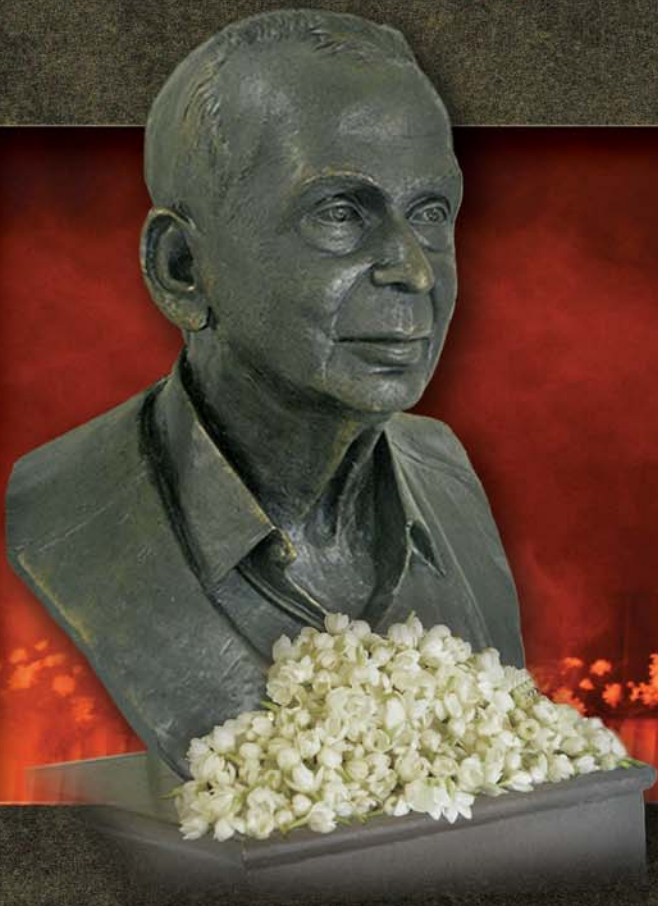


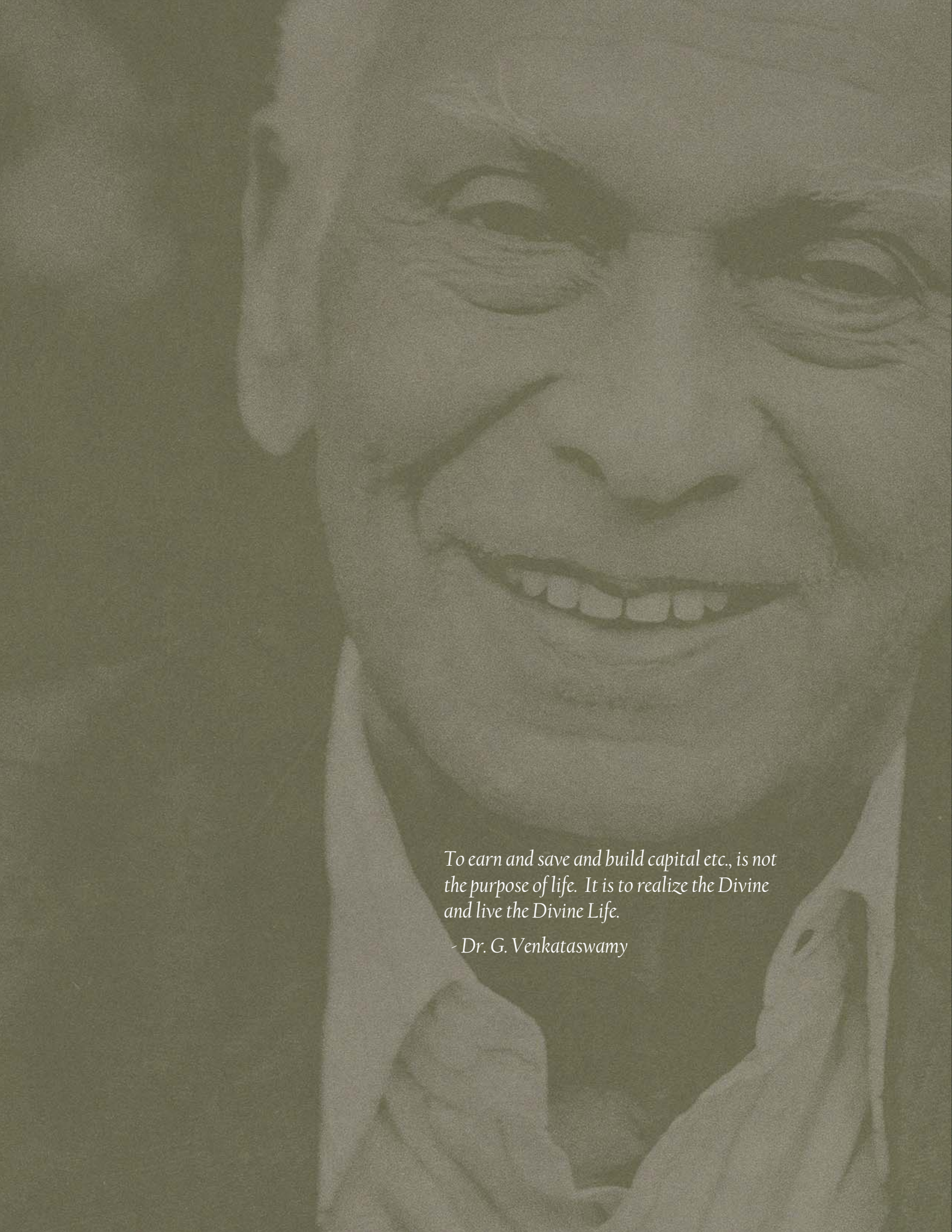
activity report

april 2018 to march 2019



ARAVIND EYE CARE SYSTEM

Vision: Eliminate needless blindness



*To earn and save and build capital etc., is not
the purpose of life. It is to realize the Divine
and live the Divine Life.*

- Dr. G. Venkataswamy



A secret soul behind supporting all
Is master and witness of our ignorant life,
Admits the Person's look and Nature's role.
But once the hidden doors are flung apart
Then the veiled king steps out in Nature's front;
A Light comes down into the Ignorance,
Its heavy painful knot loosens its grasp:
The mind becomes a mastered instrument
And life a hue and figure of the soul.
All happy grows towards knowledge and towards bliss.

- Sri Aurobindo, from Savitri, Book 7, Canto V

ARAVIND
EYE CARE SYSTEM
VISION
*Eliminate needless
blindness...*



**EYE CARE
SERVICES**

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



**EDUCATION
AND TRAINING**

*.. developing ophthalmic 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
AND CAPACITY
BUILDING**

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



**OPHTHALMIC
SUPPLIES AND
EQUIPMENT**

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

activity report

april 2018 to march 2019

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Udaya Kumar B, Aravind - Madurai*

EYE CARE SERVICES

In the year-ending March 2019,

4,408,980 outpatient visits were handled
502,536 surgeries and laser procedures were performed.

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 - 6
(Cataract Services, Speciality Diagnosis)
Theni 1985 | Tirupur 2010 | Dindigul 2010
Tuticorin 2012 | Udumalpet 2012
Coimbatore City Centre 2014

OUTREACH PROGRAMMES

Free Eye Camps

More than 2,800 camps were conducted
through which 555,006 patients were screened
and 92,510 surgeries were performed *

Community Eye Clinics

Out-Patient Eye Care Centres
(Comprehensive Eye Examination, Treatment
of minor ailments)

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

Vision Centres

Primary Eye Care Centres - 75
(Comprehensive Eye Examination)

ARAVIND INTEGRATED EYE BANK SERVICES

5,630 eyes were collected and 2,536 eyes were
utilised for surgery*

EDUCATION AND TRAINING

ARAVIND POSTGRADUATE INSTITUTE OF
OPHTHALMOLOGY
LIONS ARAVIND INSTITUTE OF
COMMUNITY OPHTHALMOLOGY (LAICO)

Around 1900 candidates were trained*
114 papers published*

RESEARCH

Aravind Medical Research Foundation
Dr. G. Venkataswamy Eye Research
Institute

Basic and translational research | Clinical
research | Operations research |
Product development in eye care

10 research papers published*

CONSULTANCY AND CAPACITY BUILDING

LIONS ARAVIND INSTITUTE OF
COMMUNITY OPHTHALMOLOGY (LAICO)

Sharing best practices of Aravind |
Advocacy in eye care

352 hospitals from 29 countries including
India receive consultancy services in eye care
management

OPHTHALMIC SUPPLIES AND EQUIPMENT

AUROLAB

Intraocular lens | Pharmaceuticals |
Suture needles | Equipment |
Surgical blades | Special products

Products are exported to more than 160
countries worldwide

**Statistics mentioned is for the year ending March 2019*

HIGHLIGHTS

This turned out to be the year of rejuvenation and reconnecting to the roots. Across the entire system over a hundred activities took place, a lot of them developmental in some way, as Dr. V would have wanted and a few that were celebratory. Every department committed and did something meaningful to honour the spirit of the founder.

This was Aravind's way of celebrating Dr. V's hundredth birth anniversary and strengthening the spiritual dimension of Aravind's work.

Though it has been over a decade since he left his body, his presence is strong, coming alive through the actions of the many that he touched and groomed. Dr. V lived his life, spiritually in a scientific and systematic manner to address the challenge of needless blindness. He recognised that this required a public health perspective, competent clinical intervention, robust monitoring and widely sharing the lessons to continually bring on board, other providers of eye care. To deepen this approach, there was a year-long activity of monthly lecture sessions on every aspect of eye care. These sessions dealt in depth the community

needs, the barriers, emerging technologies, what was being done globally and specifically by Aravind, and what Aravind should do further. These twelve lecture sessions were continually documented, edited and the pinnacle was the release of this as a book on Dr. V's hundredth birthday, titled "Public Health Perspectives to Eye Care". This monumental work was done by Dr. Balaji under the guidance and leadership of Dr. N. Venkatesh Prajna. The eye bank team at Aravind also brought out a Manual on Eye Donation.

Other significant activities that were specifically driven as part of the centenary celebrations were, getting NABH quality accreditation for the hospitals, a major continuing medical education (CME) event happening every month and Aurolab setting a goal of producing a hundred patient education video clips, as well as conducting workshops in partnership with LAICO across the country to strengthen patient education and counselling techniques.

The highlight of the birth centenary of Dr. V, was the public function at Raja Muthiah Mandram, Madurai to pay tribute to the noble soul. Eminent personalities closely associated with Dr. V shared their thoughts on his life, impact of his work and how Aravind has set a model in eye care delivery. Speakers included

Release of the book 'Public Health Perspectives to Eye Care'



A quiz on Dr. V's life and work to the staff in commemoration of his birth centenary





staff and guests at the centenary celebrations

Dr. J. Radhakrishnan IAS, Principal Secretary to Govt. Health and Family Welfare Dept; Tamil Nadu, Ms. Prema Nandakumar from Trichy; Dr. Gullapalli N Rao, Chairman, L V Prasad Eye Institute, Hyderabad; Mr. Manohar Devadoss, Artist, Chennai; MJF Lion Prof. Dr. S.S. Pari Parameswaran, Governor, Lions District 324-B3; Dr. Raja Sabapathi, Chairman, Ganga Hospital, Coimbatore; Dr. Asim Sil, Medical Director, VMANNN, West Bengal; Mrs. Elizabeth Kurian, Regional Director, Vision for Mission, India; and Mr. Philip Hoare, International Agency for Prevention of Blindness, UK.

The function closed with a unique and spectacular theatrical representation of Dr. V's life, directed by Dr. Prabahar Vedamanickam, Professor, The American College, Madurai. The presentation had a profound impact not only on the audience, but also on the hundred odd actors and those who narrated the script, who were all staff of the Aravind Eye Care System. It was so well received by the public, that there were earnest requests for the play to be presented again, especially for the benefit of youth. In response, it was played four times at later dates, each time to a filled auditorium of 800+ person capacity.

Dr. Prabahar Vedamanickam with Mr. Karthikeyan who portrayed a key role in the play



Infrastructure

This year too saw a significant expansion of the infrastructure. Sri Venkateswara Aravind Eye Hospital at Tirupati, a 325,000 sq. ft. facility including staff accommodation, was completed in a record time of 18 months. The hospital informally started functioning from 12th December 2018 following the installation of The Mother's relics. The formal inauguration was on March 4, 2019 by Sri. N. Chandrababu Naidu Garu, the then Chief Minister of Andhra Pradesh. The hospital's operating theatre complex has twelve major OTs and two minor OTs - one for intravitreal injections and the other for minor procedures. The hospital has 200 beds for the free patients and 90 beds for the paying. Following Aravind's policy driven by its philosophy, those who cannot pay will receive required care either free or at a steeply subsidised rate. This hospital became a reality, thanks to the

benevolence of Tirumala Tirupati Devasthanam which provided 7-acres of land on a long lease.

The network of vision centres continues to grow. During the year, nine more vision centres were added, taking the total to 75, covering a rural population of six million. The vision centres are emerging as a scaled model of universal eye health. During the year, these vision centres handled a total of 650,000 outpatient visits, of whom 22,785 received cataract surgeries, 29,774 got advanced speciality care and over 82,000 purchased eye glasses.

Though Aravind has worked extensively internationally, its nature of work has always been training, mentoring or consulting for individual

Sri Venkateswara Aravind Eye Hospital, Tirupati





Aravind team at Tulsi Chanrai Foundation Eye Hospital, Abuja, Nigeria

hospitals or national initiatives. For the first time, Aravind agreed to manage and run an overseas facility. Nigeria, a country of 170 million people, has acute need for eye care. Against an estimated need of about 600,000 annual cataract surgeries, less than a 100,000 are done now. For more advanced conditions, the patients will have to travel to India or Europe, which translates to pretty much very few getting the needed care. To deal with the huge and increasing backlog of blindness due to cataract and to bring advanced eye care, Tulsi Chanrai Foundation whose parent organisation has been into manufacturing and trading for over a hundred years in Nigeria, decided to set up an eye hospital in Abuja, the country's capital in partnership with Aravind. The hospital started functioning from February of 2019 and the formal inauguration is slated for a later time. The patient flow is steadily increasing and the hospital work is supplemented by extensive outreach work. Over time, the Tulsi Chanrai Foundation Eye Hospital is expected to become a model in eye care for Nigeria and develop into a significant training centre.

October Summit

October summit which happens annually, consists of a series of workshops and consultations, held in honour of Dr. V around his birth anniversary which falls on 1st October. The topics chosen are often new and unexplored areas and yet very

critical in the delivery of care. This gives Aravind and other eye care providers a structured process and time to explore domains that are critical and yet inadequately understood. During this year, two important areas were explored: (i) how to deliver eye care effectively in an eco-friendly way; (ii) eye care beyond 2020 especially in the context of demographic changes, emerging technologies, initiatives in healthcare financing, geographic inequities and growing areas of political unrests. The highlight as with every October Summit was the Dr. G. Venkataswamy Endowment Oration. The special honour of delivering it in the centenary year went to Prof. Fred C. Munson, a retired Professor of Hospital Management, University of Michigan. Fred first came to Aravind in June 1981

Dr. G. Venkataswamy Endowment oration : Prof. Munson, Mary and Meg with Thulasiraj Ravilla and Dr. P. Balakrishnan





Silver jubilee celebrations of LAICO

as a volunteer with his wife Mary Munson. Since then, the couple visited Aravind literally every year, sometimes more than once. Fred's insights have helped Aravind develop its strategic approaches which are now being shared extensively with partner institutions. He can be credited with initiating several breakthrough discussions that have led to radical developments at Aravind. He played an instrumental role in developing India's first Masters Course in hospital management (MHM) which was offered by the Madurai-Kamaraj University. In the oration that Fred titled as "Exploring the Edges", he focused on the future of Aravind's growth.

Twenty-five years of Enhancing Eye Care Globally

This was a milestone year for LAICO, having completed twenty-five years of promoting best practices and enhancing eye care, both on the number of people served and quality front.

LAICO was established in 1992 with support from Seva Foundation and Lions Clubs International. Its mandate is to support eye care programmes globally through consultancy and capacity building, management training and research. Till date, LAICO has worked with over 350 eye hospitals in India and 28 other developing countries, and has trained over 2000 professionals from 70 countries. To commemorate LAICO completing its silver jubilee year of service, a grand function was held on 1st October 2018

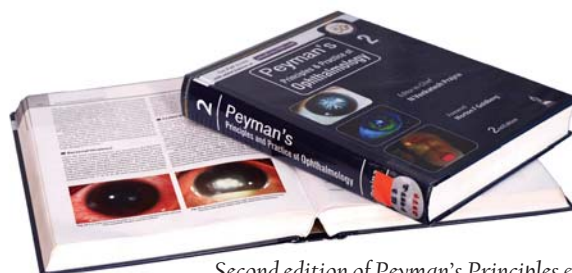


and the event was graced by INGOs, partnering organisations and well-wishers.

Beyond Aravind ...

A significant global contribution to the academic community of ophthalmology was the second edition of "Peyman's Principles & Practice of Ophthalmology". This second edition came after a gap of almost three and a half decades. Unlike the first edition, by design this had authors from across the globe writing various chapters in this 2000 page, two-volume set. This mammoth effort was led by Dr. N. Venkatesh Prajna of Aravind and published by Jaypee Brothers Medical Publishers.

A few years ago, encouraged by the universal reach of Aravind's Vision Centres (VC), a goal was set to make this model of Primary Eye Care accessible to a billion people, especially in areas where eye care is inadequate. Though this was an audacious goal, steady progress is being made. Within India, several states have shown interest in



Second edition of Peyman's Principles & Practice of Ophthalmology

this model and Aravind works very closely by way of training, sharing the software application and being on the ground to establish and demonstrate the running of first few vision centres. The State of Tripura is fully covered with 40 VCs and this was done way back in 2007. Since then Chhattisgarh, West Bengal and Tamilnadu states have extensively adopted this model and established several pilot VCs. The state of Jharkhand is in the planning stage. The state of Andhra Pradesh adopted this model and came up with their own version of telemedicine enabled vision centres. A significant development is the decision by the Govt. of Bangladesh to cover the entire country with VCs to provide universal eye health. As the first step, twenty centres were launched by Hon'ble Prime Minister Sheikh Hasina in August 2018. Aravind's Chairman, Dr. R. D. Ravindran attended this launch and at the ceremony, Prime Minister reiterated the commitment to cover the entire nation. Aravind is working very closely with the senior health officials of Bangladesh to make this a reality.

PudhuVue'18

Aravind-Pondicherry in association with Pondicherry Ophthalmologists' Association had the privilege of organising the 66th Annual Conference of Tamil Nadu Ophthalmic Association - PudhuVue'18. The stellar arrangements and the scientific programme attracted a record breaking number of participants - 1400 regular and 600



Inauguration of PudhuVue'18

associate delegates. Hon'ble Lieutenant Governor of Puducherry, Dr. Kiran Bedi inaugurated the conference.

A Model that Continues to Inspire

Aravind's model is one of inclusive eye care services, which ensures that everyone in need of eye care is served, some in the hospital and others by proactively reaching out into the communities. This is done without a pre-condition that they must pay and doing this for over 40 years without dependence on external donations. This model initially caught the attention of peer eye care providers - to study, understand and replicate. However, in the recent years there has been a growing recognition that, what drives Aravind, is far beyond the specifics of eye care and has much wider relevance. Of particular interest were the strong focus and alignment of all employees

Officials from Rashtrapati Bhavan with Dr. G. Natchiar during their visit to Aravind





Sale of goods made by the visually challenged at - RSR programme at Aravind - Madurai

towards Aravind's purpose of "eliminating needless blindness"; the emphasis on building people; an organisational culture that continually learns, strives to give the best, constantly innovates and holds customer (patient) care as its core; has built a financially viable business model that is founded on transparency, where means are as important as the end and a pricing structure which allows free or steeply subsidised care to half its customers (patients). This has resulted in a steady stream of senior bureaucrats from Govt. of India, leadership teams of large corporates like Novartis, participants of leadership development agencies like Wavelength and distinguished individuals like Dr. Rajiv Kumar, Economist and Vice Chairperson of NITI Aayog making a visit to Aravind.

Compassion in Action

Though Aravind's goal is to end one form of human suffering, compassion cannot and should not be bound to one cause alone. In fact, opportunities to recognise and be of help when others are in distress positively impacts the core work of Aravind. Residents Social Responsibility (RSR) initiative is built on this premise, where in all Residents (Post-Graduate Ophthalmology students) adopt a community project and support it financially and through their personal efforts. This year's batch adopted special and disadvantaged children, as the focus of their compassionate action. Along the same vein, Aravind and Aurolab generously donated relief materials and money to flood-



RSR programme by Aravind - Tirunelveli team

affected people of Kerala in Idukki district and nearby villages and the victims of Cyclone Gaja that caused unimaginable havoc in the Tamil Nadu's Delta region.

Research

Aravind's research in the areas of Genetics, Stem Cell Biology, Computational Biology and Proteomics have been substantial and is set to bring in significant impact in the way eye care is being delivered. A new research programme supporting systematic analysis of paediatric eye disease genetics, with focus on translational aspect, has been funded by the Department of Biotechnology, Govt. of India. Understanding molecular mechanisms of paediatric eye diseases will pave way for early detection and possible therapeutic intervention.

On Aurolab

While Aurolab reaches out to many more countries, it has dealer presence in 73 countries and holds registrations in 40 countries for 160 products. As a result, Aurolab saw a remarkable growth in exports this year. It introduced several new products including CATvision, a plug-n-perform device when connected to any TV monitor, turns it into a visual acuity measuring device. In order to lend support to the users, Aurolab established two more phaco training centres at Shree Santram Netra Chikitsalay and Priyamvada Birla Aravind Eye Hospital, Kolkata.

PATIENT CARE

From April 2018 to March 2019

4,408,980 out-patient visits

were handled, and

502,536 surgeries, laser procedures and injections

performed across all Aravind Eye Hospitals.



PERFORMANCE APRIL 2018 - MARCH 2019

Out-Patient Visits

HOSPITALS

Paying Sections	2,357,654
Free Sections	637,848

OUTREACH

Screening camps	563,941
Vision Centres	652,902
Community Eye Clinics/ City Centres	196,635

Total Out-Patient Visits Handled 4,408,980

Total Madurai

OUT-PATIENT VISITS

HOSPITALS

Paying Sections	2,357,654	680,478
Free Sections	637,848	200,216

OUTREACH

SCREENING CAMPS*

Comprehensive camps	346,972	95,990
Diabetic Retinopathy screening camps	88,805	11,648
Workplace refraction camps	54,240	13,854
School children examined by Aravind staff*	49,962	14,369
Paediatric eye screening	8,334	-
Mobile van refraction camps	6,693	-
RoP - No. of babies screened in NICUs (OP)	8,935	917

TOTAL FROM SCREENING CAMPS* 563,941 136,778

VISION CENTRES 652,902 272,309

**COMMUNITY EYE CLINICS/
CITY CENTRES** 196,635 108,361

TOTAL OUT-PATIENT VISITS 4,408,980 1,398,142

SURGERIES, LASER PROCEDURES & INJECTIONS

Paying Sections	267,453	90,651
Subsidised (walk-ins to the free hospital)	142,573	50,576
Free (through screening camps)	92,510	32,178

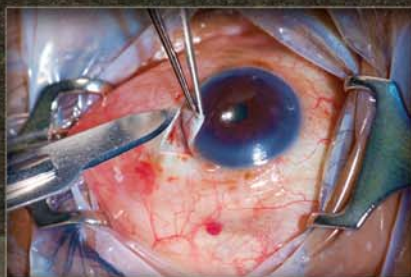
TOTAL SURGERIES 502,536 173,405

While Aravind team screened 49,962 children, an additional 371,921 children



Theni	Tirunelveli	Coimbatore	Pondicherry	Tirupur	Dindigul	Salem	Tuticorin	Udumalpet	CBE CC	Chennai	Tirupati
102,384	339,757	386,475	287,639	52,231	77,339	137,199	60,718	42,301	38,268	147,814	5,051
26,103	83,951	122,388	101,360	14,164	-	22,804	10,467	18,243	-	37,113	1,039
21,025	45,800	80,771	63,136	-	-	15,073	3,792	-	-	21,385	-
3,471	1,715	65,286	6,371	-	-	314	-	-	-	-	-
3,604	11,654	15,402	6,014	1,143	-	1,919	650	-	-	-	-
2,487	5,398	9,642	12,840	1,826	-	3,333	-	-	-	67	-
2,255	1,065	1,503	3,511	-	-	-	-	-	-	-	-
-	-	6,693	-	-	-	-	-	-	-	-	-
1,031	1,392	5,384	200	-	-	-	-	-	-	11	-
33,873	67,024	184,681	92,072	2,969	-	20,639	4,442	-	-	21,463	-
69,117	143,223	54,472	84,617	13,047	-	-	-	16,117	-	-	-
23,176	33,196	-	31,902	-	-	-	-	-	-	-	-
254,653	667,151	748,016	597,590	82,411	77,339	180,642	75,627	76,661	38,268	206,390	6,090
9,205	35,634	49,783	36,427	3,374	4,897	14,233	2,926	3,066	2,283	14,974	-
4,544	15,470	29,780	22,240	2,507	1,845	4,515	1,539	4,028	-	5,529	-
2,557	10,535	22,852	17,634	688	-	2,723	324	529	-	2,490	-
16,306	61,639	102,415	76,301	6,569	6,742	21,471	4,789	7,623	2,283	22,993	-

were screened by teachers/vision screeners and found to be normal. This takes the total outreach screening to 935,862.



Surgeries, Laser Procedures & Injections

Paying Sections	267,453
Subsidised (walk-ins to the free hospital)	142,573
Free (through screening camps)	92,510
<u>Total Surgeries</u>	<u>502,536</u>

'The surgery went very well. Now after surgery, they explain in detail how to use the post-operative medicines and give a sheet with instructions.

Even our children may get irritated if we ask questions, but here they are very caring and responsive.

This attention and care is what we look forward to and what brings us to Aravind'.

- Testimony from a patient

Surgery Details April 2018 - March 2019

	Total	Madurai
Cataract surgeries	306,961	107,491
Trab and combined procedures	7,192	2,162
Retina and Vitreous surgeries	16,702	6,646
Squint correction	2,389	1,119
Keratoplasty (Incl. Graft procedures, Keratotomies, DSAEK)	2,587	852
Pterygium surgeries	6,678	2,428
Ocular injuries	1,470	427
Lacrimal surgeries	5,533	2,640
Orbit and Oculoplasty surgeries	8,434	2,547
Refractive laser procedures	6,055	2,343
Retinal laser procedures	46,116	14,241
YAG laser procedures	46,833	14,829
Intravitreal injections (Anti VEGF & Steroids)	28,335	9,989
Other surgeries, Laser procedures & Injections	17,251	5,691
Total Surgeries	502,536	173,405



Theni	Tirunelveli	Coimbatore	Pondicherry	Tirupur	Dindigul	Salem	Tuticorin	Udumalpet	CBE CC	Chennai
10,565	35,383	58,641	45,701	5,406	5,178	14,143	3,795	6,576	1,518	12,564
49	1,162	1,573	1,733	34	84	157	60	-	20	158
5	1,463	5,615	1,646	-	-	468	-	1	-	858
-	281	789	171	-	-	-	-	-	-	29
-	380	675	555	-	-	69	-	-	-	56
314	474	1,297	1,001	108	105	516	29	105	24	277
6	128	422	347	4	12	67	-	-	-	57
69	606	1,046	895	15	14	32	-	20	10	186
224	1,234	2,086	1,469	61	150	97	58	43	72	393
-	647	868	1,172	-	-	254	-	-	-	771
1,464	6,445	9,304	9,196	-	-	2,148	-	-	317	3,001
2,869	7,274	9,341	4,967	824	1,134	2,133	831	829	255	1,547
702	4,032	5,826	4,238	2	-	983	-	-	60	2,503
39	2,130	4,932	3,210	115	65	404	16	49	7	593
16,306	61,639	102,415	75,301	6,569	6,742	21,471	4,789	7,623	2,283	22,993

Aravind-Tirupati started surgeries only in April 2019 and hence, the data is not shown here.



ARAVIND EYE HOSPITALS - DEVELOPMENTS: APRIL 2018 TO MARCH 2019

Crossing Borders

Aravind's long-awaited project in Tirupati - Sri Venkateswara Aravind Eye Hospital was formally inaugurated by Shri Chandrababu Naidu Garu, the then Chief Minister of Andhra Pradesh on March 4, 2019. Senior government officials, senior leadership team of Aravind, and officials from Tirumala Tirupati Devasthanam were present during the inauguration. With over 200,000 square feet of built up area, the hospital is equipped to handle about 400,000 out-patient visits and perform around 30,000 surgeries per year. The hospital will also start training programmes for ophthalmologists and eye care paramedics.

Aravind's first overseas joint venture was materialised in Abuja, Nigeria with the opening of Tulsi Chanrai Foundation Eye Hospital (TCFEH) on January 15, 2019. The idea came up in 2013 when Tulsi Chanrai Foundation (TCF), an NGO working in Nigeria sought Aravind's support to start a tertiary eye hospital and training institute. Aravind took up the initiative and several visits were made in the subsequent years to inspect the project site and also to recruit manpower. Training was provided to the 29 new recruits in batches at Aravind-Coimbatore. A team comprising ophthalmologists, paramedics and managers was sent from Aravind to help with the actual setting up of systems and practices. Managed by Aravind, the



H.E. Muhammadu Buhari, President of the Federal Republic of Nigeria at the inauguration of Tulsi Chanrai Foundation Eye Hospital, Abuja, Nigeria

TCFEH's mission is to provide high quality, high volume sustainable eye care and build local capacity to enhance the provision of eye care in West Africa.

Towards Ensuring Quality

Several new steps were introduced and necessary modifications were implemented in the existing systems to ensure quality of care. An internal audit team for quality was formed in each centre to regularly monitor the operational practices, prepare report and analyse the same to ensure continuous quality improvement. The team helps bring in a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance process. Internal audit teams from across the Aravind centres were

Dr. Venugopal Reddy examining a patient at Aravind-Tirupati



Staff collecting feedback about the services from a patient



brought together for a two-day workshop at LAICO on November 2 -3, 2018. About 50 staff members attended.

Most of the Aravind centres are gearing towards NABH accreditation at different stages - some have received the pre-entry level certification, and some are getting ready for the external audit.

Feedback from patients is routinely collected, mainly through direct one-to-one surveys, telephone calls and focus group discussions. Last year, on an average, feedback was collected from over 6,400 patients every month, across all Aravind centres. Online ratings and feedback about Aravind by services such as Google and JustDial are also being surveyed and documented. The results thus collated are shared with the respective departments and the management to initiate actions to address the issues raised. In relevant situations, patients are informed of the action taken. This data has often helped Aravind improve its systems and practices to benefit patients.

Innovations and New Initiatives

Enhancing Biometry Services in Secondary Hospitals

Rotary Club - Madras East funded installation of Optical Biometer for Aravind's four secondary centres - Tirupur, Udumalpet, Dindigul and Tuticorin. An official launch was held at Aravind Eye Hospital, Chennai. District Governor Rtn. Babu Peram spoke about the project in his inaugural address. Dr. G. Natchiar spoke about Rotary's effective way of reaching the public and briefed on Aravind's community outreach initiatives. At Aravind-Tirupur and Udumalpet, Mr. Nandhagopal and Rtn. Ganesan performed the inauguration. A total of 75 members from Rotary club - Madras East participated. This upgradation of services will greatly help cataract patients get better visual outcomes.

Artificial Intelligence (AI) Initiative in Eye Care

Aravind has been partnering with the tech giant Google on developing an AI-based service to analyse retinal images to detect diabetic retinopathy even in early stages. Google has CE certification for this service and is in the process of getting USFDA approval. This is now being tested in Aravind's vision centres. This is expected to be more widely available as a licensed service by the year end. This has tremendous potential in bringing advanced retinal screening to remote areas.



Dr. G. Natchiar addressing the audience at the installation of optical biometer

Opening National Resource Centre for the Visually Impaired

Aravind-Madurai, January 11

With support from Vision-Aid, USA, a national resource centre was inaugurated at Aravind-Madurai to provide training and services to enable, educate and empower the visually impaired. Senior members from Vision-Aid, Mr. Ramakrishna Raju, Founder & Executive Director, Mrs. Revathy Ramakrishna, Co-Founder & Vice-President, along with Dr. Linda Lawrence, Paediatric ophthalmologist and early interventionist in Vision Rehabilitation, Kansas, USA and the senior leadership team of Aravind were present.

The centre has taken up initiatives to functionally empower the visually challenged mainly by providing training on the use of computers and smart phones. A total of 60 patients were trained in the use of Non Visual Desktop Access a free, open-source, portable

Inauguration of Vision-Aid National Resource Centre





Low cost portable field analyser

screen reader for Microsoft Windows. The training has also helped 22 students perform well in their studies and enabled 13 persons to get employed in different sectors.

Low-cost Portable Field Analyser

Aravind-Pondicherry in association with Vellore Institute of Technology has developed a low cost, compact and portable field analyser to detect glaucoma and neurological disorders. The device can replace the conventional bulky, expensive equipment used in most hospitals and does not require patients to maintain a certain posture while operating the device, thereby simplifying the whole testing process. It can also be used in screening camps.

Eye care in Patients with Neuro-degenerative Disorders

Aravind-Coimbatore organised an exclusive eye screening programme for Parkinsonism patients on September 9, 2018, the first of its kind at Aravind. A total of 14 patients attended the same. Optical Coherence Tomography was performed to evaluate if the retinal findings can be used as a biomarker to detect Parkinsonism at its early stages of onset. The hospital hopes to conduct such programmes regularly to increase awareness of Parkinsonism and in the coming years plans to include patients with other neurodegenerative disorders.

Hospital based Service Delivery Projects

HCL-ROP Tele screening project

As a part of CSR, HCL foundation has granted Aravind-Coimbatore amount worth Rs.2,500,000 for the project

titled, *Use of Tele-ophthalmology in the screening of Retinopathy of screening (RoP)*. The project covers six districts of Tamil Nadu - Salem, Dharmapuri, Namakkal, Tiruchirappalli, Perambalur and Villupuram. The aim is to screen at least 1000 babies and create awareness on RoP amongst neonatologists, paediatricians and NICU nurses of government hospitals. The project activities are scheduled to start from April 2019.

Aravind Centre for Technology-assisted Facial Alignment and Surgical Treatment - (ACT-FAST) - Project SHINE

Aravind-Chennai as part of Dr. V's centenary initiatives has embarked on a vision of developing a comprehensive centre for correcting facial deformities caused due to bone abnormalities. To accomplish this, Aravind-Chennai has joined hands with Saveetha Medical College to establish a centre of excellence in the treatment of oculofacial and orbito-cranial deformities. Cases requiring complex interventions and intensive care will be handled by the Saveetha Medical College. Cases identified and screened by the experienced doctors will be chosen for facial reconfiguration using the latest three dimensional imaging. Appropriate surgical modalities will be advised in multiple sittings. Partial funding for the project is provided by TATA Lockheed Martin Aero Structures Ltd (TLMAL). Patients are to be treated from August 2019 onwards.

Projects Supported by Standard Chartered Global Business Services Private Limited (Scope International Private Limited), Chennai

Phase 1

Under phase I, at Aravind-Madurai, the project supported 3,436 patients with corneal ulcer. A total of 113 patients underwent surgery at Aravind-Madurai for non-healing corneal ulcer. As part of enhancing the quality of outreach, Aravind-Pondicherry conducted 78 comprehensive eye camps using EMR, fundus camera and many diagnostic devices to detect large number of DR and glaucoma cases. A total of 19,018 patients were screened.

Aravind-Tirunelveli screened 2,255 babies (including review patients) for RoP. Out of 2,255 babies, 75% were screened at TVMCH. 25 babies were identified with different stages of the disease. 35 laser procedures were performed; 27 intravitreal injections were given. A total of 58 babies were benefited through the project and the treatment was provided free of cost. In collaboration

with Aurolab, Aravind-Madurai is currently developing an enhanced corneal preservative medium and trials related to this are underway.

Phase 2

Listed below are the projects under phase 2. The project period is for three years starting from November 2018.

- Providing optimal care for economically disadvantaged people with ocular trauma, Aravind - Madurai: The project aims to support 600 patients.
- Enhancing early glaucoma detection through family screening to reduce blindness caused by glaucoma, Aravind-Pondicherry (Lead), Madurai, Tirunelveli, Coimbatore and Chennai: To enhance family screening by developing a software tool which will maintain the details of the first degree relatives of patients with glaucoma diagnosed at the base hospital. The system will generate automated messages motivating the first degree relatives undergo eye examination.
- Impacting quality of life in women through presbyopia correction, Aravind-Coimbatore: The project proposes to organise free eye screening camps for women
- Retinopathy of Prematurity (RoP) project, Aravind-Madurai: To use customised tele-screening protocol using a retcam shuttle to screen preterm babies in NICUs in Madurai, Sivaganga, Virudhunagar and Theni districts.
- To establish state-of-the-art surgical training centre and thereby ensuring superior surgical skill transfer to ophthalmologists in training, Aravind-Madurai: With the incorporation of new surgical microscopes and display televisions to the already existing surgical

facility, cataract surgeries can be dealt with much more precision both in terms of the quality and time along with effective skill transfer to trainees

- Setting up six phaco training centres across the country for making phaco surgery popular, Aurolab: The plan is to set up centres with Aurolab's Hummingbird phaco machine across the country. Doctors thus can learn skills to do a phaco surgery. The use of Hummingbird will significantly bring down the price of surgery, primarily due to the low cost of the unit and reusing of consumables.

QEDJT- PHFI Diabetic Retinopathy (DR) Project

Aravind -Tirunelveli is the nodal centre for the project supported by Queen Elizabeth Diamond Jubilee Trust (QEDJT) and Public Health Foundation of India (PHFI). The aim is to develop a district level model for building capacity for effective management of DR in the government health system. Zeiss OCT was installed at Tirunelveli Medical College Hospital and two ophthalmologists from the college underwent training in laser treatment. Two paramedical ophthalmic assistants from Ambasamudram and Manur blocks were trained in FFA and OCT at Aravind-Tirunelveli. An orientation programme to sensitize the village health nurses, mentoring nurses, ophthalmic assistants and pharmacists on the importance of monitoring diabetes and diabetic retinopathy was organised on April 23. A total of 105 participants attended. Various awareness creation programmes were also organised. The first state level meeting to analyse the progress of the project was held at Chennai on December 18, 2018.

At the eye camps organised as part of QEDJT-PHFI DR project...



OUTREACH - DEVELOPMENTS : APRIL 2018 TO MARCH 2019

Free Screening Camps

Aravind's outreach camps have evolved over the years. In the beginning, the prime focus was on cataract. Gradually, outreach service became comprehensive to include other avoidable blindness conditions like refractive errors, glaucoma, diabetic retinopathy etc.

Owing to a phenomenal increase in the incidence of Retinopathy of Prematurity (RoP), outreach eye care services now include screening for RoP.

One of the fundamental determinants of any RoP management programme is effective screening. RoP screening camps thus became one of the structured activities of Aravind's outreach work. In the last year, Aravind screened 8,935 babies and of these 1,652 were identified with RoP. 193 babies were given treatment. The success of Aravind camps is largely due to the unstinting support and dedication of a band of community sponsors and NGOs. Many of these sponsors have been with Aravind for years together, often forming a part of the extended Aravind family.

Every year Aravind organises Sponsors Day in its various centres to acknowledge the noble service rendered by them in its fight against blindness. 2018 being Dr. V's birth centenary year, Sponsors' Day was celebrated at Aravind - Madurai, Coimbatore and Pondicherry, combining sponsors from the rest of the centres as well. Annual planning meeting for the staff of Outreach Department across the Aravind centres was held from January 12-13, 2019.

In the year-ending March 2019, Aravind conducted 2,833 camps through which 555,006 people were screened and 92,510 underwent surgery.

Outreach-based Service Delivery Projects

ORBIS REACH Project

With support from ORBIS, a project to reach school going children in the age group of 6-17 year to address the problem of uncorrected refractive errors has been implemented by Aravind-Madurai. The target is to screen 400,000 school going children for visual

Sponsors' Day celebrations

Aravind -Madurai, Theni, Tirunelveli



Aravind - Pondicherry and Chennai

Aravind - Coimbatore and Salem



Outreach Performance 2018 - 2019

	Total	Madurai	Theni	Tirunelveli	Coimbatore	Pondicherry	Tirupur	Salem	Tuticorin	Udumalpet	CBE CC	Chennai
SCREENING CAMPS												
Comprehensive Eye Camps												
Camps	1,696	435	132	282	387	267	-	101	31	-	-	61
Patients examined	346,972	95,990	21,025	45,800	80,771	63,136	-	15,073	3,792	-	-	21,385
Glasses prescribed	82,778	18,760	5,765	12,127	16,740	15,024	-	3,915	605	-	-	9842
Glasses delivered	69,308	16,317	5,237	10,236	13,185	12,705	-	3,378	528	-	-	7722
Glasses dispensed on the spot	55,464	14,092	4,003	8,677	12,191	10,548	-	1,969	367	-	-	3617
Diabetic Retinopathy Screening Camps												
Camps	425	55	3	15	290	59	-	3	-	-	-	-
Patients examined	85,334	11,281	612	1,715	65,286	6,126	-	314	-	-	-	-
Diabetics screened	31,387	5,201	214	617	21,939	3,301	-	115	-	-	-	-
DR Patients screened	1,866	740	14	102	503	495	-	12	-	-	-	-
Refraction Camps												
Camps	243	61	18	55	54	33	5	12	5	-	-	-
Patients examined	54,240	13,854	3,604	11,654	15,402	6,014	1,143	1,919	650	-	-	-
Glasses prescribed	22,387	5,367	1,508	4,819	7,561	2,319	207	490	116	-	-	-
Glasses delivered	19,399	4,925	1,428	4,246	6,547	1,631	125	402	95	-	-	-
On the spot deliveries	14,375	3,758	1,159	2,497	5,260	1,407	10	256	28	-	-	-
Refraction Camps by Mobile Unit												
Camps	43	-	-	-	43	-	-	-	-	-	-	-
Patients examined	6,693	-	-	-	6,693	-	-	-	-	-	-	-
Glasses prescribed	922	-	-	-	922	-	-	-	-	-	-	-
Glasses delivered	773	-	-	-	773	-	-	-	-	-	-	-
Eye Screening of School Children-Base Hospital												
Schools served	204	-	16	52	34	75	11	15	-	-	-	1
Camps	206	-	16	52	34	77	11	15	-	-	-	1
Teachers trained	3,264	-	156	1,339	252	1,517	-	-	-	-	-	-
Total children in school	245,322	-	22,853	71,201	37,460	87,389	6,631	19,044	-	-	-	744
Children screened by oph.	35,363	-	2,487	5,398	9,412	12,840	1,826	3,333	-	-	-	67
Children received glasses	9,657	-	608	3,364	1,766	3,361	89	446	-	-	-	23
Children identified with eye defects other than Refractive Error	2,279	-	109	587	333	841	62	335	-	-	-	12
Eye Screening of School Children-Vision Centres												
Schools served	4	2	-	-	2	-	-	-	-	-	-	-
Camps	4	2	-	-	2	-	-	-	-	-	-	-
Teachers trained	0	-	-	-	-	-	-	-	-	-	-	-
Total children in school	1,894	1,098	-	-	796	-	-	-	-	-	-	-
Children screened by oph.	411	181	-	-	230	-	-	-	-	-	-	-
Children received glasses	82	65	-	-	17	-	-	-	-	-	-	-
Children identified with eye defects other than Refractive Error	25	5	-	-	20	-	-	-	-	-	-	-
Paediatric Eye Screening Camps												
Camps	27	-	5	4	6	12	-	-	-	-	-	-
Children examined	8,334	-	2,255	1,065	1,503	3,511	-	-	-	-	-	-
Refractive errors	590	-	384	106	35	65	-	-	-	-	-	-
Glasses prescribed	14	-	11	-	-	3	-	-	-	-	-	-
Glasses delivered	10	-	10	-	-	-	-	-	-	-	-	-
Other defects identified	618	-	312	8	20	278	-	-	-	-	-	-
RoP Screening												
Screening visits	1,666	112	194	184	792	381	-	-	-	-	-	3
Babies screened	8,935	917	1,031	1,392	5,384	200	-	-	-	-	-	11
Babies with RoP	1,652	17	16	50	1,391	167	-	-	-	-	-	11
RoP Babies treated	193	16	16	60	101	-	-	-	-	-	-	-
VISION CENTRES												
Centres	75	31	7	15	6	11	2	-	-	3	-	-
New + Review	652,902	272,309	69,117	143,223	54,472	84,617	13,047	-	-	16,117	-	-
Out-patients / day	30	31	32	33	29	29	21	-	-	18	-	-
COMMUNITY EYE CLINICS AND CITY CENTRES												
Centres	6	3	1	1	-	1	-	-	-	-	-	-
New + Review	196,635	108,361	23,176	33,196	-	31,902	-	-	-	-	-	-
Outpatients / day	106	117	75	107	-	103	-	-	-	-	-	-



Eye care awareness programme organised for school children as part of ORBIS - REACH project

problems and also create awareness among the target population - parents, teachers and children towards increasing spectacle compliance for correction of refractive errors. Trained personnel screened 174,667 students from 1,037 schools. Around 15,285 (8.7%) students were referred for secondary evaluation. Among the referred, 14,188(93%) children were examined by an ophthalmologist. A total of 5,769 children received spectacles and 991 children were referred to base

Awareness Creation Programmes

World Diabetes Day celebrations



Aravind - Madurai



Aravind - Pondicherry



Eye camp for Tibetan refugees

hospital for further evaluation. Among those referred, a total of 69 underwent surgery.

Eye Care for Tibetan refugees in India

Aravind Eye Hospital, Coimbatore along with LAICO, Seva Foundation and American Himalayan Foundation (AHF) started this project to provide eye care for Tibetan population in Byallakuppe, Hunsur, Kollegal and Mungod in the state of Karnataka. As part of this, two eye camps were conducted and through which 101 patients underwent cataract surgery.

Childrens Day at Aravind- Tirunelveli



Retinoblastoma survivors' meet at Aravind-Coimbatore and Madurai as part of observing Retinoblastoma Awareness Week



VISION CENTRES

Aravind has come a long way since the opening of the very first vision centre two decades ago. As of March 2019, Aravind's vision centre network has 75 centres that cater to 6 million population. In the year ending March 2019, these centres together handled 652,902 out-patient visits.

Aravind model of delivering primary eye care through vision centres is being replicated widely in several Indian states and in Bangladesh. In Bangladesh, Aravind has been collaborating with National Institute of Ophthalmology since 2017 towards establishing vision centres. Honorable Prime Minister of Bangladesh, Ms. Sheikh Hasina inaugurated 20 centres in August 2018 in the presence of Dr. R.D. Ravindran, Chairman, Aravind Eye Care System. An additional 30 centres will be inaugurated in 2019.

Family Meet for Vision Centre Staff

Vision centre staff of Aravind-Madurai were invited along with their families for a one-day meet on



Family meet of vision centre staff

August 18. Around 58 staff members and their families participated in this informative and fun-filled event. The participants were taken on a tour of Aravind facilities and Aurolab. Staff from Patient Feedback department shared a few clippings and messages from patients who got benefitted through vision centres. Prof. R. Raja Govindasamy, Principal, Mannar Thirumalai Naicker College, Madurai gave a motivational talk to the audience.

Vision Centres inaugurated in 2018 -2019

Watrapp, May 21



Kaniyur, June 4



Vadipatti, August 15



Ettayapuram, September 10



Bhuvanagiri, September 19



Sanarpatti, October 17



Mukkudal, November 12



Thuvankurichi, February 22



Gingee, March 22



ARAVIND INTEGRATED EYE BANK SERVICES (AIEBS)

AIEBS collaborate with community and various hospitals for cornea retrieval. Community based cornea retrieval programme is facilitated by several NGOs and a network of volunteers. They extend their full-fledged support in various stages - counselling family members of the deceased, helping with documentation and collecting tissues. In the last year, 75% of corneal tissues retrieved were in collaboration with community. Several awareness sessions and training programmes were regularly organised for doctors and volunteers.

Eye banks have been collaborating with government hospitals and several private hospitals for facilitating eye donation. The Hospital Cornea Retrieval Programme contributed 25 % to the total corneal tissues collected in the last year. Trained counselors were posted in the morgues of government hospitals whose main responsibility was to motivate family members of the deceased into donating their loved one's eyes. Select staff from a few private hospitals helped in notifying deaths from their hospitals.

Eye collection centre at Kumbakonam, now in its fifth year of operation has been doing a commendable service in promoting eye donation. The centre collected 900 tissues during April 2018-March 2019.

New Initiatives

In collaboration with government primary health centres (PHCs), Rotary Aravind International Eye Bank (RAIEB), Madurai initiated a project to channelize death notification from the community to eye bank. Accordingly, the eye bank organised nine awareness programmes for the staff of PHCs and their sub centres.

Mr. D. Saravanan handing over eye donation information board to display at PHC



Release of the handbook on eye donation at Dr. V's birth centenary celebration

Flex boards with awareness messages and information on eye donation were displayed at 13 block level PHCs for the benefit of public.

A handbook to create awareness on eye banking and eye donation, was developed with the initiative of Mr. D.Saravanan, Manager, RAIEB. The book provides in-depth information on eye donation and eye banking. At the birth centenary celebrations of Dr. Venkataswamy held at Madurai on September 30, 2018. Dr. J. Radhakrishnan IAS, Health Secretary, Govt. of Tamil Nadu released the book and the first copy was received by Dr.Chandrakumar, Director, Tamil Nadu State Blindness Control Society.

Staff Capacity Building

Ms. K. Anusya, RAIEB visited Ramayamma International Eye Bank, Hyderabad to observe corneal tissue pre-cut in January 2019.

Training

A total of 9 eye bank technicians and 2 eye donation counsellors were trained.

Tissue Collection and Utilisation

Aravind eye banks distribute corneas, sclera and amniotic membrane to 55 institutions all over India.

Statistics 2018 - 2019

Center	Eyes Collected	Eyes Utilised in Aravind	Sent to others
Madurai	2,443	832	236
Coimbatore	1,383	665	82
Pondicherry	1,008	478	2
Tirunelveli	796	231	10
Total	5,630	2,206	330



Aravind - Coimbatore

Observing National Eye Donation Fortnight



Aravind - Pondicherry

Aravind - Salem



Aravind - Tirumelveli



Aravind - Madurai



EDUCATION AND TRAINING

The year saw a surge in the number of continuing medical education programmes organised by Aravind, an activity that was done consciously to observe Dr. V's birth centenary in the most meaningful way. Close to 20 CMEs were organised including state level programmes, giving an opportunity for ophthalmologists to connect, share knowledge and learn from each other.

CMEs ORGANISED AT ARAVIND

CME on Low Vision Rehabilitation

Aravind-Salem, May 19-20, 2018

The CME had several lectures, hands-on sessions, and case presentations to update participants on the latest developments in the field. A total of 265 people including ophthalmologists, teachers and students of optometry, optometrists from primary health centres, Block Ophthalmic Assistants, and professors from special schools attended. Faculty consisted of Aravind team - Dr. P.Vijayalakshmi, Dr. Sandra Ganesh, Mrs. Flora; LVPEI team - Dr.Beula Christy, Dr. Deepak K Bagga, Mr. Karthik Bhushan and Mrs. Mahalakshmi; Dr. Tanuja Britto from St.Joseph's Eye Hospital, and Dr. Ilango from Velammal Medical College, Madurai.

Workshop on Care and Maintenance of Ophthalmic Instruments and Equipment

Staff and technicians of Instruments Maintenance department at Aravind handled different sessions and

Instruments Maintenance Workshop



Dr.P.Vijayalakshmi inaugurating the CME on Low Vision Rehabilitation

demonstrated the maintenance of various ophthalmic equipment and instruments. Participants were from the states of Tamil Nadu, Karnataka, Kerala and Andhra Pradesh.

In the workshop held at Aravind-Chennai on June 23, 2018 around 110 participated. And at the workshop held at Aravind-Coimbatore on December 8, 2018 a total of 174 participated.

Review Learning on Advancement and Development (ReLOAD) Phacoemulsification Workshop

Aravind-Chennai, June 23-24, 2018

The workshop was conducted in association with Alcon, where 16 external ophthalmologists participated. Apart from a hands-on wetlab session, it also covered

Hands-on training at ReLOAD Phacoemulsification workshop





Dr. R. Venkatesh addressing the audience at Pudhuvue'18, Annual Conference of Tamil Nadu Ophthalmic Association



basics and advances in phacoemulsification including complication management.

Newer Insights in Cornea, Dry Eye & Glaucoma

Aravind-Chennai, July 14, 2018

About 20 ophthalmologists from various parts of India participated in this workshop conducted in association with Pfizer. Eminent faculty from Aravind and other hospitals in and around Chennai handled the sessions.

CME on Perfect Vision

Aravind-Tirunelveli, June 30 -July 1, 2018

The two-day CME arranged for practising ophthalmologists and optometrists provided new insights and approaches in the field of ophthalmology and modern management techniques. About 140, including faculty, delegates and postgraduate students in ophthalmology participated.

Inauguration of the CME on Perfect Vision



66th Annual Conference of Tamil Nadu Ophthalmic Association - Pudhuvue

Aravind-Pondicherry, August 10-12, 2018

Aravind-Pondicherry in association with Pondicherry Ophthalmologists' Association hosted PudhuVue'18 at Mahatma Gandhi Medical College and Research Institute (MGMC&RI). Dr. R. Venkatesh, Chief Medical Officer, Aravind-Pondicherry was the Organising Secretary. About 1400 delegates and 600 associate delegates took part in the conference which coincided with the bicentenary celebration of Government Ophthalmic Hospital, Egmore, Chennai.

Hon'ble LG of Puducherry Dr. Kiran Bedi inaugurated the conference. Guests of honour included Dr. P. Namperumalsamy, Chairman Emeritus, Aravind Eye Care System, Prof. K.R. Sethuraman, Vice Chancellor, MGMC&RI; Dr. Renuka Srinivasan, Chairman of the Organising Committee, TNOA; Dr. V. Panneer Selvam, President, TNOA and Dr. V. Siddharthan, Incoming President, TNOA.

AIOS-ARC PG Refresher Course

Aravind-Chennai, September 7-9, 2018

Close to 185 PG students from Tamil Nadu and Kerala and 51 faculty from across India participated. Sessions consisted of didactic and interactive lectures, wet lab training, quiz and training on various diagnostic procedures.

CME on Role of Non Ophthalmologists in Prevention of Blindness

Theni, September 23, 2018

Aravind Eye Hospital, Theni organised the CME to orient non-ophthalmologists about their role in the



Non-ophthalmologists with Dr. P. Namperumalsamy and Dr. D. Datta at the CME organised at Aravind - Theni

prevention of blindness. Dr. Pandiarajan, Finance Secretary, IMA Cumbum Valley inaugurated the CME. Speakers included paediatricians, cardiologists, neurologists and physicians. Dr. Dipankar Datta gave a talk on the partnership of diabetologists and Primary Health Centres and how technology can support in prevention of blindness. A total of 42 persons participated.

Workshop on Descemet's Membrane Endothelial Keratoplasty (DMEK)

Aravind-Pondicherry, October 17-18, 2018

The two-day workshop was conducted for corneal surgeons from across the Aravind centres. Dr. Samar Basak, Disha Eye Hospital, Kolkata was the chief instructor and he performed live DMEK. At the hands on wet lab session, the participants practised harvesting DMEK tissue from human eye ball.

CME on Diabetes

Aravind-Tirunelveli, November 25, 2018

Organised in association with IMA and Tirunelveli Medical College, the CME aimed to update ophthalmologists, physicians and other specialists on the importance of proper monitoring in diabetes and how the disease can affect eyes. About 60 doctors participated in the CME where specialists in the field of cardiology, endocrinology, gynaecology and ophthalmology as well as diabetologists gave detailed and informative lectures.

CME on Retinopathy of Prematurity (RoP)

Aravind-Madurai, November 23, 2018

The CME was conducted by the Government of Tamil Nadu National Health Mission on the occasion of

World Prematurity Day. The function was inaugurated by Honorable District Collector Thiru. S. Natarajan IAS, Dr. Chandrakumar, Project Director of District Blindness Control Society and Dr. Kavitha, Head, Department of Ophthalmology, Government Rajaji Hospital, Madurai. Dr. P. Namperumalsamy addressed the gathering. The programme had exhaustive scientific sessions about the screening guidelines, clinical management and tele screening of premature infants. Eight speakers from all over Tamil Nadu shared their experiences with the over 75 delegates. The highlight of the programme was the hands on training in visualization of the fundus with model eyes and introduction to laser for young ophthalmologists.

Phaco Development Workshop

Aravind-Madurai, November 23-24, 2018

Phaco Development programme is a dedicated platform for providing the most up-to-date knowledge in eye care to ophthalmic surgeons. It is a unique initiative between Alcon and specialist training institutes that

Dr. R. Kim inaugurating the CME on RoP





Dr. Madhu Shekhar handling session at the Phaco Development workshop

builds cataract surgical capabilities across Asia and Russia.

At Aravind-Madurai, two- day workshop for MS Residents and IOL Fellows was conducted which covered basics in phacoemulsification. Practical training was provided in wet lab. Participants performed various steps in surgery including wound construction, circular curvilinear capsulorhexis, hydro procedures and nucleus management in animal eyes.

Neuro-ophthalmology CME

Aravind – Chennai, December 1-2, 2018

The CME organised to update the latest trends in the field of neuro-ophthalmology had international, national and Aravind faculty sharing their inputs. International faculty included Dr. Peter MacIntosh, UIC Department of Ophthalmology & Visual Sciences, USA; Dr. Prem Subramanian, University of Colorado School of Medicine, USA; Dr. Umaphathi N Thirugnanam, National Neuroscience Institute, Singapore and Dr. Vivek Patel,

USC Roski Eye Institute, USA. Padmashri Prof. Dr. C. U Velmurugendran, Head, Department of Neurology, Sri Ramachandra Medical College and Research Institute, Chennai delivered the key note address and Dr. G. Natchiar, Director-Emeritus; Aravind Eye Care System delivered a talk titled “Integrating eye to brain”. Around 200 people attended the CME.

CME on Practical Approach to Childhood Eye Disorders and Rehabilitation

LAICO, December 08, 2018

A total of 150 people participated in the CME conducted for paediatricians, rehabilitation experts and special educators. Topics covered included common eye problems in children, importance of early intervention, vision rehabilitation and assistive technologies for rehabilitation of children with special needs. An exhibition was arranged where demonstration of various low vision rehabilitation devices was arranged. There was a demonstration of VIKAS, VIKAS lite

Dr. G.Natchiar and Dr.C. U Velmurugendran lighting the lamp at the Neuro-ophthalmology CME





Dr. Sahithya explaining about low vision rehabilitation devices to the participants at the CME on Childhood Eye Disorders

and Dignify, low cost assistive devices developed by Mindtree in collaboration with Aravind for children with special needs. Representatives from Youth4Jobs, the largest organisation in India which focuses on skilling and placing youth with disability in jobs shared inputs on empowering the visually impaired. Children with special needs from schools in and around Madurai also visited the exhibition.

CME on A-scan Biometry

Aravind-Madurai, January 01, 2019

Intraocular Lens and Cataract Services at Aravind-Madurai conducted the CME for all refractionists of Aravind. Staff from centres other than Madurai joined via tele conference. Topics discussed included biometry protocol, electronic medical records, A-scan, biometry in special cases - errors and issues faced.

Medical officers from the government sector at the CCDR programme



Certificate Course in Evidence Based Management of Diabetic Retinopathy (CCDR) Programme

Aravind-Tirunelveli, February 24, 2019

As part of the Diabetic Retinopathy project supported by Queen Elizabeth Diamond Jubilee Trust, Aravind-Tirunelveli facilitated this training programme for the Medical Officers in government PHCs. The programme is conducted once a month in four modules. The fourth module was inaugurated at Aravind Eye Hospital, Tirunelveli. A total of 12 Medical Officers from Department of Public Health and PHCs and three private practitioners were trained. Certificate was awarded by Public Health Foundation of India (PHFI), Centre for Chronic Diseases Control Dr. Mohan's Diabetes Education Academy and Aravind Eye Care System (AECS).

Guest lecture on Updates and Controversies in RoP Management

Aravind-Madurai, February 21, 2019

Dr. Alan B Richards from Louisiana State University, USA gave a lecture on "Updates and Controversies in ROP Management" at Aravind-Madurai, and all other Aravind Centres were connected through tele conferencing.

Training on MiLoop Technique

Aravind-Madurai, February 25-26, 2019

Dr. Barbara C. Erny, MD, ASCRS Foundation Medical Liaison for International Programs visited Aravind-Madurai to train IOL doctors on MiLoop technique. Dr. Madhu Shekhar, Dr. Aruna Pai and Dr. Gomathi Ramya got personalized hands-on training. She also gave a lecture on the technique to staff in other centres through teleconference.



Dr. Ganesh V. Raman handling a session

CME on Uveitis – Common Mistakes in Diagnosis and Management

Aravind- Coimbatore, March 24, 2019

Under the aegis of Uveitis Society of India, Aravind- Coimbatore in association with Coimbatore Society of Ophthalmic Surgeons, conducted the CME. External faculty - Dr. Jyothirmay Biswas, Head- Uvea services, Dr. Parthopratiim Dutta Majumder, Consultant, Uvea services, Sankara Nethralaya, Chennai, and Dr Padmamalini Mahendradas, Head-Uveitis and Ocular Immunology, Narayana Nethralaya, Bangalore and team from Aravind handled various sessions. A total of 191 delegates attended.



Dr. B. Manohar Babu lighting the lamp at the inauguration

Glaucoma : Back to Basics

Aravind-Madurai, March 3, 2019

The half-day CME was organised in association with Madurai Ophthalmologists Association. A total of 81 ophthalmologists attended the CME. Glaucoma experts from various Aravind centres handled the sessions.



Release of Aravind FAQs in Ophthalmology -Second Edition

Aravind FAQs in Ophthalmology, authored by Dr. N. Venkatesh Prajna and first published in 2013 has been receiving overwhelming response from the ophthalmic fraternity. The book is mainly intended to help doctors prepare for their ophthalmology exams. To cater to the increasing demand, the second edition was published in December 2018 in the presence of Dr. K. Dharmalingam, Director- Research, AMRF; Dr. Rathinam Sivakumar, Principal, Aravind Postgraduate Institute of Ophthalmology; Dr. V. Parvathasundari, Senior Associate Professor, Government Rajaji Hospital, Madurai and Dr. T. Siddharthan, President, Tamil Nadu Ophthalmic Association.

Candidates Trained 2018-19

Total Candidates: 534

POSTGRADUATE COURSES

Diploma in Ophthalmology (2 years)	8
Master of Surgery in Ophthalmology (3 years)	9
Diplomate of the National Board (3 years)	14
Post DO DNB (2 years)	6

LONG-TERM OPHTHALMOLOGY FELLOWSHIP

Ant. Segment / Intraocular Lens Microsurgery (2 years)	11
Orbit & Oculoplasty (18 Months)	8
Paediatric Ophthalmology & Strabismus (18 months)	11
Glaucoma (2 years)	20
Retina Vitreous (2 years)	22
Cornea (18 Months)	23
Uvea (18 Months)	1
Comprehensive Ophthalmology (2 years)	5
Fellowship in General Ophthalmology	25

SHORT-TERM FELLOWSHIP (FOR INTERNATIONAL CANDIDATES)

Orbit & Oculoplasty (6 Months)	2
Cornea (1 year)	1
Glaucoma (1 year)	2
Paediatric Ophthalmology (1 year)	1
Retina (1 year)	1

We have learnt a lot from LAICO. Every time we go there, we learn something and then try to implement after coming back. When we wanted to start training programme for MLOPs, we sent our team of trainers for Eyexcel programme and today, we are training approximately 15 students every year. I call LAICO and Aravind, "the Mecca of eye care"

*- Dr. Uday R. Gajiwala
Superintendent*

*Tejas Eye Hospital run by Divyjayoti
Trust, Mandvi, Gujarat*

SHORT-TERM CLINICAL COURSES FOR OPHTHALMOLOGISTS

Small Incision Cataract Surgery (1 Month)	32
Clinical Observership Programme in Diagnosis and Management of Glaucoma (1 Month)	28
Lasers in Diabetic Retinopathy Management (2 Months)	44
Vitrectomy (Virtual) (2 weeks)	2
Management of Retinopathy of Prematurity & Paed. Retinal Disorders (1 Month)	17
Neuro-Ophthalmology (3 months)	4
Orientation to Paediatric Ocular Anaesthesia for Anaesthetists	1
Phacoemulsification (1 month)	38

SHORT-TERM PARAMEDICAL COURSES

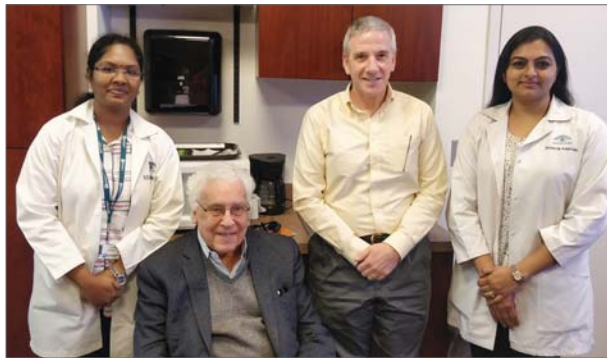
Optical Dispensing (3 Months)	2
OT Techniques (2 Months)	4
Refraction Techniques (2 Months)	7
Orthoptist (6 Months)	3
Ocularist (3 weeks)	9
Fundus Fluorescein Angiography and Ultrasonography (2 Months)	3

MANAGEMENT COURSES

Management Priorities in Eye Care Delivery (1 week)	32
Management Training and Systems Development for Hospital Administrators / Managers (4 weeks)	27
Project Management training for Eye Care (4 weeks)	9
Eyexcel - Expanding Global Eye Care Workforce through Excellence in Training (4 Days)	30
Management Training for Eye Care Programme Managers (2 weeks)	12
Community Outreach and Social Marketing of Eye Care Services (3 weeks)	22
Instrument Maintenance - for Technicians (4 weeks)	30
Instrument Maintenance - for Ophthalmologists (5 days)	4
Training in Eye Bank Techniques (1 month)	4

INTERNAL CAPACITY BUILDING

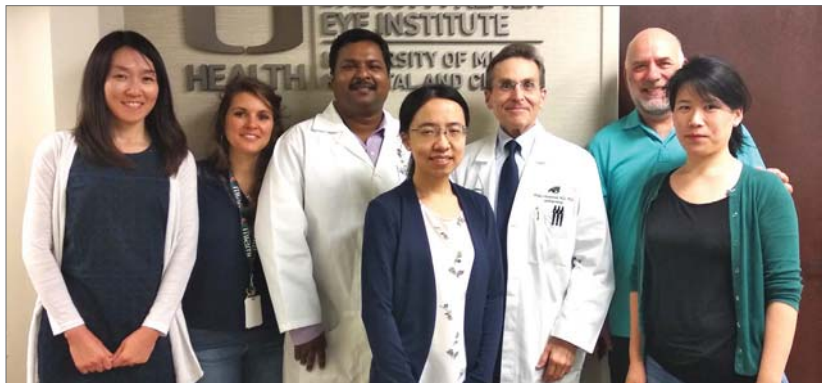
Medical field is growing tremendously and new advancements are coming in diagnostic and therapeutic modalities. It is important that the doctors are trained in the practice of these latest developments in order to ensure and deliver the best care to patients. During September - October 2018, several doctors from Aravind underwent specialised training in various prestigious institutions in the US.



Aravind's Cornea consultants, Dr. Josephine Christy and Dr. Divya Karthik with Dr. Claes H Dohlman at Boston Sight, Needham, USA



Dr. Swati Upadhyaya, Consultant, Glaucoma Services, Aravind-Pondicherry with Dr. Donald L Fellman at Glaucoma Associates of Texas, USA



Dr. Karthik Kumar, Consultant, Retina Services, Aravind - Madurai with Dr. Philip J Rosenfeld at Bascom Palmer Eye Hospital, US



Dr. Kavitha Yuvarajan, Consultant, Orbit & Oculoplasty Services, Aravind - Coimbatore with Dr. Pete Setabutr and his fellow at Eye Hospital Illinois, Chicago



Dr. Madhu Shekhar, Chief - Cataract Services, Aravind - Madurai with Dr. David. F Chang at Dr. Chang's Eye Clinic, Los Altos, USA

CONFERENCES ATTENDED ELSEWHERE

Various national and international conferences attended by Aravind staff during April 2018-March 2019 are listed below.

Annual Conference of the Indian Society of Cornea & Keratorefractive Surgeons

New Delhi, April 8, 2018

DR. REVATHI

- Mucous Membrane Grafting (MMG) in Ocular Surface Disease (OSD)

4th Asia-Pacific Glaucoma Congress (APGC)

Busan, South Korea, April 13-15, 2018

Dr.P.Sundaresan

- Current trends in molecular genetics of Primary Open Angle Glaucoma (POAG) and Primary Angle Closure Glaucoma (PACG)

Annual Conference of the American Society of Cataract and Refractive Surgeons (ASCRS)

Washington, USA, April 13-17, 2018

DR. O. ANNAMALAI

- Visual experience during Cataract Surgery (Best Video Award)
- Aravind Eye Care System model & Manual Small Incision Cataract Surgery
- Co-Instructor for ECCE – SICS Wet Lab Session

Asia Cornea Society Meeting

Qingdao, China, May 16-18, 2018

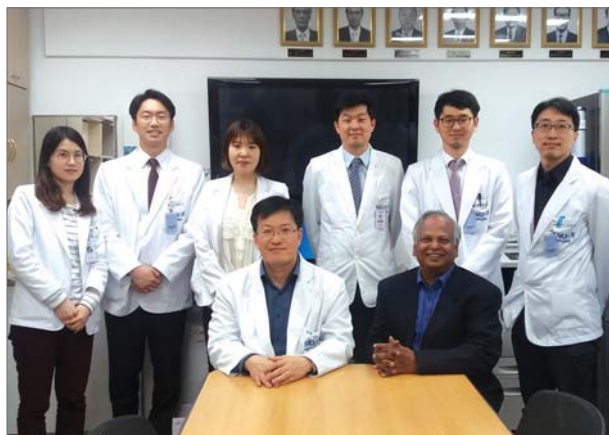
DR. N.VENKATESH PRAJNA

- Therapeutic penetrating keratoplasty for fungal keratitis

DR. NAVEEN R

- Corneal collagen cross-linking for fungal keratitis
- Infections in keratoprosthesis
- The barrier framework of patients requiring therapeutic penetrating keratoplasty for infectious keratitis

Dr. P. Sundaresan at the Asia-Pacific Glaucoma Congress



Dr. N. Venkatesh Prajna at the Asia Cornea Society Meeting

DR. LALITHA PRAJNA

- Fungal keratitis: Role of Minimum Inhibitory Concentrations (MICs) and repeat cultures on clinical outcome

Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO) 2018

Honolulu, Hawaii, USA, April 29 - May 3, 2018

DR. P. SUNDARESAN

- Targeted sequencing to identify the candidate gene in two south Indian primary open angle glaucoma families
- He moderated one of the poster sessions.

DR. S. SENTHILKUMARI

- Enhanced aqueous outflow facility in human eyes by sb772077b, a new Rho kinase inhibitor

S. YOGAPRIYA

- Age related cell loss in human trabecular meshwork is associated with loss of stem-like cells in the Schwalbe's line region

DR. J. JEYA MAHESWARI

- Analysis of fluid phase complement system activation in diabetic retinopathy

DR. ASHOK VARDHAN

- How many cataract surgeries are needed in a given population?

Dr. O. Annamalai with the Best Video Award at the ASCRS Conference





AMRF team at ARVO - 2018

World Ophthalmology Congress 2018

Barcelona, Spain, June 16-19, 2018

DR. VASURAJ

- Terbutaline induced bilateral angle closure
- Comparison of topical steroids Vs topical NSAIDS outcomes post Yag peripheral iridotomy

DR. V. NARENDRA

- Telescreening for Retinopathy of Prematurity -Our experience

DR. V.R.SARAVANAN

- Imaging on Retina OCT - A newer insights and OCT - Basic interpretations (Instruction Course)

DR. RODNEY MORRIS

- Retinal imaging and Fundus Fluorescein Angiography interpretation

Conference of Hadassah Ophthalmology

Jerusalem, June 19-22, 2018

DR. R. KIM

- Diabetic retinopathy screening in India or access to primary eye care through technology
- Round table- New Era in retinal therapy and eyelid surgery

DR. USHA KIM

- Unusual orbital adnexal tumours
- Small incision approach to orbital tumours



Dr. Vasuraj at the World Ophthalmology Congress 2018

Annual Conference of VISION2020

Guwahati, Assam, June 8-11, 2018

DR. R.D. RAVINDRAN

- Evidence for non communicable eye diseases in India

DEEPA V

- Sustainable eye care - Practical strategies for optimising human resource cost

V. VIJAYAKUMAR

- Tele ophthalmology model

SANIL JOSEPH

- Factors affecting DR patients presenting early and late to the tertiary hospital
- Comprehensiveness with quality
- Factors affecting glaucoma patients presenting early and late to the tertiary hospital

MOHAMMED GOWTH

- Development of vision centres to the unreachable
- Aravind community screening programme - beyond cataract

YESUNESAN

- Prevention of corneal ulcer through health education

MR. D. SARAVANAN

- Role of nodal centre in community cornea retrieval programme

Aravind and LAICO teams with Chairman, Dr. R.D. Ravindran at the Annual Conference of VISION 2020



GANESH BABU

- Ideal national Management Information System (MIS) under NPCB
- Innovative approach to strengthening comprehensive eye examinations in outreach activities: Role of electronic medical record
- Artificial Intelligence based rapid screening for DR, an avoidable blindness in India

B. UDAYAKUMAR

- Effect of text/voice SMS reminders in improving glaucoma follow-up compliance

S. SIVANAND

- Aurolab's E-sec and other devices for increasing reach & universal coverage

56th International Society for Clinical Electrophysiology of Vision symposium

Reims-France, June 13-23, 2018

DR. RUPA

- Visually evoked responses to pattern stimulation and its importance in Anisometropic amblyopia

SAARC Academy of Ophthalmology Congress

Kathmandu, Nepal June 21-24, 2018

DR. M. SRINIVASAN

- Penetrating keratoplasty: has it lost the glory?
- Pythium insidiosum keratitis: - Emerging as an epidemic In India
- Prevention of corneal ulcer In SAARC region

DR. KOWSALYA BALAJI

- Disc edema, disc pallor

Annual Conference of the Asia Pacific Tele-ophthalmology Society (APTOS)

Singapore, July 6-8, 2018

DR. KARTHIK SRINIVASAN

- Tele-Ophthalmology initiatives in India – Aravind's experience

DR. SANKALP SHARMA

- Routine fundus photography screening for posterior segment disease in vision centres: A stepped-wedge, cluster randomised trial in south India

Dr. Kowsalya Balaji with Dr. M.Srinivasan at the SAARC Academy of Ophthalmology Congress



SANIL JOSEPH

- Effectiveness of teleretinal imaging in identifying Diabetic Retinopathy compared with universal referral – A cluster randomised trial

Dr. Sankalp Sharma and Mr. Sanil Joseph received travel grant to attend the conference.

Colombo Retina Meeting of the Association of Vitreo Retina Specialists of Sri Lanka

Colombo, Sri Lanka, July 12-13, 2018

DR. GEORGE MANAYATH

- Management of failed macular hole surgery
- Atypical case presentations of Diabetic Macular Edema (DME) – Serous Macular Detachment
- Pachy-choroid disease spectrum and its management

Annual Conference of the Asia Pacific Association of Cornea and Refractive Surgeons

Thailand, July 19-21, 2018

DR. ANITHA

- Outcomes of Descemet Stripping Endothelial Keratoplasty (DSEK) in secondary glaucoma
- Outcomes of bacillus endophthalmitis

Annual Conference of the American Society of Retina Specialists

Vancouver - Canada, July 20-24, 2018

DR. NARESH BABU

- Comparative study of inverted ILM Flap and PRP as an adjunct in large macular holes.

DR. KARTHIK SRINIVASAN

- Chandelite: A novel method of using light probe as a chandelier
- LED on the retina: Pulsatile RAM post yag Hyaloidotomy (Medical case presentation)
- LED on the retina (Video)

Dr. Renu P Rajan participated in the scientific meeting.

Dr. Sankalp Sharma, Sanil Joseph and Dr. Karthik Srinivasan, at the APTOS Symposium



25th Annual Conference of ARVO-India – Indian Eye Research Group Meeting

Hyderabad, July 27-29, 2018

Dr. P. Namperumalsamy delivered a special talk on the establishment of the IERG of which he was one of the founding members.

R.D. THULASIRAJ AND DR. JILL KEEFFE

- Bench to bedside to the population (Instruction course)

R.D. THULASIRAJ

- Intraocular lens initiatives in India

PROF. K. DHARMALINGAM

- Chaired the Prof. D. Balasubramanian oration lecture.

DR. P. SUNDARESAN

- Chaired the session on Molecular mechanisms in eye diseases.

DR. LALITHA PRAJNA

- Chaired the session on Combating ocular infections.
- Proteomics approach to understand mycotic keratitis

DR. C. GOWRIPRIYA

- Ocular stem cells and regenerative medicine

DR. S. SENTHILKUMARI

- Cell culture models in ocular pharmacology research

DR. BHARANIDHARAN

- MicroRNAs and ocular infections

P. SARANYA

- Presence of Stem cells in the central region of the human anterior lens epithelium

DR. O.G. RAMPRASAD

- Exploration of a novel chemical cross-linker for the treatment of Keratoconus

S. YOGAPRIYA

- Age related reduction of stem cells in native human trabecular meshwork cells

K. LAVANYA

- Association of HSA-MIR-143-3P in the regulation of corneal epithelial stem cells

T. SHANTHINI

- RBI promoter methylation analysis in Retinoblastoma patients

V. LAKSHMI PRABHA

- Comparative analysis of the exoproteome of *Aspergillus flavus* spores during the early stages of growth: saprophyte versus corneal isolate

AMRF team at the ARVO-India – Indian Eye Research Group Meeting



Dr. M. Srinivasan at the Annual Conference of Eye Bank Association of India

R. KADARKARAI RAJ

- Molecular genetics of *abca4* gene in Stargardt Disease

T. MADHUMITHRA

- Differential expression of genes related to steroid responsiveness in human trabecular meshwork cells

S.UMA DEVI

- Metadata analysis towards the identification of dysregulated metabolic pathways in neovascular age related macular degeneration

DR. REVATHI

- Research around fungal keratitis

6th Annual Scientific Congress of the College of Ophthalmology of Eastern, Central and Southern Africa

Addis Ababa, Ethiopia, August 29 - 31, 2018

THULASIRAJ RAVILLA

- How to improve eye care service delivery in low and middle income countries?

Annual Conference of Eye bank Association of India

Pune, September 8-9, 2018

DR.M. SRINIVASAN

- Penetrating keratoplasty – has it lost its glory?
- Panelist for the session, Everything you need to know and more



D. SARAVANAN

- Challenges during tissue retrieval in India

Annual Conference of Glaucoma Society of India

Trivandrum, September 13-15, 2018

DR. R. RAMAKRISHNAN

- Management of congenital glaucoma - The surgical approach
- Chair session on randomised clinical trials in glaucoma

DR. MOHIDEEN

- Natural course and staging of angle closure disease
- Convener for the session, Glaucoma in India - The pubmed picture

DR. VASURAJ

- Terbutaline induced bilateral angle closure

DR. SWATI KANDURI

- Mid term outcome of Mitomycin C augmented trabeculectomy in open angle glaucoma versus angle closure glaucoma

DR. R. VENKATESH

- Non-penetrating deep sclerectomy with CO2 laser
- Is home perimetry the future of visual field testing
- Moderated the debate, Clash of the titans

DR. S. KAVITHA

- Role of screening in angle closure glaucoma

DR. SWATI UPADHYAYA

- Can Gonioscopy-assisted transluminal trabeculectomy (GATT) be an effective surgical option for primary open angle glaucoma (POAG) in developing countries? (Video)

DR. P. SUNDARESAN

- Current trends in molecular genetics of POAG and normal tension glaucoma (NTG)

DR. ROOPAM

- Update on genetics of angle closure glaucoma

DR. KRISHNADAS

- Eagle Study: Clinical trials in Glaucoma

He also moderated the session, Challenging cases in glaucoma

DR. GEORGE

- Tube related complications and management
- Debate: Failed Trab in Phakic POAG - Tube vs Repeat Trab

DR. SHARMILA

- Patient's perspective on management of glaucoma.
- Role of prophylactic sclerostomy in nanophthalmic eyes

DR. MANJU PILLAI

- Anxiety and depression- is it important?
- Moderator - Medication and adherence in glaucoma
- Convenor- Video assisted lecture

DR. INDIRA DURAI

- In-charge for Aurolab Aqueous Drainage Implant (AADI) Wet lab surgical training

DR. KANCHAN

- Precision of IOP measurement by ophthalmic assistant using Perkin's Tonometer & Uptake of Glaucoma screening among family members of known Glaucoma patients.

DR. SUJANI

- Clinical features and treatment outcomes of patients with nanophthalmos & How does glaucoma affect activities of daily living?
- Photography: Curious case of vanished tube.
- Curious case of vanished tube (Video)

DR. ASHOK

- Descriptive analysis of aniridia and glaucoma in Aniridia

DR. SINDHURA

- A rare case report of Frank-Ter-Haar syndrome in a sibling pair presenting with congenital glaucoma & Comparison of YAG PIVs Trab in acute angle closure attack

DR. MOURYA

- Descriptive analysis of axenfeld reiger syndrome and glaucoma

DR. GANESH RAMAN

- Combined surgery video, failed filter (Trab vs Tube)
- Effectiveness of Selective Laser Trabeculoplasty (SLT) in south Indian population

DR. MRUNALI

- Effectiveness of SLT in south Indian population

DR. NABEED

- Intermediate outcomes of AADI

DR. SIVA & DR. PRASANNA

- Spontaneous filtering bleb - Demystified

IAPB Council of Members Meeting

Hyderabad, September 12-15, 2018

LAICO team consisting of R.D. Thulasiraj, B.S Ganesh

Babu, D. Yesunesan, A. Syed Ali and Dhivya Ramasamy participated in the meeting held at Hyderabad.

18th Euretina Congress

Vienna, Austria, September 20-23, 2018

DR. ADITYA MAITRAY

- Paediatric endogenous endophthalmitis -case series

9th Eucornea Congress

Vienna, Austria, September 21-22, 2018

DR. ANITA RAGHAVAN

- Pythium keratitis

LAICO faculty with Mr. Thulasiraj Ravilla at the IAPB Council of Members meeting





Dr. Usha Kim at the Annual Conference of Oculoplastic Association of India

Annual Conference of Oculoplastic Association of India Jaipur, September 28-30, 2018

DR. USHA KIM

- Chaired the session, Provisc session: Eyelid
- Small incision orbital surgeries
- Live surgery - Suturing & Techniques

DR. GUNJAN RATHI

- Ocular manifestations of Goldenhar syndrome - a rare entity

DR. GUNJA CHOWDHURY

- Clinical profile of eyelid adnexal lesions in a tertiary eye care system in south India

DR. V. MANEKSHA

- Centurion Syndrome

DR. VIJI RANGARAJAN

- Prospective analysis on the diagnostic approach and treatment outcomes of orbital lymphomas
- Lexiform neurofibroma – management pearls (Video)

DR. NEHA SHRI RAO

- Demographics and management outcomes of ocular and adnexal rhinisorpidiosis in a tertiary eye care centre
- The curious case of recurrent chalazion

Dr. B. Sahithya at the 9th International Low Vision Forum



Dr. P. Sundaresan at the International Genomics and Medicine Conference

DR. YAZHINI

- A masquerade less known – varied presentation, treatment, outcomes of hair follicle tumour
- A novel and simple treatment for luxation of globe following trauma

DR. R. JAYAGAYATHRI

- Man-made misery

Annual Conference of Indian Neuro-ophthalmology Society

New Delhi, September 30, 2018

DR. PADMAVATHY

- Supra nuclear gaze palsy

DR. MAHESH KUMAR

- Evaluation of Pupillary abnormalities

He also moderated one of the free paper sessions.

DR. KOWSALYA BALAJI

- Interesting case scenarios in neuroimaging

DR. PRIYA

- Virtual field perimetry in neuro-ophthalmology

Dr. K. Nirmala Devy attended the conference

9th International Low vision forum

Beijing, China, October 11, 2018

DR. B. SAHITHYA

- An early start towards empowering residual functional vision

International Genomics and Medicine Conference

Haifa, Israel, October 2-5, 2018

DR. P. SUNDARESAN

- Molecular and prenatal diagnosis for some of the inherited eye diseases and gene discoveries.

3rd International Conference & Expo on Optometry & Vision Science

Edinburgh, Scotland, October 8-9, 2018

SANIL JOSEPH

- Prevalence and risk factors of Myopia and other refractive errors in an adult population in southern India

Indian Society for Medical Statistics conference

Bengaluru, October 31 – November 3, 2018

ISHWARYA

- Indirect treatment comparison in meta- analysis using three different methods

American Academy of Ophthalmology (AAO)

Chicago, October 27-29, 2018

DR. N. VENKATESH PRAJNA

- Conjunctival autograft for Pterygium in the Great Cornea debate session

DR. HARIPRIYA

- Endophthalmitis reduction with Intracameral moxifloxacin in eyes with posterior capsular tear
- Incidence and outcomes of toric IOL repositioning surgery
- Globalising human resources for universal eye care- Community health workers (Symposium)
- Manual ECCE Surgery- Indications and techniques
- Intracameral antibiotics options, rationale and efficacy of prophylaxis (Co- Instructor, Instruction Course)
- Learning curve of manual small incision cataract surgery at Aravind eye hospital, India

DR. R. VENKATESH

- Manual small incision cataract surgery (Instruction course)
- Participated in the panel discussion and talk on Dealing difficult situations
- Managing complex glaucoma- Difficulties in the diagnosis and management of primary open angle glaucoma in high myopia (Instruction course)
- Manual small incision cataract surgery using the miLOOP environmental sustainable high volume eye care model to address climate change (Film festival)

DR. REVATHI

- Long term outcome of paediatric epi off collagen linking
- Efficacy and safety of combination therapy with two biguanides in higher concentration in acanthamoeba keratitis
- Instruction course: Acanthamoeba keratitis Role of C3R/Steroid/TKP IN AK

- Instruction course: Fungal keratitis overview & clinical diagnosis of fungal keratitis

DR. SWATI UPADHYAYA

- Comparison of two tablet based visual field screening test with standard HFA 24-2
- Assessing the sensitivity and specificity of non mydriatic fundus camera for glaucoma screening

She was one of the trainers of SICS in the wetlab session

DR. S. BALAMURUGAN

- Clinical profile and treatment outcome of intralenticular abscess (ILA) at a tertiary eye hospital in South India
- Participated in the panel discussion on Infectious scleritis

Dr. Madhu Shekhar participated in the instruction course on Complication management. Dr. Divya Karthik trained participants in small incision cataract surgery. Dr Josephine Christy participated as trainer in the small incision cataract surgery course.

American Uveitis society Fall Meeting

Chicago, USA, October 28, 2018

DR. S. BALAMURUGAN

- Analysis of Vitamin A and D levels in Vogt-Koyanagi-Harada (VKH) panuveitis in south India

Telemedicon 2018

Vijayawada, November 1-2, 2018

DR. KIM

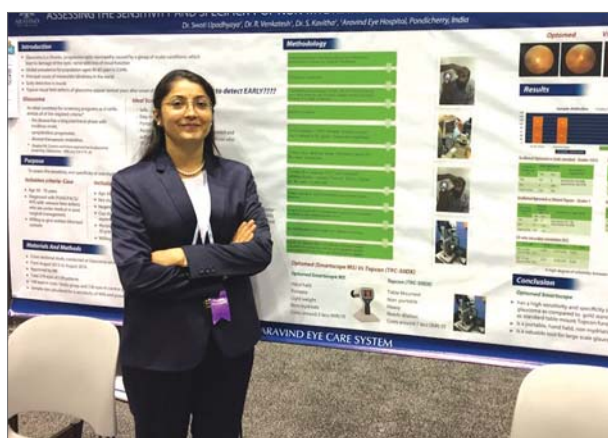
- Telemedicine : clinical applications in ophthalmology

World Innovation Summit for Health (WISH 2018)

Doha, Qatar, November 13 - 14, 2018

Aravind's Vision Centre model was selected and exhibited at WISH, which highlighted some of the most exciting innovations in healthcare. Mr. Thulasiraj Ravilla and Mr. Mohammed Gowth represented Aravind.

Dr. Swati Upadhyaya presenting her poster at AAO Conference



Mr. Thulasiraj Ravilla interacting with Prof. Sir Peng T Khaw at the World Innovation Summit for Health



Annual Conference of Uveitis Society of India (USI 2018)

Chandigarh, November 16 - 18, 2018

DR. S.R. RATHINAM

- Art of ordering lab investigations
- Conventional systemic therapy

DR. RADHIKA

- Micro architected changes in limbus and central cornea in Vogt-Koyanagi-Harada Syndrome
- A rare manifestation of Herpes zoster ophthalmics

DR. PRANESH BALASUBRAMANIAM

- Systemic Lupus Erythematosus and Tuberculosis-A diagnostic conundrum

DR. S. BALAMUGURAN

- Treating latent tubercular bacterial infection in India

Dr. Eliza Antony attended the conference

7th Annual Conference of the Society of Mitochondrial Research and Medicine (SMRM)

Lucknow, November 28-30, 2018

P. GOWRI

- Leber's Hereditary Optic Neuropathy: Relative frequency of primary mutations in south Indian population

42nd Annual Conference of Indian Association of Medical Microbiologists

Bengaluru, November 28- December 2, 2018

DR. SUNEETHA

- Spectrum of microbial pathogens and antibiotic susceptibility of vitreous aspirates in culture proven cases of all causes of endophthalmitis

KERACON 2018

New Delhi, November 30-December 2, 2018

DR. ANITHA

- Outcomes of DSEK in secondary glaucoma patients

DR. SHOBITA NAIR

- Outcomes of pythium keratitis – Our experience
- Implantable collamer lens outcomes in moderate to high myopia
- Superior pellucid marginal degeneration

P. Gowri at the 7th Annual Conference of the Society of Mitochondrial Research and Medicine (SMRM)



DR. ADITYA

- Retrospective analysis of descemetopexy procedures for descemet membrane detachment

DR. N. VENKATESH PRAJNA

- Crosslinking assisted infection reduction in fungal keratitis
- Confocal imaging of cellular features in keratitis
- Mycotic Ulcer treatment Trails (MUTT) -where are we heading?

DR. MANORANJAN DAS

- Management of Bullous Keratopathy with PKP + SFIOL: A Retrospective study
- Photo Contest: Post Descemet's stripping automated endothelial keratoplasty (DSAEK) dropped lenticule
- Photo Contest: Post Lasik Macrostriae

DR. ARUN KUMAR PANIGRAHI

- DMEK –Challenges for beginners and how to overcome the learning curve
- Transformation from DSAEK to DMEK- learning experience of a beginner
- Photo contest: Ocular surface squamous neoplasia (OSSN)
- Photo contest: Corneal vascularisation

DR. NAVEEN

- Economic and social impact of infectious keratitis among those eventuating to TPK
- Photo contest: Malignant Rongoli
- Photo contest: Bacterial colonisation of bandage contact lens
- Photo contest: Early rejection
- Photo contest: Ant on a graft

DR. PREETHIKA GANDHI

- Slit-lamp photography of corneal ulcers to predict healing trajectories

DR. RAGHURAM

- Photo contest: Corneal nerves

DR. MANALI HAZARIKA

- Photo contest: Posterior polymorphous dystrophy with steep cornea
- Photo contest: Aniridia with subluxated lens with lens coloboma and developmental cataract
- Photo contest: Peripheral corneal degeneration with thinning in congenital hereditary stromal dystrophy

Dr. Suneetha at the Annual Conference of Indian Association of Medical Microbiologists



DR. BHUESH JAIN

- Photo contest: Conjunctival cyst
- Slit lamp photograph: OSSN

DR. POONAM RAI

- A comparative study on in-vitro antimicrobial activity of Cornisol, Cornisol M and Cornisol – MA
- Microbiological profile of corneal tissue cultured after storing in Cornisol medium with 0.5% Moxifloxacin
- Photo contest: Blood in stroma in case of acute hydrops
- Photo contest: Salzmann nodular degeneration
- Photo contest: Open globe injury

DR. SREEDHAR REDDY

- Evaluating the invitro efficacy of different concentrations of Amphotericin B in Cornisol medium in decreasing the fungal load
- Photo contest: Pseudophacocoele
- Photo contest: Post PKP recurrence of Avellino dystrophy

DR. ANITA RAGHAVAN, DR. SHAFFIE

- Optimising outcome of keratoplasty in severe thermal injury with autologous serum
- Is endothelial rejection possible in deep anterior lamellar keratoplasty?

DR. ANITA RAGHAVAN

- Acanthameba keratitis - Hidden story (Instruction course)

DR. REVATHI

- What I did new in Acanthameoba keratitis

DR. RAJESH

- Nocardia keratitis- Correlation of clinical features times of presentation and antibiotic sensitivity.
- A unique case of infective crystalline keratopathy presentation with intra corneal hypopyon.

DR. PUJA

- Bipolaris keratitis - an unusual presentation post PST

Annual Conference of Vitreo Retinal Society of India (VRSI 2018)

Jaipur, November 30- December 2, 2018

DR. KIM

- Application of AI in diabetic retinopathy
- Tele-ophthalmology: The current status

DR. NARESH BABU

- Pachychoroid epitheliopathy

DR. ANAND RAJENDRAN

- Outer retinal tubulations
- Best approaches for complex retinal detachments

DR. VIGNESH

- Challenging case presentation: Eplerenone for bullous variant of Central serous chorioretinopathy (CSCR)

DR. PIYUSH KOHLI

- Rhegmatogenous retinal detachment after pars plana vitrectomy and sutureless scleral fixated intraocular lenses
- Repositioning of inadvertent intralenticular Ozurdex: A Vitreoretinal approach – Video

DR. CHITARANJAN

- Microbial spectrum and outcomes of endophthalmitis after intra vitreal injections versus pars plana vitrectomy – E Poster presentation

DR. AKSHAY

- Rare video showing removal of a live worm from the vitreous cavity using a unique approach

DR. ANAND RAJENDRAN

- Outer retinal tubulations
- Best approaches to complex retinal detachment surgeries

DR. V.R. SARAVANAN

- OCT A- Not needed for clinical practice- debate

DR. GEORGE MANAYATH

- Managing optic disc pit maculopathy

DR. RATNESH

- Exudative variant of non proliferative macular telangiectasia type 2-Role of Anti VEGF

Annual Conference of Vitreo Retinal Society of India



DR. RESHMA

- Poly choroidal disease spectrum presenting as choroidal elevation

DR. HARSHAL PRADEEP GONDHALE

- Radiation induced damage - A great imitator
- Combined IOL explantation & scleral-fixated intraocular lenses

DR. KALPANA KUMARI

- Combined Intraocular lens explantation and intrascleral lens fixation using extraocular needle guided haptic insertion technique

Dr. Manavi Sindal, Dr. Santhosh, Dr. Ayushi, and Dr. Khushboo attended the conference.

Annual Conference of Strabismus and Paediatric Ophthalmology Society of India

Baroda, December 1-2, 2018

DR. SAHITHYA

- Functional vision assessment in Autism spectrum disorder

DR. KALPANA NARENDRA

- Biometry and IOL power calculation in children
- Adjustable sutures in Strabismus

DR. SANDRA GANESH

- Paediatric traumatic cataract

DR. PUJA

- Bipolaris keratitis an unusual presentation post PST

Dr. Anjali Khadia attended the conference

12th Asia-Pacific Vitreo-Retina Society (APVRS) Congress 2018

Seoul, Korea, December 14-16, 2018

DR. NARESH BABU

- Comparative study of surgical performance of internal limiting membrane peeling in macular hole surgery using digitally assisted vitrectomy (DAVS) system versus conventional vitrectomy viewing system (CM)
- Video management of inadvertent intralenticular Ozurdex implant

DR. KALPANA

- Combined intraocular lens explantation and intrascleral lens fixation using extraocular needle guided haptic insertion technique.

Dr. R. Venkatesh at the Cicendo International Ophthalmology Meeting 2019



Indian Society of Chemists and Biologists (ISCB)

Lucknow, January 12-14, 2019

DR. O.G. RAMPRASAD

- Exploration of a novel chemical cross-linker for the treatment of keratoconus

Cicendo International Ophthalmology Meeting 2019

Bandung, Indonesia, January 18-20, 2019

DR. R. VENKATESH

- Aravind model of glaucoma care
- Primary angle closure glaucoma management
- Managing intractable glaucoma with Aurolab aqueous drainage implant

Annual Meeting of Indian Society of Human Genetics

Kalyani, West Bengal, January 30-February 01, 2019

Dr. A. Vanniarajan, Scientist, AMRF attended the meeting and got an opportunity to interact with national and international delegates. He also visited the Core Genomics facility at National Institute of BioMedical Genomics, Kolkata.

International Conference on Advances in Healthcare Management Services

IIM-Ahmedabad, February 16-17, 2019

DR. ARAVIND

- Decoding a purpose driven organization

International Digital Health Symposium

New Delhi, February 27, 2019

DR. R. KIM

- Disrupting healthcare delivery models.

Annual Conference of Asia-Pacific Academy of Ophthalmology

Bangkok, Thailand, March 06-09, 2019

DR. NARESH BABU

- Comparison of surgical performance of internal limiting membrane peeling using 3D visualization system with conventional microscope (poster)

Dr. A. Vanniarajan at the Annual Meeting of Indian Society of Human Genetics



- Repositioning of inadvertent intralenticular Ozurdex: A vitreoretinal approach (video)

DR. T.P. VIGNESH

- Eplerenone for CSCR with chronic cystoid macular edema

DR. HARIPRIYA

- Incidence and outcomes of Toric IOL repositioning surgery
- Endophthalmitis reduction with Intracameral Moxifloxacin following posterior capsule rupture
- Manual Small Incision Cataract Surgery (MICS)
- Reducing Endophthalmitis risk with posterior capsular rent
- Intracameral Moxifloxacin for Endophthalmitis prophylaxis in cataract surgery (Audio experience)

DR. R. VENKATESH

- RCT of location for laser iridotomy to reduce visual disturbance
- Comparison of new head mount perimeter (virtual reality based C3 visual field analyzer) with standard HFA in patients with and without glaucoma (Co-authored with Dr. Pavan)

DR. PAWAN KUMAR

- Family screening- An effective way to combat glaucoma blindness (Video)

World Glaucoma Congress

Melbourne, Australia, March 27-30, 2019

DR. R. RAMAKRISHNAN

- Surgical Management of glaucoma appropriate to the developing world

DR. MOHIDEEN ABDUL KADER

- Comparative study of Injection Mitomycin-C Versus sponges in Phacotrabeculectomy (Poster)

DR. HARIPRIYA ARAVIND

- Cataract surgery in Pseudoexfoliation eyes

DR. R. SHARMILA

- Histopathology - clinical correlation in nanophthalmos
- Clinical spectrum of nanophthalmos



Dr. T.P. Vignesh at the Annual Conference of Asia-Pacific Academy of Ophthalmology

DR. NEETHU MOHAN

- Conjunctival histopathology of eyes on long term antiglaucoma medications

DR. KAVITHA

- Considering age, type of glaucoma, and other factors to screen family members intelligently
- Tubes: Cost effective options and varied techniques:
- Family screening- An effective approach to combat glaucoma blindness (Video)
- Shared medical appointments in glaucoma care provision at a tertiary care eye hospital: A randomised trial.
- Photo presentation: Axenfeld anomaly, Gonioscopy

Commonwealth Eye Health Consortium (CEHC) Five Year Meeting

London, UK, March 26-29, 2019

DR. N. VENKATESH PRAJNA

- Perspective of training institution

Aravind team at the World Glaucoma Congress



ARTICLES PUBLISHED IN PEER-REVIEWED JOURNALS

- Cho J, Prajna NV, Lalitha P, Revathi R, Krishnan T, Lin YB, Ray KJ, Lietman TM, Rose-Nussbaumer J
Mycotic Ulcer Treatment Trial Group. Therapeutic penetrating keratoplasty button cultures in the mycotic ulcer treatment trial II: A randomized trial comparing oral voriconazole vs placebo.
Am J Ophthalmol. 2018 Aug;192:142-145.
- Khor WB, Prajna NV, Garg P, Mehta JS, Xie L, Liu Z, Padilla MDB, Joo CK, Inoue Y, Goseyarakwong P, Hu FR, Nishida K, Kinoshita S, Puangsricharern V, Tan AL, Beuerman R, Young A, Sharma N, Haaland B, Mah FS, Tu EY, Stapleton FJ, Abbott RL, Tiang-Hwee Tan D; ACSIKS GROUP.
The Asia cornea society infectious keratitis study: a prospective multicenter study of infectious keratitis in Asia.
Am J Ophthalmol. 2018 Nov;195:161-170.
- Varadaraj V, Ashok Vardhan, Mudie LI, LaBarre S, Ong Y, Wang B, Sherrod C, Friedman DS.
Uncontrolled hypertension is common in glaucoma clinics.
Am J Hypertens. 2019 Jan;32(1):88-93.
- Wei X, Mishra C, Naresh Babu K, Holder GE, Khandelwal N, Kim R, Agrawal R.
Choroidal structural analysis and vascularity index in retinal dystrophies.
Acta Ophthalmol. 2019 Feb;97(1):e116-e121.
- Anita Raghavan, Shaffie B, Narendran V, Rammohan R.
The acanthamoeba-fungal keratitis study.
Am J Ophthalmol. 2019 May;201:31-36.
- Prajna NV, Srinivasan M, Mascarenhas J, Lalitha P, Revathi R, McClintic SM, O'Brien KS, Ray KJ, Acharya NR, Lietman TM, Keenan JD.
Visual impairment in fungal versus bacterial corneal ulcers four years after successful anti microbial treatment.
Am J Ophthalmol. 2019 Mar 19. [Epub]
- Sathvik N, Manju Pillai R, George V Puthuran, Cassandra T, Robin AL.
Waste generated during glaucoma surgery: A comparison of two global facilities.
Am J Ophthalmol Case Reports. 2018 Oct 10;12:87-90.
- Vidyarani M, Sangeetha R, Gowri Priya C, Lalitha P.
Autophagy induced by type III secretion system toxins enhances clearance of Pseudomonas aeruginosa from human corneal epithelial cells.
Biochem Biophys Res Commun. 2018 Sep; 503(3):1510-1515.
- Palanisamy M, Abdel-hadi A, Singh YRB, Revathi R, Anita R, Banawas S, Dukhyil AAB, Alshehri B, Shobana CS, Selvam KP, Narendran V.
Fungal keratitis: epidemiology, rapid detection, and antifungal susceptibilities of fusarium and aspergillus isolates from corneal scrapings.
BioMed Research International. 2019;2019:6395840.
- Anita R, Bellamkonda P, Mendoza L, Rammohan R.
Pythium insidiosum and acanthamoeba keratitis in a contact lens user.
BMJ Case Rep. 2018 Dec;11:e226386.
- O'Brien KS, Byanju R, Kandel RP, Poudyal B, Gautam M, Gonzales JA, Porco TC, Whitcher JP, Srinivasan M, Upadhyay M, Lietman TM, Keenan JD;
Village-Integrated Eye Worker Trial Group. Village-Integrated Eye Worker trial (VIEW): rationale and design of a cluster-randomised trial to prevent corneal ulcers in resource-limited settings.
BMJ Open. 2018 Aug;8(8):e021556.
- Naresh Babu K, Piyush Kohli, Haemoglobin Parida, Adenuga OO, Kim R
Comparative study of inverted internal limiting membrane (ILM) flap and ILM peeling technique in large macular holes: a randomized-control trial.
BMC Ophthalmol. 2018;18:177.
- Ravindran RD, Sundaresan P, Krishnan T, Vashist P, Maraini G, Saravanan V, Chakravarthy U, Smeeth L, Nitsch D, Young IS,
Fletcher AE. Genetic variants in a sodium-dependent vitamin C transporter gene and age-related cataract.
Br J Ophthalmol. 2018 Nov 15. [Epub]
- Ganesh Babu BS, Thulasiraj RD.
Evidence-based management of eye care delivery.
Community Eye Health. 2018;31(102):S15-S16.
- Thulasiraj RD.
Tips for team management.
Community Eye Health. 2018;31(102):51.
- Dhivya R, Patel D.
Selecting and training candidates to suit their role.
Community Eye Health. 2018;31(102):41-43.
- Renu P Rajan, Udupihille T.
Treatment of retinopathy of prematurity (ROP).
Community Eye Health. 2018;31(101):S10.
- Parag K Shah, Narendran V, Kalpana N.
Evolution of ROP screening at Aravind Eye Hospital, Coimbatore - Lessons learnt and the way ahead.
Community Eye Health. 2018;31(101):S23-S24.
- Haripriya A, Eliza A.
Managing cataract surgery in patients with uveitis.
Community Eye Health. 2018;31(104):82-83.
- Priya S, Nikhil J, Anupama J.
Disseminated tuberculosis in a postpartum young women presenting as isolated optic neuritis.
Cur Tre Ophthalmol. 2018;1(1):46-48.

- Pratyusha Ganne, Nagesha C Krishnappa, Prabu B, Seema R.
Ocular injuries caused by hens.
EC Ophthalmol. 2018;9(5):343-347.
- Anant Bhosale, Sudeep Pujari, Rodney J Morris, Saravanan VR, Narendran V.
A rare presentation of vitreous cyst in an adult male.
EC Ophthalmol. 2018;9(10):693-695.
- Anant Bhosale, Rodney Morris, VR Saravanan and Narendran V.
27 gauge vitrectomy-past, present and upcoming.
EC Ophthalmol. 2018;9(10):685-686.
- Anant Bhosale, Rodney Morris, Narendran V.
Optical coherence tomography angiography - A way to future..!
EC Ophthalmol. 2018;9(5):246-247.
- Mayur Rokdey, Anant Bhosale, Rodney J Morris, Narendran V.
Diabetic retinopathy: challenges in the current scenario.
EC Ophthalmol. 2019;10(1):1-4.
- Krishnan Nair, Geetha D, Rajagopalaboopathi J, Nair GR, Manikandan P, Rammohan R, Narendran V, Ramatchandirane PS.
Polybacterial community analysis in human conjunctiva through 16S rRNA gene libraries.
Exp Eye Res. 2018 Sep;174:1-12.
- Khedekar A, Devarajan B, Ramasamy K, Muthukkaruppan V, Kim U.
Smartphone-based application improves the detection of retinoblastoma.
Eye (Lond). 2019 Jun;33(6):896-901.
- Adulkar NG, Radhakrishnan S, Vidhya N, Usha Kim.
Invasive sino-orbital fungal infections in immunocompetent patients: a clinico-pathological study.
Eye (Lond). 2019 Jun;33(6):988-994.
- Homa M, Galgóczy L, Manikandan P, Narendran V, Sinka R, Csernetics Á, Vágvolgyi C, Kredics L, Papp T.
South Indian isolates of the fusarium solani species complex from clinical and environmental samples: identification, antifungal susceptibilities, and virulence.
Front Microbiol. 2018 May 23;9:1052.
- Shah VM, Gawas G.
Purtscher's retinopathy in one and sixth nerve palsy in the other eye following head trauma.
GMS Ophthalmol Cases. 2019;9:Doc09.
- Virna M Shah, Karthik Panikkar.
Optic neuritis in an immunocompetent 40-year-old female due to fungal sphenoidal sinusitis.
GMS Ophthalmol Cases. 2019;9:Doc06.
- Munavalli JR, Rao SV, Aravind S, van Merode GG.
Integral patient scheduling in outpatient clinics under demand uncertainty to minimize patient waiting times.
Health Informatics J. 2019 Mar 8. [Epub]
- Zhou Y, Li S, Huang L, Yang Y, Zhang L, Yang M, Liu W, Kim R, Jiang Z, Sundaresan P, Zhu X, Yang Z.
A splicing mutation in Aryl Hydrocarbon Receptor associated with retinitis pigmentosa.
Hum Mol Genet. 2018 Jul;27(14):2563-2572.
- Lakshey D, Lakshmi Priya J, Prajna NV, Lalitha P.
Fungal keratitis caused by Laetisaria arvalis.
Indian J Med Microbiol. 2018 Jan-Mar;36(1):140-142.
- Rameshkumar G, Ponlakshmi M, Selvapandiyar A, Ramsudharsan R, Krishnan RS, Lalitha P.
Fungal keratitis caused by Podospora austroamericana: A first case report.
Indian J Med Microbiol. 2018 Oct-Dec;36(4):594-596.
- Kumar JS, Saxena D, Parida M, Rathinam SR.
Evaluation of real-time reverse-transcription loop-mediated isothermal amplification assay for clinical diagnosis of West Nile virus in patients.
Indian J Med Res. 2018 Mar;147(3):293-298.
- Nagesha CK, Meghelayin EO.
Bilateral multifocal retinal pigment epithelium detachment and pachychoroidopathy.
Indian J Ophthalmol. 2018 Apr;66(4):570.
- Kowsalya A, Umang G, Namrata GA, Mahesh Kumar S.
Unique case of midbrain tuberculoma presenting as isolated inferior rectus palsy with nystagmus.
Indian J Ophthalmol. 2018 Apr;66(4):599-602.
- Sadasivan KS, Neelam Pawar, Meenakshi R, Ramakrishnan R.
Optic nerve aplasia: A case series.
Indian J Ophthalmol. 2018 May;66(5):717-719.
- Prajna NV.
Take time to sharpen the saw.
Indian J Ophthalmol. 2018 Jun;66(6):784.
- Balamurugan S, Velis GB, Sindal MD.
Bilateral acute retinal necrosis associated with bilateral uveal effusion in an immunocompetent patient: A challenging association.
Indian J Ophthalmol. 2018 Jun;66(6):866-868.
- Sengupta S, Vasavada D, Pan U, Sindal M.
Factors predicting response of pseudophakic cystoid macular edema to topical steroids and nepafenac.
Indian J Ophthalmol. 2018 Jun;66(6):827-830.
- Thulasiraj RD.
Paradigm shift – For effective management of diabetic retinopathy and glaucoma.
Indian J Ophthalmol. 2018 Jul;66(7):893-894.

- Giridhar A, Jay Sheth, Muna B, Raja Narayanan, Sundaram N, Anand R, George Manayath, Parveen Sen, Rupak Biswas, Alay Banker, Charu Gupta.
Polypoidal choroidal vasculopathy: pearls in diagnosis and management.
Indian J Ophthalmol. 2018 Jul;66(7):896-908.
- Madanagopalan VG, Nagesha CK, Girish V, Santosh D, Balamurugan S.
Frosted branch angiitis with penetrating ocular trauma and retained intraocular foreign body.
Indian J Ophthalmol. 2018 Jul;66(7):1031-1032.
- Bala Murugan S.
Commentary: Posterior scleritis: Nuances to discern and handle effectively!
Indian J Ophthalmol. 2018 Aug;66(8):1113.
- MY Vishal, Naresh Babu K, Piyush Kohli, Anand R, Kim R.
Retrospective study of changes in ocular coherence tomography characteristics after failed macular hole surgery and outcomes of fluid-gas exchange for persistent macular hole.
Indian J Ophthalmol. 2018 Aug;66(8):1130-1135.
- Mishra C.
Commentary: Smoke stack leak on indocyanine green angiography in acute central serous chorioretinopathy.
Indian J Ophthalmol. 2018 Aug;66(8):1183.
- Lakshey D.
Commentary: Precision pulse capsulotomy: new technology for capsulorhexis.
Indian J Ophthalmol. 2018 Sep;66(9):1276.
- Seema R, Prabu B, Arti Jain.
Traumatic expulsion of intact iris in toto.
Indian J Ophthalmol. 2018 Sep;66(9):1329.
- Balamurugan S.
Commentary: Iatrogenic cytomegaloviral retinitis following intravitreal steroid implantation.
Indian J Ophthalmol. 2018 Sep;66(9):1363.
- Jayashree B, Jayagayathri R, Dayakar Y.
Masquerades less known: case report of benign hair follicle tumors.
Indian J Ophthalmol. 2018 Oct;66(10):1506-1508.
- Balamurugan S.
Commentary: Ocular toxoplasma: From bench-side to clinical practice!
Indian J Ophthalmol. 2018 Oct;66(10):1489-1490.
- Jain AM, Ratnesh R, Manayath GJ.
Atypical superior iris and retinochoroidal coloboma.
Indian J Ophthalmol. 2018 Oct;66(10):1474-1475.
- Balamurugan S.
Commentary: Discerning the porphyrias!
Indian J Ophthalmol. 2018 Oct;66(10):1469-1470.
- Kim R, Mishra C.
Commentary: Role of hyperhomocysteinemia in proliferative diabetic retinopathy: A case-control study.
Indian J Ophthalmol. 2018 Oct;66(10):1440.
- Chhablani J, Anantharaman G, Behar-Cohen F, Boon C, Manayath G, Singh R.
Management of central serous chorioretinopathy: Expert panel discussion.
Indian J Ophthalmol. 2018 Dec;66(12):1700-3.
- Madanagopalan VG, Nagesha CK, Khodifad AM, Raman R.
Influence of orientation of the external linear incision created by the 25-gauge trocar and related factors on sclerotomy closure: A clinical and optical coherence tomographic study.
Indian J Ophthalmol. 2018 Dec;66(12):1809-14.
- Naresh Babu K, Piyush Kohli.
Commentary: Nuances in management of rhegmatogenous retinal detachment in X linked juvenile retinoschisis.
Indian J Ophthalmol. 2018 Dec;66(12):1831-2.
- Manohar Babu B, Manjunath M, Baliga G, Kapadi F.
Ocular manifestations of Rickettsia conorii in South India.
Indian J Ophthalmol. 2018 Dec;66(12):1840-4.
- Pangtey BP, Piyush Kohli, Kim R.
Wyburn-Mason syndrome presenting with bilateral retinal racemose hemangioma with unilateral serous retinal detachment.
Indian J Ophthalmol. 2018 Dec;66(12):1869-71.
- Naveen R, Prajna NV.
Commentary: Assessment of limbal ischemia in ocular burns.
Indian J Ophthalmol. 2019 Jan;67(1):37.
- Ravula Hasika, Lalitha P, Naveen R, Rameshkumar G, Prajna NV, Srinivasan M.
Pythium keratitis in South India: Incidence, clinical profile, management, and treatment recommendation.
Indian J Ophthalmol. 2019 Jan;67(1):42-46.
- Nivean M, Sengupta S, Manavi Sindal, Pratheeba Devi N, Arun Kumar M, Murali Ariga.
Comparative analysis of retropupillary iris claw versus scleral-fixated intraocular lens in the management of post-cataract aphakia.
Indian J Ophthalmol. 2019 Jan;67(1):59-63.
- Sharmila R, Sujani Shroff, Sangeeta Vivek Patil, Mohammed Sithiq Uduman, Ashok Vardhan, Krishnadas SR.
Surgical outcomes of repeat trabeculectomy augmented with high dose mitomycin C.
Indian J Ophthalmol. 2019 Jan;67(1):95-100.
- Bala Murugan S.
Commentary: Bilateral acute depigmentation of iris.
Indian J Ophthalmol. 2019 Jan;67(1):134.
- Bala Murugan S.
Commentary: Angiostrongylus cantonensis in anterior chamber.
Indian J Ophthalmol. 2019 Jan;67(1):161-162.

- Manju R Pillai, Sapna Sinha, Pradeep Aggarwal, Ravindran RD,
Privitera CM. Quantification of RAPD by an automated pupillometer in asymmetric glaucoma and its correlation with manual pupillary assessment.
Indian J Ophthalmol. 2019 Feb;67(2):227-232.
- Philip R, Premanand C, Nabeed A, Mrunali D, Raman GV.
Intermediate-term outcome of Aurolab aqueous drainage implant.
Indian J Ophthalmol. 2019 Feb;67(2):233-238.
- Lakshey D, Ishani D, Anuja J, Manohar Babu B.
Ocular argyrosis: A case with silver deposits in cornea and lens.
Indian J Ophthalmol. 2019 Feb;67(2):267-268.
- Krishnadas R.
Current management options in primary angle closure disease.
Indian J Ophthalmol. 2019 Mar;67(3):321-3.
- Ranjan R, Shah PK, Narendran V.
Curious case of retrolental mass: An unusual tele-screening artifact.
Indian J Ophthalmol. 2019 Mar;67(3):415-6.
- Abraham A, Thirumalairaj K, Gaikwad N, Muthukkaruppan V, Reddy AG, Thangaraj K, Kim U, Vanniarajan A.
Retinoblastoma discordance in families with twins.
Indian J Ophthalmol. 2019 Mar;67(3):436-9.
- Sara SH, Prajna NV, Senthilkumari S.
Human amniotic membrane as a drug carrier – An in-vitro study using fortified cefazolin ophthalmic solution.
Indian J Ophthalmol. 2019 Mar;67(4):472-5.
- Nithya V, Rathinam S, Siva Ganesa Karthikeyan R, Lalitha P.
A ten year study of prevalence, antimicrobial susceptibility pattern, and genotypic characterization of Methicillin resistant Staphylococcus aureus causing ocular infections in a tertiary eye care hospital in South India.
Infect Genet Evol. 2019 Jan;69:203-210.
- Venu Gopal Reddy YC, Sharma A, Shetty AP, Abdul Kader SM.
Iodate induced toxic retinopathy: a case report.
Int J Retina Vitreous. 2018 Aug;4:27.
- Sahoo NK, Balijepalli P, Singh SR, Mahima J, Senthil S, Chhablani J.
Retina and glaucoma: surgical complications.
Int J Retina Vitreous. 2018 Sep;4:29.
- Sahithya B, Lawrence L, Flora J, Vijayalakshmi P.
Functional and cognitive vision assessment in children with autism spectrum disorder.
J AAPOS. 2018 Aug;22(4):304-308.
- Sathya RT, Shashikant Shetty S, Vijayalakshmi P.
Intratrochlear steroid injections in acquired Brown syndrome-a case series.
J AAPOS. 2019 Feb;23(1):23.e1-23.
- Samyukta SK, Neelam Pawar, Meenakshi R, Fathima A, Ramakrishnan R.
Monotherapy of topical tacrolimus 0.03% in the treatment of vernal keratoconjunctivitis in the pediatric population.
J AAPOS. 2019 Feb;23(1):36.e1-36.
- Shivananda N, Neeta Pal, Korir F.
Scleral patch graft with fibrin adhesive for post pterygium scleral thinning.
J Curr Med Res Opin. 2019;2(2):80-82.
- Gurnani B, Kaur K, Gireesh P.
Traumatic anterior dislocation of the crystalline lens in a white eye and its surprising post-operative outcome.
J Trauma Treat. 2019;8(1):442.
- Roohipoor R, Alvarez R, Brodowska K, Yaseri M, Kloek C, Riazi M, Nourinia R, Nikkhah H, Prajna NV, Krishnan C, Tuli S, Green L, Srikumaran D, Shah AS, Mantagos IS, Chiang M, Chan RVP, Loewenstein J.
Evaluation of computer-based retinopathy of prematurity (ROP) education for ophthalmology residents: a randomized, controlled, multicenter study.
J AAPOS. 2019 Mar. [Epub]
- Nagesha CK, Pratyusha G.
Paraproteinemic maculopathy in a 63-Year-Old man.
JAMA Ophthalmol. 2018 Aug;136(8):944-945.
- Priya S, Jivitesh Singh, Rajesh V.
Bilateral optic atrophy in an adolescent male Patient.
JAMA Ophthalmol. 2018 Oct. [Epub]
- Sameera K, Premanand C, Prabhu V.
Penetrating injury with foreign body in the angle of the left eye.
JAMA Ophthalmol. 2018 Nov;136(11):e183064.
- Pavan Kumar G, Palaniswamy K, Manas Nath, Prabu B, Janani M, Venkatesh R.
Can preoperative anterior segment optical coherence tomography predict posterior capsule rupture during phacoemulsification in patients with posterior polar cataract?
J Cataract Refract Surg. 2018 Dec;44(12):1441-1445.
- Mishra C, Sundar T, Srinivas S, Naresh Babu K, Kim R.
Hydro-chlorothiazide sensitised acetazolamide induced bilateral angle closure glaucoma with choroidal detachment after cataract surgery.
J Clin Diagn Res. 2018 Mar;12(3):ND04-ND06.
- Varsha R, Premanand C, Reji Philip, Vinoth A, Raman GV.
Effect of mannitol on intraocular pressure in vitrectomized and non-vitrectomized eyes: A Prospective Comparative Study.
J Glaucoma. 2018 Dec 11. [Epub]
- Sachin Gupta, Palsule-Desai OD, Gnanasekaran C, Thulasiraj RD.
Spillover effects of mission activities on revenues in nonprofit health care: The Case of Aravind Eye Hospitals, India.
J Marketing Res. 2018;55(6):884-899.

- Naresh Babu K, Piyush Kohli, Pangtey BPS, Kim R.
Evaluation of sutureless, glueless, flapless, intrascleral fixated posterior chamber intraocular lens in children with ectopia lentis.
J Ophthalmol. 2018 Aug 29;2018:3212740.
- Mohammed MRS, Muthu Kumar, Amrathlal RS, Priya K, Jeya Maheshwari J, Prajna NV, Lalitha P, Dharmalingam K.
Identification of the proteoforms of surface localized rod a of aspergillus flavus and determination of the mechanism of proteoform generation.
J Proteomics. 2019 Feb;193:62-70.
- Kannan T, Bharanidharan D, Lalitha P, Vidyarani M.
Mechanisms of fluoroquinolone and aminoglycoside resistance in keratitis-associated pseudomonas aeruginosa.
Microbiol Drug Resis. 2019 Feb 26. [Epub]
- Cunningham ET Jr, Khairallah M, Rathinam SR, Belfort R Jr, Zierhut M.
Mosquito-borne uveitis.
Ocul Immunol Inflamm. 2018;26(5):651-653.
- Ranjan R, Manayath GJ, Avadhani U, Narendran V.
Rapid macular hole formation and closure in a vitrectomized eye following rhegmatogenous retinal detachment repair.
Oman J Ophthalmol. 2018 Jan-Apr;11(1):71-74.
- Siddharth N, Manayath GJ, Narendran V.
Comparison of choroidal thickness using swept-source and spectral-domain optical coherence tomography in normal Indian eyes.
Oman J Ophthalmol. 2018 Jan-Apr;11(1):38-41.
- Ahuja AA, Venugopal Reddy YC, Adenuga OO, Kewlani D, Meenakshi R, Ramakrishnan R.
Risk factors for retinopathy of prematurity in a district in South India: A prospective cohort study.
Oman J Ophthalmol. 2018 Jan-Apr;11(1):33-37.
- Manayath GJ, Ratnesh R, Shah VS, Smita SK, Saravanan VR, Narendran V.
Central serous chorioretinopathy: Current update on pathophysiology and multimodal imaging.
Oman J Ophthalmol. 2018 May-Aug;11(2):103-112.
- Manayath GJ, Ranjan R, Karandikar SS, Shah VS, Saravanan VR, Narendran V.
Central serous chorioretinopathy: Current update on management.
Oman J Ophthalmol. 2018 Sep-Dec;11(3):200-206.
- Pankaja Yuoraj Dhoble, Girish Bharat Velis, Priya Sivakaumar.
Encapsulated metallic intraocular foreign body of long duration presenting with cystoid macular edema and normal full-field electroretinogram.
Oman J Ophthalmol. 2019 Jan-Feb;12(1):50-52.
- Pratyusha G, Pankaja D.
Diffuse unilateral subacute neuroretinitis.
Oman J Ophthalmol. 2019 Jan-Feb;12(1):59-61.
- Chidambaram JD, Prajna NV, Srikanthi P, Shruti L, Manisha Shah, Elakkiya S, Lalitha P, Burton MJ.
Epidemiology, risk factors, and clinical outcomes in severe microbial keratitis in South India.
Ophthalmic Epidemiol. 2018 Aug;25(4):297-305.
- Oldenburg CE, Prajna NV, Krishnan T, Revathi R, Srinivasan M, Ray KJ, O'Brien KS, Glymour MM, Porco TC, Acharya NR, Rose-Nussbaumer J, Lietman TM.
Regression discontinuity and randomized controlled trial estimates: an application to the mycotic ulcer treatment trials.
Ophthalmic Epidemiol. 2018 Aug;25(4):315-322.
- Sandra CG, Kalpana N, Jeyanthi N, Vijayakumar V, Sangeetha S, Nish Patel, Prabha N, Musch DC, Ehrlich JR.
The key informant strategy to determine the prevalence and causes of functional low vision among children in South India.
Ophthalmic Epidemiol. 2018 Oct-Dec;25(5-6):358-364.
- Sanil Joseph, Krishnan T, Ravindran RD, Maraini G, Camparini M, Chakravarthy U, Thulasiraj RD, Hutchings A, Fletcher AE.
Prevalence and risk factors for myopia and other refractive errors in an adult population in southern India.
Ophthalmic Physiol Opt. 2018 May;38(3):346-358.
- Naresh Babu K, Piyush Kohli, Obuli RN, Kim R.
Comparison of surgical performance of internal limiting membrane peeling using a 3-d visualization system with conventional microscope.
Ophthalmic Surg Lasers Imaging Retina. 2018 Dec;49(12):941-945.
- Gupta S, Haripriya A, Ashok Vardhan S, Thulasiraj RD, Ravindran RD.
Residents' learning curve for manual small-incision cataract surgery at Aravind Eye Hospital, India.
Ophthalmology. 2018 Nov;125(11):1692-1699.
- Gupta S, Ravindran RD, Ganesh Babu B, Ashok Vardhan S, Thulasiraj RD.
Evidence on importance of follow-up visits after cataract surgery.
Ophthalmology. 2019 Jun;126(6):910-912 Epub 2018 Dec.
- Gupta S, Haripriya A, Ashok Vardhan S, Thulasiraj RD, Ravindran RD, Shekhar M.
Visual acuity outcomes in resident-performed manual small-incision cataract surgery.
Ophthalmology. 2019 May;126(5):764-765.
- Haripriya A, Ramulu PY, Shivkumar C, Venkatesh R, Kalpana N, Shekhar M, Ramakrishnan R, Ravindran RD, Robin AL.
Aravind Pseudoexfoliation Study (APEX) - surgical and first year postoperative results in eyes without phacodonesis and non-miotic pupils.
Ophthalmology. 2019 Mar;126(3):362-371.

- Kavitha S, Ramulu PY, Venkatesh R, Palaniswamy K, Kader MA, Raman GV, Sharmila R, Zebardast N. *Resolution of visual dysphotopsias following laser iridotomy: 6 month follow-up.* Ophthalmology. 2019 Mar;126(3):469-471.e1.
- Shivananda N, Krishnan T, Seema R, Samantaray PP, Austin A, Pickel J, Porco T, Lietman T, Rose-Nussbaumer J. *Mycotic antimicrobial localized injection: a randomized clinical trial evaluating intrastromal injection of voriconazole.* Ophthalmology. 2019 Mar 20. [Epub]
- Madanagopalan VG, Suman Das, Ramkumar R. *Clear vitreous cyst and iridescence.* Ophthalmology Retina. 2018 Jun;2(6):557.
- Sengupta S, Sindal MD, Prabu B, Utsab P, Venkatesh R. *Sensitivity and specificity of smartphone-based retinal imaging for diabetic retinopathy: A Comparative Study.* Ophthalmology Retina. 2018 Feb;3(2):146-153.
- Tandon M, Vishal MY, Kohli P, Rajan RP, Kim R. *Supplemental laser for eyes treated with bevacizumab monotherapy in severe retinopathy of prematurity.* Ophthalmology Retina. 2018 Jun;2(6):623-628.
- Gupta C, Tan R, Mishra C, Khandelwal N, Raman R, Kim R, Agrawal R, Sen P. *Choroidal structural analysis in eyes with diabetic retinopathy and diabetic macular edema-A novel OCT based imaging biomarker.* PLoS One. 2018 Dec;13(12):e0207435.
- Annamalai AK, Ellard S, Shanmugam M, Juganya TPJ, De Franco E. *Juvenile diabetes & visual impairment: wolfram syndrome.* QJM. 2019 Mar 19. [Epub]
- Manayath GJ, Ranjan R, Vidhate S, Narendran V. *Photodynamic therapy-induced acute exudative maculopathy: Incidence, clinical features, and long-term outcomes.* Retina. 2018 Oct 3. [Epub]
- Manayath GJ, Jain A, Ranjan R, Naik AS, Narendran V. *Idiopathic full-thickness macular hole in an 8-year-old boy.* Retin Cases Brief Rep. 2018 Oct 9. [Epub]
- Sahoo NK, Singh SR, Anand Rajendran, Shukla D, Chhablani J. *Masqueraders of central serous chorioretinopathy.* Surv Ophthalmol. 2019 Jan-Feb;64(1):30-44.
- Ashwinbalaji S, Senthilkumari S, Gowripriya C, Krishnadas S, Gabelt BAT, Kaufman PL, Muthukkaruppan V. *SB772077B, a new rho kinase inhibitor enhances aqueous humour outflow facility in human eyes.* Sci Rep. 2018 Oct;8(1):15472.
- Ganesh SC, Rao SG, Kalpana N, Dhage AR. *Adherence syndrome following inferior oblique anteropositioning - a case report.* Strabismus. 2019 Mar;27(1):11-15.
- Priya S, Mahajan Sayali, Rajesh V. *Post-traumatic chronic red eye and ringing in the ears.* Trauma. 2018;21(1):81-82.
- Priya S, Dayakar Yadalla, Jeya Gayathri. *Ocular gunshot injury – Trauma snapshots.* Trauma. 2018 Dec 18. [Epub]

CONSULTANCY & CAPACITY BUILDING

LAICO has come a long way ever since its inception 25 years ago. Established primarily to support Lions' Sight First programme by developing and training human resources in eye care, over the years, LAICO's focus was also on capacity building of eye hospitals particularly in developing nations. It has been instrumental in bringing about policy level changes in the effective delivery of eye care and has played a major role in drafting eye care programmes for several countries.

On the occasion of LAICO completing its silver jubilee of service, a special retreat was held on April 1-2, 2018 to recognise changes and identify new challenges, review current strategies and set action plans for the next five years. The public function organised on October 1, 2018 to mark the culmination of silver jubilee celebrations had eminent people from various partner organisations and NGOs sharing experiences. New website for LAICO's online learning portal, Aurosiksha was launched during the occasion. Roadmap for the next five years was developed and shared with the audience.

Capacity Building Programmes and Consultancy

LAICO continued to provide consultancy services to various eye hospitals across the globe. While most of the consultancy works happen through projects, LAICO also entertains direct requests from not-profit eye hospitals and engages with them through a structured mentoring process with well-defined goals. LAICO's network of partners, today, has over 350 eye hospitals around the world.

Leap - together towards excellence

LAICO launched a collaborative series titled Leap - together towards excellence, an approach based on the highly effective and popular 'Breakthrough Series' model developed by the Institute for Healthcare Improvement (IHI), USA. The format has been customised for eye care based on the rich experience of over four decades from Aravind Eye Hospitals. Each series will focus on





Partners Onsite Review Meeting at Kakinada

various aspects of efficient eye care delivery and runs for a period of 12 months. The first in the series focused on enhancing cataract surgery acceptance rate.

Lavelle Project - Enhancing eye care services in the Indian sub - continent

LAICO has been engaged with Lavelle Fund for the Blind since 2014 towards enhancing eye care services in the Indian Sub-continent. 25 hospitals were selected for the project which came to an end in March 2019. The collective target set by these 25 hospitals is 139,425 cataract surgeries annually against their baseline of 67,668, essentially more than doubling their services in about two to three years. The project has committed for 37,500 additional surgeries each year, collectively by all the partners. Of these, 24 hospitals have collectively performed 93,442 cataract surgeries, demonstrating a 46% increase from their baseline. The project supported the training of 102 staff on various aspects of eye care services. Most of these partner hospitals have

implemented systems for medical record management, increasing acceptance rates for surgery and monitoring for improving clinical/surgical quality.

Review Meetings

Review meetings are regularly organised to assess the performance of partner hospital towards achieving the set targets, benchmark their performance with their peers, and suggest necessary recommendations to improve their services.

Mr. Syed Ali and Mr. D. Yesunesan, Faculty Associates, LAICO attended the SCALE Mentors' review meeting held at ICARE, Hyderabad from September 17-18, 2018. The two day meeting brought real cross learning from sharing of experiences, achievements and challenges faced in the process of continuous mentoring and capacity building initiative across SCALE mentors.

Onsite review meeting for LAICO's partner hospitals under the SCALE and Lavelle capacity building

Ms. Renuga providing hands-on training to the staff at Kitwe Eye Hospital, Zambia





SEEC Workshop at Aravind-Coimbatore

at Aravind-Chennai

programmes was held at Sankara Eye Hospital, Samarjhol, Odisha on June 29 and 30, 2018. A total of 45 participants from 15 hospitals in India, Bangladesh, Tanzania and Guatemala participated.

Review meeting for hospitals under Lavelle and So-hum projects was held at Srikan Institute of Ophthalmology, Kakinada from January 8 to 9, 2018. Ten hospital teams from India, Bangladesh and Nepal attended.

ACCESS Project

LAICO continued to provide support to the five eye hospitals in Sub Saharan Africa as part of the African Centres of Excellence in Cataract Surgical Services Network (ACCESS) project. Visits were made to these hospitals and onsite support was provided by Aravind team. A review meeting was held in Kenya in May 2018 wherein representatives from all the hospitals along with the LAICO mentoring team participated and analysed the performance of each hospital.

Teaching and Training

Skill Enhancement for Eye Care Counsellors (SEEC)

LAICO in collaboration with Aurolab started this series of workshops to enhance the knowledge and skill of eye care counsellors, who play a great role in patient compliance to treatment. In many eye care settings, counsellors assist patients in decision-making by giving detailed information about the surgical procedure, pre-operative /post-operative care, discharge and follow-up. The first in this series of workshops was held at Aravind-Chennai with 29 participants on July 6-7, 2018. Subsequently, three workshops were organised- one each in New Delhi (October 25-26), Coimbatore

(August 3-4, 2018), Kolkata (November 27-December 1, 2018) and Pune (March 16-19, 2019). Altogether 200 participants attended these workshops.

Eyexcel Global – Nepal

Bhairava, Nepal, July 25 - 28, 2018

For the first time, SEVA Foundation in association with LAICO organised “Eyexcel Global” at Nepal. Ms. Rajeshwari V R, Supervisor – Refraction Services, Aravind-Madurai and Ms. Lakshmi. R, Manager, HR, Aravind-Tirunelveli were invited as guest speakers. The workshop organised at Lumbini Eye Institute, Bhairava had 21 participants from 8 eye hospitals in Nepal.

Onsite Training

Dr. R. Sankarananthan, Medical Officer, Cataract Services, Aravind-Madurai visited Comprehensive Community Based Rehabilitation in Tanzania (CCBRT), Dar es Salaam from June 1 - July 1, 2018 for imparting SICS training to the doctors. Aravind has signed an MoU with Global Outreach

Ms. R.Lakshmi and Ms. Rajeshwari V.R. at Eyexcel Global - Nepal





Dr. V.R. Vivekanandan during the post-operative rounds at Dodoma University Eye Hospital, Dodoma, Tanzania

Division of the John A Moran Eye Center in December 2017 to partner in training and skills transfer, educational development, basic science and clinical research, patient care practices and protocols and product and material innovation. As part of this, Dr. V.R. Vivekanandan visited Bugando Medical Centre, Mwanza and Dodoma University Eye Hospital, Dodoma, Tanzania in February 2019. The purpose of the visit was to provide inputs on increasing productivity of these hospitals and quality of services offered. While there, he also trained the ophthalmologists in small incision cataract surgery as well as supported outreach initiatives performing surgeries on patients brought in through camps.

Dr. Shivkumar Chandrashekhara and Sanil Joseph ran a workshop on hospital capacity building and project management to the partners of CHEER (Children's Healthy Eyes Bring Educational Rewards) programme in Shianxi Province at Yangjiang,

Workshop on Eye care and Environmental Impact



Ms. N. Kasthuri teaching the participants at the instruments maintenance training programme at Hawassa University

Guangdong Province, China from June 2-4, 2018. Close to 30 participants benefitted.

Overseas Instruments Maintenance Courses

Upon request from Orbis Flying Eye hospital, Staff from Biomedical Engineering Department, Aravind-Madurai, conducted three training programmes on ophthalmic instruments maintenance in Ethiopia. Two programmes were organised at Menelik II Hospital, Addis Ababa during June 11-15 and October 1-5, 2018. Another session was held at Hawassa University, Hawassa, from October 8-12, 2018.

October Summit 2018

Workshop on Eye care and Environmental Impact

Aravind-Pondicherry, September 21-22

Health care industry, one of the fastest growing industries plays an important role in moderating the effects of global climate change by taking steps to reduce its own significant climate footprint. Being one of the high-volume specialties and with high surgical throughput, ophthalmology contributes a great deal towards increasing the carbon footprint. Realising this, Aravind organised a workshop on Eye care and Environmental Impact on bringing in experts in the field of environmental sustainability practices. Discussions centred on reducing carbon footprint, concept of green building, reducing waste in hospitals, water management, electricity management, and green procurement. Best practices in environment-friendly



Participants at the Consultation on Eye Care Beyond 2020

initiatives from other organisations were shared. Over 60 participants attended including heads of hospitals, doctors, administrators and representatives from NGOs.

Consultation on Eye Care Beyond 2020

Aravind-Madurai, October 1-2

The objective of the consultation was to take stock of the eye care activities, identify challenges and come up with actionable strategies to address the challenges beyond the year 2020 for countries in the South East Asia Region. Participants were mostly people holding leadership positions in governments, leading eye hospitals or national/regional forums such as IAPB and Vision2020 in the South East Asia Region. Altogether, 24 persons from Bangladesh, India, Nepal and Sri Lanka attended the workshop. The group developed a set of actionable strategies to be taken forward with support from the regional and country level stakeholders.

Enhancing Cataract Surgery Acceptance Rate through Collaborative Approach

Aravind-Madurai, October 1-2

Cataract continues to be one of the major causes of visual impairment and blindness. On the other hand cataract surgeries are the main source of revenue generation for an eye hospital. However, the ratio of number of cataract surgeries performed to outpatient visits has high variation across hospitals and the overall ratio is much lower than what it should be. This variation is on account of protocols (often lack of) on who gets advised for cataract surgery, adopting an inclusive pricing strategy, the level of compliance by the patients and most importantly not monitoring this. LAICO took up these aspects as the first to explore in

the LEAP collaborative series. The workshop had six participant teams from hospitals in Bangladesh and India.

Health Services Research

As part of enhancing the Health Systems Research (HSR) activities, the Biostatistics department was strengthened by installing a new data management platform - RedCap. LAICO faculty and other management staff underwent internal and external training in research methodology. The team also conducts research methodology course internally for both clinical and non-clinical staff with an aim to promote HSR studies. Nine articles published in peer-reviewed journals was a remarkable accomplishment of the year.

On-going Health Services Research projects

1. Impact of outreach screening camps on walk-in patients at Aravind Eye Hospital, Salem
2. Randomised controlled trial to study the effect of peer group education in enhancing comprehension and compliance in patients diagnosed with primary open angle glaucoma
3. Routine fundus photography screening for posterior segment disease: A stepped-wedge, cluster-randomized trial in South India
4. Evaluation of effectiveness of the low-cost, portable, accurate autorefractor developed by PlenOptika-Aurolab to provide well-tolerated eyeglass prescriptions
5. Impact of electronic medical record implementation on provider and patient satisfaction

RESEARCH

Aravind Medical Research Foundation (AMRF) focus on cutting edge research in vision science with a clear objective to utilise the lab findings into clinical practice. The combination of high clinical load, extensive community participation, and access to a large network of eye hospitals provide ideal opportunities for conducting laboratory, clinical, population-based studies and social and health systems research.

Proteomics

Proteomics research at Aravind aims to understand the pathogenesis of eye diseases– fungal keratitis, diabetic retinopathy (DR) and pseudoexfoliation glaucoma. Treatment in keratitis patients primarily targets killing the fungus and the role of host immune response has not been clearly understood. In vitro studies demonstrated that in corneal ulcers, the neutrophils, the primary immune cells, respond to the fungal infection by secreting inflammatory cytokines. In addition, proteomics of tear fluid and histopathological analysis of the infected corneal tissue showed clearly that the host immune response contributes to the severity of ulcer. Tear proteins, such as the complement pathway proteins – C3 and CFH, have been identified as potential indicators of the inflammatory status of the infected eye in both *A. flavus* and *Fusarium* keratitis patients.

Research scholars at the proteomics lab



Biomarker studies in diabetic retinopathy focuses on identifying protein biomarkers that can identify type II diabetes patients with a high risk of developing retinal complications as well as predict the disease progression among DR patients. As part of the Indo-UK collaborative project, 12 serum proteins are currently being validated as predictive markers for DR. Efforts are underway to identify more specific DR markers through the analysis of proteome changes in serum microparticles at different stages of DR.

Another area of focus in DR study is the identification of differentially expressed serum microRNAs involved in the progression of the disease. A panel of few microRNAs has been identified, which hold the promise of being characterized as biomarkers for the progression of the disease. Further studies are on to validate the panel of microRNAs. A novel chemical cross-linker for the treatment of keratoconus developed through a collaborative project has shown promising results both in ex-vivo pig eyes and human eyes. This treatment option is currently being evaluated as an alternative to conventional UV-A cross-linking treatment. Efforts are on to carry out further long-term stability and sterility tests and to develop a clinical packaging of the cross-linker in the form of a topical eye-drop formulation. A recent initiative is to understand the pathogenesis of pseudoexfoliation glaucoma through iris proteomics. Using a combined histopathological and proteomics approach, the changes in the iris is currently being examined to understand the role of this tissue in the production of pseudoexfoliation material as well as disease progression.

Stem Cell Biology

The thrust of research at the department of Stem Cell Biology is to understand the basic biology of adult tissue resident stem cells in human eye, their role in the normal maintenance of the tissue and changes in ocular disease/disorder.

Extensive studies on the limbal epithelial stem cells led to the establishment of a specific method for their identification, quantification, enrichment and molecular characterization. Recently, the long non-coding RNAs specific to limbal epithelial stem cells have been identified and their regulatory role in the maintenance of the stemness is being analysed, which will enable



Stem cell biology research

establishment of better cell based therapy for patients with limbal stem cell deficiency.

In addition, studies on stem cells of the human trabecular meshwork and lens using the donor eyes from Rotary Aravind International Eye Bank have identified their location. For the first time, an age-related reduction in trabecular meshwork stem cell content has been established along with total trabecular meshwork cell loss. The current focus is to assess the nature of these stem cells in glaucomatous condition and to evaluate whether adult trabecular meshwork stem cell transplantation will help in restoring the normal function. Research activities of this department are focused to establish better adult stem cell based therapies for patients with ocular disease/disorder.

Ocular Pharmacology

The focus of the department is to understand the molecular mechanism involved in the pathogenesis of steroid-induced glaucoma (SIG). Steroids are widely used in ophthalmology to suppress inflammation. Steroids can induce glaucoma or raised eye pressure in 40% of normal people and almost all glaucoma patients are steroid responders. However, the mechanism for SIG in susceptible individuals is not clearly understood. Studies are underway to profile genome-wide transcriptional alterations in the affected tissue, the trabecular meshwork and to identify the dysregulated genes which will help in understanding why glaucoma develops and how to better treat or prevent steroid induced glaucoma.

Molecular Genetics

The current focus of the department is to understand the genetic, clinical and pathophysiological aspects



Ocular pharmacology lab

of Macular Corneal Dystrophy (MCD) in Indian population. Although MCD is a rare stromal corneal dystrophy in western countries, consanguinity in Indian population increases the risk of occurrence. MCD patients with phenotype IA is commonly present in Indian population identified with frameshift mutations found in the upstream region of CHST6 gene followed by phenotype I and II.

The department is also working on the genetic basis of Leber's Hereditary Optic Neuropathy (LHON) which follows mitochondrial (mt) inheritance. A simple and cost-effective genetic testing method is being used to identify the primary mtDNA mutations that cause the disease. In contrast to the western world, the team found reduced frequency of the primary mutations in the Indian population. The current focus is to identify the LHON associated mtDNA variant in southern Indian population.

In addition, clinical and genetic aspects of Stargardt disease are also being pursued through clinical exome sequencing and Sanger sequencing method.

Research on Retinoblastoma has identified the molecular cause of the disease in more than 40 families. A wide variety of RB1 gene mutations was observed in the patients and about 20 of them were identified for the first time. Three families with twins were analysed and mutations were found only in one of the twins while the other twin was found normal. The results helped the clinicians to increase the surveillance of the disease in the affected twin and eliminate the risk in the other. Further methods were developed to understand the molecular mechanism of resistance to the therapeutic drugs. Additional genes that may contribute to the process of tumorigenesis along with RB1 gene were identified and their functional relevance is being



Molecular genetics research

assessed. Apart from retinoblastoma, new research initiatives are undertaken to understand the molecular mechanism of adult cancers such as lymphoma, carcinoma and melanoma.

Ocular Microbiology

The major research focus is on developing and evaluating more sensitive and reliable molecular methods for the diagnosis of ocular pathogens. The lab employed conventional PCR, Nested PCR, multiplex PCR, Real time PCR and gene sequencing for diagnosis along with microbiological findings. Currently, the team optimized rapid tissue processing methods for molecular identification of the ocular pathogens such as virus including HSV, VZV and CMV, Toxoplasma, Mycobacterium, Acanthamoeba, Bacteria and Fungus. Using the molecular sequencing of the bacterial, fungal and protozoan genomic DNA, new novel species and genotypes causing ocular infection which were not reported previously were also identified. The team also employed Multi Locus Sequence Analysis (MLSA) for species identification of the genetically similar genus like *Nocardia* spp., which is difficult to identify by conventional microbiological methods such as culturing and microscopy or routine molecular 16S rDNA sequencing. Next generation sequencing was employed for whole genome analysis of the Methicillin Resistant *Staphylococcus aureus* (MRSA). Apart from the routine diagnosis, the lab also focuses on understanding the pathogenesis of the bacterial and fungal pathogens, mainly to understand the mechanisms of drug resistance, drug tolerance and virulence factors. The department actively participates in the Asia Cornea Society of Infectious Keratitis Study which is a multi-

centre study involving several eye institutes across the Asian continent.

Bioinformatics

The department's research expertizes in genomics, transcriptomics and bioinformatics approaches to understand the complexity of biological processes underlying eye diseases as well as to discover small non-coding RNA biomarkers. The first study is to develop and apply bioinformatics methods for the prioritization of pathogenic variants specific to eye diseases from whole exome and genome data sets. Rare pathogenic variants were identified using an in-house script for Mendelian disorders such as LCA and complex disease such as POAG. Automated Small-RNA-seq and RNA-seq pipelines were developed to analyze the data for steroid-induced glaucoma, uveal melanoma, and retinoblastoma.

The lab is devoting considerable effort towards understanding the role of microRNA and exploring their clinical potential. A set of human microRNAs was identified in intraocular tuberculosis from the aqueous humor, the landmark study of TB-specific ocular miRNAs identification from very low-input RNA, which is now a feasible method. These miRNAs are currently being validated and confirmed as a diagnostic biomarker.

Conferences/Workshops conducted

Workshop on Vision Science to Patient Care- A Translational Approach

August 25, 2018

The workshop was conducted as part of observing Dr. V's birth centenary and focused on creating awareness among young researchers on translation of bench-side findings to patient care. A total of 45 participants attended.

AMRF - Dartmouth Education and Research Conference

November 28-29, 2018

The two-day conference had scholars from AMRF and Dartmouth College presenting research proposals on various eye diseases. Research work at AMRF was presented as posters. Facilities at AMRF were explained in detail to the external participants. A total of 50 students attended the conference.



Vision Science to Patient Care - A Translational Approach



Dartmouth Conference

Conference on Advances in Clinical Genomics

February 9, 2019

The conference had invited speakers from leading institutes in Bangalore and Chennai along with faculty from AMRF and Aravind Eye Hospitals. A total of 60 participants including faculty, research scholars and post graduate students from different institutions attended the meeting. A wide spectrum of topics in clinical genomics including gene discovery, gene therapy, data analysis, functional validation, clinical management was discussed in detail.

Ph.D Awarded

Mr.Bibhuti Ballav Saikia, Department of Molecular Genetics obtained doctoral degree from Madurai Kamaraj University for his study, Mitochondrial genes involvement in Leber's Hereditary Optic Neuropathy (LHON), done under the guidance of Dr.P.Sundaresan.

Ms.Roopam, Department of Molecular Genetics obtained doctoral degree from Alagappa University for her study, Molecular genetics and cytokine profiling

Conference on Advances in Clinical Genomics

in South Indian patients with primary angle closure glaucoma, done under the guidance of Dr.P.Sundaresan

Ms. V.Nithya, Department of Microbiology obtained doctoral degree from Madurai Kamaraj University for her study, Genotypic characterization and analysis of virulence factors in Methicillin resistant *Staphylococcus aureus* causing ocular infections, done under the guidance of Dr.SR.Rathinam.

On-going Basic Research projects

- Pathogenic *Aspergillus*: Interaction with innate immune cells (Indo-French Collaborative project)
- Study on Human mycotic keratitis
- Prospective multicentre discovery and validation of diagnostic circulating and urinary biomarkers and development of sensor(s) to detect sight threatening diabetic retinopathy - Biomarker and Biosensor study in UK and India
- Proteome profiling of serum microparticles in diabetes and diabetic retinopathy patients: Towards identification and validation of predictive biomarkers



- Functional analysis of circulating microRNAs and their regulatory role in Diabetic Retinopathy
- Novel chemical cross-linking of the cornea for the treatment of Keratoconus
- Molecular genetics of macular corneal dystrophy (MCD) in Indian population
- Genetics of retinal dystrophies
- Genetic and transcript analysis of Rb1 gene in South Indian Retinoblastoma patients
- Understanding the molecular mechanisms of chemoresistance in retinoblastoma
- Molecular characterization of tumor progression in retinoblastoma
- Identification and validation of deregulated cancer pathways in retinoblastoma
- Translational genomics of ocular cancers
- Centre of Excellence (COE): Translational genomics of paediatric eye diseases
 - Molecular analysis of mitochondrial diseases with ophthalmic manifestations
 - Epigenetic mechanisms underlying tumor progression in retinoblastoma
 - Functional validation of novel candidate genes using alternate model
 - Computational methods for whole exome/genome sequencing of paediatric eye diseases
- Limbal miRNAs and their potential targets associated with the maintenance of stemness
- Characterization and functional evaluation of trabecular meshwork stem cells in Glaucoma pathogenesis
- Role of miRNA in the regulation of Glucocorticoid Receptor (GR) signalling and development of new therapeutics for steroid-induced glaucoma
- Diagnostic markers for ocular tuberculosis
- Comparative genomics of Methicillin-Resistant Staphylococcus aureus (MRSA) and Pseudomonas aeruginosa ocular isolates from keratitis patients with different clinical outcomes
- An in-silico approach for identification of aberrant metabolic pathways in retinal angiogenesis towards early diagnosis and development of personalized medicine
- Genotyping and phylogenetic analysis of Pythium insidiosum causing human corneal ulcer
- Identification and evaluation of genetic relationship based on multilocus sequence analysis in Nocardia sp causing human ocular infection

- Genotyping and phylogenetic analysis of Acanthamoeba sp using the 18S ribosomal DNA region (JDP 1/2) from acanthamoeba keratitis patients

Ongoing Clinical Research

Cataract and IOL Services

- 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
- Prostaglandin level estimation in phacoemulsification and Femtosecond laser assisted cataract surgery with and without NSAID and correlation with postoperative inflammation and cystoid macular edema
- Visual Outcomes of SMART SICS
- Multicentre, single arm, observational post market clinical follow-up evaluation of posterior capsular opacification, intraocular lens glistening and visual outcome in patients implanted with Hoya Vivixnextm insert® IOL in routine clinical practice
- Surgical outcome comparison of miniCAP Vs Phacoemulsification – A Randomised controlled trial
- To compare the stability of Iris fixated IOL between 3 piece PMMA and single piece IOL with modified haptics
- A prospective, multicentric, randomized controlled, study on long term outcomes of Phacoemulsification with Intraocular lens implantation in pseudo exfoliation syndrome patients
- A prospective, non-randomized, single arm, open label Study to evaluate the efficacy of multifocal intraocular lenses with patients having cataract in both eyes
- Visual performance comparison between phacoemulsification and manual small incision cataract surgery in eyes with senile cataract – A prospective randomised clinical trial
- Determining the quantitative and qualitative effects of pre and per-operative music listening on a patient's experience of cataract surgery
- Complications and visual outcomes in miniCAP and phacoemulsification cataract surgeries performed by trainee ophthalmologists - A Multicentre randomised controlled trial

- Cost benefit analysis for patients undergoing femtosecond laser assisted cataract surgery and conventional phacoemulsification with aspheric IOLs in both eyes
- Assessing the clinical outcome of femtosecond assisted laser surgery versus clear corneal phacoemulsification in three groups of pre-operative astigmatism: A retrospective study

Retina

- Automated detection algorithm assisted read study - Vision centres
- An extension study to evaluate the long term efficacy and safety of Ranibizumab compared with laser therapy for the treatment of infants born prematurely with retinopathy of prematurity
- Statistical modelling and risk assessment of type 2 diabetes complications in india
- validation of neuropupillary index (npi) measured by automated Neuroptics PLR-3000 pupillometer in diagnosing ocular pathologies in south Indian population
- 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.
- ROP Tele screening
- Optos Vs Clarus with Pupillometry
- A phase III randomised, double-masked, parallel group, multicentre study to compare the efficacy, safety, pharmacokinetics and immunogenicity between sb11 (proposed ranibizumab biosimilar) and lucentis in subjects with neovascular age-related macular degeneration
- A two -year, two -arm, randomised, double-masked, multicentre, phase III study assessing the efficacy and safety of brolocizumab versus aflibercept in adult patients with visual impairment due to diabetic macular edema
- Translating research into clinical and community practice: a multi-state, multi-centre statistical modelling of risk-based stratified and personalised screening for complications of diabetes in India.
- Conventional versus Inverted Flap Technique for large macular holes: A Prospective randomised control trial
- Effect of pachychoroid features on visual and functional outcomes in polypoidal choroidal vasculopathy

- Routine fundus photography for screening of posterior segment disease in patients visiting vision centres
- Prevalence and morphological characteristics of dome shaped macula in myopic eyes on enhanced depth imaging spectral-domain optical coherence tomography
- Subjective High-risk patient counselling Randomisation Project
- A study on the differential expression of Piwi-interacting RNAs (piRNA) and altered Piwi-like protein interactions in Diabetic Retinopathy

Uvea

- Macular Edema Nepafenac vs. Difluprednate (MEND) Uveitis Trial
- Leptospirosis - ICMR survey

Glaucoma

- Deep learning algorithms applied to optical coherence tomography images of the optic nerve head for improved glaucoma diagnosis
- Indian childhood glaucoma incidence study
- Perfusion loss assessment in glaucoma
- Prospective study of changes in ocular biometrics after trabeculectomy with mitomycin C in adult glaucoma patients
- Blindness due to steroid induced glaucoma in children in India
- Prospective study of changes in ocular biometrics after trabeculectomy with mitomycin C in adult glaucoma patients
- Shared medical appointments randomized trial
- A prospective study to evaluate the reasons for hospital visit among patients with primary glaucoma
- The Asia Primary Tube versus Trab Study

Neuro-Ophthalmology

- A phase 2/3, randomised, double-masked, sham-controlled trial of qpi-1007 delivered by single or multi-dose intravitreal injections to subjects with acute non arteritic anterior ischemic optic neuropathy

Orbit

- Genetic and transcript analysis of Rb1 gene in south Indian retinoblastoma patients
- Identification and validation of deregulated cancer pathways in retinoblastoma

- Translational genomics of paediatric eye diseases
- Translational genomics of ocular cancers

Paediatric Ophthalmology

- Analysis of the characteristics and etiological factors of headache among various age group of paediatric patients presenting to tertiary eye care centre
- Evaluation of etiology in children presenting with cataract to 4 tertiary eye hospitals in south India
- Heritability and clinical profile of myopia in children in a tertiary care hospital: A cross sectional study
- Correlation between handedness and ocular dominance in strabismic amblyopia
- Long term outcomes of Ectopialentis managed with Cionni CTR placement in paediatric patients
- Atropine 0.01% dose for the treatment of progressive myopia.
- RoP Long term followup study
- Assessment of reading visual acuity in patients with nystagmus
- Translational genomics of paediatric eye diseases
- Management of Nystagmus
- Referral uptake and outcome in children referred to tertiary care centre from school screening camps
- Comparison of refractive measurement with E-see autorefractometer & standards cycloplegic retinoscopy
- Normative data for functional vision assessment in typically developing children
- Retinitis Pigmentosa in children; epidemiological characteristics and ERG changes: a population based study in south India
- Etiology of paediatric cataract
- Ocular motility evaluation in patients undergoing Aurolab AADI implantation
- Utility of +1.5D test at screen level
- Residual vision impairment among students from school for the blind
- Yoke prism trial

Cornea

- Assessment of tear film alterations in post cataract surgery patients
- Comparative study on different methods of eye drop counselling in post optical keratoplasty patients
- Knowledge and awareness regarding eye donation- A survey
- Microbiological and clinical outcomes of corneal collagen crosslinking (CXL) in bacterial keratitis - A randomized control trial
- Comparison of fibrin glue vs. sutures in lamellar corneal tear repair

Health Services Research

- Impact of outreach screening camps on walk-in patients at Aravind Eye Hospital, Salem
- Randomised controlled trial to study the effect of peer group education in enhancing comprehension and compliance in patients diagnosed with primary open angle glaucoma
- Routine fundus photography screening for posterior segment disease:
- A stepped-wedge, cluster-randomized trial in South India
- Evaluation of effectiveness of the low-cost, portable, accurate autorefractor developed by PlenOptika-Aurolab to provide well-tolerated eyeglass prescriptions
- Impact of electronic medical record implementation on provider and patient satisfaction

Clinical Trials - Aurolab

1. To study the safety and performance of high refractive index cast molded hydrophobic intraocular lenses with age-related cataract patients.
2. A prospective, non-randomised, single arm, open label study to evaluate the performance of multifocal intraocular lenses with patients having cataract in both eye.

OPHTHALMIC SUPPLIES & EQUIPMENT

Aurolab's international sales saw remarkable growth in the year. With a strong dealer base covering 73 countries, Aurolab products significantly impact the way eye care is being delivered. Another major event was the leadership transition. Dr. P. Balakrishnan, who was the founding Managing Director of Aurolab passed on the reins to Mr R.D. Sriram in January 2019.

New Products

Angle Kappa Device

This is a screening tool to ensure that the patient is eligible for multifocal IOL implantation. Angle kappa value measurement is one of the important parameters to select right patients for multifocal IOL. To make the screening process easier and effective, the device is designed in a compact way and can be mounted on a slit lamp to measure this value in linear distance. The device works with a computer and software to capture and calculate angle kappa value.

Hawk I B2 Slit Lamp

The two-step slit lamp with camera and imaging software, the first of its kind in the market delivers images of exceptional quality even under varied light conditions. The imaging software ensures

storing of images for diagnosis. Beam splitter and integrated camera can be tailored to suit all major slit lamp brands available in the market.

CAT (Compact Acuity Test) Vision

CAT vision is a portable digital vision chart that can be used to measure visual acuity. Compared to Aurochart, this device is easy to transport to export markets and is very cost effective.

i Scope- Ophthalmoscope and Retinoscope

These are additions to Aurolab's expanding equipment portfolio. With these entry level diagnostic products, Aurolab can cater to ophthalmologists and optometrists expecting good diagnostic capabilities at reasonable prices.

i-hook

This is a flexible iris retractor used for mechanical dilation of pupil in ophthalmic surgery.

X – Nit

X-Nit is a disposable medical device used in scleral fixation IOL (SFIOL) surgery. This helps in simplifying the exteriorization of IOL haptics and minimises trauma during the surgery.

Eye Drops

Pharmaceutical division extended its product range with the introduction of an anti-glaucoma



eye drop, TimBrim (Timolol 0.5% with Brimonidine 0.2%) and anti -allergic eye drop, Ologic (Olopatadine 0.1%).

Product Portfolio Extension

Aurolab has introduced the following models as enhancements in surgical blades:

Sideport 1.1 mm angled substitutes MVR 23G and Sideport 1.7 mm angled substitutes sideport 15 degree to have better control on incision depth during SICS surgery.

Aurolase 532, the green laser photocoagulator for the treatment of diabetic retinopathy was upgraded with a touch screen display.

Marketing Activities

Skill Enhancement for Eye Care (SEEC) Counsellors – Aurolab organised this series of workshops in six cities - Chennai, Coimbatore, Madurai, Delhi, Kolkata & Pune in collaboration with LAICO. Aravind Eye Hospital, Shroff's Charity Eye Hospital, Delhi; Priyamvada Birla Eye Hospital, Kolkata and HV Desai Eye Hospital, Pune hosted the events. More than 250 participants from 135 hospitals attended these workshops.

Live surgeries by eminent ophthalmologists using Aurolab products – Hummingbird, Aurovue Define Multifocal IOL, Auroflex Toric, Aurosling and Aurostent - were arranged in various prestigious ophthalmic forums. Wet lab training in the use of Aurolab Aqueous Drainage Implant (AADI) was provided at the Annual Conference

of Glaucoma Society of India and All India Ophthalmic Conference.

Aurolab established two phaco training centres at Shree Santram Netra Chikitsalay and Priyamvada Birla Aravind Eye Hospital, Kolkata.

Sales training (ASTRA) programme was conducted for the newly recruited field staff at LAICO from October 24 to November 1, 2018.

All India sales meet was held at Aravind Eye Hospital, Chennai during from April 8 -9, 2018.

International Marketing

In collaboration with Brady Pharma, Aurolab brought around 40 ophthalmologists from Philippines in two batches to expose them to Aravind Eye Care System. Honorary Consulate General, Mr. B. Narendran from Philippines Embassy paid a visit to LAICO to felicitate these ophthalmologists.

Aurolab organised CMEs for Indonesian doctors with special focus on AADI and Hydrophobic IOLs. The CMEs were held at Indra Eye Hospital and Sanglah Eye Hospital, Bali, Indonesia.

Towards becoming a one-stop solution for ophthalmic instruments needs of its international customers, Aurolab started procuring and distributing the same from suppliers across India.

Regulatory Activities

QMS ICMED and CE audits were completed successfully. Yellow aspheric hydrophilic foldable IOLs, trocar set, Auroslim blades are in the line to attain CE certification. Aurolab successfully





Mr. Sivanand addressing the participants at the SEEC Workshop held at Aravind-Coimbatore

completed GMP inspection of Brazil and Tanzania for medical devices. Registration certificate has been received for 11 products in 5 countries.

Aurolab also participated in several domestic conferences and CMEs promoting several of its products.

Prominent Tradeshows Attended

- Annual Conference of American Society of Cataract and Refractive Surgeons, Washington D.C, USA, April 14-16,2018
- General Assembly of International Association of Prevention of Blindness, Hyderabad, India, September 13-16,2018
- Annual Conference of European Society of Cataract and Refractive Surgeons, Vienna, Austria, September 21-25,2018
- Annual Conference of American Academy of Ophthalmology, Chicago, USA, October 27-30,2018
- All India Ophthalmological Conference, Indore, Madhya Pradesh from February 14-17, 2019

HR Activities

Training programmes and outbound learning sessions were regularly arranged for the staff of different departments. Healthcare awareness lectures arranged on various occasions were found to be extremely useful. Session on fire safety and emergency management was arranged. On the recreation front, several programmes were conducted which provided staff the much-needed respite from the hectic work schedule. Festivals such as Pongal, Navaratri and Diwali were celebrated with great fun and excitement.

Aurolab completed 27 years of its journey towards eliminating needless blindness. Dr. R. Meenakshi - Chief Medical Officer, Aravind Eye Hospital, Tirunelveli was invited as chief guest during the annual day celebrations.

CE Surveillance and QMS Scope Extension Audit



CENTRAL FUNCTIONS

Human Resources Development

Commemorating Dr.V's Birth Centenary

2018 being the birth centenary year of Aravind's legendary founder, Dr. V, it was collectively decided to observe the year in a special and meaningful way. A series of events were planned and each centre took up the responsibility of executing these. Events conducted were of informative and celebratory in nature and included conferences, CME programmes, competitions, public functions and alumni meets.

Alumni Meets

Hosted by Aravind-Chennai on November 17 -18, Roots 2018 brought together Aravind's alumni doctors from across India. 112 doctors attended the fun-filled event with nostalgic memories.

Aravind-Tirunelveli organised alumni meet of Aravind's allied ophthalmic personnel (AOP) on October 13-14, 2018. Senior AOPs who had served Aravind for more than 10 years were invited for this two day programme. 65 alumni AOPs attended.

Allied Ophthalmic Personnel Training Affiliated to Health Sector Skill Council

Aravind's Allied Ophthalmic Personnel (AOP) training is considered to be one-of-its-kind in the world. The AOPs are the backbone of the Aravind model of eye care delivery. More than 60% of the routine tasks in ophthalmic care are being performed by AOPs, thereby increasing the productivity of the ophthalmologists. In



Alumni AOPs during the meet at Aravind-Tirunelveli

August 2018, the AOP Training Division at Aravind-Madurai was affiliated as training partner to Healthcare Sector Skill Council (HSSC), a government notified non-statutory certification body that works under the Ministry of Skill Development & Entrepreneurship and a part of "Skill India Mission" launched by the Hon'ble Prime Minister. The training divisions at Aravind-Madurai and Tirunelveli have been affiliated as skill centres to conduct training for vision technicians, refractionists and operation theatre technicians. As part of this, Ms. J. Anbujyoti; Ms. P.Alees Mary, Ms. M. Vijayalatha, Ms. R. Sangeetha and Mr. George underwent a certified 10-day training programme organised by HSSC.

Upon request, the AOP Training Division conducted a training of trainers workshop from April 30 to May 2, 2018 for the staff of Sri Radhika Seva Trust, Aurangabad

Roots 2018 - Get-together of Aravind alumni ophthalmologists





Dr. Bill Stewart and Dr. S. Aravind with the participants at the Healing the Healer retreat

who plans to set up a similar training programme in the field of maternal and child health.

Towards Ensuring Professional Development

Employees across the cadres are encouraged to attend professional education programmes organised throughout the year.

- Aravind-Tirunelveli organised a CME on patient safety for its staff on July 22, 2018. Around 80 persons attended. It also organised a CME on December 16 to update the vision centre staff on the latest developments.
- Glaucoma retreat was held in Aravind-Chennai on December 7-8, 2018 bringing together Glaucoma teams from all Aravind Centres. Facilitated by Dr. David Friedman, Executive Director, Dana Centre, Johns Hopkins University, USA, the retreat discussed plans for the development of Glaucoma services at Aravind.
- Healing the Healer retreat was arranged for doctors at Aravind-Chennai on September 28, 2018, which

provided an opportunity to reflect on the issues they face and how to deal with the same.

- Aravind-Madurai organised a refresher training programme for drivers in January 2019 which was attended by 27 persons from across the Aravind centres.
- Senior staff including doctors and managers of Aravind-Pondicherry was taken to Pegasus Academy for an outbound learning experience on January 12 – 13, 2019.
- Staff of Accounts Department from all Aravind centres had their annual training programme at Aravind-Chennai on March 9 and 10, 2019.

Employee Welfare Activities

In association with Employees' State Insurance Corporation, HR Department arranged a medical camp for staff of Aravind-Madurai on March 26, 2019. Doctors from various specialities were brought in so as to provide a complete health check up. 393 staff members were benefited. Facilities for blood test and basic

Training of trainers workshop for the staff of Sri Radhika Seva Trust, Aurangabad



Outbound learning session for the staff of Aravind-Pondicherry





Staff of Accounts Department during their annual training programme

investigations like ECG were also provided. Aurowel, the annual health check-up was organised for the staff members across the centres.

A series of guest lectures on motivational and health care topics are being organised regularly to help in the holistic development of the staff and employees. Excursions are also being conducted for staff members in various batches.

Summer camp for was arranged in May 2018 to productively engage the children of staff members during their annual vacation. The camp had eminent resource persons handle various sessions. Children thoroughly enjoyed the field trips and other entertainment activities organised as part of the camp.

Financial assistance is regularly being provided to support the education of staff children. In the last year, 260 employees from across the centres were benefitted.

Summer camp for staff children of Aravind-Madurai



Christmas celebration at Aravind-Coimbatore



Exhibition on Emergency Resuscitation, Aravind-Madurai



Staff during a soft skill training session at Aravind-Tirunelveli



Information Technology and Systems

Implementing Electronic Medical Records (EMR) system has been one of the major activities over the past few years. Most of the Aravind centres already have EMR in place. Last year, EMR was installed in Aravind centres at Tuticorin, Salem, Pondicherry and Tirupati and will soon be implemented in two tertiary centres and one community eye clinic. The highlight of the year was the launch of EMR onto cloud platform and maintaining a single version application for all centres. This has enabled to access patients medical records from any Aravind centre. A central database was developed and the EMR databases running locally at the respective hospitals were migrated and moved to cloud. Today, EMR is on Google Cloud Platform as Infrastructure as a service (IAAS).

Upgrading Existing Software

Integrated Hospital Management System (IHMS): To maintain better integrity between patient care application and EMR and to eliminate the need for data exchange, it was decided to develop and migrate the existing application onto EMR platform. The process is almost complete and is undergoing trial. In order to provide comprehensive IHMS on a new platform for Aravind's partner hospitals, pending modules are being developed. IHMS was upgraded with appropriate Identity columns for centralization of database and moving to cloud. Surgery selection and logics for calculation of charges were revised. Necessary changes in the master and software were implemented.

Technology

- To strengthen connectivity between the vision centres and base hospital for tele-consultation, TATA connectivity @ 4Mbps was implemented
- Mail server was migrated from the in-house MS-Exchange server to G-Suite cloud. This has resulted in an increased mail box size. Mails can be accessed anywhere using internet and browser.
- Network devices were upgraded to improve performance and security
- Backup of all databases are being moved to cloud in addition to local storage on a regular basis.

IT Services and solutions

IT solutions were installed and services were provided to LAICO's partner hospitals as part of building their capacity or upon request from institutions. IHMS was



Aravind librarians with the senior team at Aravind-Tirunelveli

installed in the hospitals. The IT team visited eight hospitals to provide onsite support and to ensure better utilization of software:

Vision Centre Management System was implemented in 24 centres run by four hospitals in India and two in Bangladesh.

Aravind Library and Information Centre

Aravind Library and Information Centre continues to implement new technology to improve its resources and share information in the most productive way. Continuing education programme for Aravind librarians was conducted at Aravind- Tirunelveli on October 27, 2018. The programme discussed ways to improve library services and thereby increase customer satisfaction.

A bibliometric analysis of Aravind publications, from 1978 till date was carried out and the result was published as a poster and book. Training was provided to students of Library Science from Vivekananda College, Thiruvudagam & Madurai Kamaraj University.

Biostatistics

The department supports data entry, management and statistical analysis for the various clinical and non-clinical research studies at Aravind. It also extends support to Aravind staff in Pro-forma development, sample size calculation, data management, data analysis and developing graphs for the various research projects. A major initiative last year was the introduction of a dynamic software for data entry and management – REDCap. The plan is to gradually move databases relating to all studies to this platform and towards this, the department conducted a one-day orientation workshop for nearly 25 research co-ordinators from across the Aravind centres.

RECOGNITIONS & ACHIEVEMENTS

RECOGNITIONS

Health Value Award

Washington, DC, USA, April 29-May 2, 2018
Aravind Eye Care System (AECS) emerged as the Diamond winner in the category of *Direct Care Provider* at the Health Value Awards ceremony sponsored by World Health Care Congress, the Validation Institute and the Health Rosetta Institute. Aravind was recognised for its vision centre model of eye care delivery. Ms. Donna Campbell of Aravind Eye Foundation received the award on behalf of AECS.

Best Hospital for Innovative Technology Intervention for Patient Experience

Mumbai, October 11-13, 2018
Aravind- Pondicherry received the award given by Hospital planning and infra-structure and Hosmac India Pvt. Ltd

Asia Pacific HIMSS Elsevier Digital Healthcare Award

Brisbane, Australia, November 6, 2018
Aravind- Pondicherry received the award in the category, *Outstanding ICT Innovation* for its novel initiative of implementing electronic medical record system camps.

FICCI Healthcare Excellence Award 2018

New Delhi, August 30, 2018
The award was presented to Aravind-Pondicherry by Smt Tina Ambani, Chairperson of Kokilaben Dhirubhai Ambani Hospital. Mr. N. Vengadesan, Manager-Quality Assurance, Aravind-Pondicherry received the award.

National Board of Examinations (NBE) Award for Excellence in Medical Education

New Delhi, September 21, 2018
On behalf of AECS, Dr. N. Venkatesh Prajna, Director-Academics received the award from Shri. Venkaiah Naidu, Hon'ble Vice President of India.

Best Performing Doctor Award

Chennai, June 29, 2018
On the eve of Doctor's Day, Department of Health & Family Welfare, Govt. of Tamil Nadu honoured Dr. P. Namperumalsamy, Chairman Emeritus with the

award in appreciation of his outstanding performance in health-related activities.

Fellow of All India Collegium of Ophthalmology (FAICO)

Indore, February 14-17
Dr. P. Namperumalsamy has been conferred honorary FAICO in Retina and Vitreous by the All India Ophthalmological Society at its annual conference held at Indore.

Lifetime Achievement Award

New Delhi, September 30, 2018
Dr. G. Natchiar, Director Emeritus-AECS was honoured with the award by the Indian Neuro-ophthalmology Society at its first annual conference. Dr. Mahesh Kumar, Chief, Neuro-ophthalmology Services, Aravind-Madurai received the award on her behalf.

Heroes of Ophthalmology Award

Madurai, March 09, 2019
Dr. G. Natchiar, received the award from MS Chellamuthu Trust and Research Foundation, Madurai on the occasion of International Women's Day.

Dr. G. Venkataswamy Community Ophthalmology Oration

Pondicherry, August 10-12, 2018
Mr. Thulasiraj Ravilla, Executive Director - LAICO delivered the oration on *How Dr.V figured out the Leading cause of Blindness and addressed it in his own style - the lessons for us* at Pudhuvue, the 66th annual conference of Tamil Nadu Ophthalmic Association.

Distinguished Alumnus Award

Kolkata, November 14, 2018
Mr. Thulasiraj Ravilla received the award from his alma mater, the Indian Institute of Management, Calcutta in recognition of his immense contributions in the arena of social entrepreneurship.

Dr. V. Velayutham Glaucoma Oration Award

Chennai, September 9, 2018
Dr. R. Ramakrishnan, Advisor, Aravind-Tirunelveli was honoured with the award at Tambaram Ophthalmic Society conference (TOSCON) 2018 and he delivered an oration on *Pearls for surgical management of glaucoma and current concept*.

Second Krovvidi Family Endowment Lecture

Hyderabad, January 12, 2019

Dr. R.D. Ravindran, Chairman, AECS delivered the lecture on the topic, *Customer oriented approach critical to building organizations - Aravind case study*.

Dr. Alim Memorial Lecture

Dhaka, Bangladesh, March 20, 2019

Dr. R.D. Ravindran, delivered the lecture at the 46th Annual National Conference of the Ophthalmological Society of Bangladesh. His lecture was titled, *Enhancing quality and minimising surgical complications and infection in cataract surgery*.

AAO Achievement Award

Aravind-Madurai, September 10, 2018

American Academy of Ophthalmology (AAO) honoured Dr. S.R. Rathinam, Chief, Uvea Services, Aravind-Madurai with the award in recognition of her distinguished service in the programmes of the society.

Dr. G.Venkataswamy Endowment Award by the Uveitis Society of India

Chandigarh, November 16 - 18, 2018

Dr. S.R. Rathinam was honoured with the award at the 18th Annual Meeting of Uveitis Society of India. She gave the oration titled, *Let there be the joy of doing something beautiful*.

Life Achievement Honour

Pune, April 28-29, 2018

Dr. S.R. Krishnadas, Director-HR, AECS was presented with the award at Pune Eyecon 2018 organised by National Institute of Ophthalmology, Pune. The award was presented in recognition of his commitment in the field of ophthalmology, patient care and research.

Asia Pacific Academy of Ophthalmology (APAO) Achievement Awards

Bangkok, Thailand, March 6-9, 2019

Dr. R. Venkatesh, Chief Medical Officer, Aravind-Pondicherry; Dr. Mahesh Kumar, Chief-Neuro-ophthalmology Services, Aravind-Madurai and Dr. Naresh Babu, Chief- Retina and Vitreous Services, Aravind-Madurai received the Achievement Awards for their contributions to the scientific programmes of the APAO.

Nomination to the Wired 25 List - 25 People Who Will Change the Future

Google CEO, Sundar Pichai nominated Dr. Kim, Chief Medical Officer, Aravind-Madurai to the Wired 25 List for Aravind's ground-breaking work in Artificial

Intelligence (AI) and diabetic retinopathy. Aravind and Google collaborated to develop AI that can predict whether a patient has diabetic retinopathy, and ultimately, can be used to detect other eye diseases.

Inducted as President – Oculoplastic Association of India

Jaipur, September 28-30, 2018

Dr. Usha Kim, Chief, Orbit, Oculoplasty, Ocular Oncology and Ocular Prosthetics Services, Aravind-Madurai was elected President of Oculoplastic Association of India for a period of two years at the annual conference held in Jaipur.

Women Ophthalmological Society's Research Award

Hyderabad, December 22-23, 2018

Dr. Haripriya, Chief-Cataract Services, Aravind-Chennai received the award at the annual conference of the society.

Dr. PR Mondal Memorial Oration

Kolkata, December 8-9, 2018

Dr. Haripriya delivered the oration on *Intracameral Antibiotics for Endophthalmitis Prophylaxis* at the annual conference of Ophthalmological Society of West Bengal.

Award of Excellence

Dr. Usha Kim received two awards on the occasion of International Women's Day

- Award of Excellence from BNI Chanakyaas, Madurai on March 7, 2019
- Vocational Excellence Award for the year 2018 from the Rotary Club of Madurai Blossom on March 9, 2019

Eye Health Hero Award by the International Agency for the Prevention of Blindness (IAPB)

Hyderabad, September 15-16, 2018

Mr B.S Ganesh Babu, Senior Manager, IT and Systems, AECS was presented with the award at the annual general body meeting of the IAPB.

Vocational Excellence Award

Madurai, June 8, 2018

Dr. P.Sundaresan, Senior Scientist, AMRF received the award from Rotary Club of Madurai West.

Best Social Worker award

Theni, June 4, 2018

Mr.Jeyaraj, Camp Manager, Aravind-Theni received the award given by State Bank of India.



Best Performing Doctor Award for
Dr. P. Namperumalsamy



Lifetime Achievement Award for
Dr. G. Natchiar, by the Indian
Neuro-ophthalmology Society



Hon'ble Lieutenant Governor of Puducherry, Kiran Bedi
presenting the Dr. G.V Endowment Oration crest to Mr.
Thulasiraj Ravilla at Pudhuvue'18



Mr. Thulasiraj Ravilla
receiving the Distinguished
Alumnus Award at IIM
Calcutta



FICCI Healthcare
Excellence Award 2018



Dr. R. Ramakrishnan receiving
the Dr. V. Velayutham
Glaucoma Oration Award



Dr. R.D. Ravindran being felicitated
after delivering the second Krovvidi
Family Endowment Lecture



Dr. R.D. Ravindran receiving the crest after delivering the
Dr. Alim Memorial Lecture from the Health Minister of
Bangladesh, Mr. Zahid Maleque and the President of
Ophthalmological Society of Bangladesh,
Prof. Md. Sharfuddin Ahmed



Mr B.S Ganesh Babu receiving the
IAPB's Eye Health Hero Award

Dr. N. Venkatesh Prajna receiving the NBE
Award for Excellence in Medical Education





AAO's Achievement Award for Dr. S.R. Rathinam



Dr. S.R. Rathinam receiving the Dr. G. Venkataswamy Endowment Award by the Uveitis Society of India



Lifetime Achievement Honour for Dr. S.R. Krishnadas



Dr. Usha Kim being inducted as President-Elect of the Oculoplastics Association of India



Women Ophthalmological Society's Research Award for Dr. Haripriya



Dr. Haripriya at the Dr. PR Mondal Memorial Oration ceremony



Vocational Excellence Award to Dr. P. Sundaresan



Rotary Club of Tirunelveli Star Award to Mr. C.V. Bremkumar



Best Social Worker Award to Mr. Jeyaraj



Ms. T.C. Saravana Selvi receives the Best Service Award from Rotary Club of Tirunelveli



... Dr. R. Venkatesh



... Dr. Mahesh Kumar



... Dr. Naresh Babu

APAO Achievement Awards for ...

Awards for Staff of Aravind-Tirunelveli

- Lions Club of Tirunelveli Green City, Team Trust felicitated Ms. T.C. Saravana Selvi of Sankarankoil Community Eye Clinic, with Best Service Award for her selfless work and service on December 8, 2018. She was also felicitated by Red Cross Society on the eve of International Nurses Day.
- Senior MLOPs - Ms. M.N. Chidambaram; Ms. V. Arumugam ; Ms. E.M. Maruthammal; Ms. R.A. Ramalakshmi; Ms. V.G. Prema Baby; Ms. V.G Viji Kala; Ms. G.V Susi Selvi and Ms. S. Sathya were appreciated with Certificate of Achievement by the Lions Club of Tirunelveli Cosmos on July 29, 2018 for their selfless and efficient work.
- Mr. C.V. Bremkumar, Telemedicine Technician was presented with the award by Rotary Club of Tirunelveli Star Award in appreciation of his best public service on September 10, 2018.

ACHIEVEMENTS

- Dr. O. Annamalai, Consultant, Glaucoma Services, Aravind-Pondicherry received the Best Video award for the video titled, *Visual experience during cataract surgery* at the Annual Conference of American Society of Cataract and Refractive Surgeons Film Festival held at Washington DC, USA from April 13-17, 2018.
- Dr. Kalpana Kumari, Fellow, Retina and Vitreous Department, Aravind-Pondicherry won first prize in the Image Nation Contest organised as part of the Retina Imaging Congress held at Chaitanya Eye Hospital, Trivandrum from June 29-30, 2018.
- Dr. Vaishali K. V, Aravind-Madurai emerged as university topper in the Tamil Nadu Dr. MGR Medical University MS Ophthalmology examinations. She won Thiru. C.K. Kumaraswamy 51st birthday commemoration Gold Medal for securing the highest mark and also the Dr. Rema Mohan Gold Medal.
- Dr. R. Venkatesh, Chief Medical Officer, Aravind-Pondicherry won the Best Video award for the video, *Visual experience during cataract surgery* at the Intraocular Implant and Refractive Society of India (IIRSI) Conference held at Chennai from July 7-8, 2018.
- Dr. Kaustubh and Dr. Sabyasachi Chakrabarthi of Aravind-Tirunelveli emerged winners of the DNB exams for the year 2014 and 2016 respectively.
- Dr. R. Jayagayathri, Medical Consultant, Orbit and Oculoplasty Services, Aravind-Pondicherry won the Dr. Raman Mittal Best Paper Award for the paper, *Man-made misery* at the annual conference of Oculoplastic Association of India held at Jaipur from September 28-30, 2018.
- Dr. S. Priya, Medical Consultant, Neuro-ophthalmology Services, Aravind-Pondicherry won

- the Best Paper Award for the paper titled, *Virtual field perimetry in neuro-ophthalmology* at the First Neuro-ophthalmology Society Conference held at New Delhi, on September 30, 2018.
- Dr. Swati Upadhyaya, Glaucoma Consultant, Aravind-Pondicherry won the award for the video titled *Can GATT be an effective Surgical Option for POAG in Developing Countries?* at the competition conducted by Glaucoma Today magazine.
- Glaucoma consultants of Aravind-Madurai, Dr. Indira Durai and Dr. Subhathra won first and second prize respectively at the quiz competition held as part of the CME, *Perimetry: Back to Basics* organised by Sun Pharma at Madurai on November 25, 2018.
- Dr. Anirban Datta, Senior Resident, Aravind-Tirunelveli became winner of the Quiz competition held at iFocus, National Postgraduate Education program in Ophthalmology, Hyderabad on January 7, 2019.
- Mr. Vengadesan won Best Paper award for the paper titled *Patient Engagement Approach to Improve Patient safety and Quality in High Volume Ophthalmic Care* in SHOQ- CON 2019 held at Christian Medical College, Vellore from February 1-2, 2019.
- Dr. HariPriya Aravind won Sante Vision Award for the best paper in cataract at the Annual Conference of All India Ophthalmological Society held at Indore from February 14-17, 2019.
- Photo taken by Mr. Rajkumar, Photographer, Aravind-Madurai was selected for the ORBIS photo calendar 2019.

At the Annual Conference of Glaucoma Society of India

Trivandrum, September 14-16, 2018

- Dr. S. Kavitha, Medical Consultant, Glaucoma Services, Aravind-Pondicherry received Best Video award for video titled, *An effective approach to combat glaucoma blindness*. She was also the runner up for the Best Paper Award for the paper, *Laser peripheral iridotomy location and other predictors of intra ocular pressure lowering after iridotomy: A prospective randomized trial*.
- Glaucoma Fellows of Aravind-Coimbatore, Dr. Prasanna and Dr. Onyinye. O won first and third place respectively in the quiz competition

At the Annual Conference of VISION 2020

Guwahati, June 8-11

- Mr. N. Vengadesan, Manager, Patient Care, Aravind-Pondicherry - Best Paper Award for the paper, *Opportunistic Screening for Diabetic Retinopathy in rural villages through Fundus on Phone*.
- Mr. D. Saravanan, Manager- Rotary Aravind International Eye Bank, Aravind-Madurai the First runner up in Paper presentation for the paper



Dr. Shivkumar Chandrashekharan receiving the Dr.M.N.Endowment Award at TNOA Conference



Dr. Prerana Shah, one of the 12 winners of Bayer Global Ophthalmology Award



Dr. Vaishali K V, Topper, MGR Medical University MS Ophth. examinations receiving the award from Shri. Venkaiah Naidu, Hon'ble Vice President of India Union Minister of State



Proficiency Award to Dr. M.Sivadarshan and Dr. N. Sivagami

IERG Awards



Ms. Yogapriya and Ms.K.Lavanya receive Best Poster Award



Ms. V. Lakshmi Prabha, Ms. V.Nivetha, receive 2nd prize in quiz

At the Annual Conference of VISION 2020



Mr. Santhosha Ganesh receiving the Second runner up award in Poster presentation



Mr. D. Saravanan receiving the First runner up award in Paper presentation



Mr. Rajkumar and his photograph that was selected for the ORBIS photo calendar 2019



titled, *Role of Nodal centre in Community Cornea Retrieval Programme in Southern India*

- Mr. Santhosha Ganesh, Assistant Manager - Central Operations - Second runner up in Poster presentation for the poster, *Accelerating the rate of innovation: Impact of an in-house innovation council*
- Mr. Senthil Kumar, Photographer, Aravind-Coimbatore-First runner up in photo competition.

At the Annual Conference of Indian Eye Research Group (IERG)

Hyderabad, July 27-29, 2018

- Ms. S. Yogapriya, Department of Stem Cell Biology, AMRF won the Best Poster Award for the poster on *Age-related reduction of stem cells in native human trabecular meshwork cells*
- Ms. K Lavanya, Department of Stem Cell Biology, AMRF won the Best Poster Award for the poster on *Association of hsa-mir-143-3p in the regulation of cornea epithelial stem cells*
- Ms. V. Lakshmi Prabha, Ms. V. Nivetha, from Proteomics Department and Ms. T. Madhumithra, Ocular Pharmacology Department, AMRF won second prize in the quiz competition.

Awards at Annual Conference of Tamil Nadu Ophthalmic Association

Pondicherry, August 10-12, 2018

- Dr. Usha Kim and team won the Ophthalmic Premier League.
- Dr. HariPriya Aravind, was selected for the Dr MN award for Best Free Paper in Cataract for the paper titled, *Endophthalmitis reduction with intracameral moxifloxacin following posterior capsule rupture.*
- Dr. Sahithya B, Medical Officer, Paediatric Ophthalmology and Adult Strabismus Services, Aravind-Madurai won First Prize under the category, Shark Tank- Innovations in Ophthalmology for *Visual Intervention kit with analytics for children with special needs (VIKAS).*
- Dr. Marimuthu M, MS Resident and Dr. Sahithya B, Aravind-Madurai won Second Prize under the category, *Only 3 minutes video.*
- Dr. Sarveswaran, DO Resident, Aravind-Madurai won the Best e-poster Award for the poster, *A rare case report of Frank Ter harr syndrome in a sibling pair presenting with congenital glaucoma.*
- Dr. Shivkumar Chandrashekharan, Chief, Cataract and IOL Services, Aravind-Tirunelveli received Dr. M.N Endowment Award in the Cataract session.
- Dr. V. K Anjali Jadhav, Primary DNB Resident and Dr. Srilatha, Senior resident, Aravind-Coimbatore won Prof.E.T. Selvam Quiz competition
- Dr. Premanand Chandran, Medical Consultant,

Glaucoma Clinic, Aravind-Coimbatore won the Best Free Paper Award in Glaucoma for the paper, *Effect of mannitol on intraocular pressure in vitrectomized and non-vitrectomized eyes: A prospective comparative study.*

- Dr. Mayur S. Rokdey, Retina Fellow, Aravind-Coimbatore won Third Prize in Open Quiz
- Dr. Dhipak Arthur, Retina Fellow, Aravind-Madurai won TOPS award for the best paper in Retina.
- Dr VG Madanagopalan and Dr Nagesha C K, Medical Consultants, Retina & Vitreous Services; and Dr. Ashish K, Retina Fellow, Aravind-Pondicherry received Best of Best Paper Award for the paper titled *Does a simple change in direction of trocar entry decrease suture rates in 25 gauge sclerotomies?*
- Dr. Niruban, Cornea Fellow, and Dr. N. Shivananda, Chief-Cornea Services, Aravind-Pondicherry received Best Paper Award in Cornea for the paper titled *Demographic profile of dematiaceous fungal keratitis*
- Dr. John Davis Akkara, Glaucoma Fellow and Dr. Josephine Christy K, Medical Consultant, Cornea Services, Aravind-Pondicherry received Best Paper award for the paper titled *Use of smartphone app for measuring anterior segment lesions on smartphone slit lamp photographs*
- Dr. John Davis Akkara, Dr. Swati Upadhyaya, Aravind-Pondicherry received Best Poster award for the poster titled *Ophthalmology Apps for Amblyopia and Stereopsis.*

Fellowship Award

Dr. Prerana Shah, Medical Consultant, Retina Services, Aravind-Madurai was announced as one of the 12 winners of Bayer Global Ophthalmology Award, for her research titled, *Preventing ROP blindness in premature infants using telescreening in neonatal care units.* The award carries a grant of US\$ 50,000 and is intended to facilitate the development of research and clinical expertise in the field of retinal ophthalmology.

APAO Awards

- Dr. Pavan Kumar, Medical Consultant, Aravind-Pondicherry - *Most popular Video Award for Family Screening: An Effective Way to Combat Glaucoma Blindness*
- Dr. Rashmita Ravisankar, DNB Resident, Aravind-Pondicherry-*Most popular E-poster Award for Calibration of various Tonometers: Schiotz, Goldmann, Perkins, Noncontact Tonometer, iCare, and Tonopen*

Proficiency Awards

At the annual day celebrations of Aravind - Madurai, Dr. M.Sivadarshan and Dr. N. Sivagami were honoured with Dr. G. Venkataswamy Endowment Award for securing highest marks in the MS and DO examinations respectively.

ARAVIND EYE FOUNDATION

Founded in 2000, the Aravind Eye Foundation continues to support the Aravind in its mission to eliminate needless blindness through a combination of philanthropy, volunteerism, and strategic partnering. Since Aravind's core operations are self-sustaining, the foundation focuses on those areas where external support can be a catalyst for innovation or can help scale successful programmes within Aravind or to other eye care organizations.

Ring of Hope

Cancer treatment can be a catastrophic event for any family, burdening them with debt. This is even more so in India, where the average daily wage is 340 rupees or less than \$5 a day. The Ring of Hope fund, founded 15 years ago, provides free treatment and rehabilitation to patients suffering from eye cancer. A full course of treatment – diagnosis, genetic testing, surgery, chemotherapy and radiation – costs between \$1000 and \$2000. Ring of Hope also covers the cost of travel and accommodation so that those costs do not become an obstacle to continuing treatment.

In some cases of eye cancers, the treatment offered can save a patient's life, but can cause disfigurement and blindness, destroying self-esteem and limiting active participation in the community. Aravind's team of expert ocularists created 250 custom prostheses for patients who had an eye removed – roughly half of them were provided free through the Ring of Hope Fund. The Ring of Hope Fund also helps provide rehabilitation services and devices for patients who have low vision or no vision, free of cost.

Aravind Eye Foundation board members travelled to Madurai in February to meet 25 Ring of Hope patients and their families. They ranged in age from a two-month-old girl, who is just starting treatment, to 17-year-old Jayanthi, who is taking her 12th standard in a few months and hopes to go to college. Maria, in spite of very limited vision in both eyes caused by cancer, has managed to participate and win several awards in track running events. Since inception, Ring of Hope has helped save 523 children's sight and/or lives, funded 7,399 patient visits, and provided custom-made prostheses to 289 patients.

AEF is grateful to the Madison Community Foundation, the Jaya G. Iyer Endowment Fund, the Umberto



Maria with her parents at the Retinoblastoma Awareness Week celebrations at Aravind-Madurai

Romano and Clorinda Romano Foundation, the Sohum Foundation, the Diaz Family Foundation, and the many individuals who give life and sight to these patients and their families.

Rural Vision Centers

The Aravind Eye Foundation board also attended the opening of Aravind's 74th rural vision center at Thuvankuruchi. The AEF board members funded the establishment of this centre as a special gift to mark the centenary year of Dr. V's birth anniversary.

Rural vision centers are a critical component in providing universal eye care in India, where it is estimated that for a population of 1.39 billion people, there are 12,000 ophthalmologists, mostly concentrated

Dr. Christine Melton, President of Aravind Eye Foundation, inaugurating the vision centre at Thuvankuruchi



in urban areas. Each center is equipped with telemedicine technologies, and artificial intelligence is now being tested to provide the highest quality eye care at the village level.

Aravind Eye Foundation provides seed funding to cover the capital and first-year operating costs for each center. Centers are usually self-sustaining from affordable patient fees and eye glass sales within a year. Last year, centers funded by AEF treated 128,074 patients (including review cases) and distributed 15,279 spectacles.

Spectacles for Scholars

Around the world, an estimated 12 million children have visual impairments that can be corrected with a pair of spectacles. Regular vision screening and free spectacles have proved to have a major impact on a child's academic performance and, consequently, future employment and prosperity.

With AEF's corporate partner, Warby Parker, the retail and online eyewear company, Aravind screened 217,000 school children and distributed 9,500 pairs of spectacles this year.



Children wearing spectacles sponsored by Aravind Eye Foundation at a school children screening camp

Sridevi, a computer teacher at one of the schools screened said, "Many children do not even bother to tell parents about their eye problems. So, it is very useful when the Aravind team comes here and perform eye examinations for the children. It is even more helpful when they provide free spectacles onsite. Many parents find it difficult to buy spectacles otherwise for various reasons. Sometimes they may not have sufficient money. With spectacles, the children are now able to see clearly what is being written on the blackboard. We are grateful to Aravind and its excellent service."

Research

Aravind's Genetic Testing Lab for Retinoblastoma enables the early diagnosis of eye cancer in children and helps predict the likelihood of future generations or siblings developing the disease. Since the lab became fully operational in 2016, 300 patients and their families have been tested.

Now, with the support of the Sohum Foundation, Aravind will expand the genetic testing lab services to cover all ocular cancers. Each year, about 10,000 new eye cancers are diagnosed in India, but the reality is that many more go undiagnosed and untreated. These tumors affect mainly adults in the working age group, reducing their ability to care for their families and contribute to the community. Early detection and treatment are key to winning their battle with cancer.

Fellowships

Aravind benefits greatly from the expertise, enthusiasm and commitment of the many volunteers who give their time to making Dr. V's vision a reality. As part of the Hilton Coalition Fellows Program, Aravind hosted two fellows in the areas of innovation and patient education for three months at LAICO (Lions Aravind Institute of Community Ophthalmology).

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

*Aravind Eye Foundation is deeply
grateful to the many supporters and friends who
participate in the joy of Aravind's vision.*



PARTNERS IN SERVICE

Aravind gratefully acknowledges its well-wishers and partner organisations for their unstinting support towards its sight restoration work. Though Aravind's core services are financed internally, community support on various levels have taken it a step closer to achieving its mission of eliminating needless blindness.

For service delivery, training and more

- Alcon Laboratories Inc, USA
- Carl Zeiss Meditec, Germany
- CBM International, Germany
- Centre for Innovation in Public Systems, Hyderabad, India
- Combat Blindness Foundation, USA
- Conrad N. Hilton Foundation, USA
- Dana Center, Johns Hopkins University, USA
- Essilor, India
- Fred Hollows Foundation, Australia
- T. H. Chan School of Public Health, Harvard University, USA
- Indian Institute of Management, Bengaluru, India
- Indian Overseas Bank, India
- International Agency for Prevention of Blindness, UK
- International Council for Ophthalmology, UK
- Kaushal Devendra Gupta, Pune, India
- Lavelle Fund for the Blind, USA
- Lions Clubs International Foundation, USA
- London School of Hygiene & Tropical Medicine, UK
- Manohar Devadoss, Chennai, India
- ORBIS International, USA
- Rotary International, USA
- Schwab Foundation and Social Entrepreneurship, Switzerland
- Seva Foundation, USA
- Seva Canada
- SightLife, USA
- SightSavers, UK
- State Bank of India, India
- Standard Chartered Bank & Scope Intl., UK
- So-Hum Foundation, USA
- Subroto Bagchi, Odisha, India
- The Queen Elizabeth Diamond Jubilee Trust, UK
- Tirumala Tirupati Devasthanams, India
- TOMS, USA
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- University of British Columbia, Vancouver, Canada
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- University of Michigan, USA
- University of Pennsylvania, USA
- USAID, USA
- VISION 2020 - The Right to Sight, India
- Wescott Williams Ltd., UK
- World Diabetes Foundation, Denmark
- World Health Organization, Switzerland
- XOVA: Excellence in Ophthalmology Vision Award, USA
- Council of Scientific and Industrial Research, New Delhi, India
- Department of Biotechnology, New Delhi, India
- Department of Science and Technology, New Delhi, India
- Department of Health Research, New Delhi, India
- Geisel School of Medicine at Dartmouth, Dartmouth Hitchcock Medical Center, Lebanon NH, USA
- Google, Mountain view, CA
- India Alliance, Hyderabad, India
- Indian Council of Medical Research, New Delhi, India
- Indian Paediatric Glaucoma Interest Group (IPGI), Chandigarh
- Indian School of Business, Hyderabad
- John Hopkins University, USA
- Kalasalingam University, Krishnan Koil, India
- Kellogg Eye Center, University of Michigan, USA
- London Business School, UK
- Madurai Kamaraj University, Madurai, India
- Michigan State University, USA
- MIND TREE, Bangalore, India
- Moorfields Eye Hospital, London
- National University of Singapore, Singapore
- National Eye Institute, USA
- National Healthcare Group Eye Institute, Tan Tock Seng Hospital, Singapore
- Neuroptics Research Laboratory, Berkeley, USA
- Pondicherry University
- Sun Pharma
- Cognizant Foundation
- Peninsula Eye surgery centre, Los Atlos, CA
- Postgraduate Institute of Medical Education and Research, Chandigarh, India
- Proctor Foundation, University of California, San Francisco F.I., USA
- Sastra University, Thanjavur, India
- Singapore Eye Research Institute/ Singapore National Eye Centre, Singapore
- Singapore National Eye Centre, Singapore
- Science and Engineering Research Board, New Delhi, India
- State University of New York (SUNY), Buffalo, New York
- Tufts School of Medicine, Boston, Massachusetts
- University College, London
- Unite des Aspergillus, Institut Pasteur, Paris
- University of California, Berkeley, USA
- University of Liverpool, Liverpool, UK
- University of California, San Francisco
- University of Ulster, Northern Island, UK
- Vision Research Foundation, Sankara Nethralaya Chennai, India
- Wellcome Trust, UK
- Wills Eye Hospital, Philadelphia, USA
- World Health Organization, Switzerland

For research

- Alagappa University, Karaikudi, India
- Aravind Eye Foundation, USA

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