Aravind Centre for Eyecare Innovation (ACEi) organised its 5th annual Hackathon, drawing

participation from around 80 Aravind staff members including doctors, managers, technicians, and MLOPs. Additionally, 43 students from VIT, Chennai, and Vellore, and IIT Tirupati joined forces to find solutions. A total of 128 problem statements were collected prior to the event, ultimately selecting 32 of them for the Hackathon. The top five innovations were awarded. Engineers from Aurolab, Remidio, and Alfaleus provided on-site technical support for the event.

Symposium on Diabetic Retinopathy

Aravind-Madurai, 27-28 January 2024

The two-day symposium aimed to create a platform for discussions on retinal damage due to diabetes and the latest advancements in treatment procedures. Renowned experts in the field from the USA and Israel were involved in the discussion virtually. Sessions highlighted topics such as epidemiology, clinical pearls in diabetic macular edema (DME), investigative modalities, surgical modules, and the future of diabetic retinopathy (DR).

Participants of Hackathon 5.0 presenting their innovative solutions





Participants at the workshop on Seven Habits of Highly Effective People

Seven Habits of Highly Effective People

Aravind-Madurai, 30-31 January 2024

The Central HR team organised the two-day workshop focussing on empowering participants with essential principles for personal and professional growth. Conducted by the certified trainer, Cindy Harrison - Vice President, Human Resources, Henry Ford Health System, USA. The workshop included interactive sessions, group discussions, and practical exercises. These sessions helped attendees gain insights into each habit and apply them in their daily lives.

Phacoexcel Workshop

Aravind-Madurai, 10-11 February 2024

The CME, under the theme of “Explore the Excellence”, featured classroom lectures and video sessions on complex case handling. Renowned international and national speakers, along with internal faculty members from Aravind, led the sessions. Additionally, a pre-conference workshop, held the day before the main event, provided hands-on training in secondary IOL implantation and simulated phacoemulsification techniques.

Retina4U

Aravind-Pondicherry, 18th February 2024

The one-day CME featured talks by speakers from leading institutes and by internal speakers covering a wide spectrum of topics in Intravitreal injections such as retinal vascular disorder, age-related macular degeneration, inflammations, and infections including the intravitreal injection technique. The CME featured didactic lectures and hands-on training activities.



Hands-on training at the Phacoexcel Workshop

Dry Labs

Aravind-Coimbatore, 18th February 2024

The 5th edition of the CME saw the participation of 190 postgraduates from 36 institutions from Tamil Nadu, Kerala, and Andhra Pradesh. They were divided into eight groups and rotated to eight stations namely cornea, glaucoma, retina, neuro-ophthalmology, squint, orbit, retinoscopy and electrophysiological studies. The highlight of the CME included, interactive sessions, viva voce, retinoscopy with model practice eyes, Kahoot quiz, and distribution of the course materials. There were 12 mentors guiding 20 faculty members, conducting the dry labs.

Paediatric and Squint Symposium (PASS 2024)

Aravind-Pondicherry, 24th March 2024

The symposium aiming to share advancements in paediatric ophthalmology provided insights into the latest research areas, techniques, and best practices. There was a workshop featuring live demonstrations of essential concepts in strabismus drawn significant

Participants at the Dry Labs



interest, especially from postgraduates. During the workshop, the intricate physics behind various tests were elucidated using models and practical demonstrations. A notable highlight of the event was the wet lab session, which focused on training for capsulorhexis with forceps.

Symposium on Basics of Clinical Perimetry

Aravind-Madurai, 31st March 2024

The symposium in collaboration with the Madurai Ophthalmologists Association, focused on the basics of autometer perimetry, interpretation of visual fields on autoperimetry, perimetric interpretation of glaucomatous visual field and structure function correlation. Dr. Gudimetla Ramachandra Reddy, Ophthalmologist, Dr. G.R. Reddy Eye Care Centre, Tadepalligudem, Andhra Pradesh, delivered the keynote address on structure function correlations, and engaged in interactive discussions on complex concepts in perimetry.

For Aravind's Mid-level ophthalmic personnel (MLOP)

Dispensing of Spectacles

Aravind-Coimbatore, 14-15 April 2023

The workshop aimed to enhance the clinical knowledge of trainees and keep them updated on various types of spectacles and the available coatings. Topics including single vision and their coatings, Kryptok bifocal, D-shaped bifocal, executive bifocal, progressive lens, spectacle correction for patients, and paediatric spectacle correction were discussed.

CME for Pharmacy staff

Aravind-Madurai, 1-2 November 2023

Aravind-Madurai organised its first-ever CME for the staff members, covering a wide variety of topics such as

Workshop on Dispensing of Spectacles



CME for Pharmacy staff

the importance of uvea medications, neuro medications, glaucoma medications, classification of ophthalmic drugs, effective communication with patients, and reorder level and dispensing error. Additionally, there was a quiz contest on pharmacy medications.

CME on Patient Safety for Medical Record Department (MRD) staff

Aravind-Coimbatore, 4-5 January 2024

The CME focused on the significance of patient safety, featuring various topics including, incidents, near misses, and sentinel events, communication tips for success, documentation of near misses and incident reporting, professional etiquette and importance of interdepartmental relationships. These sessions guided the participants creating a professional climate in their working environment.

CME for Vision Centre staff

Aravind-Madurai, 7th January 2024

Staff members from 37 vision centres operated under Aravind-Madurai, participated in the CME. The sessions covered a range of topics, including clinical updates, adherence to clinical protocols, reorientation to fundus imaging, cataract follow-up at vision centres, optical and innovative anterior segment imaging, and self-motivation.

CME for Vision Centre staff



Internal Capacity Building

Aravind constantly seeks ways to enhance patient care by exploring new avenues to address eye care-related issues. It facilitates training of clinicians to develop their knowledge and skills to improve patient care. In this regard, the NIH D43 Fogarty programme extends support in terms of capacity building and the execution of innovative and collaborative global research projects. Aravind collaborated with the University of Michigan (UM) to train Medical Consultants to become successful clinician-scientists. Gaining the skills, mentorship, and experience to design and lead high impact clinical and epidemiologic research studies, the participants contribute to reducing the impact of blinding eye disease in India and beyond.



Dr. Karthik, Medical Consultant, Retina & Vitreous Services, and Dr. Divya, Medical Consultant, Cornea & Refractive Services, Aravind-Chennai, completed Micromasters in Clinical Epidemiological Research from the University of Michigan during the 2022-23 academic year, aided by NIH D43 Fogarty. Dr. Karthik focused on Artificial Intelligence in Ophthalmology while Dr. Divya focused on Keratoconus and dry eye disease.

Dr. Annamalai, Medical Consultant, Glaucoma Services, Aravind-Pondicherry, and Dr. Neelam Pawar, Medical Consultant, Paediatric Services, Aravind-Tirunelveli, visited University of Michigan during 2023-2024. Dr. Annamalai conducted a full time collaborative and mentored research specifically related to family screening in glaucoma. Dr. Neelam did her research on Artificial Intelligence in paediatric myopia at Kellogg Eye Center, MI, USA. Additionally, both of them attended courses on Biostatistics and Epidemiology at the School of Public Health, University of Michigan.



Dr. Devendra Maheshwari, Senior Consultant, Glaucoma Services, Aravind-Tirunelveli, visited Shimane University in Japan on 15-22 April 2023 and trained with Dr. Masaki Tanito, Professor & Chairman, Dept. of Ophthalmology, Shimane University, Faculty of Medicine, to expand his expertise in micro-invasive glaucoma surgery (MIGS).



Dr. Indira Durai, Medical Consultant, Glaucoma Services, Aravind-Madurai, underwent a one-week observership under Dr. David Friedman at the Mass Eye and Ear Infirmary in Boston from 24th October - 2nd November 2023. Similarly, she completed an observership under Dr. Pradeep Ramulu at Johns Hopkins Wilmer Eye Hospital in Baltimore from 7-17 November 2023.



Dr. R. Sharmila, Medical Consultant, Glaucoma Services, Aravind-Madurai, visited Glaucoma Associates of Texas between 6-9 November 2023 to observe Dr. Davinder Grover. She learnt about Minimally invasive glaucoma surgeries (MIGS), and experienced various MIGS procedures.

International & All India Conferences attended by Aravind staff

11th Annual Vit-Buckle Society Meeting (American Society of Retina Specialists-ASRS)

Las Vegas, NV, 12-15 April 2023

DR. NARESH BABU

- International surgical retina: With great power comes great responsibility

Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO) 2023

New Orleans, US, 23-27 April 2023

PROF. DR. K. DHARMALINGAM

- Defining the host response to ocular pathogens using transcriptomics and proteomics (Paper)

DR. N. VENKATESH PRAJNA

- Automatic classification of slit lamp photographs by illumination technique (Poster)

DR. GOWRI PRIYA CHIDAMBARANATHAN

- Decline in the function of adult human retinal pigment epithelial stem cells with ageing (Paper)

P. SARANYA

- Decline in the adult human lens epithelial stem cell function with ageing and in cataract (Paper)

K. SARASWATHI

- Genomic and transcriptomic profiling identifies aberrant signalling pathways in ocular B cell lymphoma (Paper)

DR. A. VANNIARAJAN

- Distinct epigenomic alterations in retinoblastoma (Poster)



AMRF team at the annual meeting of ARVO

R. ISWARYA

- Human trabecular meshwork stem cells derived exosomes enhanced wound healing and antioxidant property: an attempt towards a cell-free therapy for glaucoma (Poster)

American Society of Cataract and Refractive Surgery (ASCRS) 2023 Annual Meeting

San Diego, California, 5-8 May 2023

DR. K. VEENA

- Evaluation of anisometropia, anisometric amblyopia and its effect on distance and near stereopsis in children aged 6-15 years
- A good capture - Good vision
- SICS course: Basic steps of MSICS

35th Annual Meeting of Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS)

Singapore, 8-10 June 2023

DR. N. VENKATESH PRAJNA

- Update on fungal keratitis: Newer trends in diagnosis

DR. ANJALI KHADIA

- Signs of intact posterior capsule (Video)
- Button prolapse of hard nucleus in MSICS (Video)

10th World Glaucoma Congress

Rome, Italy, 28 June to 1st July 2023

DR. ASHOK VARDHAN

- Models to care for remote populations

DR. R. SHARMILA

- Managing uveal effusions in nanophthalmic eyes
- Visual outcomes of expulsive choroidal haemorrhage: Risk factors and management (Poster)
- Dante's inferno: Surgical management of choroidal effusions (Paper)

DR. INDIRA DURAI

- Comparison of IOP and systemic effects of conventional vs. 10 μ L timolol eye drops
- Evolution of an affordable: Aqueous drainage implant - The Indian story

Aravind team at World Glaucoma Congress



Dr. Prajna at the annual meeting of APACRS





Thulasiraj Ravilla at the Global Digital Health Summit



Aravind team at the Vision 2020: The Right to Sight-India National Conference

DR. MADHURI

- Walking with glaucoma: My story (Video)

DR. NEETHU MOHAN

- 7 Steps to a stress free, patch free tube (Video)

DR. S. KAVITHA

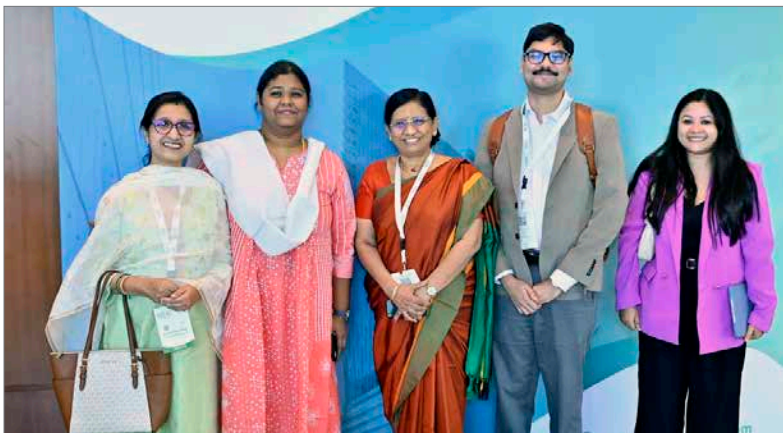
- Providing more services in less cost
- Avoiding loss to follow-up
- My clinic is too full (Chairperson)

17th edition of Vision 2020: The Right to Sight-India National Conference
Madhya Pradesh, 26-27 August 2023

MOHAMMED GOWTH

- Innovations in comprehensive and inclusive eye health
- Inculcating eye health seeking behaviour in rural communities through storytelling and providing access to eye care (Invited talk)

Aravind team at Euvre-Usicon 2023



DHIVYA RAMASAMY

- Identifying new metrics for treatment compliance
- Skilling allied ophthalmic personnel (Invited talk)

DR. DAYAKAR YADALLA

- A unique app to reach the unreached : Aroma project

HARIESH KUMAR

- Impact of outreach and awareness creation to scale up early detection of DR and glaucoma

REVATHY KANNADHASAN

- Acceptance of cataract surgery from the patients who have systemic conditions at a tertiary eye hospital

RIYAH JAITIKA

- Introducing structured BELT (Both Eye with limited time period (i.e. within 15 days) cataract surgery process

AKSHAYA R B

- Providing primary eye care services to the underserved population through tele-mobile van units

HINDUJA

- Avoiding dispensing errors and incompleteness of prescription through pharmacy audit triage posting of MLOPs in an eye hospital

S. RAJESH

- Trend of systemic comorbidities and influence of various systemic conditions on the uptake of cataract surgery in outreach screening camps

Global Digital Health Summit, Expo & Innovation Awards 2023
Mumbai, 1-2 September 2023

THULASIRAJ RAVILLA

- Digital health and the rise of intelligent medicine: The role of big data, AI, robotics

4th Annual Advances in Paediatric Retina (APR) Course

Santa Clara, California, 7-9 September, 2023

DR. PRITHVIRAJ

- Advances in paediatric retina short term perfluorocarbon liquid tamponade in familial exudative vitreoretinopathy associated RRD with severe PDR

EUVRE-USICON 2023 (24th Annual Meeting of the Uveitis Society India)
Abu Dhabi, 29-30th September 2023

DR. RATHINAM

- Iris granulomas: Aetiologies

DR. VEDHANAYAKI

- Scleritis with varied clinical markers

DR. RADHIKA

- Ultra-Biomicropica characters of inflammatory scleral abscess (Poster)



Dr. Usha Kim with the participants at EYECON 2023



D. Saravanan at Eye Bank Association of India on Cornea and Eye Banking

DR. JONATHAN

- Is the treatment of non-infectious paediatric uveitis gruelling for an ophthalmologist-posterior?

DR. S. BALAMURUGAN

- Basics of immunosuppressives in uveitis

DR. S. BALAMURUGAN & DR. HARSHA

- Valedation of serum angiotensinogen converting enzyme with clinical response in uveitis (Free paper)

DR. S. BALAMURUGAN & DR. ANNESHA SONOWAL

- A changing case of paediatric posterior uveitis: Kawasaki disease (E-poster)

13th National Conference of the Eye Bank Association of India on Cornea and Eye Banking

Varanasi, 30th September-1st October 2023

D. SARAVANAN

- Management: Key to successful eye banking (Speaker)
- Innovation in eye donation awareness in the eye bank premier league (EPL) (Speaker)
- Video session in eye banking (Chairperson)
- Innovation leading to success at eye banks

23rd Euretina Congress

RAI Amsterdam, Netherlands, 5-8 October 2023

DR. NARESH BABU (Invited faculty)

DR. T.P. VIGNESH

- Eplernone in the treatment of bullous CSCR (Paper)

DR. RENU P RAJAN

- RD surgery in retinoblastoma

32nd Annual Conference of the Glaucoma Society of India (GSI)

Pune, 6-8 October 2023

DR. GEORGE V PUTHURAN

- Surgical treatment in glaucoma: How to conduct safe AADI surgery?
- All About Tubes (Chairperson)

DR. MANJU R. PILLAI

- Glaucoma following VR surgery
- Take home messages (Panellist)
- Uveitic glaucoma

DR. R. SHARMILA

- Cost effective MIGS (Paper)
- Repeat Trabeculectomy (Paper)

DR. DEEBA ISHRATH

- On study of compounds in glaucoma (Poster)

DR. INDIRA DURAI

- Evolution of an affordable aqueous drainage implant: The Indian story
- IOP reduction and systemic effects of conventional vs. 10¹/4 L 0.5% timolol maleate eye drops (Free poster)

DR. RAJI KOSHY

- Analysis of glaucoma resurgeries following primary surgical intervention in tertiary care centre (Poster)

DR. SALMA attended this conference

DR. ANJANA & DR. NEETHU MOHAN

- Sniffing the truth out of a snuff out (E-poster)

DR. PRASANNA, DR. CHETNA, DR. DEEPA, & DR. NEETHU

- Angle closure diagnostics with ultrasound biomicroscopy (E-poster)

DR. NEETHU MOHAN & DR. RISHIKA LAKSHMINARAYANA

- Secondary glaucoma post PPV with tamponadae (E-poster)

DR. PRASANNA & DR. ANJANA

- True exfoliation syndrome: A case series (Physical poster)

DR. USHA TEJASWINI S

- Offline artificial intelligence (AI) on smartphone for glaucoma screening at vision centres (E-poster)

DR. S. KAVITHA

- Wet lab on AADI
- Optic disc & Fundus evaluation instruction course (IC)

DR. SWATI UPADHYAYA

- DIY for glaucoma procedures: Practice makes a doctor perfect (Video)

INASCERS Development Program for Ophthalmologist (INDEPTH 2023)

Indonesia, 6-8 October 2023

DR. MANORANJAN DAS

- Overview of infective keratitis
- Conjunctival and corneal tumours
- Fuch's dystrophy, diagnosis and management

National Conference on Orbit and Oculoplasty – EYECON 2023

Chennai, 7th October 2023

DR. USHA KIM

- Dissection and demonstration on cadaver session: Orbit anatomy, lid and lacrimal anatomy, ptosis repair, ectropion and entropion correction, lacrimal probing, and keratoprosthesis.
- Approaches to the Orbit – VAST



Thulasiraj along with Dr. Hugh Taylor at AAO



Aravind team at the annual conference of AAO

Annual Conference of the Oculoplasty Association of India (OPA)

Hyderabad, 20-22 October 2023

DR. USHA KIM

- Cadaver dissection for flaps, ptosis, and orbital surgery (Instructor)
- Ocular oncology (Chairperson)
- Genetics in ocular oncology: How does it help optimise care? (Paper)

DR. MEGHANA TANWAR

- An unlikely intruder: How bad can TED get? (Paper)
- Globe salvage in panophthalmitis: and identification of significant predictive factors using logistic regression and fine-gray models (Paper)

DR. VINITHA RASHME

- Primary mucinous carcinoma of the eye lid and orbit: A case series (Case presentation)
- Efficacy of interferon alpha-2b in the management of ocular surface squamous neoplasia: A report from a teaching hospital (Paper)

DR. SAYALI AMBERKAR

- Rare orbital masquerades and outcomes of frontalis suspension with silicone sling in BPES (Paper)

DR. HEMALATHA

- Dark side of the white moon and optic nerve sheath fenestration: Quality of life (Case presentation)

DR. POOJA YADHAV

- Lymphoma: Not always (Case presentation)

DR. ANAMIKA PANDEY

- A blast on the eyelid (Paper)

DR. JAYAGAYATHRI

- Symposium: Upper eyelid entropion

19th International Conference of TSI and 27th ISfTeH International Conference

Goa, 3-4 November 2023

DR. USHA KIM

- Tech-enabled vision centres and their role in achieving universal eye health

127th Annual Conference of the American Academy of Ophthalmology (AAO)

San Francisco, 3-6 November 2023

THULASIRAJ RAVILLA

- Scaling retina, glaucoma, paediatric eye services: Lessons from cataract and refractive error
- Green ophthalmology, our sustainability mandate
- Cataract and refractive error: Achieving 2030 goals for quality and volume (Co-moderator)

DR. R. SHARMILA

- Outcomes of pupillary block glaucoma after vitreo retinal surgery (E-poster)
- Surgical management in short eyes with videos on sclerostomy and benefits of the surgery (Co-contributor of a course on short eyes)
- Tips and tricks in managing short eyes (Grand round guest lecture)

DR. INDIRA DURAI

- Comparison of IOP reduction and systemic effects of conventional vs. 10- μ L 0.5% TM eye drops (Paper)

DR. NEELAM PAWAR

- Wet lab MSICS (Instructor)

DR. ANNAMALAI O

- Comparison of IOP reduction and systemic effects of conventional vs. 10- μ L 0.5% TM eye drops (Paper)

DR. SIDDHARTH

- Comparative evaluation of a novel CRISPR/Cas12a-based diagnostic tool, culture, PCR, and next-generation sequencing for the diagnosis of fungal endophthalmitis (Poster)

DR. HARIPRIYA ARAVIND

- From soil to sight: An inconceivable invasion (Video)
- MSICS in challenging cases
- Cataract spotlight symposium (Panelist)
- HelpMeSee simulator exhibit-simulation in cataract surgery (Panelist)

DR. S.R. RATHINAM

- Kerato uveitis AUS symposium on special topics in uveitis

DR. GANESH VENKATARAMAN

- Elusive glaucoma: Strategies for busy eye programmes (Speaker)
- Limbus-based conjunctival flap with patchless technique of AADI implantation: A retrospective comparative study (poster)
- The first study on fixed-dose combination of Timolol + Brimonidine + Brinzolamide eye drops for OAG/Ocular hypertension (Poster)

JIPMER Retina Update 2023

Pondicherry, 26th November

DR. SHREEYA HINGE

- A case involving intraocular eyelashes following a penetrating injury (Paper)

DR. K. NARESH BABU

- 3D solution to everyday surgeries
- Surgical retina update (Co-chair person)

DR. RENU P. RAJAN

- Surgical management of proliferative retinopathies

DR. INDU G

- Understanding the pachychoroid spectrum
- Retinal laser photocoagulation and Intravitreal injections

DR. MANAVI D. SINDAL

- Choice of anti-VEGFs: Choosing and switching!
- Evolution of biosimilars: Are they all same?

Annual Conference of Tamil Nadu & Pondicherry Association of Neurologists - TANCON 2023

Erode, 1-3 December 2023

DR. VIRNA SHAH

- Interpretation of visual fields and optical coherence tomography in neuro-ophthalmology

DR. SUJAY JAJU

- Ocular insights into the cerebral world: The vital role of neuro-ophthalmology

DR. CHINMAY MAHATME

- Visual fields in neuro-ophthalmology: Basics, interpretation and clinical importance

DR. RUHEL CHACKO

- Optical coherence tomography in neuro-ophthalmology

32nd Annual Conference of Vitreo Retina Society of India (VRSI) 2023

Trivandrum, 1-2 December 2023

DR. R. KIM

- Introduction of Dr. Patnaik

DR. K. NARESH BABU

- Perfluorocarbon liquid in the management of retinal detachment with proliferative vitreoretinopathy
- Wise counsel in unconventional course

DR. MUTHUKRISHNAN

- Surgical Removal of subfoveal choroidal neovascular membrane in age related macular degeneration: A retrospective analysis

DR. BHAVANI

- Don't judge a book by its cover: Don't judge a new vessel by its location in fundus (E-poster)

DR. RENU P. RAJAN

- Lucky to be born a premature baby (E-poster)

DR. SIVADARSHAN

- Misery loves company!! A tale of takayasu arteritis (E-poster)

DR. ANANYA GOSWAMI

- Couching of intraocular lens in microphthalmic eyes with irido-fundal coloboma: Revisiting history

DR. AVIK DEY SARKAR

- Outbreak of toxic anterior segment syndrome following vitreo retinal surgery: A retrospective analysis

3rd Indian Paediatric Glaucoma Society Meeting (IPGS)

New Delhi, 3-5 December 2023

DR. MANJU R PILLAI - Panellist

DR. PRASANNA & DR. CHETNA

- Cataract surgery in children: Slippery slope (E-Poster)

DR. PRASANNA & DR. NEETHU MOHAN

- Repeat trabeculectomy: Is it worth its salt

DR. S. KAVITHA

- 360 degree GATT in primary congenital glaucoma

16th Asia-Pacific Vitreo-retina Society (APVRS) Congress

Hong Kong, 8-10 December 2023

DR. K. NARESH BABU

- Subretinal gliosis removal: An unconventional surgical approach (Video)
- When you cannot eat it, bury it": An unorthodox surgical approach for fibrotic subfoveal choroidal neovascular membrane (Video)

DR. MUTHUKRISHNAN

- Surgical removal of subfoveal choroidal neovascular membrane in age-related macular degeneration: A retrospective analysis.



Dr. Anand Rajendran at the APVRS Congress

- Efficacy of scleral patch graft in optic disc pit maculopathy: A retrospective analysis

DR. ANAND RAJENDRAN

- Subthreshold micropulse laser in the management of diabetic Macular Edema

11th Annual National Conference of the Cornea Society of India - Keracon 2023

Chandigarh, 8-10, December 2023

DR. ANITHA

- Dry eye surgical treatment (Instruction course)
- Corneal dermoid excision (Video)

DR. REVATHY

- The sandwiched host (E-poster)
- An analysis of changes in presentings clinical profile of newly diagnosed keratoconus cases post-covid (E-poster)
- Renetrating keratoplasty (Panalist)

DR. MANGALA

- Eye banking - Gly corol preserved cornea: An alternative during pandemic crisis (Free paper)

Aravind team at the Indian Paediatric Glaucoma Society Meeting



DR. SNEHA

- Ocular surface tumefactions: A hunt for ocular surface squamous neoplasia (OSSN) (Free paper)

DR. MAMTA

- Slit lamp v/s scopy doo comparison of TBUT measurement in trt eyes (Free paper)
- Bomy growth on eye: A rare epibulban issues choristoma case report (Poster)

DR. ANASWARA

- Epidemic of infections scleritis: Post-covid (Paper)

48th Annual Conference of the Vidarbha Ophthalmic Society - Eyespire 2024

Maharashtra, 6-7 January 2024

DR. USHA KIM

- A journey beyond vision
- Ptosis management
- Rare orbital inflammatory conditions

Dhanvantri Oration

Andhra Pradesh, 7th January 2024

Dr. R.D. Ravindran, delivered a talk on *Epidemiology of Cataract & Cataract Surgery Trends in India* at the Young Ophthalmologists Society of India (YOSI) meet organised by Goutami Eye Institute, Rajahmundry, Andhra Pradesh.

The United Kingdom Paediatric Glaucoma Society Annual Meeting (UKPG) 2024

London, 26th January

DR. MANJU R. PILLAI

- Clinical evaluation protocol for childhood glaucoma (Paper)
- Rare case of Adams Oliver Syndrome with congenital glaucoma
- A case of AADI (Aurolab aqueous drainage implant) with supramid stenting in a refractory secondary childhood glaucoma in congenital rubella syndrome post penetrating keratoplasty

39th Asia-Pacific Academy of Ophthalmology (APAO) Congress

Bali, Indonesia, 22-25 February 2024

DR. N. VENKATESH PRAJNA

- Advances in diagnosis of fungal keratitis
- AI in infectious keratitis

DR. SAHITHYA BHASKARAN

- Impact of online vision therapy on functional vision of children with multiple disabilities (Poster)

- Referral uptake and outcomes in children referred to tertiary eye care from school eye screening (Free paper)

- Smart vision glasses (Video)

DR. NITHYA SRIDHARAN

- Study on acceptance of low vision aids and visual rehabilitation measures in tertiary care centre (E-poster)

DR. MEGHANA TANWAR

- Globe salvage in panophthalmitis: Identification of significant predictive factors using logistic regression and fine-gray models

DR. R. RAMAKRISHNAN

- A battle well prepared is half won pre-op evaluation, intra OP measures to prevent failure (Co-instructor)

DR. DEVENDRA MAHESHWARI

- Repeat trabeculectomy and post resurrection bleb care (Co-instructor)
- Modified ab-interno sulcus placement of non-valved drainage implant tube-early outcomes of a novel technique (Physical Poster)

DR. R. MADHAVI

- The quandary of a failing bleb: Strike when the bleb is hot (Chair and chief instructor)
- Catch it early: Role of AS-OCT in failing bleb & future of OCT angiography
- Outcomes of bleb needling with high dose (40µg) injectable subconjunctival mitomycin C in failing or failed blebs (Physical Poster)
- Ocular imaging - evaluation of microvascular changes and optic nerve head perfusion following trabeculectomy: An optical coherence tomography angiography (OCT-A) study (Paper)

DR. NIMRITA NAGDEV

- Early interventions: Ocular massage, suturolysis, add on injections of MMC/ 5FU- when & how? (Co-instructor)
- Glaucoma update (Free Paper)
- Deroofing the narrow road by magnifying mirror: Gonioscopy-assisted transluminal trabeculotomy (GATT) (Video)

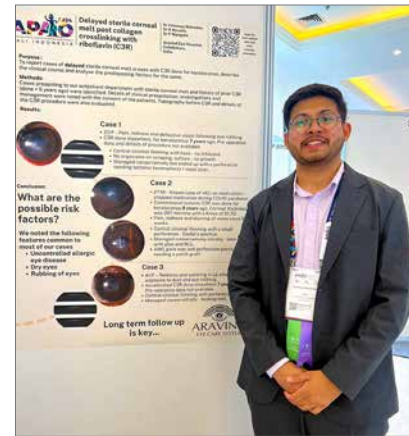
DR. MADHAVI, DR. GEETHU KURIAN, &

DR. MOHIDEEN ABDUL KADER

- Outcomes of bleb needling with high dose (40µg) injectable subconjunctival MMC in failing or failed blebs (Poster)

DR. ELACKIYA

- An outreach school screening model for functional vision assessment in children with disabilities (Poster)



Dr. Chinmay Mahatme at APAO Congress

DR. R. RAM SUDARSHAN

- Demographics, clinical, microbiological profile and treatment outcomes of traumatic endophthalmitis in paediatric population in South India (Poster)

DR. HARINIKRISHNA BALAKRISHNAN

- Correlation of mantoux test and serum angiotensin converting enzyme (ACE) levels with clinically and radiologically diagnosed ocular tuberculosis and ocular sarcoidosis (Poster)

DR. SAMEER CHAUDHARY

- Blindness due to the third eye: Sudden vision loss in Pineal gland tumour (Poster)

DR. CHINMAY MAHATME &

DR. SIDDHARTH NARENDHAN

- Predicting outcomes in fungal keratitis using RidMyc CRISPR assay (Paper)

DR. CHINMAY MAHATME, DR. VIRNA

SHAH, DR. KARTHIK KUMAR &

DR. MADHURIMA KAUSHIK

- Optic Neuritis challenges in Indian scenario (Physical poster)

DR. CHINMAY MAHATME, DR. R. REVATHI

& DR. P. MANGALA

- Delayed melt post C3R case series (Physical Poster)

23rd Asia Pacific Orthopaedic Association Congress (APOA)

Dubai, 29th February - 2nd March 2024

DR. SALONI

- Impact of social media in ophthalmology (Poster)
- Attitude and preference of refractive correction amongst ophthalmologists (Poster)
- Paradox in the eyes: A case of drug induced bilateral secondary angle closure glaucoma (Poster)

DR. MEGHA NAIR

- Revolutionising surgical training: Integrating GoPro video recording and facebook live streaming as catalysts for novice resident skill enhancement (Free Paper)
- MSICS: The Aravind way (Video)

DR. HARI

- Knowledge attitude and practice regarding diabetes mellitus and diabetic retinopathy at a tertiary eye care centre in South India (Paper)

DR. PRABHU KRISHNA

- A novel mobile app-based screening for anterior segment diseases

DR. APURVA

- Randomised controlled study between two techniques of capsular opening in intumescent cataract: Tomy rhexis and mini rhexis (Poster)
- A new path towards patient counselling: An innovative approach (Poster)
- Gateway to safe suture: Gonioscopy assisted transluminal trabeculectomy (GATT) (Video)



Dr. Jeyasri and Dr. Virna Shah at the annual meeting of NANOS

50th Annual Meeting of the North American Neuro-Ophthalmology Society (NANOS)

USA, 2-7 March 2024

DR. VIRNA M. SHAH

- Efficacy of telemedicine in neuro-ophthalmology channelled through “vision centres” in South India. (Physical Poster)

- Challenges faced in diagnosis and management of atypical optic neuritis: The Indian scenario (Physical Poster)

DR. JAYASRI K.N.

- Linezolid induced toxic optic neuropathy: A case series
- Clinical profile and aetiologies of papilledema in tertiary eye care centre (Physical Poster)

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Venugopalan LP, Aimananda V, Namperumalsamy VP, Prajna L, Kuppamuthu D, Jayapal JM. *Comparative proteome analysis identifies species-specific signature proteins in Aspergillus pathogens.* Appl Microbiol Biotechnol. 2023 Jun;107(12):4025-4040.

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LAICO, a consultancy and capacity building entity, is dedicated to expanding its reach to meet global demands for eye care needs. Over the past year, LAICO has provided support to hospitals in India and several other countries, offering mentorships and structured training programmes to improve their performance.

Consultancy and Capacity Building



Consultancy and Capacity Building

Capacity building visits

Last year, LAICO completed situation analysis and needs assessment visits to seven institutions in India. Following these visits, LAICO organised two vision building workshops with participation from six hospitals. These workshops guided the partner hospital teams in developing strategic plans covering demand generation, quality, human resources, and financial sustainability. Given below is the list of hospitals visited by our team during the year.

Needs assessment visits for capacity building

- Indira Gandhi Eye Hospital & Research Centre, Gurugram, Haryana
Thulasiraj Ravilla, Executive Director, LAICO
R. Meenakshi Sundaram, Senior Manager-Clinical Services, Aravind-Madurai
R. Suresh Kumar, Senior Faculty, LAICO
Dr. Tiruvengada Krishnan, Chief, Cornea & Refractive Surgery Services, Aravind-Chennai
- Samko Eye Hospital, Nagercoil, Tamil Nadu
Dhivya Ramasamy, Senior Faculty, LAICO
Dr. S. Padmavathy, Chief, Neuro-Ophthalmology, Aravind-Tirunelveli
- MGM Eye Hospital, Raipur, Chhattisgarh
Syed Ali A, Senior Faculty, LAICO
Dr. Preeti Mohanty, Medical Consultant, Aravind-Tirupati
- Synod Hospital, Aizwal, Mizoram
D. Yesunesan, Senior Faculty, LAICO
Dr. K. Umakanth, Medical Consultant, Aravind-Tirupati
- Kantai Netralaya, Jalgaon, Maharashtra
BS Ganesh Babu, Senior Manager Operations, Aravind-Madurai

Dr. D. Balamuruganandaraj, Medical Consultant, Aravind-Pondicherry

- Aurangabad Chikaltana Lions Eye Hospital Chhatrapati Sambhajnagar, Maharashtra
D. Yesunesan

Dr. Kuldeep Dole, Technical Adviser, LCIF Sight First MD 323 and 321 & Medical Director, PBMA's HV Desai Eye Hospital

- Balasore Lions Eye Hospital, Balasore, Odisha
Syed Ali A

Surgical training visit

- Lusaka Eye Hospital, Lusaka, Zambia
Dr. R. Sankarananthan, Medical Officer, Aravind-Salem

On-site capacity building for primary eye care delivery

- Porecha Eye Hospital, Blind People's Association, Bareja, Ahmedabad, Gujarat
Mohammed Gowth, Senior Faculty, LAICO

LEAP collaborative series

In the past year, three major LEAP collaborative initiatives were conducted, supporting 25 eye hospital teams.

a) The second batch of LEAP Collaborative for facilitating implementation for quality standards, launched during the year, helped five enrolled partner hospitals implement and comply with NABH entry-level standards. LAICO faculty members and Quality Assurance Managers from Aravind Eye Hospitals have completed gap assessment visits to identify areas for improvement as per the compliance required for NABH entry level accreditation. In addition to the visit, an in-person workshop on NABH standards was conducted at LAICO in April 2023 which included practical exposure visits to various centres in Aravind, Theni, Dindigul, and

Aravind team visiting Indira Gandhi Eye Hospital and Research centre, Gurugram, Haryana



Tirupur. Throughout the collaborative period, partner hospitals received regular guidance through weekly calls and monthly collective virtual reviews.

The names of the partner hospitals and the visiting teams are given below:

- Netaji Eye Hospital, Purulia, West Bengal
Ganesh Babu
Vikky Kumar, Manager-Quality Assurance, In-patient Services, Aravind-Tirunelveli
- Mahatma Gandhi Eye Hospital and Research Institute, Mayurbhanj, Odisha
Syed Ali A
Mohammed Ghouse, Manager-Patient Care, Aravind-Tuticorin
- Rotary Navsari Eye Hospital, Navsari, Gujarat,
Mohammed Gowth
Chandravadhana, Manager-Quality & Patient Care, Aravind-Madurai
- Shri Jaganath Nethralaya, Bhavanipatna, Odisha
Suresh Kumar
Balaji T, Patient Care Manager, Aravind-Tirupur
- SGVS Eye Hospital and Research Centre, Khunti, Jharkhand,
Yesunesan
Kalidass Krishnan, Manager-Patient Care, Aravind-Theni

b) The LEAP Series on “Enhancing cataract surgical outcomes (ECSO),” launched on 4th October 2023, aimed to achieve a visual outcome better than or equal to 6/12 (BCVA) for 90% of patients undergoing cataract surgery. Nine eye hospitals from India, Nepal, and Bangladesh were enrolled, and among these, three new hospitals including Dr. K Zaman BNSB Eye Hospital, Mymensingh, Bangladesh, Grameen GC Eye Hospital,

Vikky Kumar during the visit at Netaji Eye Hospital, Purulia, West Bengal



Bogura, Bangladesh, and Pushpagiri Vitreoretinal Institute, Hyderabad, Telangana, joined later. An in-person learning session for the enrolled hospital teams was conducted at LAICO from 12 to 15 December 2023. The workshop oriented the teams towards enhancing the quality of cataract surgery and introduced comprehensive clinical protocols OPD, surgery and follow-up, CATQA (Cataract surgery online monitoring tool), and sterilisation techniques. Representatives from the Fred Hollows Foundation also attended this learning session.

The names of the partner hospitals and the visiting teams are given below:

- Sitapur Eye Hospital, Uttar Pradesh
Dr. Aditi Ghosh, Medical Consultant, Aravind-Madurai
Sasipriya, Consultant, LAICO
- Tejas Eye Hospital - Divyajyoti Trust, Mandhvi, Gujarat
Dr. Aruna Pai, Medical Consultant, Aravind-Madurai
Sasipriya
- Nav Bharat Jagriti Kendra, Hazaribagh, Jharkhand
Dr. Vishwaraj C R, Medical Consultant,
Aravind-Pondicherry
Udayakumar, Senior Faculty, LAICO
- Sewa Sadan Eye Hospital, Bhopal, Madhya Pradesh
- Govind Netralaya, Shore, Madhya Pradesh
Dr. Anjali Khadia, Medical Consultant, Aravind-Pondicherry
Mohammed Gowth
- Himalaya Eye Hospital, Pokhara, Nepal
Dr. Madhu Shekhar, Chief, Intraocular Lens & Cataract Services, Aravind-Madurai
Yesunesan

c) LEAP collaborative series on “Closing the loop”, launched on 19th March 2023, was designed to improve

Syed Ali and Mohammed Ghouse during their visit to Mahatma Gandhi Eye Hospital, Mayurbhanj, Odisha





Mohammed Gowth and Dr. Anjali Khadia along with the Govind Netralaya Eye Hospital team

the delivery of cataract and refraction services to a higher proportion of patients from the current patient volume. Eleven hospitals have enrolled in this programme.

Upcoming collaborative on inventory management

LAICO has collaborated with the Indian Institute of Management (IIM), Udaipur, to develop the structure and content for the upcoming LEAP collaborative on Inventory Management. The collaboration involved a visit by the IIM students and faculty to Alakh Nayan Mandir, Udaipur, to understand the eye hospital's inventory system. As a result, a comprehensive content plan for the inventory management collaborative has been devised, and is scheduled for the upcoming year.

Consultancy Projects

LEAP: Together towards excellence

Under the project supported by Lavelle Fund for the Blind, USA, LAICO aimed to work with 60 eye hospital teams in the Indian Sub-continent through multiple collaboratives, each focused on a specific domain or key area of significance. This initiative aimed to enhance and increase the effectiveness of eye care service, both in terms of volume and delivery. So far, LAICO has successfully completed six collaborative series, with 76 teams from 54 hospitals participating. During the last year, three more LEAP collaborative series including, NABH, ECSO, and LEAP Closing the Loop, were organised, taking the total LEAPs to nine.



Udayakumar with Nav Bharat Kendra team during the gap assessment visit

SEVA Global Sight Initiatives (GSI) Phase II & III

Last year, under the SEVA GSI project, LAICO continued to mentor ten partner hospitals as well as an additional new partner, to support their capacity building. The following are the key outcomes of the project.

A total of 1,026 free cataract surgeries were performed by six partner hospitals for underprivileged people.

- Aravind-Salem distributed 4,296 spectacles to the potential beneficiaries working as silversmiths and weavers in the Salem and Namakkal districts, achieving 81% of the target.
- Five vision centres at Aravind-Tirupur and Udumalpet centres collectively performed 1,843 additional cataract surgeries and facilitated 3,322 specialty case referrals to the base hospital.
- LAICO mentored Alakh Nayan Mandir, Udaipur, Rajasthan, to initiate a vision technician training programme to enhance access to eye care services in underserved areas.
- Srikiran Institute of ophthalmology screened 21,800 schoolchildren, provided 878 spectacles, and performed 28 cataract surgeries and 46 squint surgeries.
- LAICO provided optical dispensing training to Jyoti Tiwari from MGM Eye Institute from October to December 2023.

Additionally, LAICO facilitated a series of calls and meetings with its 11 mentees to develop project proposals addressing the current and future needs of hospitals, with active participation from SEVA in these deliberations.

Capacity Building of Eye Hospitals in Northern India

Initiated in 2021, this project aimed to build the capacity of Sitapur Eye Hospital (SEH), Uttar Pradesh. This mentorship aimed to enhance SEH's capabilities in combating blindness, standardising quality care, promoting cost-effective practices, fostering academic excellence, and achieving self-sustainability in alignment with Aravind's vision.

To achieve these objectives

- Dr. Vivekanandan was deputed to guide the clinical team in streamlining the clinical protocols and performing surgeries.
- By the leadership team of Aravind, including Thulasiraj Ravilla, Dr. Prajna and Dr. S. Aravind action plans were developed to improve the financial sustainability of the organisation.
- Goal-setting exercise for the year 2024 was conducted involving all the key stakeholders.
- A team from SEH, including doctors, managers, and clinical staff from SEH enrolled in the LEAP ECSO collaborative series.
- Dr. Aditi Gosh, Aravind-Tirunelveli, and Sashipriya, LAICO, visited SEH to understand the current practices and processes to ensure surgical quality as part of this programme.
- Several consultants from Aravind provided onsite support for patient care activities and in establishing systems and processes.
- During November and December 2023, a five-member MLOP team from Aravind provided onsite

support to handle the increasing patient volume during the peak season and to refine the systems and process.

- Fifteen SEH staff members underwent training at Aravind Eye Hospitals and LAICO for skill enhancement and management development from April 2023 to March 2024. Three medical officers had short exposure visits at Aravind-Chennai, before joining SEH as consultants.
- A needs assessment visit was carried out by members from Aravind, LAICO and the design collaborative team at B.S. Mehta Eye Hospital, Prayagraj (Allahabad), a branch of Sitapur Eye Hospital from August 8th to 10th 2023. Following the visit, an investment plan for renovation, along with building design, required HR and equipment needs, was shared with the leadership team.

BOSCH - free eye surgeries and school children screening programme

The BOSCH India Foundation collaborated with LAICO for the implementation of their Corporate Social Responsibility (CSR) project in eye care. Launched in August 2023, this project supported free cataract and pterygium surgeries to economically deprived individuals, and distributed free spectacles to Government school children. The project involved Aravind-Chennai and Tirunelveli and 14 existing LAICO partner hospitals across nine different states in India. Collectively, these 16 hospitals performed 2,128 cataract surgeries, 290 pterygium surgeries and provided 670 pairs of spectacles to schoolchildren.

Eye care situation analysis for India

At the request of CBM, LAICO conducted a comprehensive analysis of the current eye care situation in India. This analysis provided an overview of existing eye care services, the disease profile, and the geographic distribution of eye health issues. The findings aim to identify potential areas of programmatic intervention for CBM. The report comprehensively Vision2020 India's priority eye diseases, including cataract, refractive error and low vision, childhood blindness, corneal blindness, retinopathy of prematurity, diabetic retinopathy and glaucoma. Additionally, the report detailed the eye care resources available in India, such as infrastructure for training, and the number of ophthalmologists and optometrists across various states. Other key features

Suresh Kumar, Vinoth and Dr. Vivekanandan during their visit to B.S. Mehta Eye Hospital, Prayagraj, Uttar Pradesh





Poster presentation at Lions Give Conclave, Mumbai - Mohammed Gowth and Yesunesan presenting Laico's activities

included an analysis of the primary eye care scenario in India, financing for eye care, and research in eye care.

Lions Give Conclave

Mumbai, 27-28 January

LAICO was invited to participate and showcase its capacity building work and other initiatives at the Lions Give Conclave, organised by Lions International, held at the Jio World Centre, Mumbai. During the event, Thulasiraj Ravilla delivered a talk on *Cutting-edge technology and charitable eye hospitals: How to make the twin meet*.

Observation visit to Tulsii Chanrai Foundation Eye Hospital (TCFEH), Nigeria

In connection with the partnership with Tulsii Chanrai Foundation Eye Hospital (TCFEH), Abuja, Nigeria, Rajesh, Manager-Patient Care, Aravind-Chennai, visited the hospital, from 6th December 2023 to 16th January 2024 to provide support to the hospital's day-to-day operations, enhancing the efficiency of patient care services through new ideas and innovations, and customising protocols based on specific conditions.

Teaching and Training

30th On-site Ophthalmic Instrument Maintenance Course

Rwanda, 22-26 May

A team from the, instrument maintenance department, Aravind-Madurai, served as resource persons for the on-site programme, organised by The Fred Hollows Foundation,



Rajesh during the observation visit to Tulsii Chanrai Eye Hospital, Abuja, Nigeria

Rwanda. A total of 17 biomedical technicians from various government general hospitals in Rwanda attended the programme.

Aurosiksha

Aurosiksha, the online training platform for MLOPs, works towards standardising the trainings across all facilities. An ongoing tablet-based skill assessment was initiated in the last year, including skill mapping, checklist review, and preparing master assessors. Over 3,500 trainees and employees were mapped for 137 skills. During the academic year 2023-24, seven departments were on boarded, with four more departments included for 2024-25. Classroom sessions were standardised with a common teaching schedule and digital attendance. Last year, the Aurosiksha team visited Aravind Eye Hospitals in Coimbatore, Tirupati, Pondicherry, and Chennai, to ensure its proper implementation.

Prof. Manickam, Kasthuri, and Meenakshi with participants of instrument maintenance course, Rwanda, Africa





Participants of operational excellence workshop

In the process of instructional design and online content creation, 87 competency-based and other high-quality training materials were created and uploaded to Aurosiksha. Thirteen online quizzes were published, each receiving over 600 responses. Additionally, “Siksha Bites” microlearning modules were introduced.

Aurosiksha effectively uses social media platforms for training initiatives. Monthly quizzes and “Siksha Bites” were posted on Facebook and LinkedIn, enhancing an organic reach.

Training of Trainers workshop for the MLOP training team was organised on 29-30 June 2023 with the focus on standardising the training plan for the upcoming second-year MLOP training programme and the implementation of Aurosiksha’s Learning Management System (LMS). As part of the SCB project, four hospitals were identified for capacity building through MLOP training, with workshops scheduled for June 2024 at LAICO.

Skill laboratories were set up at Aravind-Madurai for seven departments, currently used for skill assessments. Aurosiksha also conducted six webinars with global participation, averaging over 200 participants from 20 countries each.

Workshop on continuous process improvement for achieving operational excellence

A two-day workshop on 1-2 March for managers, supervisors, nursing superintendents, senior sisters, and administrators, focused on developing processes to foster a culture of continuous improvement within AECS. Sessions included group work and discussions on Total Productive Maintenance (TPM), which enabled participants’ knowledge and skills in identifying problems and opportunities for improvement,



Poster presentation at Arangam

determining root causes for delays and errors, and deriving ideas through a systematic journey to test and implement them across AECS.

October Summit 2023

Arangam

As part of the October Summit 2023, Aravind-Madurai organised an intramural conference for MLOPs and admin staff across all Aravind centres on 12-14 October. This conference effectively addressed the lack of a platform for non-doctors to share the best practices in their respective departments and generate innovative ideas, fostering continuous learning, and improvement. Doctors were also invited to present on non-clinical topics. A total of 320 participants from various Aravind centres took part in four parallel tracks. These tracks featured instructional courses and competitions, including oral, poster, and video presentations, as well as quiz contests. There were over, 319 submissions, and 200 innovative presentations, with 55 participants winning prizes.

Vision centres 2.0

The internal workshop held on 30th September aimed to elevate primary eye care to the next level. The discussions centred on improving the quality of care at vision centres, including reviewing and standardising the equipment, ensuring all equipment was in working condition and all the vision centre staff adhered to various aspects of the clinical protocol to provide comprehensive eye care, and enabling IT support to generate reports for supporting operations and decision-making. Additionally, a book on vision centre guidelines in Tamil was launched by Dr. P. Namperumalsamy and Dr. G. Natchiar during this event.



Vision centres 2.0 meet

Workshop on integrating research in eye care: advancing knowledge and practice

The research division of LAICO organised this two-day consultative workshop on 2nd and 3rd October, 2023. The deliberations focused on understanding the research and practice nexus, exploring practical application and implementation strategies to build a research ecosystem in institutions. The workshop brought together 30 participants, consisting of eye care professionals, researchers, educators, and other stakeholders, from India and Nepal.

Health Services Research

In order to estimate the prevalence of avoidable blindness due to cataract and refractive errors and the uptake of eye care services in Tamil Nadu, LAICO conducted the first of two Rapid assessment of avoidable blindness (RAAB) surveys to be conducted in the state. One of the objectives of the survey was also to validate the RAAB7 software in the Indian population. RAAB7 is the digitised version of the RAAB survey,

Sanil Joseph at the workshop on integrating research in eye care



Launch of vision centre guidelines, a Tamil manual during vision centre 2.0 meet

developed by the International Centre for Eye Health, London. It includes assessment of near-vision and the enablers and barriers to the uptake and use of near-vision eyeglasses. The first survey was conducted in Sivaganga district during March and April 2024. As part of the survey, 3,582 people aged 50 years and older from 77 different locations were examined. Approximately one-fourth of the surveyed people required some form of eye care intervention and were referred to nearby eye care facilities.

The LAICO journal club achieved a commendable feat by crossing the landmark of 500 sessions. To mark this occasion, the research division organised a panel discussion titled “Journal Club as a Strategy to Enhance Research”.

As part of research enhancement activities, an outbound two-day strategic planning exercise was organised at Pondicherry and Nithyatha, Aurolab, on 22-23 March 2024. The event aimed to foster team spirit and synergy among the research team members, enabling them to set new goals and focus on key functional areas of the division.





Aravind Medical Research Foundation (AMRF) constantly works to tackle various eye diseases through the concerted efforts of its researchers, employing diverse perspectives. Each year, new projects are initiated, spanning basic, clinical, health systems, and clinical trial research. One notable project in the past year identified several mutations in myocilin and other causative genes of juvenile open-angle glaucoma patients at Aravind Eye Hospitals. This led to the discovery of clinical glaucoma in multiple members of a targeted family, increasing the possibilities for early diagnosis. AMRF hosted the Indian Eye Research Group (IERG) meeting (ARVO-India Chapter) for the third time, facilitating the exchange of research findings and fostering the exploration of further research possibilities.

Research

Molecular Genetics

The current research work focuses on investigating Leber's hereditary optic neuropathy (LHON) and Leber's congenital amaurosis (LCA). Besides, the ongoing projects employ whole exome sequencing, whole mitochondrial DNA sequencing, and copy number analysis to attain precise molecular diagnosis.

A seven year study that began in 2018 based on twenty two X-linked retinoschisis (XLRs) patients from South India unveiled a diverse range of clinical presentations, genetic mutations, and genotype-phenotype associations. Notably, the researchers observed a clustering of missense mutations within the RSI discoidin domain in the South Indian cohort. Furthermore, a novel mutation in the RSI signal peptide sequences was uncovered. These collective findings significantly enhance the understanding of XLRs in this population, offering insights into its pathogenesis and improving diagnostic accuracy for individuals affected by XLRs.

Genetics of Ocular Tumours

The primary focus of the research includes lymphoma and retinoblastoma. Patients of the ocular adnexal lymphoma underwent incisional biopsy and the tumour sections were checked for the expression of specific markers. CD20 expression confirmed B cell lymphoma. Follicular Lymphoma was diagnosed with consistent BCL2 positivity, along with BCL6 and CD10 expression. Mantle Cell Lymphoma was identified by CCND1 expression, which is a hallmark dysregulation. Other subtypes, such as Extra Marginal Zone Lymphoma, Lymphoplasmacytic Lymphoma, and Small Lymphocytic Lymphoma, identified in the patients clearly correlated with the clinical characteristics and treatment response.

A genetic study identified large translocations such as IGH/BCL2 and IGH/CCND1 in follicular and mantle cell, lymphoma respectively. MYD88 L265P mutation has been extensively studied in primary vitreoretinal lymphoma but not in ocular adnexal lymphoma. Hence, the MYD88 L265P mutation was checked in 20 lymphoma patients using a faster method called Allele-Specific Polymerase Chain Reaction (AS-PCR) and Sanger sequencing. The MYD88 L265P mutation in OABL was identified as infrequent as it is found only in two samples.

Retinoblastoma (RB), the most common eye tumour in children, is caused by loss-of-function of the RBI

gene. Genetic screening is crucial for managing RB and can impact important clinical decisions. Genetic testing of RBI was performed in 57 new patients during the year. Out of 57, 36 were unilateral and 21 were bilateral RB. Among these 57 patients, 18 were older patients who were visiting the clinic for follow-up or referred from other centres. The disease was found to be either inherited from the parents or will be inherited to the next generation owing to the germline mutations in 18 patients. In five patients, somatic mutations were identified in five tumours but not in blood cells, indicating a low risk of RH in the next generation. Similarly, absence of mutations in the rest of the blood samples implies low or no risk of RB inheritance.

Proteomics

Diabetic Retinopathy Project

Diabetic retinopathy (DR) is the most serious ocular complication of diabetes and affects approximately one-third of people suffering from diabetes. DR shows no symptoms in the early stages, and manifests only if one develops vision-threatening diabetic retinopathy (VTDR) in the form of proliferative DR or diabetic macular edema. Hence, identifying and validating robust biomarkers for both DR onset and its transition to advanced stages is crucial for enabling early intervention and preventing vision loss.

Extracellular vesicles (EVs) were evaluated as a source of predictive biomarkers for DR. EVs are lipid-bilayered non-dividing nano-vesicles that carry physiology-altering biological information in the form of regulatory nucleic acid, protein, lipids, and metabolites. EVs lipid bilayer protects the protein and nucleic acid cargo from proteolytic cleavage and degradation while in circulation, thus, being an excellent candidate for novel biomarker discovery. Here, the study aimed to detect protein cargo of plasma and vitreous EVs in patients specific for sight-threatening proliferative diabetic retinopathy and to identify vitreous EV proteins present in the circulation. Comparative proteomic analysis of small extracellular vesicle protein cargo from plasma and vitreous of PDR patients and patients with macular holes identified:

- The retinal protein RBP3 that plays a protective role in DR development is identified in circulatory EVs and is reduced in patients with PDR. Thus, the gap that RBP3 is present predominantly in the vitreous is not readily accessible for biomarker use, which is now filled by this study.

- Several proteins involved in angiogenesis, fibrinolysis, cell adhesion, retinal neuroprotection, and photoreceptor development are identified and found to be dysregulated and are localised in small extracellular vesicles derived from plasma and vitreous of PDR patients.

Pterygium Project

Despite a significant prevalence rate of 12%, there is currently no pharmaceutical intervention capable of halting the progression of pterygium. Surgical removal remains the sole treatment option available, and there are no prognostic tools for predicting disease progression or recurrence. The exploration of how epigenetic changes regulate gene expression in pterygium remains largely uncharted territory, despite the constant ocular exposure to sunlight in affected individuals. Specifically, genome wide methylation analysis was performed using the Illumina Infinium Methylation EPIC v2.0 beadchip array. They have identified genes that are potentially activated or repressed by epigenetic modifications in pterygium conditions, which will help in understanding the role of epigenetic changes in pterygium pathogenesis.

Keratoconus Project

The team investigated the mechanism of action of a novel chemical cross-linker for treating keratoconus. Chemical cross-linkers increased the stiffness of ex vivo pig, human, and in vivo rabbit corneas with negligible cytotoxicity to the cells of corneal layers. Further, the cross-linker brought together the disorganised collagen fibres in the keratoconus corneal stroma, leading to the increase in stiffness in the keratoconus corneas. The collagen fibril diameter and fibril density also increased, leading to the increased stiffness in the cross-linker treated keratoconus cornea. The cross-linker regulated proteins are related to extracellular matrix (ECM), WNT, and Notch signalling pathways in the corneal epithelium. In the corneal stroma, ECM and integrin signalling pathways were affected. Reduction in inflammatory signalling pathways was also observed after the treatment of the cross-linker. The cross-linker increased the abundance of structural proteins in the epithelium and collagen I, III, and VI and proteoglycans in the stroma to stiffen the cornea. The cross-linker reduced the activity and secretion of matrix metalloproteases MMP-2 and 9 in the corneal epithelial and stromal layers and that of another protease cathepsin G, thereby reducing the degradation



Maintaining primary cultures of ocular cells

of matrix in keratoconus cornea. The novel chemical crosslinker inhibited the signalling pathways involving ECM, metalloproteases and increased the abundance of collagen molecules leading to corneal stiffening, thereby halting the progression of keratoconus disease.

Ocular Pharmacology

The Ocular Pharmacology lab has been working on understanding the molecular mechanism(s) involved in the pathogenesis of glaucoma (primary open angle-glaucoma and steroid glaucoma) and developing newer therapeutics for its management.

Relaxin is a heterodimeric peptide hormone with known vaso-dilatory and anti-fibrotic activity. This hormone was first identified by Frederick Hisaw in a guinea model of pregnancy and parturition. In the previous study in identifying the differentially expressed genes between steroid responsive and non-responsive human cadaveric eyes in perfusion culture, it was found that the relaxin 1 gene was significantly down-regulated in steroid-responder eyes as compared to non-responder eyes, and its expression was evident in the 7d group as compared to 16h steroid-treated HTM cells. However, the role of relaxin and its non-allelic gene variants in human aqueous outflow facility and IOP regulation is not clearly understood. Considering the distribution of relaxin and its receptors in human aqueous outflow pathway tissue, it is hypothesised that relaxin2 may have an active role in the regulation of outflow facility and IOP in human eye. Currently, the establishment of a TGF β 2-induced elevated IOP ex vivo model of glaucoma is in progress to demonstrate the IOP lowering property of relaxin 2. It is believed that relaxin 2 with proven IOP lowering and anti-fibrotic properties will be more beneficial in the management of glaucoma.

Microbiology

Early diagnosis and predicting disease progression are crucial for managing fungal keratitis, since some cases prove resistant to treatment. The present research employs high-throughput technology to screen for microRNAs (miRNAs). These small RNA molecules, measuring around 19-22 nucleotides, regulate gene expression and are known to change during disease. The researchers have identified specific miRNAs that play a key role in how fungal keratitis develops. These miRNAs have the potential to serve as diagnostic and prognostic markers, pending validation in a larger study group. Interestingly, our findings suggest that miRNA dysregulation might be specific to fungal genera. This opens the door for identifying genus-specific miRNA biomarkers, as seen in our discovery of miRNAs specific to *Fusarium* sp. and *Aspergillus flavus*.

Furthermore, comprehensive miRNA profiling in *Pseudomonas aeruginosa* keratitis revealed several dysregulated miRNAs involved in the disease process. By comparing these findings with clinical outcomes, they were able to pinpoint specific miRNAs associated with positive patient responses. These miRNAs warrant further exploration for their potential therapeutic applications.

Bioinformatics

AMRF empowers researchers with cutting-edge bioinformatics tools to analyse their NGS data. EyeVarP, a user-friendly software package, available online, streamlines the analysis of genomic and exomic data, pinpointing critical mutations associated with eye diseases. Without having the time or expertise for



Visualisation of cultured ocular stem cells using confocal microscopy

in-house analysis, AMRF offers tailored NGS data analysis services to fit specific research projects.

Stem Cell Biology

Adult stem cells are present in almost every tissue in the human body, responsible for maintaining tissue homeostasis throughout life. Hence, research in this area focuses on understanding the basic biology of adult stem cells in the human eye, elucidating changes with ageing/diseased conditions, and developing better stem cell based therapies. Studies are being carried out on (i) trabecular meshwork stem cells in relation to primary open angle glaucoma, (ii) lens epithelial stem cells and age-related cataract, and (iii) retinal pigment epithelial stem cells and age-related macular degeneration. Previous reports from this laboratory have confirmed the location of stem cells for trabecular meshwork in the anterior non-filtering region, lens epithelium in the central zone and retinal pigment

Participants at the annual meeting of the Indian Eye Research Group





UoE cornea research conference



epithelium in the peripheral region. Quantification of the stem cells revealed a significant reduction in trabecular meshwork stem cells in glaucomatous condition, functional loss of lens epithelial stem cells in age-related cataract and retinal pigment epithelial stem cells with ageing. Recently, exosomes derived from the trabecular meshwork stem cells demonstrated to have enhanced wound healing and anti-oxidant potential *in vitro* indicating the possibility of developing a cell-free therapy for glaucoma. Further studies are being initiated to evaluate the efficacy of these nanovesicles in TM regeneration using animal models for primary open angle glaucoma. Studies are now being carried out to understand the molecular regulation of these adult stem cells by factors including transcription factors, microRNAs, and associated signalling pathways. Identification of these intrinsic factors will enable the development of better methods for expanding the stem cells *in vitro* as well as to activate them *in vivo*.

Conferences/Workshops conducted

UoE cornea research conference

14-15 June 2023

The two-day conference in collaboration with the University of Edinburgh (UoE) focused on on-going and future projects, fostering long-term association between them. During the conference, scientists from UoE introduced a new technology called “FluoroPi” aimed at establishing and developing a cost-effective device for diagnosing the causative microbe of microbial keratitis in patients. Additionally, clinicians, scientists, and research scholars engaged in brainstorming the current challenges and solutions in microbial keratitis. A total of 14 papers were presented by UoE, Aravind Eye Hospital, and AMRF team over the course of two days, covering various aspects of corneal research.





Prof. K. Dharmalingam delivering the inaugural address at the Innovations in Eye Health symposium

Symposium on Innovations in eye health: Technology to translation

28th July 2023

The one-day symposium, supported by SERB, DBT, and CSIR, featured fifteen talks by scientists in translational research, covering five key areas, including, gene editing/ cell therapy for retinal diseases, immunopathology of ocular disorders, novel approaches for treatment of corneal infections, exosomes in eye health and disease, and genetic diagnosis and therapy for inherited eye diseases.

Annual meeting of Indian Eye Research Group

29-30 July 2023

The 29th annual meeting of the (IERG) ARVO India Chapter focused on Innovations in Eye Health: Technology to Translation. The meeting featured seven

scientific sessions centring on translational research, including gene therapy and stem cell therapy for retinal diseases and corneal dystrophies. There were special discussions on Artificial intelligence in diagnosing ocular disease, and Emerging areas of Indian Eye Research: Future perspective that helped establish goals for further research.

Workshop on Single-Cell Omics

12-13 October 2023

As a part of the October Summit and Scientific Social Responsibility (SSR) programmes under an on-going SERB project (CRG/2020/00528), a two-day workshop was organised. During the workshop, the participants were updated on the recent advances in single-cell transcriptomics, spatial transcriptomics, extracellular vesicles, proteomics, and data analysis.

Research facility training programme on genetic testing techniques

29th February 2024

As an integral component of the SERB-LHON project, a one-day research facility training programme was organised as part of the SSR programme. The event consisted of two modules: the first covering DNA isolation and quantitation, and the second focusing on Sanger sequencing, highlighting the fundamentals of ophthalmic genetics and its application in molecular diagnosis. The programme saw active participation from 30 students representing 14 different colleges in the vicinity of Madurai, spanning across 8 distinct academic departments.

PhD Awarded by Alagappa University



P. Gowri

Molecular Genetics

Thesis: Molecular genetics and functional studies of mitochondrial genes associated with Leber's hereditary optic neuropathy
Guide: Dr. P. Sundaresan



K. Jeyaprakash

Molecular Genetics

Thesis: Genomic characterisation of Kinome related genes in retinoblastoma
Guide: Dr. A. Vanniarajan

PhD Awarded by SASTRA University



K. Kathirvel

Microbiology & Bioinformatics

Thesis: Characterisation of antimicrobial resistance and virulence in ocular pseudomonas aeruginosa and methicillin-resistant staphylococcus aureus strains through comparative genomics approach
Guide: Dr. D. Bharanidharan



K. Manojkumar

Microbiology & Bioinformatics

Thesis: Identification of pathogenic variants associated with genetic eye diseases in whole exome and genome data
Guide: Dr. D. Bharanidharan

Ongoing Projects

Basic research

AMRF's research emphasis is always on the application of basic research to solve clinical problems. At the same time, host-pathogen interaction in fungal and bacterial pathogenesis and mechanisms underlying eye disorders are also explored in depth. Modern techniques such as proteome profiling by mass spectrometry, single-cell RNA analysis, whole genome sequencing, and microbiome interaction are pursued vigorously. Besides laboratory studies, AMRF actively involved in population studies to identify people at risk of early-onset and late-onset glaucoma. Researchers also identified biomarkers that could predict the progression of diabetes to early diabetic retinopathy. These studies will allow the early intervention and prevention of severe sight-threatening disorders. The overall objective of AMRF research activities is to leverage fundamental scientific knowledge for patient care.

- Molecular regulators associated with the maintenance of human trabecular meshwork stem cells in relation to their reduction in aging and glaucoma
- Molecular characterisation of human retinal pigment epithelial stem cells and their role in age related macular degeneration
- Identification and characterisation of adult human retinal pigment epithelial stem cells
- Adult stem cell derived extracellular vesicular miRNAs for trabecular meshwork regeneration in glaucoma
- Characterisation of adult human lens epithelial stem cells in the maintenance of tissue homeostasis throughout life and their functional status in cataractous lens
- Molecular regulation of adult human lens epithelial stem cells: changes with aging and cataract
- A scalable system for the production of human induced pluripotent stem cell derived functional retinal pigmented epithelial cells
- Deciphering predictive and preventive methods in the progression of pterygium using multi-omics approaches
- Whole genome sequence analysis of selected family members of the Kadaladi family and identification of markers for the early detection of JOAG using tear extracellular vesicles
- A comparative proteomic analysis of plasma and vitreous humour derived small extracellular vesicles (SEVs) from proliferative diabetic retinopathy (PDR) patients.
- Proteomic and metabolic analysis of microbial keratitis patient's tear to identify biomarkers of corneal microbial ulcer progression
- Understanding the mechanism of action of a novel chemical cross-linker designed to treat keratoconus
- Development and validation of a non-invasive point-of-care diagnostic tool for fungal keratitis
- Mechanotransduction in retinal pigmented epithelium homeostasis and degeneration: Implications in age-related macular degeneration
- Translational genomics of ocular cancers
- Elucidating the role of cancer stem cells in chemoresistant retinoblastoma and their therapeutic implications
- Molecular characterisation of ocular lymphoma for improved disease prognosis
- Molecular characterisation of leber's congenital amaurosis (LCA) in South Indian cohort
- Investigation of nuclear genes involvement in a mitochondrial disorder: Leber's hereditary optic neuropathy (LHON)
- Decoding the unknown genetic etiology to ameliorate the molecular diagnosis of leber's congenital amaurosis
- Investigating the crosstalk between nuclear and mitochondrial genome in patients with leber's hereditary optic neuropathy
- Molecular genetics of juvenile X-linked retinoschisis in South Indian population
- Dysregulated human corneal miRNAs and their role in disease progression
- Expression profiling of human corneal miRNAs and their role in pseudomonas aeruginosa induced keratitis
- Evaluation of IOP lowering property and Anti-fibrotic property of relaxin on TGFβ2-induced elevated IOP ex vivo model of glaucoma using human organ cultured anterior segment (HOCAS)
- 'Relaxin' the pressure in glaucoma
- Role of vitamin D3, dopamine and serotonin levels in myopia development and progression
- Identification and analysis of alternative transcripts in retinoblastoma progression
- Identification of host immune factors as predictor of severe human fungal keratitis and their utility in disease management
- Modelling macular degeneration using human pluripotent stem cells for better understanding of disease pathophysiology and to investigate novel therapies

Clinical research

Prospective and retrospective clinical studies are underway at Aravind Eye Hospitals (AEH). These include investigator-initiated academic clinical studies, as well as nationally and internationally funded collaborative observational and interventional studies. The focus is on advancing eye care through advanced and scientific treatment approaches, which can influence trends in clinicians' analytical and interventional approaches globally.

Clinical research studies at AEH are conducted in compliance with the New Drugs and Clinical Trial Rules, 2019, International council for harmonisation of technical requirements for pharmaceuticals for human use (ICH), Guidelines for good clinical practice (GCP), and applicable Indian regulations.

Glaucoma

- Family screening of glaucoma
- An open label, multicentric, phase III, prospective study to evaluate the efficacy, safety and tolerability of triple fixed dose combination of Timolol 0.5% + rimonidine 0.2% + Brinzolamide 1% eye drops in patients with open angle glaucoma/ocular hypertension not responding to dual drug therapy
- A randomised, multicentre, active controlled, parallel-group study to access efficacy and safety of fixed dose combination of netarsudil and latanoprost ophthalmic solution (0.02% w/v + 0.005% w/v) in comparison with latanoprost eye drops (0.005% w/v) in patients with open angle glaucoma or ocular hypertension
- The Asia primary tube versus trab (TVT) study
- Shared medical appointments randomised trial (SMA)
- Screening for glaucoma in children with retinopathy of prematurity: A pilot study
- Enhancing early glaucoma detection through family screening to reduce glaucoma related blindness (F-PAGE)
- Screening of family members of juvenile open angle glaucoma (JOAG) patients for Myocilin gene mutations
- Evaluation of the accuracy of an automated algorithm for glaucoma detection from color fundus photographs taken on a low-cost camera as compared with the gold standard clinical evaluation - A prospective study (LJMU)
- Knowledge, willingness and preferences of glaucoma patients on telemedicine and vision centres in a tertiary care hospital in South India (Telemedicine)
- Comparison of virtual reality based perimetry with standard automated perimetry in patients with glaucoma
- Environmental assessment of community based vision centres vs. referral centre visits
- Comparison of ocular biometric parameters in patients diagnosed with Nanophthalmos and in patients with primary angle closure disease
- A cross sectional study on comparison of lens parameters and choroidal thickness across spectrum of primary angle closure disease and normal population
- A prospective, interventional study evaluating the safety and efficacy of therapeutic ultrasonogram (TUG) in

subjects with primary open angle glaucoma or ocular hypertension

- Evaluating causes of long patient visit durations in a paying and free glaucoma clinic
- Intraocular lens (IOL) power formula selection in ultra-short nanophthalmic eyes
- Screening of family members of juvenile open angle glaucoma (JOAG) patients for Myocilin gene mutations
- Molecular regulators associated with the maintenance of human trabecular meshwork stem cells in relation to their reduction in aging and glaucoma
- Timed instillation of medicated eyedrops in glaucoma patients (TIME)

Cataract

- To compare the effect of existing hydrophilic intraocular lens and newly designed hydrophilic intraocular lens over posterior capsule opacification rates in cataract patients
- To assess the safety and efficacy of posterior chamber phakic intraocular lens in patients with high myopia
- Comparative analysis of single dose intraoperative sub-conjunctival depot steroid to routine topical steroids and NSAIDs in phacoemulsification
- The natural history of IOL in eyes with exfoliation syndrome
- Visual performance comparison between phacoemulsification and manual small incision cataract surgery in eyes with senile cataract - A prospective randomised clinical trial
- Comparative analysis of simulator-based training and traditional wetlab training on the cataract surgical outcome in manual small incision cataract surgery -A prospective study
- Validation of cataract detection tool - An artificial intelligence based app on android mobile
- Effect of Nd: YAG laser posterior capsulotomy on higher order aberrations
- Characterisation of adult human lens epithelial stem cells in the maintenance of tissue homeostasis throughout life and their functional status in cataractous lens
- To study the safety and performance of high refractive index cast molded hydrophobic intra ocular lenses with age-related cataract patients

- Effect of preloaded capsular tension ring on clinical outcomes during and after phacoemulsification cataract surgery
- A prospective, randomised, double blind, comparative study to evaluate the surgical performance of Nanocut and Aurolab round stock surgical blades for making corneal incisions during cataract surgery.
- Detection of posterior capsule integrity in posterior polar cataract during pre-operative biometry using IOL master 700
- Comparing outcomes of femto laser assisted cataract surgery to conventional phacoemulsification in nanophthalmos eyes- A randomised controlled trial

Cornea

- Intelligence smartphone imaging trial - (INSIGHT)
- Steroids and cross-linking for ulcer treatment (SCUT II)
- Outcome of post-operative treatment with tacrolimus ointment in therapeutic corneal grafts for fungal infections
- Effect of clinical photo documentation in the management of corneal ulcer
- A prospective comparative observational study on the clinical features, microbial profile and outcomes of patients with corneal vs primary tertiary centre visit
- Analysis of tear protein profile in herpes simplex viral keratitis
- A prospective analysis on the risk factors for descemets membrane detachment during small incision cataract surgery and phacoemulsification
- Rose bengal electromagnetic activation with green light for infection reduction study (REAGIR)
- Quantifying microbial keratitis to predict outcomes: An imaging and epidemiologic approach
- Diagnostic accuracy of smartphones for photographing corneal scars
- Proteomic and metabolomic analysis of microbial keratitis patients tears to identify biomarkers (molecular signatures) of corneal ulcer progression

Paediatric ophthalmology

- Multi-centric randomised controlled trial to compare the efficacy of 0.01% vs 0.05% Atropine in progression of myopia in Indian population
- Role of vitamin D3, dopamine and serotonin levels in myopia development and progression

- Evaluation of axial length and axial length/curvature ratio in Indian myopic children and adolescents
- Screening for glaucoma in children with retinopathy of prematurity: A pilot study
- Long-term effects of early visual deprivation on perceptual development

Retina

- A 96-week, two-arm, randomised, single-masked, multicentre, phase III study assessing the efficacy and safety of brolicizumab 6 mg compared to panretinal photocoagulation laser in patients with proliferative diabetic retinopathy (CONDOR)
- A phase 3, Randomised, double-blind parallel group, multicentre study to compare efficacy, safety, pharmacokinetics, and immunogenicity of BPO5 versus EU-approved Lucentis® in patients with wet (Neovascular) age-related macular degeneration.
- A double masked, parallel group, randomised, multicentre, clinical study to compare efficacy and safety of intas ranibizumab with Lucentis® in patients with neovascular (Wet) age-related macular degeneration (AMD).
- A phase III, prospective, randomised, parallel group, double-blind, multicentre study to compare the efficacy, safety, and immunogenicity of lupin's aflibercept with Eylea® in patients with neovascular age-related macular degeneration.
- Randomised, double-masked, parallel-group, multicentre clinical study to evaluate the efficacy and safety of AVT06 compared with EU-Eylea® in subjects with neovascular (wet) age-related macular degeneration (ALVOEYE)
- A prospective, interventional, single arm, multicentre, phase 4 study to assess the safety and efficacy of ranibizumab in participants with retinopathy of prematurity
- A prospective, multicentre, phase IV study to assess the efficacy, safety and immunogenicity of ranibizumab solution for injection 10 mg/mL (r-DNA Origin) and compare with reference biologic for the treatment of neovascular age-related macular degeneration
- Subjective high-risk patient counselling randomisation project (SHARP)
- Genetic characterisation of macular telangiectasia (MacTel) 2 in the Indian population

- Prospective study for ocular and systemic pathologies
- Quality of life in patients with diabetic retinopathy in South India, a questionnaire-based cross-sectional study - DR QOL
- A prospective comparative study of lutein and zeaxanthin adjunctive therapy with pars plana vitrectomy in macula off rhegmatogenous retinal detachment
- Lutein and zeaxanthin adjunctive therapy with primary pars plana vitrectomy for idiopathic macular hole - A prospective comparative study
- Efficacy of autologous platelet rich plasma for refractory macular holes: A prospective study
- A prospective comparative study between efficacy and safety profile of ranibizumab biosimilars and innovator ranibizumab in diabetic macular edema, retinal vein occlusion and choroidal neovascular membrane - A real world experience
- Assessing the change in preferences and compliance rates for stable non-proliferative diabetic retinopathy patients and projected new patient flow and surgeries by a new diabetic retinopathy follow-up visit and screening pathway at Madurai vision centres
- A prospective pilot study comparing conventional versus under the air vitrectomy for vitreous biopsy in endophthalmitis
- Evaluation of role of early vitrectomy versus observation in traumatic macular hole - A prospective study
- Structured post-marketing surveillance to collect the safety data of intravitreal aflibercept injection (IVT-AFL) in patients of wet age-related macular degeneration during real world clinical practice.
- Improving retinopathy of prematurity (ROP) telemedicine systems in South India
- Long-term effects of semaglutide on diabetic retinopathy in subjects with type 2 diabetes
- A phase III, comparative, double blind, randomised, multicentric study to compare the efficacy, safety and immunogenicity of sun's ranibizumab with reference biologic in patients with neovascular age-related macular degeneration (wet AMD)
- A randomised, active-controlled, double-masked, parallel-group, phase 3 study to compare efficacy and safety of CT-P42 in comparison with Eylea in patients with diabetic macular edema

- Accuracy of smart phone based mydriatic fundus camera in the detection of CMV retinitis
- Prevention of blindness using digital technologies at primary care centres
- Artificial intelligence integrated low cost fundus camera to perform diabetic retinopathy screening at diabetes and endocrinology clinics in India
- A phase IIIb, multicentre, open-label, single-arm study to investigate faricimab (Ro6867461) treatment response in treatment-naïve, underrepresented asian Indian patients with diabetic macular edema
- A phase III, randomised, double blind, parallel group, multicentre study to compare the efficacy, safety and immunogenicity between test aflibercept and Eylea® in patients with neovascular (Wet) age-related macular degeneration (AMD)
- Diabetic retinopathy microbiome study- India
- Long-term outcomes of patients with DME who receive less than 3 intravitreal injections in the first year
- Paradigm shift in indications of pars plana vitrectomy over the past decade in a tertiary care hospital – A retrospective observational study
- Measuring compliance rates for diabetic retinopathy procedure, surgery, and routine follow-up visits from January 2022 to June 2023 and analysing relationships and interactions in the data
- Evaluating causes of long patient visit durations in a paying and free retina clinic
- Retrospective review of surgical removal of subretinal fibrosis in vogt koyanagi harada disease (VKHD)

Uvea

- A phase III, multicentre, randomised, double masked, sham-controlled study to investigate the efficacy, safety, pharmacokinetics, and pharmacodynamics of Ro7200220 administered intravitreally in patients with uveitic macular edema
- Ocular pathogen and transcriptome investigation using comprehensive sequencing

General ophthalmology

- Remote mobile phone app for diagnosis of anterior segment disease - A new model for community based screening

Orbit

- Clinico-radiological and pathological correlation of orbital tumors - A retrospective study
- Mapping the human exposome to identify the source of retinoblastoma
- Phenotypic and molecular characterisation of chemoresistance in retinoblastoma

Neuro-ophthalmology

- Comparison of idiopathic intracranial hypertension in patients with and without anemia
- Impact of community-based eye health education program on service uptake and speciality diagnosis in vision centres

- Traumatic optic neuropathy treatment study (TONT)
- A pharmacogenomics study to identify genetic risk factors for development of ethambutol optic neuropathy

Health systems research

Led by the research division of LAICO, health systems research at Aravind, focuses on enhancing eye care delivery. The studies primarily explore issues related to access to quality eye care, universal coverage of eye care through vision centres, and the validation of innovative technologies such as telemedicine and artificial intelligence to improve eye care delivery. Additionally, this division designs and conducts population-based studies to understand the prevalence of various eye diseases and the utilisation of eye care services by the community. The team also engages in conducting systematic reviews and meta-analyses on relevant clinical and non-clinical themes.

- A retrospective cross-sectional study to estimate the annual prevalence of eye injuries reported at 31 vision centres associated with Aravind Eye Hospital, Madurai.
- Impact of vision centres on achieving universal eye health coverage: Prevalence, coverage, and utilization of eye care services in Southern India
- Investigating gender differences in care-seeking and diagnosis for various ophthalmologic conditions in the Theni district of India: A secondary analysis of a retrospective cohort study
- Rapid assessment of avoidable blindness survey at Kanniyakumari district using the upgraded RAAB7 methodology
- Experimenting a novel design to improve cataract and refractive services for all eligible patients to achieve the 2030 global targets on effective coverage of eye care, specifically eCSC and eREC
- Impact of electronic medical record implementation on care provider and patient satisfaction at a tertiary level eye hospital network in India.
- Impact of electronic medical record implementation on care provider and patient satisfaction at Aravind's partner eye hospitals in India.
- Effective cataract surgical coverage (eCSC) and effective refractive error coverage (eREC) in a southern Indian population: Results from a comprehensive eyecare workload assessment (CEWA) Study
- Annual eye care utilization in a southern Indian population: Results from a comprehensive eyecare workload assessment (CEWA) Study
- Prevalence of Refractive error in a Southern Indian Population: Results from comprehensive eye care workload assessment Study
- Investigating the accuracy of subjective refraction performed by a trained non-refractionist compared with an experienced refractionist in a high-volume eye hospital in southern India
- Impact of pupil dilation on imageability and accuracy of AI-based all-in-one DR screening system
- Product optimisation of a low-cost, portable, all-in-one self-testing fundus camera
- Evaluation of the agreement and reliability of transpalpebral tonometers compared with goldmann applanation tonometer - A systematic review and meta-analysis
- Prevalence of glaucoma in India - A systematic review and meta-analysis
- Impact of a community-based eye health education program on service uptake and speciality diagnosis in vision centres
- Cost-effectiveness of primary eye care delivery through community-based vision centres in South India
- Examining the safety and efficacy of an altered post-OP follow-up protocol following an uneventful cataract surgery at a tertiary eye care hospital in Bangladesh - A randomised controlled trial
- A study of patient digital usage habits, access and attitudes at a high volume eye hospital in Southern India

Clinical trials: Aurolab

- Randomised controlled study of Aurolab's multispot green laser with already available green laser (PASCAL) in proliferative diabetic retinopathy patients
- Prospective, randomised, double arm study to compare the safety and efficacy of Aurolab's aurovisc (2% HPMC) with eyevisc
- To evaluate the safety and efficacy of Aurolab's refractive design extended depth of focus (EDOF) intraocular lenses (IOL) in cataract patients.
- Evaluating the visual performance and rotational stability of a refractive design extended depth of focus (EDoF) toric intraocular lens (IOL)

Ophthalmic Supplies and Equipment

In the last year, Aurolab embarked on a rebranding exercise, Aurolab 2.0, which revitalises its position as a trustworthy global organisation. The suture division's 25 years of service was commemorated with a grand celebration, highlighting its sustained excellence. Further, Aurolab's new warehouse facility underscores its commitment to distributing products globally while adhering to international standards. Aurolab remains dedicated to continuous improvement initiatives focused on boosting productivity, enhancing employee safety, and ensuring customer satisfaction, all with the vision of enabling vision for all.



Infrastructure Development

The ever-growing demand for ophthalmic products, and increased production necessitated the streamlining of stocking and distribution. To meet these needs, Aurolab opened a state-of-the-art warehouse facility on 1st October 2023. Spanning an impressive 1 lakh square feet, this facility is meticulously designed to streamline the maintenance of medical devices, medications, and equipment manufactured at Aurolab. Equipped with an advanced ERP software system, and cutting-edge global technology, the new facility significantly strengthened operational efficiency and enhanced customer service. The rising demand for IOL production required additional space, leading to the relocation of the suture needle and blade division to a new facility inaugurated on 19th February 2024. Further, to provide room for the IOL unit, the construction of a new facility for the Pharmaceutical division commenced with a boomi pooja held on 1st December 2023.

To accommodate the ever increasing workforce, Aurolab also opened a new production staff hostel, in addition to the existing one.

New Products

Aurolab Phoenix

The Aurolab Phoenix, the multispot laser, was launched at the VRSI Conference 2023 in Thiruvananthapuram. This advanced device features 24 preprogrammed scanned patterns, ensuring precise alignment and enhanced efficiency with a dual-hit mechanism. It also guarantees safety and control for both surgeons and

patients, with its inbuilt eXs (Expert System) and true colour visibility with a safety filter.

Aurolab i-Nova

Aurolab proudly unveiled i-Nova, its latest innovation, at the AIOS 2023 conference in Kochi. i-Nova is a next generation pupil expander that streamlines complex surgical procedures. It is designed to enhance the surgical outcomes and facilitate effortless small pupil surgeries. With its optimally designed features, and wide 6.3 mm circulate view, i-Nova enables doctors to manoeuvre instruments, perform anterior capsulorhexis, lens removal, and IOL implantation without causing damage to ocular tissues. The device's performance-driven design ensures optimal visualisation and access even in small pupil management.

Aurolab Omniglo

The Aurolab Omniglo is a stereo coaxial illumination device designed for easy external attachment to any mid-range or low-end microscope. This device significantly improves illumination, making it an ideal solution for cataracts and other surgeries. It serves as a primary light source and enhances the view of the eye structure with its red reflex light. This improved visibility assists surgeons in seeing the eye structure more clearly, thereby enhancing their surgical experience.

Aurolab Falcon-i

The Aurolab Falcon-i anterior surgical microscope was launched at AIOS 2024 in Kolkata. Its apochromatic



optical system delivers crisp, true colour output at every magnification level. Optimised with Omniglo red reflex technology, it ensures enhanced illumination. It is the only step magnification microscope that supports both red reflex technology and an HD surgical recording system. The Aurolab Falcon-i maximises surgical capabilities, benefiting both surgeons and patients with its versatility.

Aurolab Essence

Aurolab introduced Essence, a high performance IOL featuring advanced monofocal technology for extended vision. It provides consistent clarity from intermediate to distance vision.

Aurolab Retisil 1500 PFS

Aurolab's silicone oil "Retisil" ensures optimal viscosity, ease of use, and sterility during surgical procedures. The pre-filled syringe variant offers convenience by eliminating manual filling, reducing contamination risk and ensuring accurate dosing, cost savings, and environmental benefits.

Aurolab i-Ring

Designed to address challenges during cataract surgery, Aurolab has developed i-Ring, preloaded capsular tension rings (CTRs) with the latest advancements that

improves efficiency and effectiveness of procedures. With intelligent design and practical functionality, i-Ring guarantees a consistent circular expansion, maintaining the capsular bag's stability throughout the procedure.

New Initiatives and Developments

Rebranding exercise

Aurolab unveiled their new logo on 27th January 2024, during the 32nd annual day celebration, highlighting a customer-centric approach and reinforcing their global reputation as a trustworthy organisation. This rebranding initiative, termed Aurolab 2.0, incorporates enhancements in global outlook, professionalism, trustworthiness, customer-centricity, quality, and innovation, ensuring the company's operations align with evolving market demands.

Regulatory Affairs

Aurolab obtained significant achievements in regulatory compliance and market expansion this year.

- Secured licensing for surgical blades from the Indian FDA, and renewed the drug license.
- Obtained quality management system certificate



Aurolab Essence



Aurolab i-Nova



Aurolab Omniglo



Aurolab i-Ring



Aurolab Retisil 1500 PFS



Aurolab Falcon-i



Aurolab Phoenix

for the phacoemulsification system and silicone products.

- Successfully listed Auroblue and i-Nova with the USFDA, marking a remarkable achievement in the journey towards entering the US market.
- Registered a total of 69 products across 12 countries, including Indonesia, Thailand, Mexico, and Syria, to provide quality healthcare solutions on a global scale.
- Completed GMP audits from Rwanda and Uganda.

National Sales Meet (NSM) 2024

Convened in Jaipur on 26-29 March, the NSM 2024 engaged diverse teams, including domestic sales, field service, therapeutics, and marketing division. A meticulously organised workshop helped the field team delineate targets for the forthcoming financial year. The marketing and sales development programme (MSDP) sessions were instrumental in providing participants with invaluable insights and strategic approaches, and equipping them with practical methodologies to navigate the dynamic market condition effectively.

Marketing

- The domestic marketing team launched a video “Your vision in safe hands,” on 1st July by the domestic marketing team to showcase Aurolab’s commitment to providing the highest quality eye care solutions worldwide.
- Aurolab organised Hawk-i roadshow campaigns between 16-21 October 2023 and 20th January -

1st February 2024 to promote its products across Karnataka, Rajasthan, and Kerala, providing complete information about its products and the opportunity for a hands-on experience. The road show covered a total of six institutes and fifteen hospitals.

CMEs, Training Programmes and Conferences

Aurolab participated in 34 national conferences and 27 international conferences to showcase its existing products and launch new products, enhancing its brand visibility.

The first-ever workshop for postgraduates in ophthalmology was conducted at JIPMER Institute, Pondicherry on, 20-21 July 2023 with the aim of raising awareness about its products among them.

A webinar on Together As One for cataract surgeons was organised on 28th July 2023 to explore the combined use of two IOL technology platforms: Aurovue Vivid and Aurovue Dfine.

Aurolab organised a Round Table Meeting at Pune on 5th August 2023. Dr. Tejas D. Shah, Amdavad Eye Hospital, Ahmedabad, shared his valuable experience with Aurolab’s Indigenous CFV IOL.

A webinar on The Role of Surgical Tamponade in Retinal Detachment Treatment, for retinal surgeons and fellows was held on 11th August 2023, featuring surgical videos, and demonstrating techniques for silicone oil insertion and removal. The webinar not only offered insights into retinal surgery strategies but also promoted collaborative learning.



Aurolab at Various National and International Ophthalmic Conferences

Rajasthan Ophthalmological Society Conference, Jodhpur



Poona Ophthalmological Society Conference, Pune



All India Ophthalmological Conference, Kolkata



Karnataka Ophthalmic Society Conference, Bengaluru



India International Optical and Ophthalmology Expo, Nepal



Vitreo-Retina Society of India, Thiruvananthapuram



Aurolab staff members celebrating the Suture 25 campaign at the Aurolab

Suture 25

Suture 25 campaign was organised on 17th November 2023 to celebrate Aurolab's suture division completing 25 years. On the occasion, the campaign uniform, badges, and technical guide were unveiled. Moreover, a video showcasing the suture division's milestones was launched. As part of this event, Aurolab distributed the employee kit to the suture division, marketing, and sales team members. Additionally, a suture-experiencing booth was set up to highlight the significance of suture procedure. As part of this campaign, Aurolab field staff visited approximately 6,200 ophthalmologists, providing them with a special kit.

Support to Vision Centres

Aurolab supported the Rotary Orange project and its collaborating partner hospitals to setup vision centres by providing vision centre packages. Aurolab's marketing and service team ensured a smooth

implementation of this programme. So far, Aurolab has supplied several vision centre packages to support the establishment of 100 vision centres. Further, the Mission for Vision also joined this initiative, inaugurating their first partnered vision centre on 10th August 2023, at Mayiladuthurai.

Human Resource Development

As part of the vocational skill training programme, Aurolab collaborates with reputed universities to organise various initiatives, empowering employees. Distance education programme for the production staff, and Gandhian thoughts programme, a certificate course, were conducted through Madurai Kamaraj University, Madurai. Additionally, tailoring and craftwork sessions were conducted by an external trainer.

After a four-year break, Aurolab organised Aurolab Utsav 2023 on 22nd to 25th December 2023 to showcase the talents of its employees. As part of the programme, they were grouped into various teams, namely customer focus, trust, global view, professionalism, quality, and innovation, highlighting the key qualities of Aurolab 2.0. Aurolab Utsav 2.0 was part of the rebranding initiative that highlighted how these values are incorporated in Aurolab's operations to keep up with market changes.

Aurolab staff members participating in the tug-of-war competition at the Aurolab Utsav 2.0



Social Responsibility Activity

The campaign on 'Mission ToRCh - A Mission To Reach Children,' held on 8-12 July 2023, aimed to provide primary eye care, including medicines and spectacles, to orphaned and underprivileged children free of cost. Two campaigns were conducted at Vakil Eye Clinic, Coimbatore, for the children of Don Bosco Anbu Illam, and at Shri Rukmini Polyclinic, Tirunelveli, for the children of St. Anne's Home.



In its progressive march towards expanding its service, and catering to demand, Auroitech has evolved into an independent company, embodying the core values of the Aravind Eye Care System to address eye care needs in the digital space. On its journey towards universal eye care coverage, Auroitech, with its new identity, is set to undertake far-reaching initiatives.

Information Technology



Lanuch of Dhristi app

In 2021, the IT unit of Aravind was given a new identity as “Auroitech”. This year, in response to its increasing relevance, it was evolving into a separate entity, marking a pivotal moment in its growth trajectory.

Following in the footsteps of GOVEL Trust, LAICO, Aurolab, and AMRF, and with the same visionary path of “eliminating needless blindness” through affordable and high-quality care, it became the Auroitech Digital Solution Foundation - a technology and software company, on 3rd August 2023. This independent entity provides accessible, innovative, and affordable digital solutions to healthcare institutions worldwide, aimed at enhancing quality, safety, and efficiency in eye care delivery.

A dedicated white-labelled IT product development and R&D facility has been setup in Madurai and Chennai, supported by a strong technical team committed to advancing current EMR solutions built on cloud-native architecture, with future plans to incorporate IoT and AI/ML solutions for workflow automation.

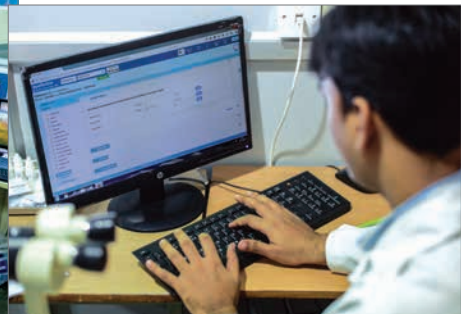
To date, Auroitech has successfully implemented its flagship product, eyeNotes, for external client hospitals, at different locations. New client implementations across India, Bangladesh, and Kenya were achieved through remote support.

As value-added services, the Cataract Quality Assurance (CatQA) tool was delivered to 9 hospitals to support LAICO’s LEAP initiative to enhance outcomes in cataract surgery. The Picture Archiving and

Team of Auroitech



eyeNotes application use at Aravind





Srinivasalu Thayam received the community achievement awards at the CISO platform conference

Communication System (PACS) was implemented at Sitapur Eye Hospital. Additionally, Web Vision centre management system (VCMS) was hosted for over 200 vision centres for the Government of Bangladesh.

This year has been productive as a new Optical Management System was launched, including a mobile app for patients called Dhristhi.

A learning and development framework called “Innovate, Secure, and Thrive” was set up under which weekly learning sessions, workshops, and conferences are conducted to discuss proof of concepts, tool assessment, and process improvements. This helps build in-house capability and reduce the overall cost of its products.

Further, an annual day was organised featuring conference sessions with industry experts and veterans



who shared insights on the domain and technical trends with team members. Additionally, a Hackathon was

held, with active participants from six colleges around Madurai. Top performers in the Hackathon were offered employment opportunities. As a part of community development, Auroitech’s technical team has contributed and shared Aravind’s best practices with

the industry through various platforms such as Digital India, the Ministry of Electronics and Information Technology, MediCall Academy, Indian Express, the CISO platform, CIO Klub, CII, a few engineering colleges, and other organisations.

Awards and Recognitions

Aravind has received several industry recognitions over the last year:

- 1st Runner-up in “Best Healthcare Digital Initiative” on 23rd November 2023
- 1st runner up award in “Best Health Tech Innovation” from CII-WR 2023 on 23rd November 2023
- Community Achievement Award for Healthcare Security from the CISO platform
- “Innovation-Technology” award from Tech-Senate South, express group on 9th December 2023

IT team celebrating the annual day



Employee Empowerment

Apart from professional education, which is imparted through periodical continuing education programmes, Aravind constantly looks to ways of empowering people holistically.

“My Life My Pride” programme, designed for MLOPs, who make up nearly 75% of the workforce, provides them with various life skills courses.

Continuing education programmes are regularly held for clinical staff to keep them updated with the latest trends and technological advancements. In the past few years, this programme has been extended to non-clinical staff, such as staff of the Publications and Audio-visual department, Electrical Maintenance Department, and the Stores, to help in their professional growth and to enhance their performance. These workshops, along with extracurricular activities, benefit employees, enabling them to lead a successful professional and personal life.

Departmental Retreats

Periodical department-wise retreats are held for standardising work across all facilities. This also gives the opportunity for bonding between department staff across all facilities.

Aravind Communications conducted its 7th CPE for its staff across Aravind centres on 22-23 December,

including designers, photographers and videographers. The programme covered key topics such as learning and application of infographics, introduction to digital drawing, mid-career realities, strategies for expanding reach through YouTube videos, and colour correction in photography.

Senior managers, managers, coordinators, admin assistants, and MRD staff of insurance teams across all hospitals had their meet on 5-6 January 2024 at Aravind Pondicherry and Aravind-Chennai, respectively. The sessions at Pondicherry included professional behaviour in patient interaction, communication, teamwork, staff coordination, planning, decision-



Aravind Personnel team during their retreat

Insurance team





Cataract and IOL services team during their retreat



Electrical department team with Dr. G. Natchiar



Human resource team with Dr. G. Natchiar, Cindy Harison, and Dr. R.D. Ravindran

making, and resource utilisation. While, the sessions at Aravind-Chennai featured talks by industry experts from renowned insurance companies.

A three-day CPE on 26-28 January 2024 for the Stores team from all Aravind centres, focused on enhancing clarity regarding inventory management practices, standardising store functions, defining roles and responsibilities of staff, and providing training on the material management system (MMS).

The Personnel team consisting of senior managers, managers, nursing superintendents, coordinators, and admin assistants from all Aravind had their retreat at Aravind-Theni, on 9-10 January. The sessions covered policies, planning and scheduling work, discussions about statutory acts applicable to hospitals, process flow within the department, allocation of additional duties and responsibilities, centralisation, and sharing of work.

The central office of Human Resources organised a retreat on 1-2 February for Regional HR Directors from various zones, MLOP Doctors In-charge-1, and MLOP Superintendent-1 from all hospitals. Facilitated by the HR team's mentor, Cindy Harrison, Vice President, Human Resources, Henry Ford Health System, the retreat focused on strategic HR planning for 2024.

The first-ever meeting of the electrical maintenance staff was held at Aravind-Madurai on 3-4 February with the aim to foster fellowship, discuss recent parameter audits, share experiences and outcomes, review lessons learnt from incidents, discuss energy and cost-saving practices, promote environmental sustainability, and outline future development activities.



Mike Myers, Aravind volunteer, teaching photography techniques to the photographers



Stores team attending a session

Heads, Senior Medical Officers, and MLOPs from the IOL departments across all Aravind centres had their retreat at Aravind-Madurai on 12th February 2024. The retreat facilitated discussions on current practices and

identified opportunities for standardisation amidst evolving trends in cataract surgery and had multiple sessions and discussions that led to the formulation of a roadmap for future initiatives.

Making a difference

As part of the annual resident social responsibility (RSR) initiative, also known as the “Vaanaivil” programme, which has been running for sixteen years, the postgraduates from Aravind-Madurai offered educational kits to the students of Govt. Girls High School, Mahaboopalayam, on 8th August 2024. In a similar event, the postgraduates supported visually rehabilitated women from Trichy by organising a sale day to sell their handmade products at LAICO on 1st January 2024. With strong support from the public and staff, the RSR programme helped them raise a substantial amount from the sale.

Continuing the tradition, Aravind-Pondicherry and Madurai organised Angaadi, on 11th January and 22nd February, respectively. Angaadi is a unique charity event where all employees donated their unused items. These items were categorised and sold, creating a fun shopping experience exclusively for hospital employees.





All proceeds were donated to charity organisations. My Life My Pride, a structured well-being programme, began in 2022, grooms MLOPs both physically and emotionally stronger for a happy and

healthy life. Its three focus areas include, personal counselling, life skill development programme, and extracurricular activities.

At present, the “My Life My Pride” programme is active in Aravind Eye Hospital, Chennai, Tirupati, and Tirunelveli. Recognising its positive reception and widespread interest, plans are underway to expand into the rest of the Aravind centres.

To effectively teach youngsters essential life skills, ‘Thalir Thiran Thittam’ model was introduced. It consists of instructional videos, developed by the Aparajitha Foundation, Madurai, these videos make learning enjoyable and allow MLOPs to practice life skills in daily life. MLOP tutors were trained on this model to teach life skills to newly joined MLOPs as part of their curriculum.

Nine MLOPs from Aravind-Chennai, participated in a Marathon organised by Chennai Maduravoyal Police station on 18th June, aimed at improving the physical well-being of the public. Similarly, 22 MLOPs participated in a 5 km Marathon to raise awareness for organ donation awareness on 7th January 2024, received certificates and medals.

At Aravind-Tirupati, MLOPs and junior doctors underwent Taekwondo training. After completing two months of training and passing the grading exam for the yellow belt, they received certificates and awards during a programme held on 24th February. As part of the programme, MLOP committees were introduced, and their responsibilities were outlined, symbolised by badges. This approach fostered a sense of shared ownership between management and MLOPs, offering a sense of pride.

Taekwondo classes have commenced in Aravind-Tirunelveli, following the successful completion of tailoring and Aari training sessions.



MLOPs at Aravind-Madurai attending spoken English class



MLOPs from Aravind-Chennai receiving medals at a Marathon event



MLOPs from Aravind-Tirunelveli practicing Aari and tailoring

MLOPs of Aravind-Tirupati and children of staff members with their Taekwondo certificates



Recognitions and Achievements

RECOGNITIONS

Confederation of Indian Industry (CII) Western Region Innovation in Healthcare and Hospital Technology Awards

Mumbai, 23-24 November 2023

Aravind secured first- runner-up positions in two categories: Best healthcare digital initiative for the eyeNotes EMR product, and Best health tech innovation for the Automated Retinal Disease Assessment (ARDA) project at the international trade fair and conference for the healthcare sector.

CII Tamil Nadu Award for Aravind-Chennai

Chennai, 19th November 2023

Aravind-Chennai received the CII Tamil Nadu Medclave Honours for Ophthalmology.

Farm Fest 2024

Pondicherry, 9-11 February 2024

Aravind-Pondicherry won first prize at the institutional level consecutively for the seventh year, in the Farm Fest 2024-cum-34th Flower, Vegetable, and Fruit Show, organised by the Department of Agriculture and Farmers Welfare, Government of Puducherry.

Lifetime Achievement Award

Delhi, 16th April 2023

Kannamma Ravindran, Lakshmi Eye Care Support Services, Aravind-Madurai, received the Lifetime Achievement Award from Zeiss as part of its 'You & Eye' Awards, recognising her contribution to optical services.

Akshaya Seva Ratna Award

Madurai, 14th April 2023

Dr. Usha Kim, Chief, Orbit and Oculoplasty Services, Aravind-Madurai, was honoured with the Akshaya Seva Ratna Award in recognition of her service to the society.

Prof. C.S. Baskaran Endowment Lecture

LV Prasad Eye Institute, Bhubaneswar, 3-6 July 2023

Dr. S.R. Krishnadas, Director-Fellowship & Physician Development Programme, AECS, delivered the Prof. C.S. Baskaran Endowment Lecture on *Family screening for early glaucoma detection: Chase the families*.

Prof. V. Velayudham Endowment Oration

Chennai, 1st October 2023

Dr. S.R. Krishnadas delivered the Endowment Oration on *Current concepts in management of angle closure disease* at the 9th Annual conference of Tambaram Ophthalmic Society, Chennai.

Dr. N.N. Sood Oration Award

Pune, 6-8 October 2023

Dr. R. Ramakrishnan, Advisor, Aravind-Tirunelveli, delivered the oration on *Glaucoma now and then: The paradigm shift in surgical management* at the 32nd Annual Conference of Glaucoma Society of India.

Subodh Agarwal Gold Medal Award at the Annual Conference of the Intraocular Implant and Refractive Society of India (IIRSI)

Delhi, 7-8 October 2023

Dr. Haripriya Aravind, Chief, Cataract Services, Aravind-Chennai, received the Subodh Agarwal Gold Medal Award at the conference of IIRSI. Titles: *Postoperative misalignment of toric IOLs; Principles of IOL placement in eyes with PCR*

Elected as President of the Telemedicine Society of India (TSI) 2023-2024

Goa, 3-4 November 2023

Dr. R. Kim, Director -IT, AECS & Chief Medical Officer, Aravind-Madurai, was elected as the President of TSI for the year 2023-2024 at the 19th International Conference of TSI.

Dr. PN Nagpal Outstanding Contribution in Ophthalmology Award

Hyderabad, 17-19 November 2023

Dr. R.D. Ravindran, Chairman, AECS, was presented with the award in appreciation of his dedicated service and commitment in the field of ophthalmology at the 5th Biennial World Conference of the International Society of Manual Small Incision Cataract Surgeons (ISMSICS) conference.

Dr. T. Kumaraguru Award

Erode, 9-10 December 2023

Dr. R. Ramakrishnan was conferred with the award for his Community Service, at the 78th Tamil Nadu Annual State Medical Conference (TIMACON-2023).



CII Western Region Innovation in Healthcare and Hospital Technology Awards to Aravind, received by Deepa Krishnan, AuroiTech



CII Award to Aravind-Chennai, received by Srinivasulu Thayam, AuroiTech, Revathy Kannadhasan & Riyah Jaitika, Aravind-Chennai



Prof. C.S. Baskaran Endowment Lecture Award to Dr. S.R. Krishnadas



Lifetime Achievement Award (Zeiss) to Kannamma Ravindran

Dr. R. Kim elected as President of the Telemedicine Society of India



Subodh Agarwal Gold Medal Award - IIRSI to Dr. Haripriya



PSG Vishwa Seva Rathna Award to Dr. P. Namperumalsamy



Dr. M.M. Joshi Oration Award to Dr. R.D. Ravindran

Dr. Samir Kumar Biswas Memorial Oration Award 2023

Kolkata, 15-17 December 2023

Dr. R. Kim was honoured with the award at the 54th Ophthalmological Society of West Bengal Conference. Title: *Technology in retinal disease management*

Padma Shri Dr. M.M. Joshi Oration Award

Hubli, 16-17 December 2023

Dr. R.D. Ravindran was honoured with the award by MM Joshi Eye Institute during the Eye Fest 2023.

Late Dr. Neelima Pawade Lifetime Achievement Award

Nagpur, Maharashtra, 6-7 January 2024

Dr. Usha Kim was conferred with the award at the 48th annual conference of the Vidarbha Ophthalmic Society, "Eyespire 2024". Oration title: *A journey beyond vision*

PSG Vishwa Seva Rathna Award

Coimbatore, 25th January 2024

Dr. P. Namperumalsamy, Chairman Emeritus, AECS, was honoured with the award for his exemplary dedication and visionary leadership by PSG & Sons' Charities, Coimbatore, on the occasion of its 98th Founders' Day.

Padma Shri Award

26th January 2024

On the eve of the 74th Republic Day, the Government of India announced the Padma Shri Award, one of India's highest civilian honours for Dr. G. Natchiar, Director Emeritus, AECS, in recognition of her exceptional and compassionate patient care spanning over 55 years.

Prof. N.N. Sood Lecture Award

Delhi, 2-4 February 2024

Dr. R. Ramakrishnan was conferred with the award at the 57th Annual Foundation Day Celebrations of Dr. Rajendra Prasad Centre for Ophthalmic Sciences, AIIMS, Delhi. Title: *Glaucoma now and then: The paradigm shift in surgical management*

Dr. V. Shanta Memorial Oration

Chennai, 8th March 2024

Dr. G. Natchiar delivered the 3rd Dr. V. Shanta Memorial Oration. Title: *Dr. V. Shantha: A compassionate healer*

82nd Annual Conference of the All India Ophthalmological Society (AIOS 2024)

Kolkata, 14-17 March 2024

FAICO Award

Dr. R.D. Ravindran, was honoured with the award of the Honorary Fellow All India Collegium of Ophthalmology (FAICO) at the AIOS 2024.

Dr. Gullapalli N Rao Oration Award

Dr. N. Venkatesh Prajna, Chief, Cornea and Refractive Surgery Services, Aravind-Madurai. Title: *Innovative diagnostic procedures in fungal keratitis*

AIOS – P Siva Reddy International Award 2023

Winner - Dr. George V. Puthuran, Chief, Glaucoma Services, Aravind-Madurai. Title: *Evolution and widespread use of an affordable aqueous drainage implant*

International Ophthalmic Heroes of India Award (Recognising remarkable achievements)

- Dr. G. Natchiar, Dr. Manju R Pillai, Dr. Viji Rangarajan, Dr. R. Venkatesh, Dr. K. Veena, Dr. S. Kavitha, Dr. Shivraj, Dr. Haripriya, Dr. V.R. Vivekanandan, Dr. Swati Upadhaya, Dr. Puja Maitra, Dr. Apurva Dr. Hirika Gosalia and Dr. Prithvi Chandrakanth



Prof. V. Velayudham Endowment Oration Award to Dr. S.R. Krishnadas



Dr. N.N. Sood Oration Award to Dr. R. Ramakrishnan



Dr. Samir Kumar Biswas Memorial Oration Award to Dr. R. Kim



Dr. Usha Kim receiving the Late Dr. Neelima Pawade Lifetime Achievement Award



Honorary FAICO Award to Dr. R.D. Ravindran



Dr. Gullapalli N Rao Oration Award to Dr. N. Venkatesh Prajna



AIOS - P Siva Reddy International Award to Dr. George V Puthuran



International Ophthalmic Heroes of India Award to Dr. Haripriya at the AIOS Conference

Top-Cited Ophthalmology Researchers in India

Dr. M. Srinivasan, Director Emeritus, AECS, has been listed among the top ten Lifetime Highest-Cited Ophthalmology Researchers in India. This ranking was announced by a panel of experts from Stanford University, and Elsevier, based on the impact of his work.

Furthermore, in the latest annual Top-Cited Researchers Ranking for 2023, Dr. M. Srinivasan, Dr. S.R. Rathinam, Dr. N. Venkatesh Prajna, and Dr. S. Lalitha Prajna, Chief, Microbiologist, Aravind-Madurai, have all been included. Notably, they have been listed for three consecutive years.



Dr. M. Srinivasan



Dr. S.R. Rathinam



Dr. N. Venkatesh Prajna



Dr. S. Lalitha Prajna

ACHIEVEMENTS

11th Annual Vit-Buckle Society Meeting of the American Society of Retina Specialists (ASRS)

Las Vegas, USA, 12-15 April 2023

Dr. K. Naresh Babu, Chief, Retina and Vitreous Services, Aravind-Madurai, won the Best Video Award for his video titled, *International surgical retina with great power comes great responsibility*, and a travel grant.

Annual Conference of All India Ophthalmological Society (AIOS)

Kochi, 11-14 May 2023

Best Film in Quality Teaching

- Winner - Dr. Manju R. Pillai, Dr. Chinmayee, Dr. Niranjana, and Dr. Amit Pathak, Medical Consultants, Glaucoma Services, Aravind-Madurai. Title: *Clinical evaluation protocols for childhood glaucoma*

Best Film in Special Interest category

- Runner-up - Dr. Manju R. Pillai, and Talla Shruthi, Glaucoma

Fellow, Aravind-Madurai.

Title: *This too shall pass*

Film Festival Award of AIOS (FIFA)

- Winner - Dr. Madhu Shekhar, Chief, Cataract and IOL Services, Aravind-Madurai
Title: *Identifying subtle signs of zonular compromise: The art of deduction*
- Runner-up - Dr. Athul S. Puthalath, Retina Fellow, Aravind-Madurai
Title: *Blue light patch for smartphone assisted Cobalt blue photography*

ARC Surgical Innovators Corner

- Consolation prize - Dr. Athul S. Puthalath
Title: *Intraocular diathermy instrument: A challenge overcome in vitreoretinal surgery*

Best Physical Poster

- Winner - Dr. Talla Sruthi, Glaucoma Fellow, and Dr. Vijayalakshmi, Medical Consultant, Glaucoma Aravind-Madurai
Title: *Bilateral secondary angle closure glaucoma as an initial manifestation of systemic lupus erythematosus*

Quiz on Micro Vision

- Dr. Senthil Prasad, Medical Consultant, Cataract Services, Aravind-Madurai, won 7th place.

Certificate of Excellence in Research

- Dr. Toshit Varshney, Retina Fellow, Aravind-Madurai, received the Certificate in the young researcher's award session at the PG thesis competition.

Indian Journal of Ophthalmology (IJO) Gold Award

- Dr. Shivkumar Chandrasekharan, Chief, Cataract and IOL Services, Aravind-Tirunelveli
Title: *Outcomes and favourable prognostic factors in patients of phacomorphic and phacolytic glaucoma managed by manual small incision cataract surgery: A retrospective study*

IJO Certificate of Merit

- Dr. Mohideen Abdul Kader, Chief, Glaucoma Services, Aravind-Tirunelveli
Title: *Lowering of intraocular pressure after phacoemulsification in primary*



Dr. Madhu Shekhar won the Film Festival Award of AIOS



Dr. Mohideen receiving the IJO Certificate of Merit



Dr. Shivkumar Chandrasekharan receiving the IJO Gold Award

open angle and angle closure glaucoma: Correlation with lens thickness

- Dr. V. Anitha, Chief, Cornea Services, Aravind-Tirunelveli
Title: *Pythium insidiosum keratitis.*
- Dr. Prasanna Venkataraman, Medical Consultant, Glaucoma Services, Aravind-Chennai
Title: *A systematic approach to the management of microspherophakia*

Best Poster Podium Presentation

- Winner - Dr. Neelam Pawar, Medical Consultant, Paediatric Ophthalmology Services, Aravind-Tirunelveli
Title: *Non-compliance for wearing spectacles in school-going children in South India*
- Winner - Dr. Swati Upadhyaya, Medical Consultant, Glaucoma Services, Aravind-Pondicherry
Title: *Bent needle AB interno goniotomy: Preliminary results*
- Winner - Dr. Manavi D. Sindal, Chief, Retina and Vitreous Services, Aravind-Pondicherry
Title: *Unusual associations with aggressive retinopathy of prematurity*

ENT Ophthalmology & Dermatologic Medicine (ENTOD) Quiz

- Dr. Praveena Shyam, Fellow, Paediatric Ophthalmology Services, Aravind-Tirunelveli, won second prize.

Col. Rangachari Award for Best of Best Paper

- Winner - Dr. Siddharth Narendran, Medical Consultant, General Ophthalmology, Aravind-Coimbatore
Title: *Nucleic acid extraction: Free CRISPR/CAS 12 A based diagnostic platform for fungal keratitis*

Best Physical Poster Award - Neuro ophthalmology

- Dr. Karthik Kumar, Medical Consultant, Neuro-Ophthalmology, Aravind-Coimbatore; Title: *Lamina cribrosa thickness in non arteritic: Anterior ischemic optic neuropathy*

Appreciation Award for Photography

- Dr. Avani B. Chandran, DNB Resident, Aravind-Coimbatore

Best Free Paper - Community Ophthalmology

- Winner - Dr. Hirika Gosalia, DNB Resident, Aravind-Coimbatore
Title: *Smartscope kit: A portable eye hospital for screening in outreach camp*

Think Under the Apple Tree Innovation Award

- Consolation Prize - Dr. Hirika Gosalia; Title: *Log: A perfect surgical digi logbook for residents!*
- Third and fourth place - Dr. Prithvi Chandrakanth, Medical Consultant, Retina and Vitreous Services, Aravind-Coimbatore
Video title: *Slitscope and gimballscope*

- Consolation prize - Dr. V.R. Vivekanandan, Chief, Cataract-General Ophthalmology Services, Aravind-Pondicherry
Video title: *Flanges: The Brahmastra for anterior segment surgeons*

Free Paper Category

- Runner-up - Dr. Chinmay Vikas Mahatme, DNB Resident, Aravind-Coimbatore
Title: *Macular microvascular and structural changes in neuromyelitis optica spectrum disorders and myelin oligodendrocyte glycoprotein antibody disease*

Fellowship of the All India Collegium of Ophthalmology in Glaucoma Award

- Winner - Dr. Sunanda Subramanian, Medical Consultant, Glaucoma Services, Aravind-Coimbatore

Best Free Paper Award - Trauma Category

- Winner - Dr. Prithvi Chandrakanth
Title: *Documentation of ocular trauma using smartscope kit*

Best Physical Poster Award - Optics Category

- Dr. Prithvi Chandrakanth
Title: *Gimbalscope: Every beginner's retinoscopy teacher*

Best of IJO Award

- Dr. C.R. Viswaraj, Medical Consultant, and Dr. S. Kavitha, Chief, Glaucoma Services, Aravind-Pondicherry
Title: *Neuroprotection in glaucoma*



Dr. Viji Rangarajan won the Oscar Award at the conference of WSOPRAS



Dr. Manju Pillai and Dr. Kavitha receiving the Film Festival Awards at WGC



ARC-Video Session Award

- Winner - Dr. V.R. Vivekanandan
Title: *Flanges - 'MJOLNIR' of ophthalmology*

ARC-Surgical Innovators Corner

- Consolation prize -
Dr. V.R. Vivekanandan.
Title: *Managing ID repair, CTS and SFIOL the simple flanged way*

AIOS-YOSI Competitive Case Presentations

- Winner - Dr. Joshi Saloni Mahesh, DNB Resident, Aravind-Pondicherry
Title: *Paradox in the eyes: A case of bilateral secondary acute angle closure*

IJO Honour Award

- Dr. Anand Rajendran, Chief, Retina and Vitreous Services, Aravind-Chennai

Awards at the National Video Competition – Maharashtra Ophthalmological Society

15th April 2023

Non-Surgical Category

- First prize - Dr. Nishant Maindargi, DNB Resident, Aravind-Pondicherry; Title: *Eye-banking*

Innovation Category

- First prize - Dr. Shivaraj Tagare, Retina Fellow, Aravind-Pondicherry; Title: *Innovations in operation theatre*

Film Festival Award Winners – American Society of Cataract and Refractive Surgery Conference (ASCRS) 2023

San Diego, California, USA, 05-08 May 2023

Grand Prize: Outstanding Film Award

- Winner - Dr. K. Veena, Medical Consultant, Paediatric Ophthalmology Services, Aravind-Pondicherry
Title: *Wasteless: A model for green cataract surgery*

Special Interest Category

- Winner - Dr. V.R. Vivekanandan
Title: *Flanges: Mjolnir for ophthalmologists*

Glaucoma Surgery Category

- Runner-up - Dr. R. Venkatesh, Chief Medical Officer, Aravind-Pondicherry
Title: *Gateway to safe suture gonioscopy assisted 99 transluminal trabeculotomy*

Oscar Award at the World Society of Ophthalmic Plastic Reconstructive Aesthetic Conference (WSOPRAS)

Dubai, UAE, 5-7 May 2023

Dr. Viji Rangarajan, Chief, Orbit and Oculoplasty Services, Aravind-Coimbatore, won the Oscar Award in the Best Video category.

Title: *Eyes are the windows of the soul: Bridging extensive upper eyelid congenital colobomas*

Film Festival Award Winners at the ASCRS conference, Aravind-Pondicherry team



Film Festival Awards at the 10th World Glaucoma Congress 2023

Rome, Italy, 28th June - 1st July 2023
Educational/Public Health Category

- First prize - Dr. Manju R. Pillai
Title: *This too shall pass*

Surgical/Diagnostic Category

- Second prize - Dr. S. Kavitha
Title: *Gateway to safe GATT*

Film Festival Award at the Indian Intraocular Implant & Refractive Surgery Convention (IIRSI) 2023

Chennai, 8-9 July 2023

Grand Prize - Dr. Naveen Nischal, Medical Consultant, Cataract and IOL Services, Aravind-Pondicherry
Title: *Flanges: Mjolnir of Ophthalmology*

Awards at the 70th Platinum Jubilee Conference of TNOA

Trichy, 4-6 August 2023

Dr. G. Venkataswamy Community Ophthalmology Oration Award

- Dr. Parag K Shah, Medical Consultant, Paediatric Retina and Ocular Oncology Services Aravind-Coimbatore

Dr. V. Velayutham Best Paper Award in Glaucoma

- Dr. Devendra Maheswari, Medical Consultant, Glaucoma Services, Aravind-Tirunelveli
Title: *Early outcomes of a modified AB interno sulcus placement of AuroLab aqueous drainage implant tube*

Prof. C.P. Gupta Best of Best Paper Award 2023

- Dr. Kavitha Yuvarajan, Medical Consultant, Orbit, Oculoplasty & Ocular Oncology & Ocular Prosthetic Services, Aravind-Coimbatore
Title: *Underdiagnosed ocular dirofilariasis: A synopsis*

Best Free Paper Award in Orbit and Oculoplasty

- Dr. Kavitha Yuvarajan
Title: *Underdiagnosed ocular dirofilariasis: A synopsis*

Capt. Subramaniam Best Video Award

- Dr. Sahithya, Medical Consultant, Paediatric Ophthalmology & Adult Strabismus Services, Aravind-Madurai
Title: *Smart vision glasses: An all-in-one rehab tool*

Eureka Innovation Odyssey

- First prize - Dr. V.R.Vivekanandan
Title: *In and out iridodialysis repair*
- Second prize - Dr. Prabhu Krishna, DNB Resident, Aravind-Pondicherry
Title: *Lumizoom: Achieving the cleanest block*
- Third prize - Dr. Vigneshwar Rengappa, Medical Consultant, Aravind-Dindigul
Title: *The tall lamp*

Best Poster Award

- Dr. Wagh Akshay Sanjay, DNB Resident, Aravind-Pondicherry
Title: *Bringing innovation into focus: Solving ophthalmic challenges through Hackathons*
- Dr. Tejaswi Prasad P V, Medical Consultant, Cornea and Refractive Services, Aravind-Madurai
Title: *Clinical and pathological characteristics of OSSN in the South Indian population*

Best Paper Award - Paediatric Ophthalmology

- Dr. Sandra Ganesh, Medical Consultant, Paediatric Ophthalmology & Adult Strabismus Services, Aravind-Coimbatore
Title: *Botulinum toxin as first line treatment for acute acquired comitant esotropia: A prospective study*

Best Paper Award - Comprehensive Ophthalmology

- Dr. Prithvi Chandrakanth, Medical Consultant, Retina and Vitreous Services, Aravind-Coimbatore
Title: *D.O.T.S: Documenting trauma with smartscope kit*

Best Paper Award - Neuro-Ophthalmology

- Dr. Sharanya, IOL Fellow, Aravind-Coimbatore

Title: *Peripapillary microvascular and structural OCTA features of NAAION, fellow eye and controls*

TOPS Award for Best Free Paper - Retina

- Dr. Manavi D Sindal, Medical Consultant, Retina Vitreous Services, Aravind-Pondicherry
Title: *Validating AI-based referable DR detection tool on portable fundus camera at primary eye centres*

Best Free Paper Award - Cornea

- Dr. Poorani R, DNB Resident, Aravind-Pondicherry
Title: *Prevalence of keratoconus among patients with vernal keratoconjunctivitis*

Best Free Paper Award - Uvea

- Dr. Akshay K Umare, Resident, Aravind-Pondicherry
Title: *96 cases of sympathetic ophthalmitis: Largest study in tertiary eye care centres in South India*

Prof. E.T. Selvam Endowment Quiz Award

- Dr. Abisha, and Dr. Anusha, DNB Residents, Aravind-Coimbatore

General Ophthalmology Quiz

- Second prize - Dr. Muthukrishnan, Medical Consultant, Retina and Vitreous Services, Aravind-Madurai

Eye Q General Quiz

- Winner - Dr. K.S. Aparna, Orbit Fellow, Aravind-Tirunelveli

Cash prize at "Let India See IT" – Image & Video Competition by Vitreo Retinal Society – India July 2023

Dr. Meri Debbarma, Medical Consultant, Retina and Vitreous, Aravind-Madurai, secured the first prize, a cash award for her entry titled, *Prodigious yet innocuous: The giant vessel*

Best Oral Presentation Award at the 17th edition of Vision 2020: The Right to Sight-India National Conference

Neemuch (MP), 26-27 August 2023

Revathy Kannadhasan, Manager-Administration, Aravind-Chennai



Best Oral Presentation Award to Revathy Kannadhasan at the Vision 2020 conference

Title: Acceptance of cataract surgery from the patients who have systemic conditions at a tertiary eye hospital

Awards at the 32nd Annual Conference of the Glaucoma Society of India

Pune, 6-8 October 2023

Glaucoma Diagnostics Category

- Runner-up - Dr. Devendra Maheswari, Medical Consultant, Glaucoma Services
Title: Steer clear of blind entry: A new technique of AB interno tube

Glaucoma Management Category

- Dr. Swati Upadhyaya, Medical Consultant, Glaucoma Services, Aravind-Pondicherry
Title: DIY for glaucoma procedures: Practice makes a doctor perfect

Best Paper Awards at the Annual Conference of the American Academy of Ophthalmology (AAO)

San Francisco, 3-6 November 2023

- Dr. Haripriya Aravind won the award at the cataract category.
Title: Aravind pseudoexfoliation (APEX) study: Ten-year postoperative results
- Dr. Siddharth, Medical Consultant, General Ophthalmology Services, Aravind-Coimbatore won the award in the cornea category.



Dr. Haripriya won the Best Paper Award at the AAO conference

Title: Multi-centric evaluation of a CRISPR/Cas12a-based diagnostic platform for the diagnosis of fungal keratitis

Awards at the 5th Biennial World Conference of the International Society of Manual Small Incision Cataract Surgeons (ISMSICS)

Hyderabad, 17-19 November 2023

Video competition

- Runner-up - Dr. Madhu Shekhar, Chief, Cataract & IOL Services, Aravind-Madurai
Title: Unravel the clues of zonular compromise

E-Poster competition

- Runner-up - Dr. Madhu Shekhar
Title: MSICS in intralenticular metallic foreign body

Best free paper award

- Dr. R. Sankarananthan, Medical Consultant, Aravind-Salem
Title: Objective assessment of simulated surgical outcomes using a manual small-incision surgery virtual reality simulator

Dr. Y. M. Paranjape Innovative Video Award

- Winner - Dr. V.R. Vivekanandan
Title: A novel flanged method for iridodialysis repair

Dr. Debasish Bhattacharya the Best Video Award

- Winner - Dr. Naveen Nischal, Medical Consultant, Aravind-Pondicherry



Best Free Paper Award to Dr. Sankaranathan at the ISMSICS conference

Title: Flanged scleral fixation of IOL-A novel 4 flanged technique using a regular PMMA IOL

Prizes at the JIPMER Retina Update 2023

Pondicherry, 26th November 2023

- Dr. Shraddha Shah, Retina Fellow, Aravind-Madurai, won first prize in the case challenge session.
- Dr. Roopa K.S., Retina Fellow, Aravind-Pondicherry, won the Best E-Poster award for his poster titled, *A rare case of RDH12 retinopathy in two brothers*

Best Image of the Year Award at the 32nd Annual Conference of the Vitreo Retina Society of India

Trivandrum, 1-3 December 2023

- Winner - Dr. Bhavani S., Medical Consultant, Aravind-Madurai
Title: Clew of worms appearance gave a clue to diagnosis

5th Annual Conference of the Indian Neuro-Ophthalmology Society (INOS)

Hyderabad, 9-10 December 2023

Poster Podium Presentation

- Second prize - Dr. Jayasri K.N., Medical Consultant, Department of Neuro-Ophthalmology, Aravind-Madurai



Dr. K.N. Jayasri, Dr. A. Sabarinath, and Dr. Utami Noor Syabaniyah won prizes at the INOS conference

- Title: *Linezolid-induced toxic optic neuropathy: A case series*
- Third prize - Dr. Sabarinath A, MS Resident, Aravind-Madurai
Title: *Visual outcome in patients treated with high-dose corticosteroids for indirect traumatic optic neuropathy*
- Third prize - Dr. Utami Noor Syabaniyah, Neuro Trainee, Aravind-Coimbatore
Title: *Nerve rattling infections: Clinical and radiological tracing of cranial nerve palsy due to skull base osteomyelitis*

Young Researcher Award

Rajasthan, 9-10 December 2023

Dr. Athul S. Puthalath, Retina Fellow, Aravind-Madurai won the award in the Innovations and Patent category at the National Biomedical Research

Young Researcher Award to Dr. Athul S. Puthalath



Competition organised by the Society of Young Biomedical Scientists (SYBS).

Magic Ball of Squint Award

Rishikesh, 9-10 December 2023

Dr. Anjali Khadia, Medical consultant, Paediatric Ophthalmology services, Aravind-Pondicherry, won the award at the Annual Conference of Strabismus and Paediatric Ophthalmological Society of India (SPOSICON).

Seva Foundation 2023 - Call for Ideas - Project Grants

Aravind-Madurai

Winner - Dr. Athul S. Puthalath
Title: *BLU (Blue Light Unit) Patch: The future of smartphone aided blue light photography in tele-ophthalmology, and READ - Rapid evaluation and diagnosis*

Dr. Usha Kim receiving the Runner's trophy at the OTSI conference



of external ocular lesions to aid in tele-ophthalmology

Annual Conference of Ocular Trauma Society of India (OTSI) Traumacon 2023

Chennai, 16-17 December 2023

- Dr. Usha Kim won the runner's trophy. Title: *Unusual foreign bodies in the orbit*
- Dr. Naveen Nischal won second prize for his video titled, *A novel falnged methods for iridodialysis repair*, and fifth prize for his E-poster titled, *Traumatic anterior lens capsule tear in a pseudophakic patient*.

Best Poster Award at the National Conference on Frontiers in Life Science Research (NCFLSR)

Madurai, 23rd January 2024

- R. Iswarya, Senior Research Fellow, AMRF
Title: *Protein profiling of human trabecular meshwork stem cell derived exosomes by mass spectrometry*
- R. Sethu Nagarajan, Senior Research Fellow, AMRF
Title: *Evaluation of GD2 synthase as a prognostic biomarker in retinoblastoma*

CII Pondicherry Innovation Contest

Pondicherry, 2nd February 2024

Dr. Kunal A. Mandlik, Dr. Prabhu Krishna, and Dr. Nishant Vivekanand, DNB residents, Aravind-Pondicherry,



R. Iswarya and R. Sethu Nagarajan receiving the Best Poster Award at the NCFLSR conference



Best of IJO Certificate 2023 to Dr. Madhu Shekhar

and Dr. Kunjal, DNB resident, Aravind-Chennai, secured second place for their innovative device, LumiZoom.

82nd Annual Conference of the All India Ophthalmological Society (AIOS 2024)

Kolkata, 14-17 March 2024

Best of IJO Certificate 2023

- Dr. S.R. Rathinam, Chief, Uvea Services, Aravind-Madurai
Title: *Leptospiral uveitis: "Transition from epidemic to endemic form" difficulties in laboratory confirmation* (Co-authors: G. Jeya Kohila, P. Chidambaranathan Gowri, and K.S. Balagiri)
- Dr. Madhu Shekhar, Chief, Cataract and IOL Services, Aravind-Madurai
Title: *Outcomes of toric intraocular lens realignment surgery done using slit lamp method and wavefront aberrometry method* (Co-authors: R Senthil Prasad, R Sankarananthan, Aruna Pai, Nikhil R Kamble, Logesh Balakrishnan, R Chitradevi)
- Dr. Virna M Shah, Medical Consultant, Neuro-Ophthalmology, Aravind-Coimbatore; Title: *Comparison of glaucomatous from non-glaucomatous optic neuropathy using Bruch's membrane opening minimum rim width optical coherence tomography measurements.* (Co-authors: Karthik M Kumar, A K Karan, Veerappan R Saravanan)

IJO Award of Appreciation - One of the top 25 cited papers of IJO in 2021

- Dr. George V. Puthuran; Title: *Neovascular Glaucoma: A review*

IJO Commendation Certificate – One of the top 10 cited papers of IJO in 2021

- Winner - Dr. R. Sharmila, Medical Consultant, Glaucoma Services, Aravind-Madurai; Title: *Impact of COVID-19 on follow-up and medication adherence in patients with glaucoma in a tertiary eye care centre in South India* (Co-authors: Dr. Subathra GN, Dr. Vijayalakshmi A, Iswarya M, and Udayakumar B.)

Best Free Paper Awards

- Dr. Usha Kim
Title: *Our SMS strategy for molecular diagnosis of retinoblastoma, and genetics and retinoblastoma: All you need to know!*

Dr. Sharmila receiving the IJO commendation certificate at AIOS



- Dr. Muthukrishnan
Title: *Toxic anterior segment syndrome following Vitreoretinal surgery: A retrospective analysis*
- Dr. Mohideen Abdul Kader
Title: *To screen myocilin mutation in a large South Indian family with early onset JOAG and POAG*
- Dr. A. Balraj, Chief, Neuro-Ophthalmology, Aravind-Pondicherry
Title: *Proficiency assessment of trained vision centre technicians in neuro-ophthalmology disease screening.*

AIOS FAICO Gold Medal

- Dr. A. Balraj

Two Minutes to Win - Video Symposium

- Dr. Athul S. Puthalath; Title: *BLU revolution*

Dr. Athul S. Puthalath receiving the certificate at AIOS



FIFA Film Festival of AIOS

- Grand Prize - Dr. Athul S. Puthalath; Title: *Slit lamp sensor*

Think Under the Apple Tree

- Consolation Prize - Dr. Athul S. Puthalath; Title: *Slit lamp sensor: A sustainable solution*

Video Symposium on “When the going gets tough”

- Consolation prize - Dr. Meera Biju Rahim, IOL Fellow, Aravind-Madurai
Title: *Innovation born out of an adversity*

Best Physical Poster Award

- Winner - Dr. Talla Sruthi, Glaucoma Fellow, Aravind-Madurai
Title: *Bilateral secondary angle closure glaucoma as an initial manifestation of systemic lupus erythematosus*

Young Researchers’ Award

- Dr. Mythri Rao, Glaucoma Fellow, Aravind-Madurai

All India PG Thesis Competition

- First prize - Dr. Mythri Rao

Hyde Park Paper Session

- Winner - Dr. Shivam Gupta, Medical Consultant, Aravind-Tirunelveli
Title: *Clinical and surgical outcomes of Sturge Weber syndrome*

Best Paper Award

- Winner - Dr. Abhishek Das, Medical Consultant, Paediatric Retina and Vitreous Services, Aravind-Coimbatore
Title: *Impact of telemedicine in ROP screening in rural outreach in South India: A report of 17270 sessions*

Dr. Narsing Rao Award & Best Paper in Uvea

- Dr. Harsha, DNB resident, Aravind-Pondicherry
Title: *The Sarcoidosis-Tuberculosis conundrum: The role of serum ACE, Mantoux test and Lymphocyte count*

C S Reshmi Award for the Best Video

- Winner - Dr. Indira Pegu, Fellow, Glaucoma Services, Aravind-Pondicherry; Title: *DIY for glaucoma*

procedures: Practice makes a doctor perfect!

- Top 16 - Dr. Naveen R, Medical Consultant, Cornea & Refractive surgery services, Aravind-Pondicherry; Title: *Pythium keratitis Vs Fungal keratitis*

Poster Podium Presentation

- Winner - Cataract category.
Dr. Kaavya, DNB Resident, Aravind-Pondicherry
Title: *Intra-operative complications in high volume cataract surgery: A quartile-wise analysis*

Community Ophthalmology Category

- Winner - Dr. Hari Bhadari, DNB Resident, Aravind-Pondicherry
Title: *Environmental sustainability of outreach & telemedicine at a tertiary eye care centre in South India*

AIOS 2024 – FIFA Award

- Winner - Cornea category-
Dr. Kulharsh B. Jaiswal, Medical Consultant, Cornea & Refractive Surgery Services, Aravind-Pondicherry

A cohort of Aravind women ophthalmologists receiving the International Ophthalmic Heroes of India Award on behalf of Dr. G. Natchiar at the AIOS 2024 conference





Dr. Meghana Tanwar receiving the APAO International Fellowship Award for the year 2022-23



Dr. Shivraj Tagare and Dr. Shivam Gupta receiving prizes at the 2nd Incubator Start-up Challenge 2024



- Winner - Cataract category- Dr. V.R. Vivekanandan
- Runner-up - General Ophthalmology category- Dr. Prabhu Krishna, Medical Consultant, Aravind-Pondicherry

AIOS 2024 quiz competition

- Second price - Dr. Shagufa Jamal, Medical Consultant, Aravind-Pondicherry

IJO Recognition Certificate

- Dr. Prabu Baskaran, Medical Consultant, Aravind-Chennai

Best Poster Podium Presentation

- Winner - Dr. Aditya Maitray, Medical Consultant, Aravind-Chennai

Title: *AI-Powered smartphone fundus camera: Advancing referable AMD screening*

Best Physical Poster

- Winner - Dr. Puja Maitra
Title: *Pole to pole imaging: Economising paediatric ocular imaging by DIY devices*

Awards at the 39th Asia-Pacific Academy of Ophthalmology (APAO) Congress

Indonesia, 22-25 February, 2024

- Dr. Meghana Tanwar, Medical Consultant, Orbit, Oculoplasty & Ocular Oncology Services, Aravind-Madurai, was among the three ophthalmologists awarded the APAO International fellowship for the year 2022-23.

- Dr. R. Madhavi, Medical Consultant, Glaucoma Services, Aravind-Tirunelveli, received the prestigious "Professor Yasuo Tano" Travel grant.

Prizes at the 2nd Incubator Start-up Challenge 2024

Hyderabad, 2nd March, 2024

- Dr. Shivraj Tagare, Retina Fellow, and Dr. Megha Nair, Cornea Fellow, Aravind-Pondicherry, secured first prize for their project *I-Verter at the AIOS Eye Invent Hackathon*.
- Dr. Shivam Gupta secured second prize for his project titled, *SL90DH: Slit Lamp 90D holder in the AIOS Eye Invent Hackathon category*.

Winners of AIOS - Fellowship of the All India Collegium of Ophthalmology (FAICO) Exam (2022 - 2024)

Neuro-Ophthalmology

Dr. A. Balraj, Chief, Neuro-ophthalmology, Aravind-Pondicherry, won the AIOS - FAICO Gold Medal 2024.

Retina

Retina Fellows and Medical Consultants from Aravind-Madurai: Dr. Arpit Sharma, Dr. U. Prithiviraj, Dr. Vipul Singh, Dr. Anchitha Meenu, Dr. Meri Debbarma, Dr. Sivadarshan, Dr. Ananya Goswami, Dr. Athul S. Puthlath, Dr. Avik Dey Sarkar, Dr. Kulsum Sayyad, Dr. Pragathi, Dr. Raghavendra, Dr. Reshma Dara, Dr. Saumya Jain, Dr. Shivani Srivatsava, Dr. Shraddha Shah, and Dr. Toshit Varshney

Paediatric Ophthalmology & Strabismus

Dr. A. Fathima, Medical Consultant, Aravind-Tirunelveli, and Dr. Sneha Pandurangan, Medical Officer, Aravind-Madurai

Glaucoma

Dr. Sujitha Ramesh, Glaucoma Fellow, Aravind-Madurai, and Dr. Niranjana, Medical Officer, Aravind-Madurai

Aravind Eye Foundation

April 2023 to March 2024

Founded in 2000, the Aravind Eye Foundation supports the mission of the Aravind Eye Care System to eliminate needless blindness and ensure that everyone, regardless of ability to pay, receives high-quality, patient-centric eye care. Through a combination of philanthropy, volunteerism, and partnering, the foundation seeks to stimulate innovation and scale successful programmes across the Aravind network and to other countries. Foundation board members and advisors bring expertise in clinical care, medical research, technology, higher education, and healthcare management.

Providing the best eye care to those who need it most

Aravind's core patient services, such as cataract surgeries, are self-sustaining, but there are some conditions, usually affecting the poorest patients, where Aravind's supporters help provide the life-changing gift of sight.

Now in its 20th year, the **Ring of Hope** programme continues to provide free treatment and rehabilitative services for children and adults with eye cancer. A full course of treatment may include CT scans, counselling, genetic testing, surgery, radiation, chemotherapy, and custom-made prostheses, costing more than \$1000 per eye and well beyond the means of most families in India. This past year, Aravind Eye Foundation supported 57 new patients on the road to health, and for 815 follow-up visits, offered genetic testing to 51 patients and family members, and created custom eye prosthetics for 41 children.

Dr. Usha Kim, founder of the Ring of Hope, with eye cancer survivor, S. Jeyanthi



Aravind celebrates the courage of these patients and regularly brings together survivors and their families. Some of these patients have been coming to Aravind for nearly all their lives, and their stories inspire and give hope to the next generation. A 21 year old, retinoblastoma survivor, S. Jeyanthi, and her father attended a recent event at Aravind - Madurai.

As a child, both her eyes were affected by the disease. However, the sight in her left eye was saved. Her poor vision didn't stop her from completing her degree in special education. She hopes to work at Aravind in the vision rehabilitation programme. Since 2004, the Ring of Hope has received funding from the SoHum Foundation.

Corneal Ulcers primarily affect rural, working-class populations – farmers, fisherman, and day laborers who are injured on the job and generally do not have access to high-quality, emergency eye care. As a result, many can lose their sight and their livelihoods.

After initial diagnosis of their condition, many patients cannot afford the essential medications and multiple follow-up visits needed to complete treatment successfully. This past year, 817 patients received free medications and/or surgery and 564 patients' ulcers were cured with support from the Gowri Family Foundation.

Reaching everyone who needs care

Not everyone can travel easily to an Aravind Eye Hospital, but everyone deserves excellent eye care. Rural populations have the highest incidence

Krishnan and Vasanthi from Gowri family foundation with Dr. Kaumudi Kiran Shinde, Cornea Fellow, Aravind - Madurai





Student receiving follow-up exam at a local vision centre

of preventable and curable blindness. Outreach programmes take Aravind's high-quality, compassionate care to where it is most needed.

Rural Vision Centres can provide 90% of basic services, including on-site eye exams, telehealth consultations, medicines, and eye glass prescriptions, making quality eye care locally accessible with lower cost and greater ease. Overall, Aravind Eye Foundation has funded 21 rural vision centres since 2011. During the last year, these centres handled nearly 200,000 patient visits.

Refractive error, particularly myopia or short-sightedness, is a rapidly growing cause of poor vision in school-age children. It is also one of the easiest to solve – a pair of eye glasses can improve a child's school performance and change their economic future.

Spectacles for Scholars provides free vision screening and eyeglasses to school children throughout Tamil Nadu. With support from Warby Parker, 248,610 students were screened and 12,320 pairs of eye glasses were delivered.

Integrating School Eye Health into Vision Centres is a new approach to school screening designed to make vision exams more widely available and increase awareness of healthy vision within the community. This past year, two pilot programmes in five vision centres around Madurai and Tirunelveli districts were launched. Preliminary screening took place at the schools and students with refractive errors were



My Life, My Pride - MLOPs participating in a Marathon event

referred to the nearest vision centre for more detailed examination, accompanied by a parent. The pilots covered 185 schools and 49,359 students, providing 1,062 free pairs of eye glasses. This programme was funded in part by the Madison Community Foundation and the Yield Giving Foundation.

Building capacity through innovation and example

Universal Coverage through Comprehensive Eye Care is a multi-year project to create a centre of excellence or "Best Eye Care Zone" in Theni District, Tamil Nadu. In 2023, Aravind conducted 451 screening camps to identify new cases of diabetic retinopathy, refractive errors among school children and adults, retinopathy of prematurity (ROP), and glaucoma.

My Life, My Pride is a well-being programme designed for Mid-Level Ophthalmic Personnel (MLOPs). The purpose is to help MLOPs and admin staff, balance their personal and professional lives and support their physical, emotional, and psychological well-being. The programme includes personal counselling, life skills development, and extra-curricular activities (sports club, dance club, and readers' club).

Funded by the Lavelle Fund for the Blind, the **LEAP Collaborative Initiative** focuses on increasing quality, building capacity, and improving the sustainability of eye hospitals. Currently, Aravind is mentoring 62 eye hospitals across India.

Aravind Eye Foundation is deeply grateful to the many supporters and friends who participate in Aravind's vision of a world where all enjoy the beautiful gift of sight.

*"Intelligence and capability are not enough.
There must be the joy of doing something beautiful."
- From the journals of Dr. G. Venkataswamy*



Partners in Service

Aravind Eye Care System is grateful for the support of like-minded individuals and organisations in its mission to eliminate needless blindness. Their commitment has helped the organisation bring light to countless lives, making a significant impact in saving vision.

For service delivery, training and more

- Alcon Laboratories Inc, USA
- A.L Shah, Pondicherry, India
- Aravind Eye Foundation, USA
- Bosch India Foundation, Bengaluru, India
- Carl Zeiss Meditec, Germany
- CBM International, Germany
- Combat Blindness Foundation, USA
- Conrad N. Hilton Foundation, USA
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- Topcon, Japan
- Tulsi Chanrai Foundation, Nigeria
- University of Michigan, USA
- USAID, USA
- VISION 2020 - The Right to Sight, New Delhi, India
- World Diabetes Foundation, Denmark
- World Health Organization, Switzerland
- XOVA: Excellence in Ophthalmology Vision Award, USA

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- Science and Engineering Research Board, New Delhi, India
- Smith Kettlewell Eye Research Institute, San Francisco, USA
- Sun Pharma, Mumbai, India
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- Tamil Nadu State Blindness Control Society, Chennai, India
- Tricell Biologics Pvt.Ltd., Chennai, India
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- University of Melbourne, Centre for Eye Research Australia (CERA), Australia
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- University of Ulster, Northern Island, UK
- University of Washington, USA
- Velux Stiftung, Switzerland
- Wilmer Eye Institute, Baltimore, Maryland, USA
- World Health Organization, Switzerland
- Yale University, USA
- Zeiss India, Bangalore, India

Management Support to Eye Hospitals

Aravind Eye Hospitals and LAICO offer management services to socially committed partners working in underserved areas of India and other developing countries, in establishing and running the eye hospitals effectively. Under this initiative, Aravind provides holistic assistance, starting with the design of the facility, recruiting and training the local human resources, helping them adopt proven systems and processes, sharing Aravind developed IT systems like IHMS & EMR, and hand-holding in the initial period by deploying a select team from Aravind during the start-up period.

Currently, Aravind works with

- Priyamvada Birla Aravind Eye Hospital, Kolkata, West Bengal (since 2001)
- Sudarshan Netralaya, Amreli, Gujarat (since 2007)
- Tulsi Chanrai Foundation Eye Hospital, Abuja, Nigeria (since 2018)
- Sitapur Eye Hospital, Uttar Pradesh (since 2021)



Dr. Kalpana, along with Sudarshan Netralaya team



Dr. S. Aravind with Muhammadu Buhari former President, Nigeria at TCFEH



Dr. V.R. Vivekanandan, Dr. S. Aravind, Thulasiraj Ravilla and R. Suresh Kumar with Sitapur Eye Hospital team

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