

ARAVIND



**Aravind Eye Hospitals
& Postgraduate Institute of Ophthalmology**

Lions Aravind Institute of Community Ophthalmology

Aravind Centre for Women, Children and Community Health

Aurolab

Activity Report 1998

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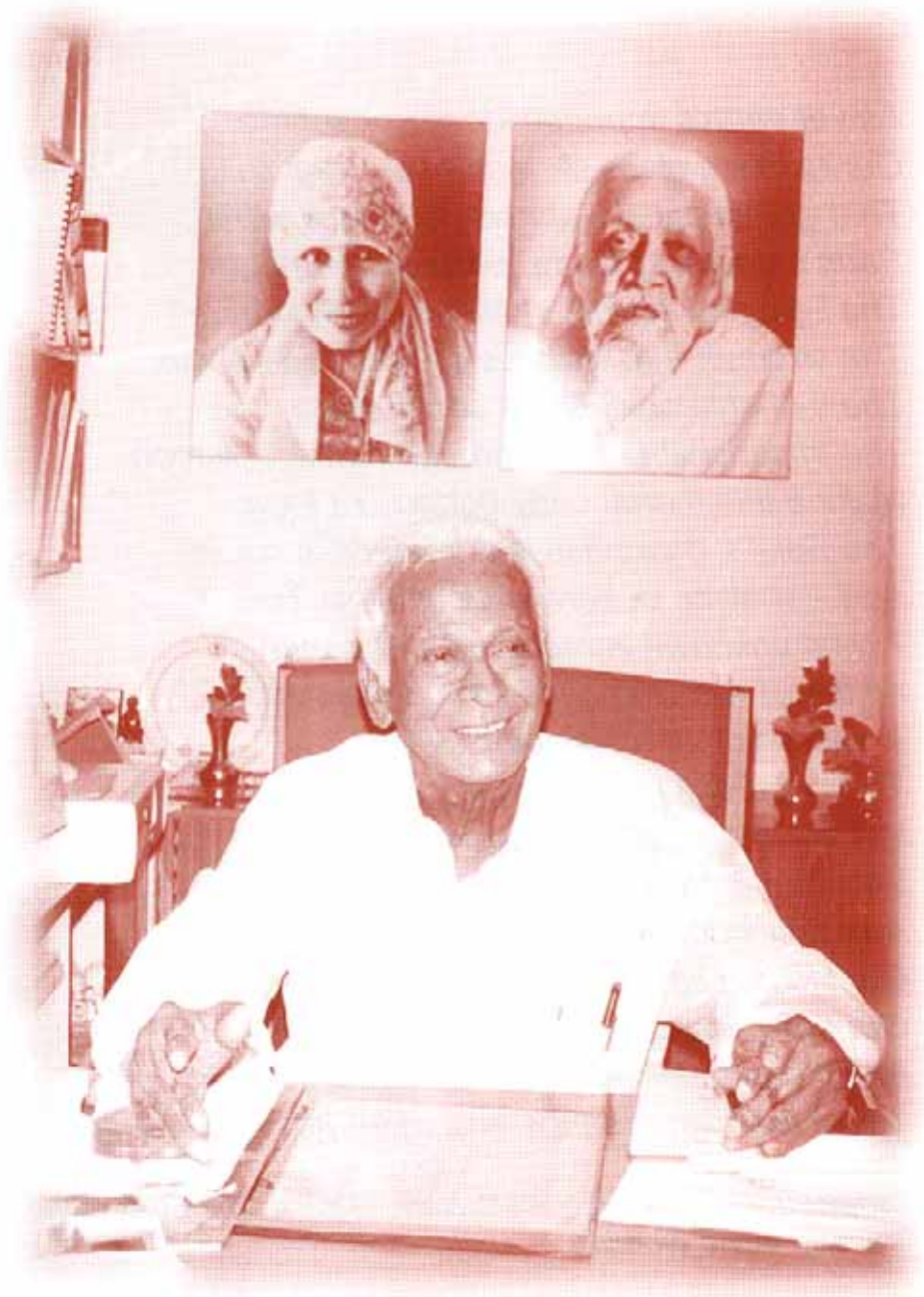
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Jeff Ceaser, Berkeley, USA

Murugan, Aravind-Madurai

*As yet earth's imperfection is our sphere,
Our nature's glass shows not our real self;
That greatness still abides held back within.
Earth's doubting future hides our heritage:
The light now distant shall grow native here,
The strength that visits us our comrade power;
The ineffable shall find a secret voice,
The imperishable burn through matter's screen
Making this mortal body godhead's robe.
The Spirit's greatness is our timeless source
And it shall be our crown in endless Time.
A vast unknown is round us and within;
All things are wrapped in the dynamic One:
A subtle link of union joins all life.
Thus all creation is a single chain:
We are not left alone in a closed scheme
Between a driving of inconscient Force
And an incommunicable Absolute.
Our life is a spur in a sublime soul-range,
Our being looks beyond its walls of mind
And it communicates with greater worlds
There are bigger earths and wider heavens than ours.*

*Excerpt from Sri Aurobindo's **Savitri**, "Book II: The Book of the Traveller of the Worlds"*



"Age is not entirely a time of life. It is a temper of the will; a quality of imagination."

On Dr. V's eightieth birthday, with much love and affection

1998: The year in retrospect

Activities fostering growth and continuous progress are perhaps the most important factors contributing to the success and vitality of an organisation. In an intense growth stage of an organisation, its environment unleashes a spurt of creativity and a spirit of harmony among its staff. Like the previous two decades, 1998 for Aravind has been a year of growth and progress.

While there has been no significant expansion of facilities, there has been a tremendous growth in the volume of services. In 1998, Aravind Eye Hospitals handled 1,163,145 out patient visits and performed 157,827 surgeries. This marks a 19 percent growth in out patient visits 28 percent growth in surgeries over the previous year. The existing training activities continued with unflagging levels of involvement and inputs from the faculty as several new courses were added during the year. Skills development courses such as lasers in retina, glaucoma diagnosis and therapy and community outreach were introduced this year to bridge the gap between current skill levels and new developments.

Our one-year old satellite hospital, Aravind-Coimbatore, started its first structured training programme - an eight-week skills development training in IOL Microsurgery with funding support from Sight Savers International. This year, Aravind Eye Hospitals launched several research projects that had been in preparation the previous year. These include dosing newborns with vitamin A and studying its effect on mortality, impact of antioxidants on cataract formation and a World Bank funded Evaluation Survey in Sivagangai District to assess the impact of cataract intervention programmes. LAICO continues to be involved in training, research and management development. Besides, LAICO stepped beyond national boundaries to share expertise and partner in the development of eye care programmes in Malawi and Cambodia.

The fourth Continuing Medical Education programme for IOL Microsurgery trainees at Aravind Eye Hospital at Tirunelveli had the highest attendance. It was adjudged the best CME in the series, thanks to the organisers' attention to detail from start to finish. Aravind-Theni with its dedicated team continues to be a model, inspiring budding ophthalmologists and others who visit it.

Aravind Children's Hospital was renamed Aravind Centre for Women, Children and Community Health to reflect its mission of improving child and maternal health.

Aurolab, a pioneer in production of affordable intraocular lenses matching international standards, launched its suture needle division this year. It already enjoys the reputation of producing one of the finest ophthalmic suture needles.

The Rotary Aravind International Eye Bank established this year marks a step forward in providing a sustainable solution to the problem of corneal blindness. It is one of the four eye banks in the country affiliated to the International Federation of Eye Banks.

The Aravind-Sight Savers Diabetic Retinopathy Project launched this year is a health education programme emphasising the early screening of all diabetics for diabetic retinopathy.

Looking back, Aravind, LAICO, Aurolab and Aravind Centre for Women, Children and Community Health have been instruments for meaningful work. The real joy, however, comes out of building a global community and working as a team with major international NGOs - Combat Blindness Foundation, CBM International, Lions SightFirst, Sight Savers, Seva Foundation, Seva Service Society, World Health Organization and the Government of India. We are grateful to the forces that have paved the way for this global co-operation towards prevention of blindness.

Highlights of the year

1998 has been an eventful year at Aravind, traversing the highway of growth and diversity.

A glimpse of significant happenings

Ophthalmic suture needle division: Aurolab's new venture

Aurolab's ophthalmic suture needle manufacturing division, established with technical know-how from a European technology partner, is the first of its kind in the country. Inaugurated on February 2, the venture is part of Aurolab's mission to further lower the cost of IOL surgery by manufacturing and supplying suture needles at affordable costs.

The state-of-the-art suture needle division produces microsurgery suture needles of different lengths and curvatures in 8-O, 9-O and 10-O ranges. Sutures are manufactured both in nylon and silk.

The following organisations actively participated in making this venture possible: Seva Foundation, USA; Sight Savers International, UK; CBM International, Germany; Combat Blindness Foundation, USA; Seva Service Society, Canada; Al Noor Foundation, Saudi Arabia; and Canadian International Development Agency (CIDA), Canada.



Mr. David Green, Mr. Rolf Spingler, Mr. B.D. Thanawala, Mr. Roland Jungbaer and Dr. P. Balakrishnan



Prof. Dharmalingam, Dr. P. Namperumalsamy, Mr. Noah Butler, Dr. Radha Saraswathy, Dr. G. Venkataswamy, Dr. C.A.K. Shanmugham and Dr. Rathinam Sivakumar

Ophthalmic research laboratory: Genetics and Immunology

Another landmark was the establishment of a genetics research laboratory at Aravind-Madurai in collaboration with Iowa University, USA. The laboratory forms part of the newly instituted Department of Ophthalmic Genetics and Immunology at Aravind-Madurai. It initiates research studies aimed at understanding and preventing heritable eye diseases in India, using advanced molecular cytogenetic techniques. Dr. P. Namperumalsamy, Director, Aravind Eye Hospitals, and Dr. Edwin M. Stone, University of Iowa, have been instrumental in developing the department.

Rotary Aravind International Eye Bank: For the sake of vision

A desire to provide a sustainable solution to the corneal blind led Aravind to collaborate with Rotary International in establishing an eye bank of international standards. The Rotary Aravind International Eye Bank was inaugurated on September 19. It is one of the four eye banks in the country affiliated to the International Federation of Eye Banks (IFEB) which lays down stringent standards of quality for corneas to be used in transplants. Its objectives are to create public awareness about the need for eye donation, develop collection centres, evaluate, process and distribute corneas. Its future plans include training people in eye bank management and imparting corneal transplant techniques to corneal surgeons.



Dr. G. Venkataswamy and Mr. Kalyan Banerjee at the Eye Bank inauguration



Mr. James Leimkulhler, Mr. Raheem Rahmathullah, Rtn. Robert Ketron and Dr. M. Srinivasan

Housed in 1000 square feet of space on the fourth floor of the main building, the eye bank is centrally air conditioned, sterile and modern. It has an array of hi-tech equipment including serology equipment and specular microscope. It is staffed by personnel trained in eye banking at the International Federation of Eye Banks (IFEB), Prague, Czech Republic, on promotional, administrative and technical aspects of eye banking. IFEB provides technical collaboration, training and support.

The Rotary Aravind International Eye Bank was inaugurated on September 19 by Mr. Kalyan Banerjee, Past President, Rotary International. Other speakers on the occasion included Mr. James Leimkulhler, Senior Vice President, IFEB, and Rtn. Robert Ketron and Rtn. Nayagam (District 3000 Madurai) who was instrumental in initiating the project.

Aravind-Sight Savers Diabetic Retinopathy project

Diabetic Retinopathy is emerging as a challenge to ophthalmologists. In response, the Aravind-Sight Savers Diabetic Retinopathy project was launched in 1998. It is a health education programme for health care professionals and the public emphasising the need for early screening of all diabetics for diabetic retinopathy.

Other happenings

- The Janaky Amma Day Care Centre inaugurated in June met a long-felt need of working mothers at Aravind-Madurai. The centre commemorates the memory of Mrs. Janaky Ramasamy (sister of Dr. G. Venkataswamy and one of the founding trustees of GOVEL Trust) who passed away early this year.



Children at the centre

- Aravind's Audiovisual Division was inaugurated by L. E. James Erwin, Vice President, Lions International. A well-equipped centre, its activities include photography, production of documentaries and surgical video cassettes.



Mr. Kulasekaran and Mr. Shanmughavelayudham in the audiovisual division

- Aravind Eye Hospitals launched its intranet services – *Auroweb*, to provide users with updated information about the activities of the institution. Currently, *Auroweb* contains information about visitors, research, postings, academic programmes, surgery details, and performance.
- Harmony, the Aravind guest house at Madurai, moved to a new location just two blocks away from the main hospital. A three-storeyed building with eighteen spacious rooms, Harmony has been designed and built to provide guests the best care and hospitality.
- A leptospirosis regional laboratory was established at Aravind-Madurai in November in collaboration with Royal Tropical Institute, Netherlands. Dr. W. Terpstra, Director, Leptospirosis Reference Laboratory, Royal Tropical Institute, Netherlands, visited Aravind-Madurai to guide its activities.



Dr. Rathinam Sivakumar with Dr. Terpstra

Aravind Facilities

Eye Care Services

Aravind Eye Hospitals

Paying and Free Sections

Aravind-Coimbatore

Aravind-Theni

Aravind-Madurai

Aravind-Tirunelveli



Speciality Clinics

Retina and Vitreous

Cataract and General ophthalmology

Neuro-ophthalmology

Cornea

Paediatric ophthalmology

Contact lens

Glaucoma

Uvea

Orbit and Oculoplasty

Support Facilities

Ocular microbiology laboratory

Ophthalmic research laboratory: Genetics and Immunology

Biochemistry

Radiology

Instruments maintenance laboratory

Patient counselling services

Audiovisual department

Library and Resource Centre

Computer Centre

Community Outreach

Free eye camps

School eye health screening

Village Volunteers Programme

Community Based Rehabilitation programme

Rotary Aravind International Eye Bank

Donor screening

Collection, evaluation, preservation and distribution of corneas

Training in eye banking

Training in corneal transplants

Research

Aravind Medical Research Foundation

Education and Training

Aravind Postgraduate Institute of Ophthalmology

and

Lions Aravind Institute of Community Ophthalmology

Postgraduate courses in ophthalmology

Fellowship programmes

Short term training programmes

Continuing Medical Education programmes

Paramedical courses in ophthalmic practices

Management courses in health care

Task-oriented training courses

Custom designed courses

Capacity building for eye hospitals

Women and Child Care

Aravind Centre for Women, Children and Community Health

Primary Health Care programmes

Health awareness programmes

Nutrition related blindness prevention programmes

Development of appropriate cost effective technology

Aurolab

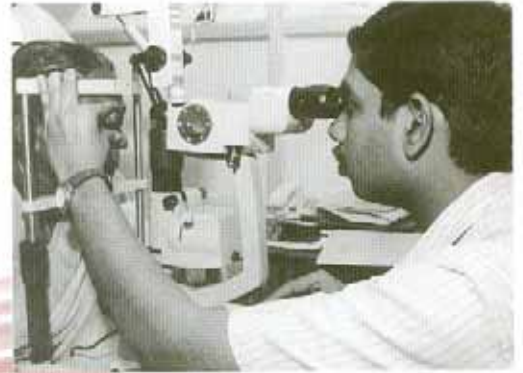
Intraocular lens

Ophthalmic suture needles

Ophthalmic pharmaceuticals

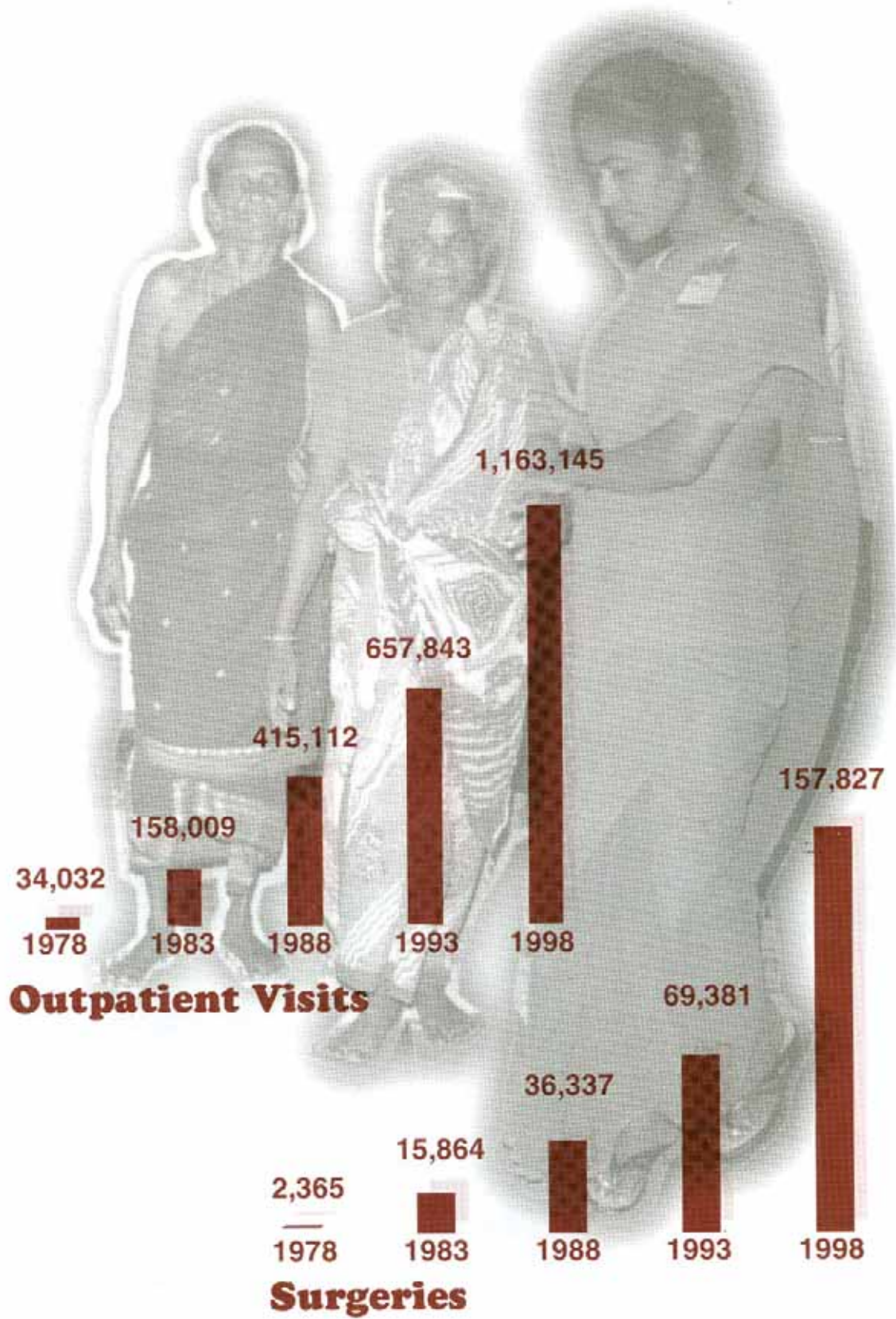
Low vision aids

Spectacle lens division



Statistics 1998

	Madurai	Tirunelveli	Theni	Coimbatore	Total
Outpatient visits					
Paying	225,539	83,980	28,752	127,225	465,496
Free	309,899	147,723	44,236	195,791	697,649
Surgery					
Paying	28,485	7,306	1,354	12,130	49,275
Free	56,505	19,235	5,322	27,490	108,552
Hospital OP visits	384,988	144,668	52,495	206,997	789,148
Eye camp OP visits	150,450	87,035	20,493	116,019	373,997
Total OP visits	535,438	231,703	72,988	323,016	1,163,145
Screening camps	560	313	175	298	1,346
Surgery Details					
Cataract and other lens removal procedures					
- With IOL implantation	61,208	20,699	5,368	30,803	118,078
- Without IOL	8,327	1,635	576	2,560	13,098
Trabeculectomy	859	498	47	331	1,735
Retinal detachment	554	41	-	248	843
Vitreous surgery	514	7	-	226	747
Membranectomy	63	-	-	13	76
Squint correction	458	34	-	88	580
Keratoplasty	281	2	-	139	422
Radial keratotomy	41	-	-	-	41
Ocular injuries (IOFB, corneal tear)	195	50	2	125	372
Pterygium	390	132	51	146	719
Lacrimal surgeries	2,590	1,279	310	968	5,147
Orbitotomy	65	-	-	1	66
Ptoisis	191	10	-	11	212
Lid and Socket reconstruction	25	2	-	4	31
Other oculoplastic surgeries	829	256	68	278	1,431
Other surgeries	857	125	74	735	1,791
Laser Procedures					
Laser, Xenon photocoagulation	4,514	689	-	2,332	7,535
Nd. yag iridectomy	1,161	488	27	65	1,741
Nd. yag capsulectomy	1,868	577	153	544	3,142
Argon laser trabeculoplasty	-	17	-	3	20
Total	84,990	26,541	6,676	39,620	157,827



Community outreach programmes

Community awareness and involvement are vital factors in any programme dealing with a community issue such as poor vision and blindness. Community outreach programmes are an integral part of Aravind's eye care services. They reflect its commitment to help the deserving and to provide services to people unable to access the treatment they need. Rather than wait for patients to turn up at its door, Aravind "goes to the people".

Using principles of service marketing, Aravind creates awareness about eye problems and their solutions. Every year it organises over 1000 free eye camps throughout various districts of Tamil Nadu and the adjoining state of Kerala. These screening camps serve a population of 17 million to 20 million within a radius of 240 kilometres from the hospital. Through these camps, teams from each of Aravind's hospitals go into the rural areas to seek patients. Camp teams, working closely with community leaders and service groups, screen hundreds of patients in a single day. Patients needing surgery are transported to the base hospital. Transport, accommodation and food are provided free of charge to these patients.

In 1998, Aravind conducted 1,346 eye camps where 373,997 people were screened and 65,926 underwent surgery. Camps are scheduled every day of the year. Aravind's successful community outreach is made possible thanks to the experienced and committed staff of its outreach department, efficient organisational set up and sustained support from a number of social and voluntary organisations.

The year began with a desire to increase the overall performance and quality of community outreach service. The outreach departments of Aravind Eye Hospitals presented Camp Plan'98 – a platform for all camp organisers to review their performance in 1997 and develop a strategic plan for 1998. At this meeting on January 12 at LAICO, all camp organisers of Aravind presented the backlog of cataract in their service areas, their 1997 performance and action plan for 1998.

Village Volunteers Programme

This is an off shoot of the operations research project jointly conducted by Aravind-Madurai and University of Michigan, USA. It is a community based referral system to clear the cataract backlog. The programme provides training at the base hospital for health care volunteers from villages to screen people for operable cataract and motivate them to accept surgery. On an average, volunteers visit a hundred houses every month.

The programme seeks to address various issues in cataract blindness such as overcoming barriers in acceptance of cataract surgery, evaluating different methods of health education designed to create awareness and motivating patients to accept surgery.

"India has by far the world's worst cataract problem. My mission is to reduce needless blindness. My dream is to see that no one remains blind due to cataract."

- Dr. G. Venkataswamy



Patients registering at the camp site

With such singleness of purpose and commitment, it has become quite common for Aravind camps to screen and perform IOL implantations in large numbers of patients. For eg. at the camp conducted at Namakkal by the Namakkal South India Trust and MGM Trust, 793 patients received IOL surgery.

Free Eye Camps 1998

Sponsoring organisations	Camps	Outpatients	Cat.+IOL	Others	Total surgeries
Lions Clubs	322	121,838	19,937	666	20,603
District Blindness Control Societies	289	32,880	8,156	358	8,514
Bhagvan Sathya Sai Seva organisations	116	33,688	7,075	226	7,301
Youth & Fan Associations	77	18,802	2,291	110	2,401
Educational Institutions	69	11,298	1,304	62	1,366
Trusts	42	18,779	3,770	84	3,854
Rotary Clubs	41	16,729	3,500	92	3,592
Hospitals	39	12,366	2,139	96	2,235
Vivekananda Kendra	36	10,152	1,400	66	1,466
Industries	36	19,251	3,643	99	3,742
Banks	22	3,537	413	16	429
Jaycees	5	1,357	215	9	224
Other voluntary organisations	108	23,595	3,193	110	3,303
Others	82	26,020	3,315	145	3,460
Total	1,346	373,997	63,708	2,218	65,926

School eye health screening

Into its seventh year of operation, the school eye health screening scheme focuses on identifying common eye defects in children like refractive errors, squint and vitamin A deficiency. Teachers interested in eye care services are selected and trained in eye screening in the school premises. The teacher to children ratio is 1:100. Analysis of the findings of this scheme shows that 6-7 percent of children in schools have eye defects. The programme involves the concerted efforts of the school management, school teachers trained in eye health screening, doctors and para medical staff.

In 1998, 402 teachers from 22 schools were trained to screen children for possible eye defects. They identified 1,469 schoolchildren with eye defects who were subsequently provided appropriate treatment.



Ophthalmic assistants examining children at a school eye camp

Comprehensive eye care services

At Aravind-Theni, a unique project to provide comprehensive eye care services to the curable and incurable blind was launched with the support of Sight Savers International, UK. The project provides preventive, promotive, curative and rehabilitative services to the entire service area of Aravind-Theni consisting of a population of nearly one million covering the entire population of Theni District.



Field workers learning through simulation



The first project targeted at Periyakulam and Theni Taluks was completed in December 1997. Following this, in January 1998, Aravind-Theni extended its services to Chinnamanur, Aundipatti and Mayiladumparai blocks covering a population of more than two hundred thousand.

In the second project, a house-to-house search revealed 3231 persons with various eye problems. Thirty screening camps were organised at the panchayat level. One thousand seven hundred and ninety-nine persons were treated for various eye problems and 312 persons underwent cataract surgery at Aravind-Theni. Of the 61 persons identified as incurably blind, 25 persons were rehabilitated within the community through orientation, mobility, activities of daily living skills etc. Seven persons were economically rehabilitated. The school screening programme covered 17 schools and trained 115 school teachers to screen students.

Aravind-Theni conducted a one-week training programme on Primary Eye Care for the field staff of Seva Nilayam, a non-governmental organisation providing services to patients with leprosy and tuberculosis. The strategy was to enhance eye care services to the community by partnering with Seva Nilayam. It was conducted in three batches of twenty-five field staff each. On being trained, field staff identify people with eye problems in their community. Aravind-Theni then provides necessary eye care services.

Sponsors' Day

Aravind conducts sponsors' day annually at each of its hospitals to recognise the role of sponsors in rural eye care services and seek their continued support. Sponsors share their experiences on various aspects such as camp planning, publicity, and

benefits of eye camps. Feedback from participants thus enables camp organisers to better the efficiency of community outreach services.



Dr. G. Natchiar and Mr. R. Meenakshi Sundaram at Aravind-Theni Sponsors' Day

Sight Savers film crew at Aravind

Sight Savers International will soon be fifty years old. To commemorate this milestone, a Sight Savers International film crew visited Aravind- Madurai and Theni and Vivekananda Mission Hospital Chaitanyapur, West Bengal.

The team consisted of Ms. Paula Seager, Manager Communications; Mr. Richard Walsh, Manager, Direct Marketing, Sight Savers, UK; Mr. Godbole from Sight Savers India office; Ms. Sally Murcott and Mr. Peter Rance, camera crew; Mr. Tom Stoddart and Ms. Felicia Webb, photo journalists; and Mr. Mark Tully, veteran broadcast journalist.

While at Madurai, the team visited the hospital and spoke to the Chairman and Founder, Dr.G.Venkataswamy and other senior staffers to get an insight into the functioning of the institution.

At Aravind-Theni, the crew filmed the various activities under the comprehensive eye care services.

The film hopes to create awareness of Sight Savers activities in India and other countries.



Sight Savers film crew at the Free Hospital

Aravind Postgraduate Institute of Ophthalmology

Aravind's mission to combat the challenge of blindness has led to development of human resources as a major activity. The education and training programmes at Aravind Eye Hospitals are intended for all levels of ophthalmic teaching and training – ophthalmologists, ophthalmic technicians, clinical assistants, out reach co-ordinators and health care managers. Some of these training programmes, both long term and short term, are affiliated to local universities. The postgraduate clinical courses are affiliated to Dr. MGR Medical University, Chennai.

The courses in ophthalmic clinical assistance, optometry and health care management are affiliated to Madurai Kamaraj University and Mother Teresa Women's University, Kodaikanal.

Postgraduate training in ophthalmology

Aravind's postgraduate training offers candidates excellent opportunities to develop their skills in a clinical setting geared for high volume and high quality.

- Diploma in Ophthalmology
- M.S. in Ophthalmology
- Diplomate of the National Board
- Fellow of the Royal College of Surgeons

Short term courses for practising ophthalmologists

Ophthalmology is one of the fields in medicine that has witnessed rapid advancements both in diagnosis and treatment. Over the years, major advances have taken place in cataract surgery, diagnosis and treatment of posterior segment disorders and glaucoma. However, due to lack of equipment and trained manpower, very few residency programmes have been able to keep abreast of such developments.

Aravind has also recognised the need for transition from conventional surgical procedures to state-of-the-art techniques for management of cataracts. It runs short term training courses in IOL microsurgery, indirect ophthalmoscopy, laser treatment and management of glaucoma.

Aravind-Sight Savers short term courses for practising ophthalmologists are designed to bridge this gap; enabling

**The Batch of '98:
MS in Ophthalmology**
Dr. K. Sundaresh
Dr. Gutha Haripriya
Dr. K. Chandra Mohan
Dr. B. Manohar Babu

**Diploma in Ophthalmology
(DO)**
Dr. S. Mahesh Kumar
Dr. Bertle Sugrith Fernando
Dr. Gopal M.R.S.
Dr. Durga Chaitanya K.
Dr. A. Maghizh
Dr. Anand Rajendran
Dr. Kamal Preet K. Likhari
Dr. Viveka Raj

**Diplomate of the National
Board (Dip. N.B.)**
Dr. Manoranjan Das
Dr. Subra Sil
Dr. Ramesh Moorthy
Dr. Shamik Anil Ambatkar
Dr. Siddharth Kothari

**Fellow of the Royal College
of Surgeons (FRCS)**
Dr. Mahalakshmi S.
Dr. Ashwini Kumar Sainani
Dr. Amitabh Kumar



Batch of '98: Postgraduate ophthalmology students with senior Aravind staff



Training in IOL microsurgery

IOL Microsurgery Training

In India

Andhra Pradesh	6
Arunachal Pradesh	1
Assam	4
Bihar	8
Goa	1
Gujarat	1
Haryana	2
Karnataka	7
Kerala	3
Madhya Pradesh	10
Maharashtra	4
Punjab	1
Rajasthan	1
Tamil Nadu	3
Uttar Pradesh	11
West Bengal	6

Other Countries

Bangladesh	2
Germany	2
Ireland	1
Nigeria	4
Switzerland	2
Uganda	1
Total	81

Indirect Ophthalmoscopy and Lasers

Andhra Pradesh	3
Bangladesh	1
Bihar	2
Karnataka	2
Kerala	5
Madhya Pradesh	1
Maharashtra	7
New Delhi	2
Tamil Nadu	2
Uttar Pradesh	1
West Bengal	3
Total	31

practising ophthalmologists acquire these skills.

- Aravind-Sight Savers short term IOL Microsurgery Training
- Aravind-Sight Savers short term Indirect ophthalmoscopy and Lasers in diabetic retinopathy
- Aravind-Sight Savers short term diagnosis and management of glaucoma

The **IOL Microsurgery Training Programme**, started in 1993, is the first training course in the country to offer hands-on skills development. Since its inception, 439 candidates have been trained from various parts of India and seventy-three candidates from other countries. In 1998, eighty-one doctors were trained in IOL microsurgery. This also includes District Ophthalmic Surgeons deputed by the Government of India for training in IOL microsurgery.

Established in 1994, the **Indirect Ophthalmoscopy course** offers training in various diagnostic procedures to detect retinal diseases. Between 1994-1998, one hundred and sixty-three candidates from various states of India and five candidates from other countries have been trained in indirect ophthalmoscopy.



Training in Indirect Ophthalmoscopy

Since 1998, the centre has also added training in the use of **Lasers in the Management of Diabetic Retinopathy**. The course is open to ophthalmologists and postgraduates in ophthalmology.

Aravind-Sight Savers short term course in **Glaucoma Diagnosis and Therapy**, started in 1998, provides practising ophthalmologists and postgraduates training in diagnosis and management of glaucoma.

Visiting residents

Ophthalmology residents from various university hospitals in the US and some European countries come to Aravind for additional training as part of their residency programme.

In 1998, a resident from Herlev Hospital/University of Copenhagen, Denmark, and residents from the following hospitals in the US were here:

University of Illinois, Chicago; Brooklyn Eye Institute, New York; Brookdale Hospital and Medical Centre, New York; University of Wisconsin, Madison; Massachusetts Eye and Ear Infirmary, Boston; St. Vincents Hospital, New York; The Krieger Eye Institute (Sinai Hospital) Baltimore; Wilmer Eye Institute, Johns Hopkins University, Baltimore; Greater Baltimore Medical Centre, Baltimore.

Training in Ophthalmic Nursing and Housekeeping

At Aravind, nurses and housekeepers are trained on the job. Twice a year, high school graduates are recruited and trained in basic and ophthalmic nursing

and housekeeping. The efficiency of the paramedical staff contributes significantly to Aravind's high volume, high quality eye care services. LAICO formalised these training programmes into structured courses affiliated to Madurai Kamaraj University and Mother Teresa Women's University, Kodaikanal.

Speciality training



Dr. Rathinam Sivakumar at the Laboratory for Leptospirosis, Royal Tropical Institute, Amsterdam, Netherlands

The following staff members of Aravind visited leading institutes and eye care centres abroad to undergo specialised training in their respective disciplines. These institutes collaborate with Aravind in various training and research activities.

Dr. Rathinam Sivakumar attended a three-week training programme in laboratory procedures for leptospirosis at the World Reference Laboratory for Leptospirosis, Royal Tropical Institute, Amsterdam, Netherlands. She was an observer at the Tuberculosis and Leprosy Laboratory, Royal Tropical Institute, Netherlands and at Netherlands Ophthalmology Research Centre.

Mr. Raheem Rahmathullah and Ms. Alees Mary Rajkumar attended a six-week training programme conducted by the International Federation of Eye Banks (IFEB) at Prague, Czech Republic. Mr. Rahmathullah trained in the managerial aspects of eye banking such as donor screening, evaluation of cornea, storage and distribution. Ms. Alees Mary Rajkumar trained in the technical aspects of eye banking such as excision of cornea, enucleation of eyeballs, tissue evaluation and serology for blood transmitted diseases.



Mr. Raheem Rahmathullah and Ms. Alees Mary Rajkumar with staff at IFEB, Prague

Dr. Usha Kim visited the University Hospital of Utah, Salt Lake City, USA. She was trained in several new oculoplastic techniques by Dr. Bhoopendra Patel at Moran Eye Centre. At New Orleans, she attended the American Academy of Ophthalmology



Dr. Usha Kim with Dr. Bhoopendra Patel at Moran Eye Centre

meeting. At the Seva evening, she spoke about Aravind's work to several ophthalmologists.

She attended the Seva Board meeting at San Francisco. She acquired further training in oculoplasty by observing Dr. Bill Stewart and his associate Dr. Stuart Saiff at Pacific Medical Centre, San Francisco.

Dr. Bill Stewart's visit to Aravind in November provided Dr. Usha Kim an additional opportunity to work under his supervised guidance. Her interactions with him enabled her to transfer state-of-the-art oculoplasty techniques to the Indian context.



Dr. Usha Kim with Dr. Bill Stewart at Aravind's Orbit and Oculoplasty clinic

Continuing Medical Education at Aravind

Ophthalmology update for postgraduate students

Aravind-Madurai, January 4-10 and July 5-11

The update provided exam-going postgraduate students an exposure to various aspects of clinical and theoretical ophthalmology. Two batches of twenty postgraduates attended the first course. The second course was attended by twenty-two postgraduates. The programme consisted of various sessions on theory, case discussions, observation of surgical procedures, poster exhibition, video and slide shows. Also included were a model examination and quiz. The faculty consisted of Dr. M. Srinivasan, Chief Medical Officer, Aravind-Madurai; Dr. P. Vijayalakshmi, Chief, Squint and Paediatric Clinic, Aravind-Madurai; Dr. R. Ramakrishnan, Chief Medical Officer, Aravind-Tirunelveli; Dr. Chandrasekara Shetty, Bangalore; Dr. Anantha Kannan, Chennai; and Dr. G. Natchiar, Joint Director, Aravind Eye Hospitals.

Learning Phaco - Workshop

Aravind-Coimbatore, January 17-18

One hundred and eighteen delegates from different parts of the country participated. A live surgical demonstration and wet lab were included on both days.



Dr. G. Natchiar and Dr. Linda Civerchia

Guest Faculty Lectures:

Dr. Alvan Balent, Fort Lauderdale, Florida, USA

- *History and evaluation of phacoemulsification*

Dr. Prema Padmanaban, Sankara Nethralaya, Chennai

- *Phaco dynamics*
- *Different types of phaco machines*

Dr. Linda Civerchia, Fort Lauderdale, Florida, USA

- *Basic steps of phaco surgery*

Dr. Abhay Vasavada, Cataract and IOL Research Centre, Ahmedabad

- *Recent advances in phaco techniques for rock hard cataract techniques for posterior polar cataract.*
- *Phaco in subluxated cataract*



Dr. Alvan Balent

Aravind Faculty Lectures:

Dr. G. Natchiar

- *Learning curve of phaco*

Dr. R.D. Ravindran

- *Various types of wound construction*

Dr. V. Ravishankar

- *Capsulorhexis and hydrodissection*

Dr. R. Ramakrishnan

- *Glaucoma combined procedure*

Dr. Arup Chakrabarti

- *Phacoemulsification in small pupil IOL explant or exchange following phacoemulsification*

Dr. P. Mohan

- *Manual phaco and its advantages*

Dr. Kalpana Narendran

- *Anterior segment complications of phaco surgery*

Dr. R. Narendran

- *Management of posterior segment complications following phaco surgery (nucleus drop).*

Symposium on Uveitis



Dr. P. Namperumalsamy

Aravind-Madurai, February 1-2
The uvea clinic of Aravind Eye Hospital conducted its third successful uveitis symposium. Sixty candidates from various ophthalmology institutions in South India participated.

Guest Faculty Lectures:



Dr. Rathinam Sivakumar

Dr. Robert Nozik, Proctor Foundation, San Francisco, USA

- Systemic work up in uveitis
- Sarcoidosis
- Retinal vasculitis

Dr. Emmett Cunningham, Proctor Foundation, San Francisco, USA

- Paediatric uveitis
- AIDS in ophthalmology

Dr. Jack Whitecher, Proctor Foundation, San Francisco, USA

- Endophthalmitis

Dr. Peter Watson, Cambridge University, UK

- Autoimmune disease of cornea and sclera

Dr. Vijayarangan, Madurai

- Systemic autoimmune disease and uveitis

Dr. Muthukumarasamy, Government Rajaji Hospital, Madurai

- Immunosuppressants and steroids in uveitis



Dr. Whitecher, Dr. Nozik and Dr. Cunningham at the symposium

Aravind Faculty Lectures:

Dr. P. Namperumalsamy

- Eales vasculitis

Dr. Rathinam Sivakumar

- Uveitis terminology, clinical importance and epidemiology
- Leptospiral vasculitis and other spirochaete

Dr. Meena Chakrabarti

- Postoperative uveitis
- Pars planitis

Dr. V. Ravishankar

- Cataract extraction in uveitis cases

Dr. R. Kim

- Uveal effusion syndrome and Vogt Koyanagi Harada syndrome.

Ophthalmology update for General Practitioners

Aravind-Tirunelveli, April 19

Forty general practitioners from Tirunelveli, Tuticorin and Kanyakumari districts participated. The faculty included Dr. M. Srinivasan, Chief Medical Officer, Aravind-Madurai; Dr. P. Vijayalakshmi, Chief, Squint and Paediatric Clinic, Aravind-Madurai; and Dr. R. Ramakrishnan, Chief Medical Officer, Aravind-Tirunelveli.

CME programme on contact lens

Aravind-Madurai, July 4 and 5

The programme consisted of didactic lectures, practical sessions, video demonstrations and panel discussions on various aspects of contact lenses. The speakers included Dr. M. Srinivasan, Dr. P. Vijayalakshmi, Prof. N. Sukumaran, Mr. V. Ramakrishnan (Johnson and Johnson) and Ms. Janaki Vaidyanathan (Bausch and Lomb).

IOL CME programme

Aravind-Tirunelveli, August 17 to 22

Aravind-Tirunelveli hosted the fourth Continuing Medical Education Programme for IOL trainees of the Aravind-Sight Savers short term training course. Fifty-two delegates from all over the country and one from Belgium participated. The faculty included ophthalmologists from Aravind Hospitals - Madurai, Coimbatore, Tirunelveli and Theni.



IOL CME Programme at Aravind-Tirunelveli

Special Lectures:

Dr. G. Natchiar

- *Recent developments at Aravind*
- *Anticipation of PCO*
- *Manual phaco*

Dr. R. Ramakrishnan

- *Management of PCO*
- *Aphakic and pseudophakia glaucoma*
- *Cataract and glaucoma management*

Dr. R. Kim

- *Management of dropped nucleus*
- *Postoperative endophthalmitis: prevention and management*

Dr. Sanjay Sharma

- *Courses and management of CME*

Dr. R.D. Ravindran

- *Phaco techniques*
- *Astigmatism in cataract surgeries*

Dr. Rajesh Bhat

- *IOL in difficult situations*

Dr. P. Vijayalakshmi

- *Paediatric cataract*

Dr. C. Nataraju

- *Recent developments in cataract surgery*

Dr. Alok Raj Singh

- *Secondary IOL implantation*

Mr. R.D. Thulasiraj

- *Social marketing*

Prof. V. Srinivasan

- *Instruments maintenance*

CME for Aravind Alumni

Aravind-Madurai, September 13-15

The scientific session included lectures on recent advances in small incision cataract surgery, management of infantile cataracts, recent advances in diagnosis and treatment of uveitis, oculoplastic surgery and newer techniques in filtering surgery in glaucoma. Prof. V. Srinivasan highlighted the importance of instruments maintenance in ophthalmic practice. Dr. V. Panneerselvam, Arasan Eye Hospitals, Erode, an Aravind alumnus, spoke of his experiences and management practices in setting up an eye hospital utilising the Aravind model of high quality, low cost eye care.

Symposium on Paediatric Ophthalmology and Strabismus

Aravind-Madurai, October 16-17

The symposium provided an update on current trends in management of childhood eye diseases. One hundred and forty-one delegates from various states participated

Guest Faculty Lectures:

Dr. Sherwin J Isenberg, Jules Stein Eye Institute, USA

- *Ophthalmia neonatorum prophylaxis*
- *Diagnosis and management of ROP*
- *Nystagmus – Evaluation and management*
- *Adjustable suture surgery innovative techniques*
- *Recent developments in strabismus surgery*

Dr. Pradeep Sharma, AIIMS, New Delhi

- *Pathogenesis and management of amblyopia*
- *Video: Preoperative and postoperative AV-pattern*
- *Diagnosis and management of III nerve palsy*



Dr. P. Sharma

Dr. Muthukumarasamy, Oncologist, Govt. Rajaji Hospital, Madurai

- *Medical management of childhood tumours*

Dr. K. Ravishankar, Sankara Nethralaya, Chennai

- *Exodeviation*
- *Diagnosis and management of VI nerve palsy (inclusive of Botulinum toxin injection)*



Dr. K. Ravishankar

Aravind Faculty Lectures:

Dr. P. Vijayalakshmi

- *Evaluation and management of childhood cataracts*
- *Visual acuity estimation in children: Lecture and video*
- *Microtropia*
- *Duane's syndrome*
- *Video on Duane's, Brown's, Mobius and fibrosis syndromes*



Dr. Kuldeep Srivastava

Dr. Kalpana Narendran

- *Aetiology and types of childhood cataracts*
- *Accommodative esodeviations*

Dr. R. Krishnadas

- *Diagnosis and management of congenital glaucoma*

Dr. R. Kim

- *Diagnosis and management of childhood tumours*



Dr. R. Kim



Dr. Sherwin J Isenberg, Dr. Vijayalakshmi and Dr. Kalpana Narendran

Dr. Usha Kim

- *Congenital dacryostenosis*

Dr. Radha Saraswathi

- *Basic genetics for an ophthalmologist*

Dr. Kuldeep Srivastava

- *Non-accommodative esodeviations*

Symposium on leptospirosis

Aravind-Madurai, November 11

This symposium was attended by ophthalmologists, physicians and microbiologists from Madurai.

Dr. W. Terpstra, Royal Tropical Institute, Netherlands

- *Past, present and future status of research in leptospirosis*
- *Role of leptospirosis reference laboratories in developing countries*

Dr. P. Namperumalsamy

- *Ophthalmic complications in leptospirosis*

Dr. Rathinam Sivakumar

- *Role of tertiary care eye hospital in leptospirosis*

Workshops/Conferences attended by Aravind Faculty

Fifty-sixth Annual Conference of All India Ophthalmological Society

January 22-25, Guwahati

Dr. Arup Chakrabarti

- *Microsurgical instruments*
- *Prevention and management of major postoperative complications*
- *Capsulozonular complications during phaco – An in depth analysis.*
- *Intraoperative conversion from phaco to nonphaco technique*
- *IOL exchange – Indications and long term outcome*

Video presentations

- *Wound closure techniques for tunnel incision*
- *PC IOL explantation with capsular bag removal for post phaco chronic granulomatous uveitis*
- *Phaco in small pupil*
- *Cortex removal after nuclear phaco – various options*
- *IOL exchange through original tunnel incision in a post phaco case.*
- *Phaco in posterior polar cataracts*
- *Phaco in subluxated cataracts*
- *Sec. AC IOL through scleral tunnel vision*

Dr. Meena Chakrabarthi

- *Early Treatment for Diabetic Retinopathy Study and Diabetic Retinopathy Study*
- *Primary vitrectomy for rhegmatogenous retinal detachment*
- *Long term visual results in patients with Terson's syndrome*
- *SIFO: An adjunct to complicated vitreoretinal surgery*
- *Electrodiagnostic technique*

Symposium on Uveitis

Hyderabad, January 29-30

Dr. Rathinam Sivakumar

- *Terminology, clinical importance, and epidemiology of uveitis, leptospira syphilis and other spirochaete disease of the eye and uveitis in Hansen's disease*

Indian Medical Association

Nagercoil, January 31

Dr. R. Ramakrishnan

- *Ocular emergencies*

Indian Intraocular Implant and Refractive Surgery Convention '98

Bangalore, February 14

Dr. R. D. Ravindran

- *Increasing efficiency and cost containment in private clinics*

Annual Conference of Vitreo-Retinal Society of India

New Delhi, February 21-22

Dr. P. Namperumalsamy

- *Intraocular foreign body removal –Radically improved approaches.*



Dr. P. Namperumalsamy (middle) President, Vitreo-Retinal Society of India, chairing the vasoproliferative disorders session at the Vitreo-Retinal Society Conference

Symposium on Glaucoma

Regional Institute of Ophthalmology, Chennai, February 21

Dr. R. Krishnadas

- *Setons in glaucoma surgery*

Focus '98

Bangalore, February 28

Dr. P. Vijayalakshmi

- *Uses of prisms in strabismus*
- *Paediatric vision and refraction*

Vidharba Ophthalmic Association

Nagpur, March 25

Dr. P. Namperumalsamy

- *Vitreo-Retinal Oration on 'Eales Disease: Present Status'*
- *Fluorescein angiography: a video*

National Conference on Low Vision Aids

Mumbai, April 9-12.

Dr. P. Namperumalsamy

- *Low vision - Medical and surgical advances in ophthalmology*

Symposium on Diabetes and the Eye

Nagercoil, May 1

Dr. R. Ramakrishnan
- *Glaucoma in diabetes*

Regional Institute of Ophthalmology

Chennai, May 2

Dr. R.D. Ravindran
- *Endolenticular phacoemulsification*
- *Nonphaco small incision surgery*

International seminar on "Emerging Public Health issues in South Asia".

Thiruvananthapuram, May 22-23

Dr. K.C. Premarajan
- *Cataract blindness – Service delivery model and issues in coverage and outcome*

Fifteenth Congress of the International Society of Geographic and Epidemiologic Ophthalmologists

Leeuwenhorst, Netherlands, June 26-27

Dr. R. Krishnadas
- *Presented preliminary data on the prevalence of glaucoma based on the Aravind Comprehensive Eye Survey*

Twenty-eighth International Congress of Ophthalmology

Amsterdam, Netherlands, June 27-28

Dr. P. Namperumalsamy
- *Training of ophthalmic assistants in India*
- *High volume, high quality cataract surgery with available resources and making the best use of paramedical team*

International Symposium on Ocular Immunology and Inflammation

Amsterdam, Netherlands, June 27 to July 1

Dr. Rathinam Sivakumar
- *Poster presentations on clinical pattern of uveitis in South India and hypopyon in leptospiral panuveitis*

Dr. P. Namperumalsamy attended the Project Survey meeting of the **Tamil Nadu State Blindness Control Society**, Chennai, July 11-12

Indian Society for Training and Development

DCW Ltd., Sahupuram, July 25

Dr. R. Ramakrishnan
- *Industrial eye injuries*

AVM Hospital

Tuticorin, July 26

Dr. R. Ramakrishnan
- *Recent advances in ophthalmology*

Retina Society of Karnataka: CME programme on Uveitis

Bangalore, July 26

Dr. Rathinam Sivakumar
- *Terminology in uveitis*
- *Clinical approach in uveitis*
- *White dot syndrome*

Forty-sixth Tamil Nadu Ophthalmic Association Conference and Southern Regional Ophthalmic Conference

Chennai, August 7-9

Dr. P. Namperumalsamy
- *Moderator for the session on basic to advanced vitreoretinal surgery and changing trends in the management of ophthalmic diseases*

Dr. G. Natchiar

- *How to reach ophthalmology to the community*

Dr. D. Raja Kannan

- *Kearn's Sayre syndrome*

Dr. R. Chandrakanth

- *Cystoid macular oedema: Small incision vs. Automated phaco – a comparison*

Dr. Jayachandra Reddy

- *Phacoemulsification in eyes with primary angle closure glaucoma*

Dr. Kalpana Narendran

- *Extended wear and therapeutic contact lenses*

Dr. R. Narendran

- *Macular hole*

Dr. R.D. Ravindran

- *Small incision nonphaco surgery*

Dr. R. Revathy

- *Atrogenic pseudomonas keratitis and changing antibiotic sensitivity*

Dr. P. Satyan

- *Efficacy of serratiopeptidase in prevention of fibrin membrane in lens induced glaucomas*

Dr. L.V. Shanmuganathan

- *Incidence of re-surgeries following phacoemulsification, ECCE and IOL surgeries*

Dr. N. Sunil

- *Acquired bilateral parafoveal telengectasis – a rarity or a case of misdiagnosis*
- *Posterior scleritis – Various presentations differential diagnosis*

Dr. R. Kim

- *Vitrectomy for dislocated lenses and IOLs*

Dr. Usha Kim

- *Fornix deepening suture*
- *Canaliculoplasty in lower lid tears*
- *Scleral graft for upper lid retraction*

Dr. R. Ramakrishnan

- *Moderator for Case presentation session*
- *Panel discussion on Diagnosis and management of glaucoma*

Won the Best video award for

- *Scleral fixation of posterior chamber IOL in congenital ectropion uveae and subluxated cataract.*

Dr. Prasad Walimbe

- *Is congenital dacryostenosis related to development of strabismus?*

Dr. Suresh Puthalath

- *ALT – Its efficacy in controlling IOP in darkly pigmented eyes*

Dr. V.S. Venkataraghavan

- *Aetiological analysis of papilledema*

Mr. Jayakar Bharati

- *Comparative invitro antibiotic sensitivity against bacterial isolates from corneal ulcer*

College of Ophthalmologists of Sri Lanka: Annual Session

Colombo, Sri Lanka, August 13-15

Dr. G. Natchiar

- *Small incision cataract surgery (manual phaco and instrumental phaco)*
- *Management efficiency in high volume, high quality and cost effective cataract surgery*

Dr. P. Namperumalsamy attended the **Meeting of National Programme Co-ordination Committee**, New Delhi, August 14

Kerala State Ophthalmological Society

Thrissur, Kerala, August

Dr. Rathinam Sivakumar

Symposium on uveitis

Second International Conference on Ocular Infections

Munich, Germany, August 22-26

Dr. M. Srinivasan

- *Acanthamoeba keratitis in South India*
- *Ocular rhinosporidiosis*



Dr. M. Srinivasan at the Munich conference

Drishti '98: Annual conference/Silver Jubilee Celebrations – Kerala State Ophthalmological Society

Thrissur, August 29-30

Prof. N. Sukumaran

- *Refraction modalities: Past and present*

Dry Eye Symposium

Sankara Eye Hospital, Coimbatore, September 5

Dr. Kalpana Narendran

- *Dry eyes in children*

Workshop on Phacoemulsification

Varanasi, September 12-13

Dr. R. D. Ravindran

- *Posterior segment complications of phaco*
- *Phacoemulsification – surgical steps*

Motilal Nehru Medical College

Allahabad, September 14

Dr. R.D. Ravindran

- *Small incision surgery*

Workshop on Phacoemulsification

Erode Ophthalmic Association, September 23

Dr. R.D. Ravindran

- *Intraoperative complications of phaco*

Retina Society Meeting

Washington, September 24-27

Dr. P. Namperumalsamy

- *Poster on Acute florid retinal vasculitis*

Fifth Ophthalmologic Conference of SAARC Countries

Ahmedabad, September 25-27

Dr. M. Srinivasan

- *Acanthamoeba keratitis in India*

Invited speaker

- *Management of infectious keratitis*
- *High volume cataract surgery*

Dr. P. Mohan

- *Faculty- ECCE: Mini nuclear techniques*
- *Challenges of phaco in PXF cases*
- *Video presentation- Modified techniques of capsulorhexis in mature cataract*
- *'Rapid fire session' - Techniques of capsulorhexis in mature cataract*

Dr. C. Nataraju, Dr. P. Mohan

- *Manual SICS vs conventional ECCE+IOL at rural eye camps*

CME in Community Ophthalmology

Davangere, October 4

Dr. Prasad Walimbe

- *Keynote address on ' Incidence, aetiology, classification and magnitude of paediatric blindness in India'.*

National Conference on Twenty-first Century India and Services for the Disabled

Dr. Dipankar Dutta

- *Comprehensive eye care services to address the need for rehabilitative services*

Mr. V. Vijayakumar

- *Need for economic rehabilitation of visually impaired through CBR programme*

Conference of Glaucoma Society of India

Nagpur, October 9-11

Dr. R. Ramakrishnan

- *Lasers in glaucoma*

Dr. R. Krishnadas

- *Glaucoma associated with pseudophakia*
- *Primary open angle glaucoma*



Dr. R. Ramakrishnan

Strabismological Society of India

Chandigarh, October 10-11

Dr. P. Vijayalakshmi

- *Estimation of visual acuity in preverbal children*

Dr. Kalpana Narendran

- *Aetiology of congenital cataract*

Centenary Celebrations of Minto Ophthalmic Hospital and Retina Congress '98

Bangalore, November 1

Dr. P. Namperumalsamy

- *Management of epiretinal membrane surgery*
- *Posteriorly dislocated nucleus/IOL*
- *Management of aphakic and pseudophakic retinal detachment*

Gwalior Ophthalmological Society

Gwalior, November 23

Dr. Rathinam Sivakumar

- *Talk on ocular leptospirosis*

Eleventh International Meeting on Cataract, Implant, Microsurgery and Refractive Keratoplasty

Singapore, November 28-29

Dr. G. Natchiar

- *Meeting the challenge of cataract surgery in the 21st century – A holistic approach*

Tun Hussein Onn National Eye Hospital

Kuala Lumpur, Malaysia, November 30

Dr. G. Natchiar

- *Field defects in chiasmal lesion*
- *Manual phaco*

Fourth International Symposium on Genetics, Health and Disease

Amritsar, November 30 - December 6

Dr. Radha Saraswathy

Invited paper presentation

- *Identification of mutations in the genes that cause primary congenital glaucoma and Leber's congenital amaurosis in South Indian population*

Dr. Saraswathy participated in the UNESCO Regional training workshop on molecular genetics of eye diseases at LV Prasad Eye Institute, Hyderabad, and Indian Institute of Science, Bangalore, from December 13-23.

Publications

Journals

Retina, 18(1) 1998

Dr. Dinesh K. Sahu, Dr. R. Kim, Dr. P. Namperumalsamy and Dr. Nolan De Souza
- *Argon laser treatment for premacular haemorrhage, p.79-81*

Amer. Jou. of Ophthalmology, 125(1) January 1998

Dr. G. Natchiar, R.D. Thulasiraj, Raheem Rahmathullah, Dr. N. Venkatesh Prajna
- *The Madurai Intraocular Lens Study I: A randomised clinical trial comparing complications and vision outcomes of ICCE and ECCE posterior chamber intraocular lens, p.1-13*

Dr. N. Venkatesh Prajna, Dr. K.S. Chandrakanth, Dr. R. Kim, Dr. V. Narendran, Dr. Selvi Selvakumar, Dr. G. Rohini, Dr. N. Manoharan
- *The Madurai Intraocular Lens Study II; Clinical outcomes, p.14-25*

Fletcher, Astrid, V. Vijayakumar, S. Selvaraj, R.D. Thulasiraj and Leon B. Ellwein
- *The Madurai Intraocular Lens Study III; Visual functioning and quality of life outcomes, p.26-35*

Jou. Cataract and Refractive Surgery, 24(2) Feb. 1998

Oliver, Jessica E, R.D. Thulasiraj, Raheem Rahmathullah, Baburajan
- *Vision-specific function and quality of life after cataract extraction in South India, p.222-229*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXVII, No.1, March 1998

Dr. R. Krishnadas
- *Setons in glaucoma filtering surgery, p.1-8*

Dr. C.B. Shanthi, Dr.Y. Sujatha
- *Modified tarsorrhaphy-cosmetic oriented approach p.17-18*

Dr. K. Ilango, Dr. N. Subburam, Dr. G. Natchiar
- *Fibrous dysplasia of sphenoid bone presenting as optic nerve lesion: A case report, p.33-34*

Journal of Ocular Immunology and Inflammation

April 1998; Vol 6

Dr. S. R. Rathinam, Dr. P. Vijayalakshmi, Dr. P. Namperumalsamy, Dr. Emmett T. Cunningham, Dr. Robert A. Nozik
- *Vogt Koyanagi Harada Syndrome in children, p.155-161*

The Journal of Infectious Disease

May 1998; 177

Dr. Kathryn M. Chu, Dr. S. R. Rathinam, Dr. P. Namperumalsamy
- *Identification of Leptospira species in the pathogenesis of uveitis and determination of clinical characteristics in South India, p.1314- 21*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXVIII, No.2, June 1998

Dr. N. Venkatesh Prajna, Dr.Arunava Kundu, Dr. M. Srinivasan
- *Corneal allograft rejection, p.1-9*

Dr. M. Srinivasan, Dr. Jeyachandra Reddy
- *Ocular nocardiosis p.25-29*

Dr. S. Shoeb Ahmed
- *Traumatic cataracts: Newer perspectives p.31-33*

Dr. M. Sambasiva Reddy, Dr. Baburajan, Dr. R.D. Ravindran
- *Dacryocystorhinostomy with nasal tube intubation p.35-37*

Dr. T.R. Murali, Dr. R. Krishnadas
- *Congenital glaucoma associated with neurofibromatosis-A case report p.39-41*

Dr. K. Veena, Dr. R. Usha
- *Granular cell myoblastoma of the lid -A case report p.43-44*

Dr. L. Srinivasan, Dr. P. Namperumalsamy
- *Unilateral multifocal intraocular cysticercosis p.47-48*

Dr. T.I. Peter, Dr. P. Vijayalakshmi, Dr. P. Namperumalsamy
- *A typical retinoblastoma -A case report p.49-50*

Dr. V. Balamurugan, Dr. Koshy Zachariah, Dr. R. Krishnadas
- *A case report on Axenfeld-Rieger syndrome, p.53-55*

British Journal of Ophthalmology

June 1998; 82

G.P. Pokharel, S. Selvaraj, Dr. Leon B. Ellwein

- *Visual functioning and quality of life outcomes among cataract operated and unoperated blind population in Nepal, p.606-610*

Dr. Michael Eckstein, Dr. P. Vijayalakshmi, Dr. Milind Killedar, Dr. Clare Gilbert, Dr. Allen Foster

- *Use of intraocular lenses in children with traumatic cataract in S. India, p.911-915*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXIX, No.3, September 1998

Dr. Jeyachandra Reddy, Dr. P. Vijaya Deepika, Dr. N. Venkatesh Prajna, Dr. M. Srinivasan

- *Case report on bilateral superior pellucid marginal degeneration, p.29-31*

Dr. A. Saraswati, Dr. John Mathews, Dr. R. Kim

- *Case report: Radiation retinopathy, p.33-35*

Dr. J. Rajesh, Dr. N. Venkatesh Prajna, Dr. M. Srinivasan

- *Schnyder's dystrophy-Atypical presentation, p.37-38*

Dr. K. Sarala Devi, Dr. N. Venkatesh Prajna, Dr. P. Vijayalakshmi

- *Mobius syndrome, p.39-40*

Dr. C. Vidya Rani, Dr. P. Vijaya Deepika, Dr. A. Jeya Chandra Reddy,

Dr. R. Krishnadas

- *Case report on bilateral acute angle closure glaucoma, p.43-44*

Dr. H. Saileela, Dr. R. Usha, Dr. P. Subburam

- *Eosinophilic granuloma of the orbit-A case report, p.45-46*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXIX, No.4, December 1998

Dr. Suresh Puthalath, Dr. R. Ramakrishnan, Dr. Prajaktha B. Thakur,

Dr. Anup Chirayath

- *ALT – Its efficacy in controlling IOP in darkly pigmented eyes, p.1-4*

Prof. V. Srinivasan

- *Corneal transparency – A well known explanation in different words, p.19*

Dr. N. Sunil, Dr. V. Narendran

- *Posterior scleritis – various presentation and differential diagnosis, p.21-23*

Dr. P. Satyan, Dr. Sonal G. Chayya, Dr. R.D. Ravindran

- *Efficacy of serratiopeptidase in prevention of fibrin membrane in lens induced glaucomas, p.35-36*

Dr. Suresh Puthalath, Dr. R. Ramakrishnan

- *Acute bilateral proptosis, p.39-41*

Dr. L.V. Shanmuganathan, Dr. R. Sudha, Dr. R.D. Ravindran

- *ECCE and IOL surgeries, p.43-45*

Dr. R. Krishnaveni, Dr. N.V. Prajna, Dr. Jayashree Gandhewar

- *Heterochromia iridis in alkali burns, p.47-48*

Indian Journal of Community Health

3(2):24-32, (1997)

R.D. Thulasiraj, R. Priya and S. Saravanan

- *High volume, high quality cataract surgery*

Books

Anatomy of the Eye

Dr. S.P. Banumathy, Dr. G. Natchiar
Published by Aravind Publications

The Epidemiology of Eye Disease

Dr. Allen Foster, R.D. Thulasiraj

- *Planning, management and evaluation of eye care services, p.351-369*

Edited: Gordon J. Johnson, Darwin C. Minassian, Robert Weale
Publishers: Chapman and Hall, 98

Lions Aravind Institute of Community Ophthalmology

LAICO is Asia's first international training institute for blindness control programmes. It works towards a mission of contributing to the prevention and control of global blindness through teaching, training, consultancy, research in eye care delivery and publication. Working with select NGO hospitals all over India, LAICO partners to develop them into models of excellence in eye care. It imparts the knowledge and skills needed to plan, manage and implement patient-centered, high volume, high quality, cost effective eye care programmes. These training programmes use the broad environment of Aravind Hospital systems as a learning laboratory.

LAICO activities:

- Hospital development programmes (Capacity building and consultancy)
- Training programmes
- Research
- Communications
- Support to Aravind Eye Hospitals

Capacity building and consultancy

LAICO plays a catalytic role in this process by providing training for the development of necessary management and clinical skills to improve the quality and productivity of community eye care programmes. Presently, LAICO works with nearly 60 hospitals across the country including some in Nepal and Bangladesh. These hospitals are supported by Lions, Sight Savers, CBM International or Seva Foundation. The capacity building process consists of three phases: Needs assessment, vision building workshops and follow-up.

Needs assessment

After obtaining preliminary data from the hospitals concerned, a team from Aravind-LAICO visits these hospitals to make training inputs contextually relevant. The purpose of the visit is to understand the ground realities and the processes that govern the running of the hospitals. In 1998, needs assessment visits were carried out for 17 hospitals.

Vision building workshops

Following the needs assessment visit, a representative team from each hospital participates in a seven-day workshop at LAICO. Here they are provided an exposure to different aspects of eye care delivery such as service marketing, quality assurance, productivity and financial viability. By the end of the workshop, participants evolve a comprehensive strategic plan suitable for implementation in their own hospitals.



Ln. Gopalakrishna Raja addressing participants of the workshop

In 1998, three such vision building workshops were held at LAICO in May, (21-27), September (3-9) and December (8-12). Eighteen hospitals participated in the process.

Follow-up visits

A follow-up team from LAICO reviewed the perfor-

Capacity building and consultancy: Participating hospitals in 1998

Andhra Pradesh

Rotary Netra Hospital, Vishakapatnam
 Rotary Community Service Trust, Vuyuru
 Lions Eye Hospital, Nidadavole
 Sadhuram Lions Eye Hospital,
 Hyderabad
 Mahububnagar Lions Eye Hospital
 CSI Campbell Hospital,
 Jamalandugu

Bihar

Jamshedpur Eye Hospital
 Muzaffarpur Eye Hospital
 Monghyr Chakshudar Yagna Samiti
 C.M.Rajgarhia Memorial Rotary Eye Hospital,
 Gridih
 Lions Eye Hospital, Dhanbad

Gujarat

Kutch Vikas Trust, Bhuj

Haryana

Aparna Research Institute, Karnal

Karnataka

Chintamani Lions Eye Hospitals, Chintamani
 Lions NAB Eye Hospital, Miraj
 Vision Eye Hospital, Hubli
 St. Martin's Hospital, Hubli
 CSI Redfern Memorial Hospital, Hassan
 Wanless Hospital, Miraj

Kerala

Dr. Sommervil Memorial CSI Mission Hospital,



Thiruvananthapuram

Malarkara Orthodox Syrian Christian Church Medical Mission
 Hospital, Kolerchery

St. John's Hospital, Kattapara
 MOSC Mission Eye Hospital,
 Wynad

New Delhi

Venu Eye Hospital

Orissa

John Pearse Memorial Rotary Eye Hospital, Cuttack

Punjab

Lions Eye Centre, Jaitu

Tamil Nadu

Joseph Eye Hospital, Tiruchirapalli
 ALC Pakyanathan Memorial Eye Hospital, Chengam
 Lutheran Eye Hospital, Dharapuram
 Scudder Memorial Hospital, Ranipet
 Vizhiyagam Eye Hospital, Saligramam

West Bengal

Rotary Service Centre, Purulia
 Rotary Club of Budge Budge Welfare Trust, Budge Budge
 Vivekananda Mission Ashram, Haldia
 Sri Sri Bijoykrishna Ashram Relief Society, Ramchandrapur,
 Purulia
 Lions Eye Hospital, Raniganj

Uttar Pradesh

Lions Eye Hospital, Rampur

Nepal

Nepal Eye Hospital, Kathmandu

mance of the hospitals after the workshop to assist in finding solutions to the problems if any, to study the changes made and its effect on the total performance of the organisation, and to identify the training needs of the hospitals. In 1998, follow-up visits were carried out for 20 hospitals.

Sustainable eye care in Uttar Pradesh and Nepal

A team of four members consisting of Dr. Suzanne Gilbert, Director, Sight Programs, Seva Foundation; Mr. D. Nagarajan, Former Director, Sight Savers International; Mr. R. Muralikrishnan, Junior Faculty, LAICO; and Ms. Dechen Tsering, Seva Foundation, USA; visited the following eye hospitals in Nepal and North India in October.

Sitapur Eye Hospital, Sitapur, Uttar Pradesh

Sitapur Eye Hospital – (Branch) Bahraich, Uttar Pradesh

Sitapur Eye Hospital – (Branch), Nanpara, Bahraich, Uttar Pradesh

Lumbini Rana Ambika Eye Hospital, Bairawah, Nepal

Lumbini Rana Ambika eye Hospital- (satellite clinic), Tansen, Palpa, Nepal

King Mahendra Memorial Eye Hospital, Bharatpur, Nepal

Nepal Eye Hospital, Kathmandu, Nepal

The team explored opportunities for partnership to provide high quality, high volume, affordable eye care.



Dr. Suzanne Gilbert, Ms. Dechen Tsering, Mr. R. Muralikrishnan and Mr. D. Nagarajan with Dr. Mehra at Sitapur Eye Hospital

Beyond national boundaries

This year Aravind-LAICO extended its expertise in sustainable eye care to three other countries in the developing world: Malawi in South East Africa, Cambodia in South East Asia, and Nepal.

By extending its services to other countries, Aravind reiterates its commitment to the cause of global blindness. The sharing of knowledge broadens the character of Aravind's work, strengthens the organisations served and provides a learning opportunity for all involved.

Malawi

The programme at Malawi aimed at sustainability and cost recovery in eye care has been planned to proceed in a phased manner: Needs assessment and planning, training and systems development, followed by implementation support.



Cambodia

A similar programme for sustainable eye care in Cambodia is to be introduced with the support of Seva Foundation, Aravind Eye Hospitals and LAICO. This would help in the development of eye care projects throughout the country, especially the one at Siem Reap Eye Care Centre as a model.

In October, Mr. R. D. Thulasiraj, Executive Director, LAICO, and Dr. Girija Brilliant, Seva Foundation, visited Cambodia. They carried out a needs assessment by extensive field visits, talking to people in eye care, health care and rural development, gathering data specific to eye care, other related reports and completing the

structured needs assessment form. The team identified the following areas that require development: Human Resource development, community involvement, and structuring of eye care services.



Ms. Dechen Tsering, Mr. R. Muralikrishnan, Dr. Suzanne Gilbert, Mr. D. Nagarajan, Dr. P. Vijayalakshmi and Dr. John Pratt Johnson

Nepal

Dr. P. Vijayalakshmi visited Nepal in October to assist Dr. John Pratt Johnson, strabismologist and paediatric ophthalmologist, Canada, in assessing the status of paediatric ophthalmology in Nepal. Other members of the team were Mr. D. Nagarajan, Dr. Suzanne Gilbert, Mr. R. Muralikrishnan and Ms. Dechen Tsering. The visit also explored possibilities of providing better medical and surgical treatment to children with ocular problems.



Ms. Alees Mary with paramedical staff from hospitals participating in capacity Building

Training programmes

In addition to co-ordinating the postgraduate clinical courses in ophthalmology, LAICO offers paramedical and management courses.

Paramedical courses

At Aravind, paramedical staff are trained to perform many routine clinical tasks such as measuring visual acuity, A-scan and computerised field analysis. This concept of smarter working by delegating routine work to paramedical

staff significantly increases the volume of work done by an ophthalmologist; thus contributing to increased efficiency and quality of eye care services.



Mr. A.K. Sivakumar with students of nursing



Ms. P. Kothai with housekeeping trainees



Prof. N. Sukumaran teaching optometry students

Since its inception two decades back, Aravind Eye Hospitals established an in house training programme to meet its own need for trained ophthalmic paramedical staff. Today, the course has evolved to its present restructured training programme. It has the distinction of being the only one of its kind outside North America to be recognised by the Joint Review Council (JRC) and Joint Health Commission for Allied Health Professionals of Ophthalmology (JCAHPCO).

The restructured programme, offered in collaboration with Mother Teresa Women's University, Kodaikanal, leads to a

- **Diploma in Ophthalmic Assistance**

In January, in collaboration with Mother Teresa Women's University, Kodaikanal, Aravind also formalised the already existing housekeeping training into a structured course leading to a

- **Diploma in Housekeeping**

The medium of instruction is Tamil and the course provides on the job training in housekeeping skills in a health care setting.

The following two year courses are offered in collaboration with Madurai Kamaraj University from 1997

- **Postgraduate Diploma in Optometry**

It trains candidates in various aspects of optometry such as refraction, field evaluation and contact lens fitting.

- **Postgraduate Diploma in Ophthalmic Clinical Assistance**

Candidates are trained in essential skills such as operation theatre preparation, surgical assistance and postoperative patient care. Besides, they also have to go through a compulsory internship at an eye hospital.

Management courses

A response to a need for scientific management in the health sector led to a curriculum in health management. The following one year course is offered in collaboration with the Department of Entrepreneurship Studies, Madurai Kamaraj University.

- **Postgraduate Diploma in Hospital Management**

The course trains candidates to effectively manage various activities in a hospital or health care programme.

Task-oriented training courses

A deeper understanding of the various tasks that lead to better eye care services and the need for trained personnel with the required skills have made training in such tasks inevitable.

- The **course on Instruments Maintenance** is a structured training programme. It trains participants in maintenance of common surgical and non surgical ophthalmic equipment. The course, instituted in 1996, has since then trained 50 candidates, including 10 from outside India. Four instruments maintenance courses were held in 1998 in which 22 persons were trained. Of these, three were from Nepal and one each from Bangladesh, Philippines and Zambia.

Instruments maintenance camps are an integral part of the instruments maintenance course. Six camps were held this year at the following hospitals:

- Malankara Orthodox Syrian Christian Church Medical Mission Hospital, Kolenchery
- Minto Eye Hospital, Bangalore

- Sri Kanchi Kamakoti Medical Trust, Natraj Hospital, Coimbatore
- The Eye Foundation, Coimbatore
- Christu Kula Ashram Hospital, Tirupattur

Trainees, along with Aravind technicians, serviced instruments of these hospitals and won the appreciation of their doctors.

• **Course on Instruments Maintenance for ophthalmologists**

This year, Aravind-LAICO introduced a specially designed, condensed (five days) course in instruments maintenance for ophthalmologists. The first course, from December 27-31, was attended by five ophthalmologists, four of whom were sponsored by the Government of Maharashtra.



Prof. V. Srinivasan, Mr. S. Poomachandran and Ms. A.G. Subbulakshmi provide hands-on training in instruments maintenance

Course in community outreach for eye care

This course is designed to provide candidates with a better understanding of working with the community and generating their participation in eye care programmes. It trains participants in planning and organising community outreach activities and in working with communities. In 1998, the trainees included fourteen candidates from different parts of India and one from Pakistan.

UNICEF team at LAICO



Dr. P. Namperumalsamy, Dr. Edwin, Dr. G. Venkataswamy with Dr. Kamal Islam

Dr. Roger Shrimpton, Nutrition Chief, UNICEF, New York; Dr. Kamal Islam, UNICEF, New Delhi; Ms. Srilatha, UNICEF, Chennai; visited the institute on November 26. They explored possibilities of studying the use of spirulina (a blue green algae) for nutritional purposes in children. Earlier studies had indicated nutritional improvement in children

supplemented with spirulina. In addition, there were general discussions on nutrition.

Dr. Shrimpton suggested that studies could be undertaken to assess the value of spirulina in terms of weight gain and nutritional status in children 6 months to one year.



Dr. Lakshmi Rahmathullah, Dr. Roger Shrimpton and Mr. Karthikeyan

Workshops/Conferences at LAICO

CBM LAICO project: Vision building review workshop

Kodaikanal, June 3-5

This workshop reviewed the performance of the participating hospitals following the vision building workshop at LAICO in 1997. It also imparted a range of skills such as problem solving, communication and influencing which would facilitate change. Resource persons included LAICO faculty; Dr. Dipankar Dutta from Aravind-Theni; Ln. Gopalakrishna Raja from SightFirst Programme; Mr. D. Nagarajan from Sight Savers International; Ms. Claudia Koenig and Mr. Denis Joseph from CBM International. The following hospitals participated:

- ALC Packianathan Memorial Hospital, Chengam, Tamil Nadu
- Joseph Eye Hospital, Tiruchirapalli, Tamil Nadu
- CSI Campbell Hospital, Jamaladugu, Andhra Pradesh

- Dr. Sommervil Memorial CSI Hospital, Karakonam, Kerala
- MOSC Medical Mission Hospital, Karakonam, Kerala
- Vision Eye Hospital, Hubli, Karnataka
- Medical Brother St. John's Hospital, Kattapana, Kerala

Workshop on project management

July 9 to 11

Five NGOs including Aravind Eye Hospitals participated in the workshop organised by CEDAR (a Madurai-based NGO). Ms. Carey Gray, Allied Dunbar, UK, conducted the programme. The workshop highlighted basic concepts and tools in project management. Its objectives included developing a clear understanding of the process of managing a project, the constraints involved and the efficient use of tools like PERT (Program Evaluation and Review Technique), CPM (Critical Path Method) and Gantt chart.

The sharing of experiences enabled participants get an overview of the practical problems faced in running a project. It also helped in refining the project management curriculum for the Postgraduate Diploma in Hospital Management.

SightFirst seminars

September 9 and 20

Two Lions SightFirst seminars, aimed at sensitising and motivating new Lions office bearers, were held at LAICO on September 9 and 20. The first seminar focussed on eye camps; the second on eye donation, school eye screening, diabetic retinopathy and glaucoma.

These programmes were organised by SightFirst Chairman Ln. Athilakshmi and Ln. Elangovan of 324B under the Presidentship of Ln. L. Sundararajan. One hundred and seventy-five office bearers of various Lions Clubs including Ln. N.A.K. Gopalakrishna Raja and Ln. M. Nagarajan, International Director Endorsee, participated.

Workshop on Information Education and Communication (IEC):

October 9 -10

The Department of Maternal and Child Health, Chennai, guided by Ms. Sheela Rani Chunakath, Commissioner, Maternal and Child Health, conducted a two-day workshop on IEC from October 9 to 10. It aimed at disseminating information for health personnel involved in Primary Health Care.

The workshop discussed effective use of street plays and local media for creating awareness of health issues in the rural population. Health care personnel from Dharmapuri District shared their experiences about IEC activities in their district and its impact on the success of the Maternal and Child Health programme.



Ln. G. Ramasamy, Mr. R. D. Thulasiraj and Ln. Nagarajan with Mr. Michael Pajonk, Manager, SightFirst Programme



Ln. James E. Irwin, Vice President, Lions International, with senior staff of Aravind and LAICO

Other visits abroad

Dr. P. Namperumalsamy visited the UK and the US in September.

At London, he visited Sight Savers International to discuss the status of on going partnership projects and to explore the possibilities of future collaborative projects in the field of blindness prevention.

At Swindon, he met the consultants, faculty and management trainees of Allied Dunbar Trust.

At the Royal College of Ophthalmologists, he discussed the FRCS course that Aravind offers.

In the US, as Visiting Professor, Department of Ophthalmology, University of Iowa and University of Wisconsin Medical School, he participated in the Grand Rounds. At New York, he visited Orbis International and LightHouse Inc.

He visited the genetics research laboratories at the National Eye Institute, Bethesda; University of Iowa, Iowa City; and the Department of Molecular Biology, University of Wisconsin, Madison.

At Boston, he met the Director of Schepens Eye Research Institute and also the Director of its Immunology and Corneal Services.

At Wilmer Institute, Johns Hopkins University, he visited the Department of Genetics and Molecular Biology.

Mr. R.D. Thulasiraj visited the US in November to attend the Seva Foundation Board Meeting, Berkeley, USA; the Annual Meeting of the Seva Service Society, Vancouver, Canada; and the American Academy of Ophthalmology meeting at New Orleans, USA.

Deputy Directors of Madurai, Theni, Thiruvavoor, Krishnagiri, Nagercoil and Dharmapuri districts, PHC medical officers, nursing staff, street theatre specialists and members of Tamil Nadu Science Forum participated.

Conferences / Workshops attended by LAICO faculty



R. D. Thulasiraj at the IAPB Meeting at Malawi

Regional meeting of International Agency for Prevention of Blindness

Malawi, September 14-16

Mr. R.D. Thulasiraj

- *Sustainability and cost recovery in eye care*

International seminar on emerging public health

issues in South Asia

Thiruvananthapuram, May 22-23

Dr. K. C. Premarajan

- *Cataract Blindness – Service delivery model and issues in coverage and outcome*

LAICO and CBM jointly conducted two workshops on local Income Generation in New Delhi and Surajkund

New Delhi, June 10

Resource persons: Mr. R.D. Thulasiraj,

Dr. K.C. Premarajan and Dr. Dipankar Dutta

Surajkund, Haryana, November 25-27

Resource persons: Mr. R.D. Thulasiraj,

Dr. R.D. Ravindran and Mr. S. Saravanan

Workshop for defence personnel on hospital management

April 26-May 1

The workshop was jointly organised by the Institute of Technology Management (DRDO) and Bharathidasan Institute of Management, Trichy. Dr. K.C. Premarajan,

Mr. R. D. Sriram, Mr. R.D. Thulasiraj and

Dr. S. Aravind spoke on the Aravind approach to blindness through service, training and research and making new technologies available at costs affordable by developing economies. This was followed by a one-day seminar at LAICO on May 1.

Outcome and impact of National Programmes for the Control of Blindness.

Geneva, February 16-18

Mr. R.D. Thulasiraj, one of the twenty people invited for this workshop, presented a background paper on economic and managerial aspects of National Blindness Control Programmes. He also served as one of the rapporteurs of the workshop. He was nominated to the four member Programme Committee for the forthcoming General Assembly of the International Agency for Prevention of Blindness to be held in Beijing in 1999.

Doumen County blindness prevention programme

Guangzhou, People's Republic of China, January 21-28.

Mr. R. D. Thulasiraj was invited by the Zhongshan Ophthalmic Centre, Sun Yat Sen University of Medical Sciences, Guangzhou, People's Republic of China, to attend the final technical advisory committee review for the evaluation of the Doumen County blindness prevention programme.

Aravind Centre for Women, Children and Community Health

The activities of Aravind Centre for Women, Children and Community Health (ACWCCH) focus on Primary Health Care. The centre is involved in promoting health, preventing illness and providing basic curative care to women and children in villages in and around Madurai.

Basic curative care

Community acceptance is vital for an idea to acquire "social legitimacy." The resultant internalisation makes it easier for the idea to be expressed as positive action.



Dr. M.S. Paulraj examining a child

The centre's efforts to provide basic curative care in villages is based on the realisation that long term, significant improvement in village health care is possible only if it is initiated by the people. Dr. Lakshmi Rahmathullah, Director, Aravind Centre for Women, Children and Community Health, believes that *eighty percent of medical care can be effectively provided at the village level. Only 20 percent of patients need to be referred to a tertiary care centre for further treatment.* Based on this principle, women are taught simple remedial measures when a child falls ill. Like resorting to sugar-salt solution, tender coconut water and rice-

water salt solution in instances of diarrhoea. Children who do not respond to such measures are advised to come to the Aravind Centre. If necessary, they are referred to a tertiary care centre. The centre thus serves as a link between doctors and the community.

Implementation of Primary Health Care concept in urban slums and rural areas

Aravind Centre for Women, Children and Community Health makes inroads into health care in this segment of the population by working with Association of Sarva Seva Farms (ASSEFA). In Karyapatty Block in Virudhunagar District, the centre provides consultancy and health guidance to ASSEFA.

Creating awareness of health care

The centre trains a team of volunteers, both men and women, to disseminate awareness to villagers on various aspects of health care such as reproductive health, maternal health, child care, eye care, and environmental hygiene.



1998: Statistics

Number of outpatient visits	16,918
Number of camps	14
Number of cases seen in the camps	1,523
Immunisation	
DPT	722
OPV	925
AMV & MMR	282

Combatting vitamin A deficiency

In recent years, government intervention programmes and increased public awareness have resulted in a drastic drop in the incidence of nutritional blindness due to vitamin A deficiency. The centre is involved in assessment and treatment of nutrition-related blindness in children from Tamil Nadu. Every year, on an average, 20-25 such cases from Southern Tamil Nadu are treated at the centre. Most children who are blind due to vitamin A deficiency are less than six months old and some are currently breast fed. A detailed history is obtained and after being supplemented with vitamin A the children are followed up until they are five years old.

The centre provides treatment free of charge to all nutritionally blind children. Their mothers are provided bus fare and a day's wage to improve compliance for monthly follow-up visits.

The centre also runs an antenatal clinic every Thursday.

Other activities of the centre include a campaign to sensitise girls in the city colleges about the importance of breast feeding, programmes to monitor the health of working children and eye screening in rural primary schools.



Dr. Lakshmi Rahmathullah at a training session for the field workers

Vitamin A Supplementation In Newborns (VASIN) Study

This four-year collaborative community-based research between Aravind Centre for Women, Children and Community Health and Johns Hopkins University, USA, is another instance of the centre's commitment to Primary Health Care.

The study seeks to determine whether vitamin A supplementation in newborns within 48 hours after delivery will reduce infant mortality, respiratory tract infection, diarrhoeal diseases and improve growth in newborns. The study is conducted at Karyapatty and Natham Blocks in rural South Tamil Nadu.

At the grassroots, the centre undertakes a number of activities to create awareness of the project and establish rapport with the community. These include meetings with Ward members, Grama Sabha leaders, Mahila Mandal leaders and local *dais*.

Visits abroad

Dr. Lakshmi Rahmathullah, Director, Aravind Centre for Women, Children and Community Health visited USA from May 8 to June 6.

At California, she attended the Seva Board meeting. She also met the heads of the departments of Nutrition and Ethnobiology at Berkeley - University of California and San Francisco - University of California.

At Washington, Dr. Lakshmi Rahmathullah met Mr. Joy Riggs-Perla, Director, Health and Nutrition, USAID and Dr. Francis Davidson, Division of Nutritional Science.

At Baltimore, she met Dr. Alfred Sommer, Dean, and other heads, Department of International Health, Johns Hopkins University, to discuss possibilities of further collaborative ventures between Aravind Centre for Women, Children and Community Health and Johns Hopkins. The discussions with Dr. Lenin Gross and Dr. Berry Smith, Head of Dreyfuss Foundation, strengthened co-operation between Aravind and Health Action by People.

Ongoing research projects

Aravind Eye Hospitals are involved in several research projects in collaboration with renowned universities and institutes. Research projects at Aravind focus on clinical and epidemiological aspects and service delivery. The wealth of clinical material at Aravind Eye Hospitals makes it a 'researcher's paradise.' At Aravind, research is viewed as a way of strengthening clinical practice and extensive community activities. Today, Aravind Medical Research Foundation is involved in various research projects using sophisticated data management procedures and investigational methodology. Realising that much of research publications have a western focus and that the findings cannot be readily transferred to the developing world, Aravind has evolved a need-based approach to research.

I Population based eye surveys

a. Aravind Comprehensive Eye Survey

Investigators: Mr. R.D. Thulasiraj, Dr. R. Ramakrishnan, Dr. R. Krishnadas
Collaborator: Johns Hopkins University, Baltimore, USA
Duration: Two years: 1997-1998

The study examines the pattern of eye diseases prevalent in Tirunelveli and Madurai districts in Tamil Nadu. Twenty-five villages each in Madurai and Tirunelveli were chosen for the purpose of the study. Hundred families in each village were chosen. Five thousand adults over 40 years were brought to Aravind Eye Hospitals for a detailed eye examination. Adults less than forty years were examined by an ophthalmic assistant and referred to Aravind Eye Hospitals in case of eye problems. The study is in data analysis stage.

b. Evaluation survey on cataract blindness under World Bank assisted cataract blindness control project

Investigator: Mr. R. D. Thulasiraj
Collaborator: Ministry of Health, Government of India, under the World Bank Project.
Duration: Seven months: August 1998 - February 1999

One of the main objectives of the National Programme for Control of Blindness is the reduction of cataract blindness. However, no scientific data is available to measure the impact of cataract intervention programmes in terms of surgical coverage, outcome and changes in prevalence rates. This survey is designed to address this need. The study is supported by the Ministry of Health, Government of India, under the World Bank Project.

II. Vitamin A Supplementation In Newborns (VASIN Study)

Investigator: Dr. Lakshmi Rahmathullah
Collaborator: Johns Hopkins University, School of Hygiene and Public Health, Baltimore, Maryland, USA
Duration: Three Years: 1998-2001

Endemic vitamin A deficiency is a leading cause of child mortality and morbidity in the developing countries. It is a major cause of childhood blindness and also increases the risk of acute respiratory infections and diarrhoeal diseases in children. Supplementation programmes in children six months to five years have dramatically improved survival, prevented blindness and reduced the duration and severity of infections. The VASIN study is a randomised, double masked, community-based clinical trial. It aims at studying whether administering vitamin A has similar impact on new borns.



Project Co-ordinator Ms. Sheela Devi, Project Managers Mr. Chris Coles and Mr. Manoharan with field supervisors

Six thousand new born infants from Karyapatty Block, Virudhunagar District and Natham Block, Dindigul District, will be randomised to receive vitamin A or a placebo. Infant mortality, morbidity and growth will be monitored through the first six months of life.

III. Glaucoma management

a. Glaucoma management under Indian conditions

Investigator: Dr. R. Krishnadas
Collaborator: Indian Council of Medical Research (ICMR)
Duration: Four years: December 1995- November 1999

This is part of a multicentric project to standardise management of glaucoma in India. All new patients diagnosed with glaucoma are recruited, appropriate therapy instituted and patients followed up at regular intervals to observe response to therapy or otherwise. Treatment is modified if it is found inadequate to control glaucoma or if the patient is non-compliant to therapy. The study has now been extended upto July '99. Six monthly reports are sent to ICMR periodically and annual meetings of chief investigators are held at Guru Nanak Eye Centre, New Delhi.

b. American Glaucoma Valves in intractable glaucomas

Investigators: Dr. R. Krishnadas, Dr. R. Ramakrishnan
Collaborators: Indian Council of Medical Research (ICMR)
Duration: To be completed in November 1998

The study aims to determine the safety and efficacy of American Glaucoma Valves (AGV) as a primary procedure in intractable glaucoma. AGV is one of the newer generation drainage devices in glaucoma. These are devices designed with pressure sensitive valves which are thought to reduce incidence of postoperative hypotony and shallow chambers. Thirteen eyes with neovascular or absolute glaucoma were implanted with AGV. In the investigators' experience, AGV implantation, like other implant devices had a high rate of complications like extrusion of implants.

c. Verapamil drug trial

Investigators: Dr. R. Ramakrishnan, Dr. R. Krishnadas
Collaborators: Alcon Pharmaceuticals, USA and Dr. Alan Robin, Baltimore
Duration: Eight months: March – October 1997.

The study aims at determining the efficacy of the calcium channel blocker, Verapamil, as an ocular hypotensive agent in a randomised, placebo controlled trial in 25 individuals with primary open angle glaucoma or ocular hypertension.

Findings: Verapamil, a calcium channel blocker, was seen to reduce visual field progression when administered systemically to individuals with normal pressure glaucoma. Topical Verapamil was observed to reduce IOP or increase optic nerve head blood flow in several studies. This study attempted to detect if topical Verapamil, when administered with a low dose Pilocarpine caused IOP lowering when compared to a placebo or Timolol.

The study assigned 25 individuals with newly diagnosed glaucoma and IOP > 21 in a randomised masked fashion to one of the three treatment arms. The trial found no statistically significant lowering of IOP in Verapamil treated eyes as compared to controls. Timolol caused maximum lowering of IOP.

d. Angiostatic steroid study

Investigators: Dr. R. Ramakrishnan, Dr. R. Krishnadas
Collaborators: Alcon Pharmaceuticals, USA and Dr. Alan Robin, Johns Hopkins, Baltimore, USA
Duration: One year: June 1997- June 1998

Angiostatic steroids have a potential application in treatment of cancers since these compounds act by inhibiting feeder blood vessels to multiplying cancer cells. Proliferation of blood vessels and fibrosis at the site of operation is a principal cause of failure of glaucoma surgery. This study, a randomised, double masked clinical trial was undertaken to detect whether topical application of angiostatic steroids after filtering operation can increase the success rate.

About 40 individuals with primary glaucomas undergoing filtering operations were included in the study. After a followup of six months, eyes treated with angiostatic steroids resulted in lower IOP and more successful filtering operations as compared to the placebo.

e. SITA visual fields study

Investigator: Dr. R. Krishnadas
Collaborator: Zeiss Humphrey's Inc.
Duration: Four months: November 1997-February 1998

The Swedish Interactive Thresholding Algorithm (SITA), a new threshold programme to study visual fields in individuals with glaucoma, has been developed by Heijl's team for Zeiss Humphrey's Inc.

SITA is a threshold-related strategy that has been specifically developed to reduce visual field testing time, to reduce patient fatigue, without compromising the sensitivity or specificity of the older threshold strategies of Humphrey's VFA. Forty-eight individuals with established glaucoma were studied and compared with the existing visual field programmes. The SITA threshold was found to be as specific and sensitive as the older threshold-related field strategies, with the added advantage of reduced testing time. The new SITA software A-9 has since been released by Zeiss Co.

f. Frequency Doubling Perimetry (FDT) in glaucoma screening

Investigators: Dr. R. Ramakrishnan and Dr. R. Krishnadas
Collaborators: Humphrey Instruments USA, Dr. Alan Robin and Dr. Yochanan Burnstein, University of Maryland, USA.
Duration: Four months: January - April 1998

FDT is a quick, new tool to detect field defects attributable to glaucoma. Over 1000 patients attending Aravind's general outpatient clinic were subjected to FDT and a complete ophthalmological evaluation to detect sensitivity and specificity of this technique as a glaucoma screening tool. The results are under analysis.

IV Role of antioxidants in cataract formation

Investigator: Dr. M. Srinivasan
Collaborator: Proctor Foundation, San Francisco, USA
Duration: Three years: 1998-2001

The study, a double masked, randomised, community based clinical trial, seeks to determine the role of antioxidants in cataract formation. Eight hundred people between 35-50 years of age from six villages around Madurai have been chosen to receive three doses of antioxidants (vitamins A, E and C) or placebos three times a week to determine their role in arresting or delaying the development of cataract.

V Research in ophthalmogenetics

The research focus of ophthalmogenetics at Aravind-Madurai includes molecular genetics, molecular cytogenetics, and clinical aspects of cytogenetics. Genetics research offers an exciting opportunity to get a better insight into eye diseases. This translates into more effective preventive counselling, better care and treatment for the patient.

By identifying a disease at the molecular level before it manifests itself clinically, ophthalmogenetics research facilitates rapid and accurate diagnosis. Understanding the pathophysiology of the disease at the molecular level, makes it possible to apply more specific conventional treatment such as drugs, surgery and nutrition to the affected individual.

a. Molecular genetics of inherited eye diseases (Project I)

Investigators: Dr. P. Namperumalsamy, Dr. P. Vijayalakshmi, Dr. M. Srinivasan, Dr. R. Krishnadas, Dr. Radha Saraswathy
Collaborator: Dr. Edwin M. Stone, University of Iowa, USA.
Duration: Three years: 1998-2000

Patients with heritable eye diseases like Leber's congenital amaurosis and glaucoma are studied using chromosome linkage analysis and candidate gene screening in an attempt to map new disease-causing genes and find mutations in suspected disease-causing genes. Molecular analysis is done using DNA blood samples from each patient.



Dr. Radha Saraswathy in the Genetics laboratory

b. Molecular genetics of inherited eye diseases – (Project II: Retinitis pigmentosa)

Investigators: Dr. P. Namperumalsamy, Dr. P. Vijayalakshmi, Dr. M. Srinivasan,
Dr. P. Ravichandran, Dr. Radha Saraswathy

Collaborator: Dr. James Fielding Hejmancik, National Eye Institute, Bethesda, USA

Retinitis pigmentosa samples will be screened for mutations in the disease causing genes using linkage analysis approach.

c. Genetic analysis in primary congenital glaucoma

Investigators: Dr. R. Ramakrishnan, Dr. R. Krishnadas, Dr. P. Vijayalakshmi, Dr. Radha Saraswathy

Collaborator: Department of Ophthalmology, Iowa University, USA

The study aims at determining DNA and linkage analysis in families of children with primary congenital glaucoma and identifying specific loci for glaucoma. A new locus for primary congenital glaucoma has been identified by Iowa collaborators and publication is being awaited.

VI Research in uveitis



*Dr. Rathinam Sivakumar and
Ms. Gowri Priya in the leptospirosis
laboratory*

Uveitis is a complicated internal ocular inflammatory disorder where the aetiological breakup is completely different in different geographical regions due to genetic, environmental, economic/occupational and demographic factors.

Infectious uveitis is more common in developing countries due to poor hygiene, poor nutrition and lack of immunity. Aravind Eye Hospitals serves a large segment of population suffering from leptospirosis, a waterborne bacterial disease. The following are the uveitis related research projects currently underway.

a. Analysis of risk factors, course and outcome of leptospiral uveitis in South India

Investigators: Dr. Rathinam Sivakumar, Dr. P. Namperumalsamy

Collaborators: Royal Tropical Institute, Netherlands, and Netherlands Ophthalmological Research Institute.

b. Epidemiological study of uveitis cases in South India

Investigators: Dr. Rathinam Sivakumar, Dr. P. Namperumalsamy

Collaborator: Proctor Foundation, San Francisco, USA.

c. Evaluation of Polymerase Chain Reaction (PCR) in ocular tuberculosis

Investigators: Dr. Rathinam Sivakumar, Dr. P. Namperumalsamy

Collaborator: Indian Council of Medical Research (ICMR)

d. Polymerase Chain Reaction (PCR) for leprosy in patients with Hansen's uveitis.

Investigators: Dr. Rathinam Sivakumar, Dr. P. Namperumalsamy

Collaborator: Royal Tropical Institute, Amsterdam, Netherlands

VII Development and Testing of Indian Visual Function assessment Questionnaire (Ind-VFQ)

Investigator: Dr. G. Venkataswamy

Collaborator: A multicentric study

Duration: Three years: 1998-2001

The purpose of all clinical interventions is to improve the quality of life of the individual. In eye care, this is done through improving vision function. However, there is no reliable way of measuring these two parameters. The aim of this research study is to develop a set of questions and a process to measure quality of life and vision function in the Indian setting. This is a multicentric study in which Aravind-LAICO is one of the three centres. The study will be carried out at Aravind Eye Hospital, Theni.

Aurolab

The advent of intraocular lens (IOL) with its benefit of better vision following cataract surgery was a breakthrough in ophthalmic surgery. The high cost of IOLs, however, was a barrier in making it available to all patients in developing countries. Aravind Eye Hospitals responded to this challenge by establishing Aurolab – its in-house manufacturing unit. Instituted in 1991, Aurolab is an independent, non-profit charitable trust.

Its mission: To develop appropriate technology to produce high quality instrumentation, equipment and supplies for eye care providers at prices affordable by developing economies.



Pharmaceutical production

Into its seventh year of operation, Aurolab has made significant progress in several areas in 1998. This year, major developments include:

- Increased production and sale of IOLs
- CE mark certification for IOLs initiated
- Spectacle lens fabrication facility
- Suture needle manufacture
- Pharmaceutical production
- Low vision aids development project formulated

Intraocular lens division

Aurolab's state-of-the-art IOL division manufactures high quality IOLs – three piece (posterior chamber and anterior chamber) lens and single piece lens. Aurolab IOLs are exported to many developing countries. Since 1992, nearly a million Aurolab lenses have been used world wide.

Production and sales of IOLs registered a 40 percent increase over the previous year. Nearly 75 percent of the lenses produced during the year were supplied to non-profit eye care programmes. Currently, Aurolab lenses are used in eighty-five countries, spanning all continents.

A testimonial to Aurolab's impeccable standards of excellence is the prestigious ISO 9001 certification for quality systems. This year, the IOL division initiated efforts to obtain the CE mark product certification that is mandatory for sale in European Community (EC) countries. The required documentation has been submitted to the Danish certifying agency and the certification audit will be completed early next year.

The additional single piece lens production equipment commissioned during the beginning of the year was fully utilised to meet the increasing demand for single piece lenses. The IOL division's expansion plans include manufacture of negative power lenses and foldable lenses.



Mr. R.D. Sriram, Operations Manager, Aurolab, explaining the features of Aurolab's ophthalmic suture needles to Dr. P. Vijayalakshmi

Suture needle division

Aurolab's suture needle division is a major project commissioned in January 1998. The venture is part of Aurolab's mission to further lower the cost of IOL surgery by manufacturing and supplying suture needles at affordable costs. The following organisations actively participated in making this venture a reality: Seva Foundation, USA; Sight Savers International, UK; CBM International, Germany; Seva Service Society, Canada; Al-Noor Foundation, Saudi Arabia; and CIDA, Canada. A European technology partner supplied the equipment and process expertise for the facility.



Dr. P. Balakrishnan with Ms. Mary Ann Lang and Ms. Catherine Czeto of Lighthouse Inc., New York

Visits abroad

Dr. P. Balakrishnan, Director, Aurolab, visited Germany and the US in November-December.

At Cologne, Germany, he visited The Optica International Trade Fair for Ophthalmic Optics from November 6-9.

At the American Academy of Ophthalmology (AAO) meeting in New Orleans, USA, he attended the session on *Development in ophthalmic instruments and equipment*.

At the Seva Board meeting at Berkeley, San Francisco, he discussed progress in Aurolab's new suture marketing initiatives.

At Syracuse, Boston and Rhode Island, he visited companies manufacturing suture threads and suture needles. In New York, he had discussions on low vision aids with officials of LightHouse Inc.

The division produces atraumatic spatulated ophthalmic needles using 0.15mm and 0.2 mm diameter wire attached to suture threads of 10-O nylon, 9-O nylon or 8-O silk. Controlled clinical trials at Aravind Eye Hospitals established conclusively the safety and efficacy of the suture needles. The needles were also supplied to select surgeons in India and other countries for performance feedback. Aurolab needles rated high on quality and performance. The results of a double masked, randomised clinical trial at Aravind comparing the performance of Aurolab suture needles with a well-known brand from a US-based company established conclusively that the performance of Aurolab needles were on par with the US brand.

Aurolab suture needles are now used by Aravind Eye Hospitals and several eye care programmes in India and abroad. In a short span of four months, the order booking has reached a level of 70 percent of maximum production capacity.

Pharmaceutical division

Aurolab's pharmaceutical division manufactures high quality eye care pharmaceuticals at affordable prices; thereby further minimising the cost of ophthalmic surgery.

Established with expertise provided by Moorefields Eye Hospital, London, Aurolab's modern pharmaceutical formulation division produces a wide range of ophthalmic pharmaceuticals to primarily meet the needs of Aravind Eye Hospitals. The range of products include: viscoelastic HPMC, chloramphenicol, tropicamide, gentamicin, timolol, prednisolone sodium phosphate, prednisolone acetate, sodium chromoglycate, homotrophine, cyclopentolate, and silicone oil. An increased demand for viscoelastic from other eye care providers led to Aurolab increasing its production and supplying it to non-profit users in India and other countries.

Spectacle lens division

Aravind Eye Hospitals' in house optical shops cater to the needs of a large number of its patients. However, the production facility and methods used for surfacing and edging the spectacle lenses were found inadequate to meet increasing customer demand for quick service, better quality and light-weight plastic lenses. Aurolab responded to this need by establishing its spectacle lens division to primarily meet the needs of the Aravind optical shops. The plant is designed to produce prescription plastic lenses and fit them to spectacle frames. It also provides students undergoing training programmes in refraction and optometry at Aravind an exposure to modern spectacle lens production techniques. Regular production is slated to begin in early 1999.

Low vision aids

The presently available low vision aids using the glass spherical spectacle lenses have a limited patient acceptance. This is because of high image distortions due to aberrations in these spherical lenses at high power.

Plastic lenses with aspheric surfaces are commonly used for low vision aids. The technology to manufacture plastic aspheric lenses however seems to be proprietary and not readily available. The focus of Aurolab's development effort is the pilot production of plastic aspheric lenses and development of training programmes on low vision care for eye care professionals.

Partners in Service

Aravind gratefully acknowledges the unstinting support of friends and organisations throughout the world in its crusade against needless blindness. Their supportive assistance by way of human resources, technical support and donations in kind are invaluable. Aravind looks forward to a strengthened association towards realising its dream of a better vision for all in the twenty-first century.

For service delivery, human resource and other developmental activities

- Allied Dunbar Trust, Swindon, UK
- Canadian International Development Agency (CIDA)
- CBM International, Benshiem, Germany
- International Eye Foundation, Bethesda, USA
- International Federation of Eye Banks, Baltimore, USA
- Kuppusamy Naidu Hospital, Coimbatore, India
- Lakshmi Mills, Coimbatore, India
- Lions International, Oakbrook, Illinois, USA
- Rotary International, Maryland, USA
- Seva Foundation, Berkeley, USA
- Seva Service Society, Vancouver, Canada
- Sight Savers International, Haywards Heath, UK
- State Bank of India, ADB Branch, Madurai, India

For research

- Alcon Pharmaceuticals, Fortworth, Texas, USA
- Department of Ophthalmology, University of Iowa, Iowa, USA
- Humphrey Instruments, Berkeley, USA
- Indian Council of Medical Research (ICMR), New Delhi, India
- Johns Hopkins University, School of Hygiene and Public Health, Baltimore, USA
- London School of Hygiene and Tropical Medicine, UK
- National Eye Institute, Bethesda, USA
- Netherlands Ophthalmological Research Institute, Amsterdam, Netherlands
- Proctor Foundation, San Francisco, USA
- Royal Tropical Institute, Amsterdam, Netherlands,
- University of Maryland, Baltimore, USA

Volunteers

For research

- Mr. Noah S. Butler, University of Iowa, USA, to provide technical know-how for establishing the Genetics Research Laboratory at Aravind-Madurai.
- Dr. Alan Robin, Johns Hopkins University, USA, investigator of several glaucoma research projects to review the projects.
- Dr. James M. Tielsch, Johns Hopkins



Dr. James M. Tielsch with Block Officer Mr. Victor at Karyapatti Block Office

University, USA, Principal Investigator, VASIN project, made several visits during the year to review and guide the staff of the VASIN project.

- Dr. Joanne Katz, Johns Hopkins University, USA, for the VASIN project.
- Dr. Chris Coles, Johns Hopkins School of Hygiene and Public Health, USA, is at Aravind as the Co-project Manager, VASIN project.
- Dr. Mathuram Santhosam, Johns Hopkins University, USA, vitamin A project
- Mr. Michael Chung, USA (Project Study)
- Dr. John Witcher, Proctor Foundation San Francisco, USA – Antioxidant study
- Dr. Tom Lietman, Proctor Foundation, USA – Antioxidant study
- Dr. David Gritz, Saudi Arabia – Antioxidant study
- Dr. John Wilkins, Proctor Foundation, USA – Antioxidant study
- Dr. Yochanan Burnstein, Glaucoma Fellow, Wilmer Eye Institute, Johns Hopkins University, USA, for the (Frequency Doubling Technology) FDT study
- Dr. David Friedman, Wilmer Eye Institute, Johns Hopkins University, for the Aravind Comprehensive Eye Survey Programme
- Ms. Camille Hylton, medical student, USA (Glaucoma-Genetic project study)
- Dr. W. Terpstra, Director, Leptospirosis Reference Laboratory, Royal Tropical Institute, Netherlands

For CME programmes

- Dr. Alvan Balent and Dr. Linda Civerchia, Florida, USA
- Dr. John Witcher, Proctor Foundation, San Francisco, USA
- Dr. Robert Nozik, Proctor Foundation, San Francisco, USA

- Dr. Emmett Cunningham, Proctor Foundation, San Francisco, USA
- Dr. Marilyn T. Miller, Paediatric Ophthalmology, University of Illinois, USA
- Dr. Sherwin J. Isenberg, M.D., Professor of Ophthalmology and Paediatrics, Jules Stein Eye Institute, USA
- Dr. Pradeep Sharma, AIIMS, New Delhi
- Dr. K. Ravishankar, Sankara Nethrayala, Chennai

Resource persons for staff and organisational development

- Dr. David Green and Mr. Rolf Spingler provided an impetus for the ophthalmic suture project at Aurolab. Mr. Roland Jungbauer and Ms. Gaby Jungbauer trained Aurolab staff in the technical aspects of suture needle production.
- Prof. Fred Munson, Ann Arbor, USA. A regular visitor since 1991, Prof. Munson ran a three-day retreat in Pondicherry for senior staff of Aravind and followed up several sessions at the hospital during his one-month stay. He was accompanied by his wife Mary Munson who contributed towards improving the aesthetics of the hospital.
- Mr. D. Nagarajan, Former Director, Sight Savers International, Mumbai, came several times during the year as resource person for workshops in eye care delivery.
- Mr. Nathan Munson, social worker and counsellor from Montana, USA, was at Aravind-Madurai to upgrade the patient counselling services which he had initiated during his earlier visit. He also helped in developing a curriculum for the patient counselling course that LAICO plans to offer.
- Ms. Julie Johnston, Seva Volunteer, Canada, to develop and co-ordinate the various modules for the Quality Cataract Series.
- Ms. Christie Coffin, Seva Volunteer, USA, was at LAICO to work on the architectural design module for the Quality Cataract Series.
- Mr. Hal Holt, Seva Volunteer, Canada, to share his expertise in Human Resources with the Human Resources Department at LAICO.
- Mr. Tom Wilmore, Seva Volunteer, USA, to review the E-mail communications system that he helped set up during his earlier visits. His wife Ms. Linda Magee and Mr. Francis Lux helped in preparing the LAICO brochure.



Dr. M. Srinivasan, Dr. Bill Stewart, Dr. David Vastine and Dr. Usha Kim in the OT



Prof. Karl Heinrich Velhagen with Dr. S.R. Mamtha in the Retina clinic

- Dr. Bill Stewart was at Aravind to demonstrate the latest techniques in oculoplasty. He chaired the orbit and oculoplasty symposium presented by Aravind post-graduate students.
- Dr. David Vastine worked with the cornea department on advanced surgical procedures.
- Ms. Claudia Koenig, Mr. Dennis Joseph, organised vision building workshops for CBM partnered hospitals.
- Mr. Hans Zchwesper, CBM International, Resource Person, vision building workshops.



Dr. Alfred Sommer addressing Aravind doctors

- Dr. Alfred Sommer, Dean, School of Public Health, Johns Hopkins University, USA, visited Aravind-Madurai. He got an appraisal of the status of Aravind-Johns Hopkins collaborative projects. He also spoke to Aravind staff on public health and medicine, vitamin A and glaucoma.
- Prof. Karl Heinrich Velhagen, Charite – Universitätsklinik, Berlin, worked with the retina department.
- Dr. Lazar Mathew, Director and

Shri. P.S. Arputhasamy, Senior Scientist, DEBEL, Bangalore

- Mr. Mohmood Farazdaghi, Administrative and Technical Director, International Federation of Eye Banks (IFEB), USA
- Mr. James Leimkuhler, Senior Vice President, International Federation of Eye Banks (IFEB), USA
- Rtn. PDG. Robert Ketron, Rotary International, USA
- Prof. A. Rajasekaran, President, National Board of Examinations, New Delhi

Allied Dunbar, UK

- Mr. Steve Huxtable, conducted a two-day workshop on team building for students of Postgraduate Diploma in Hospital Administration.
- Dr. Martin Spencer, worked with the Human Resources Department on Human Resources and Organisation Development.
- Ms. Carey Gray conducted a three-day workshop on project management for local NGOs.
- Helen Duffy initiated a structured process for quality management.
- Ms. Linda Perry and Darren O'Connor to periodically review the LAICO-Allied Dunbar partnership and the activities under it.

Seva Foundation, USA

- Dr. Suzanne Gilbert, Director, Sight Programs, Seva Foundation
- Mr. Tom and Alvita Veit
- Ms. Amy Sherts
- Dr. Girija Brilliant
- Mr. Hans Schopflein
- Ms. Dechen Tsering
- Dr. Larry Brilliant

Seva Service Society, Canada

- Ms. Barbara Hannah Txi

Lions International

- Ln. E. James Erwin, Second Vice President, Lions International, USA
- Mr. Michael Pajonk, Manager, SightFirst Programme, USA

Sight Savers International

- Ms. Alice Crasto, South East Asia Regional Director, was here as resource person for the vision building workshop for Sight Savers supported eye hospitals.
- Mr. Adrian Poffley, Administration and Finance Director, Mr. Mark Thomson,

Mr. Philip Hoare, Purchasing and Funding Officer, Overseas Programme Department, and Mr. T.P. Dastur, Auditors, Sight Savers International, Mumbai, visited Aravind-Theni and also observed CBR activities.



Ms. Paula Seager and Mr. Mark Tully with Dr. G. Venkataswamy

- Ms. Paula Seager, Manager Communications; Mr. Richard Walsh, Manager, Direct Marketing; Mr. Godbole from Sight Savers India office; camera crew Ms. Sally Murcott and Mr. Peter Rance; photo journalists Mr. Tom Stoddart and Ms. Felicia Webb; and Mr. Mark Tully, freelance broadcaster, visited Aravind-Madurai and Aravind-Theni to film hospital activities and the comprehensive eye care services. The film commemorates the fiftieth anniversary of Sight Savers International.

Other Volunteers

- Mr. Jeff Ceaser, Photographer, Seva Volunteer, USA
- Ms. Eileen Hohmuth-Lemonick, Photographer, USA
- Ms. Carol Ann Raphael, Seva Volunteer, USA

Visitors

- Prof. Mohan Menon, Chairman, National Open School, New Delhi
- Dr. Ranga Reddy, Director, Sarojini Devi Hospital, Hyderabad
- Mr. Robin Sharp, Research Director, The Right Livelihood Award, London
- Dr. Alan Auzemery, Head of the WHO Collaborating Centre and Dr. Ducousso, Head of Training, Institute of African Tropical Ophthalmology, Bamako-Mali
- Mr. Claes Broms, Chief Advisor, Dr. Arbind Sinha, Communications Advisor, Mr. K. Vaidyanathan, Senior Advisor, DANPCB, New Delhi

- Ms. Pina Taromina, Executive Director, Ms. Jilly Stevens and Dr. Adam Zayan, ORBIS, USA.
- Dr. Arun Muttreja, Voluntary Service Overseas
- Dr. Ales Tilen, Switzerland and Mr. Arun Kumar, Indian businessman
- Dr. A.K. Chakravarthy, Executive in charge, Indian Statistical Institute, Chennai
- Mr. Peter Watson, FRCS, FRCOphth., Cambridge, UK
- Dr. Sajjad Halder, Shifa International Hospital, Islamabad, Pakistan
- Dr. Sarfraz Khan, Director of Low Vision Aids Services, L.V.Prasad, Hyderabad

Honours and Accolades



Dr. P. Namperumalsamy being conferred the Best Teacher Award



Dr. R. Ramakrishnan receives a medal for the best video presentation



Dr. G. Venkataswamy felicitated at the Centenary Celebrations of the Minto Ophthalmic Hospital, Bangalore

Staff of Aravind once again won awards this year – a source of pride for Aravind and a tribute to the quality and commitment of the awardees. The awards, in recognition of meritorious service to social causes and academic pursuits, are a testament to an ongoing search for excellence that distinguishes these individuals.

- Dr. G. Venkataswamy, Chairman, Aravind Eye Hospitals and Lions Aravind Institute of Community Ophthalmology, has been conferred the Diwaliben Mohanlal Mehta Award for his dedicated service towards the cause of blindness prevention.

- Dr. P. Namperumalsamy, Director, Aravind Eye Hospitals, was conferred the Padma Bhushan Dr. P. Siva Reddy Endowment Best Teacher Award by the Andhra Pradesh Academy of Sciences on September 12 at Hyderabad.

- Dr. R. Ramakrishnan, Chief Medical Officer, Aravind-Tirunelveli, was conferred the prestigious 'For the Sake of Honour' award by the Rotary Club of Tirunelveli West on May 16. The award recognises his contribution to blindness prevention in Tirunelveli District. Aravind doctors have won the award for the third time in a row. Last year, the recipients were Dr. G. Natchiar and Dr. R.D. Ravindran.

- Dr. R. Ramakrishnan won a medal for the best video presentation – Scleral fixation of posterior chamber IOL in congenital ectropion at the Southern Regional Ophthalmic Conference and Forty-sixth Tamil Nadu Ophthalmic Association Conference, Chennai.

- Dr. R.D. Ravindran, Chief Medical Officer, Aravind-Coimbatore, was chosen President, Coimbatore Ophthalmologists Association.



Dr. R. D. Ravindran

Aravind Eye Hospitals

& Postgraduate Institute of Ophthalmology

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Dr. P.N. Suresh, MS

Dr. Avindra Gupta, MS

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Dr. Prasanna Purelekar, MS

Dr. Ravi Gandhewar, MS

Dr. Sukesh Tandon, MS

Dr. Charu Gupta, MS

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Dr. Manas Kumar Ghosh, MS

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Dr. Vibha Gupta, MS

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Dr. Rani Jacob, MS

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Dr. K. Thiruvengada krishnan, DO

Dr. A. Saraswati, DO

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Dr. Zubhair, MS

Neuro-Ophthalmology Clinic

Chief: Dr. G. Natchiar, MS

Neurosurgeon: Dr. P. Subburam, MCh

Cornea Clinic

Chief: Dr. M. Srinivasan, MS

Medical Officer:

Dr. N.V. Prajna, Dip.NB

Fellows:

Dr. Sangita Prasad, MS

Dr. Seema Mehta, MS

Paediatric Ophthalmology & Strabismus Clinic

Contact Lens Clinic

Chief: Dr. P. Vijayalakshmi, MS

Medical Officer:

Dr. Kuldeep Kumar Srivastava, MS

Fellows:

Dr. Puneet Johri, MS

Dr. Meenakshi Sharma, MS

Dr. S. Vasantha, MS

Glaucoma Clinic

Chief: Dr. R. Krishnadas, Dip.NB

Medical Officer:

Dr. K. Manjula, Dip.NB

Orbit & Oculoplasty Clinic

Chief: Dr. K.Usha, Dip.NB

Fellow:

Dr. Maneesh Kumar, MS

Uvea Clinic

Chief: Dr. Rathinam Sivakumar, Dip.NB

Free Hospital: Dr. P. Ravichandran, DO

Physician: Dr. Banu Shree, MD

Geneticist: Dr. Radha Saraswathy, Ph.D

Aravind-Coimbatore

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Dr. R.D. Ravindran, MS

Medical Officers:

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Dr. S. Kalpana, Dip.NB

Dr. R. Revathi, MS

Dr. P. Sathyan, Dip.NB

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Dr. R. Sudha, DO

Dr. Anitha Raghavan, DO

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Dr. Anand M. Rathi, MS

Dr. T. Rama Krishna, MS

Dr. Mohan Krishnan, MS

Dr. Siju C. Cheeran, MS

Aravind - Tirunelveli

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Dr.R. Ramakrishnan, MS

Medical Officers:

Dr. A. Anup Chirayath, Dip.NB

Dr. Walimbe Prasad, Dip.NB

Dr. Sanjay Sharma, MS

Dr. V.S. Venkat Raghavan, MS

Dr. V.V. Ravichandran, MS

Dr. Isai Murthy, Dip.NB

Dr. Vijay K. Ahuja, DO

Dr. K. Prabhakar, MS

Fellows:

Dr. Pankajadhoble, MS

Dr. Praveenkumar Reddy

Dr. Prajakta B.Thakur, MS

Aravind - Theni

Chief Medical Officer:

Dr. D. Datta, Dip.NB

Lions Aravind Institute of Community Ophthalmology

Chairman:

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Director:

Dr. P. Namperumalsamy, MS

Executive Director:

Mr. R.D. Thulasiraj, MBA

Grant Administrator:

Ln. N.A.K. Gopalakrishnaraja, MJF

Institute Faculty:

Mr. A.K. Sivakumar, MHM

Dr. K.V. Santha, MBBS, BSSc.

Prof. A.V. Sadanand, MA, M.Phil.

Prof. V. Srinivasan, MS (Physics)

Prof. N. Sukumaran, B.Sc., DRO

Junior Faculty:

Mr. S. Saravanan, MHM

R. Vidhya Lakshmi, M.A., MHM

R. Muralikrishnan, MHM

P. Kothai, MSW, M.Phil.

Aravind Children's Hospital

Director:

Dr. Lakshmi Rahmathullah, DTPH

Medical Officer:

Dr. M.S. Paulraj, MBBS

Aurolab

Trust President:

Dr. G. Venkataswamy, MS, FACS

Trust Secretary:

Mr. G. Srinivasan, BE, MS

Managing Director:

Dr. P. Balakrishnan, BE, Ph.D

Manager (Operations):

Mr. R.D. Sriram, BE

Marketing Manager:

Mr. R.V. Duraiswamy, BE

Aravind Eye Hospitals

& Postgraduate Institute of Ophthalmology

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Aravind Eye Hospitals

& Postgraduate Institute of Ophthalmology



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