
ARAVIND: ACTIVITY REPORT 1994



Aravind Eye Hospitals

Aravind Children's Hospital

Aurolab

Lions Aravind Institute of Community
Ophthalmology

Front Cover:

A happy child with her mother after surgery for congenital cataract. (One of the children involved in the childhood cataract study underway at Aravind)

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The light has come, the road has opened; with a grateful bow to the laborious past, we shall move swiftly forward on the new way opened wide by Thee before us.

On the threshold of this new field of a vaster and more conscious realisation, we bow before Thee, O Lord, in an integral surrender and adoration.

The Mother



Sri Aurobindo (1872-1950), after whom the hospital is named was an Indian patriot, poet, philosopher and mystic who lived in service to God and man. The hospital is founded on this principle – and continues to be guided by it.

Planning is recognised as an integral activity in running any organisation. However, a deeper understanding of the process of planning is critical to preserving the vitality and core mission of the organisation. Quite often, planning is a ritualistic and bureaucratic exercise that gets done at specified time-intervals and this plan determines and defines what the organisation should achieve or do during the plan's time-frame. Such plans and the underlying process tend to bring in a certain amount of rigidity and inflexibility, making the organisation closed to new opportunities and challenges. Such opportunities are often interpreted as hindrances or problems that come in the way of meeting their plan objectives. Lack of trained manpower is viewed as a constraint and not as an opportunity for training. Heavy patient loads often lead to development of systems that regulate the flow rather than refining the delivery systems to greater efficiency or increasing the capacity. Operational problems and crises are viewed as a nuisance and not as opportunities for developing management skills in the staff. Planning process is important in translating new opportunities and a vision into a series of time-bound action strategies. Lack of this understanding often leads to stifling the vision process.

A few years ago, there was a great deal of debate about the use of intraocular lenses in cataract surgery. The debate was not about the merits of using intraocular lenses but its relevance to developing countries. While the consensus was that it was a better procedure, it was argued that developing countries shouldn't go in for it as the IOLs were expensive, the surgeons didn't have the necessary training and all this would result in less surgery being done. To Aravind, this presented an opportunity. It presented a challenge of bringing recent advances in cataract surgery to India at a cost affordable by the common man. It presented an opportunity for upgrading the surgical skills of ophthalmologists. Taking on this challenge, led to the establishment of Aurolab which now produces high quality IOLs and makes them available to eye care programmes in India and 40 other countries at a small fraction of the price of imported IOLs. An intense short-term course in microsurgery started in 1993, with support from Sight Savers, now trains more than 100 ophthalmologists a year, in IOL surgery. The number of cataract surgeries went up from 54,000 in 1993 to over 65,000 in 1994.

Padmashree

Dr. G. Venkataswamy has served the people of his native state, Tamil Nadu, for more than 40 years. In 1976, he retired from government service and founded Aravind to continue his mission of eradicating needless blindness.

Under his guidance, Aravind has evolved to become more than an eye hospital. It is a social organisation committed to its goal of eliminating needless blindness ; an international training centre for ophthalmic professionals and trainees who come from within India and around the world and an institute contributing to the development of eye care in India through research ranging from understanding patient-needs to seeking better treatment for eye diseases.

Since 1978, Aravind has handled 5,608,466 out-patient visits and performed 507,343 surgeries.



The patients seem to be coming earlier for surgery offering us an opportunity for preventing blindness due to cataract through early intervention. It is this spirit of working, recognising an opportunity in every problem, that has led to the rapid development of Aravind.

Milestones

- *The construction of a 50,000 sq. ft building that will house the Lions Aravind Institute of Community Ophthalmology has begun.*
- *The Royal College of Ophthalmology, UK has recognised Aravind as a centre for its Fellowship training.*
- *Another skills development course to train ophthalmologists in Indirect ophthalmoscopy was started with Sight Savers' support.*
- *A special course for training trainers in IOL surgery is underway and this will train 12 faculty members each year in IOL surgery. Two hostels have been built to house all these trainees.*
- *Construction of Aravind's fourth hospital at Coimbatore has commenced.*
- *Aurolab has increased its production capacity by adding new technology to produce single piece PC and AC IOLs.*

1994 has been a year of rapid development at Aravind and it is a reflection of it being open to new opportunities and constantly being innovative.

Performance

Aravind Eye Hospitals Statistics - 1994



*Senior Refractionist
Muthuramalingam with a
patient*

		Madurai	Tirunelveli	Theni	Total
Out-patient visits	- Paying	227,352	66,487	23,467	317,306
	- Free	278,961	99,134	21,853	399,948
Surgery	- Paying	26,126	5,039	918	32,083
	- Free	37,642	9,935	2,055	49,632

Hospital out-patients visits	357,582	109,339	33,322	500,243
Eye Camp out-patients visits	148,731	56,282	11,998	217,011
Total out-patients visits	506,313	165,621	45,320	717,254
Screening camps	479	325	72	876

Surgery Details

Cataract & other lens removal procedures (without IOL)	22,529	4,823	1,610	28,962
IOL Implantation	28,752	6,532	1,003	36,287
Trabeculectomy	990	112	8	1,110
Retinal Detachment	582	42	0	624
Vitreous Surgery	381	8	4	393
Membranectomy	65	5	0	70
Squint Correction	329	92	0	421
Keratoplasty & Therapeutic Graft	155	0	0	155
Ptosis	68	21	0	89
DCT, DCR & other Septic Operations	2,794	1,162	229	4,185
Pterygium	315	224	29	568
Laser & Xenon Photocoagulation	2,228	876	0	3,104
Nd. Yag Iridectomy	1,012	200	0	1,212
Nd. Yag Capsulectomy	1,679	442	0	2,121
Argon Laser Trabeculoplasty	31	50	0	81
Others	1,858	385	90	2,333
Total	63,768	14,974	2,973	81,715

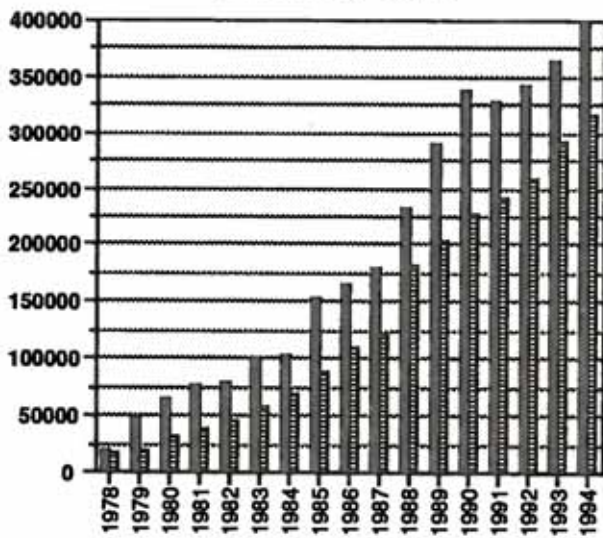


Dr. G. Venkataswamy with Dr. G. Natchiar

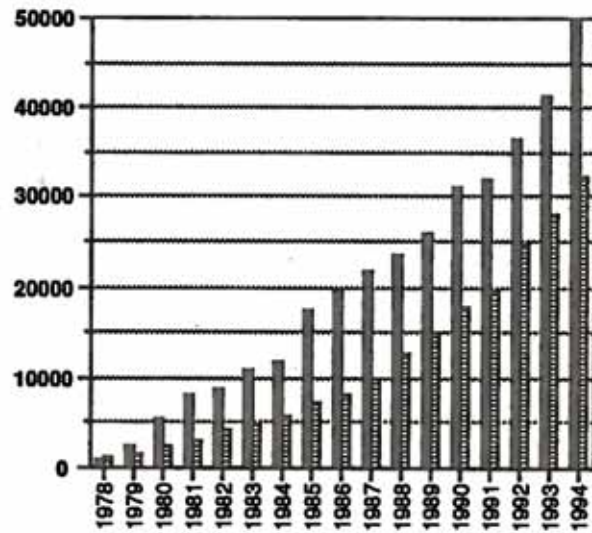
Aravind Eye Hospitals - Statistics: 1978-94

■ Free □ Paying

Out-Patient Visits



Surgeries



Nurses Padma and Ramadevi examining a child in the Paediatric Ophthalmology clinic



Nurse Sumathy measuring intraocular pressure

Aravind Facilities

Aravind-Madurai

Paying Section

Aravind-Madurai Paying Section can accommodate 325 in-patients and has 7 operating theatres.

Average out-patient visits per day : 758

Average surgeries per day : 87

Speciality Clinics

- Retina and Vitreous Clinic
- Cornea Clinic
- Paediatric Ophthalmology and Strabismus Clinic
- Glaucoma Clinic
- Intraocular Lens / Cataract Clinic
- Neuro-ophthalmology Clinic
- Orbit and Oculoplasty Clinic
- Contact Lens Clinic
- Uvea Clinic



Dr. P. Namperumalsamy in the Retina clinic



Dr. R. Ramakrishnan and Dr. R. Krishnadas in the Glaucoma clinic



Dr. Rathinam Sivakumar in the Uvea clinic



Dr. P. Vijayalakshmi in the Paediatric Ophthalmology clinic



Nurse Prema counselling a patient



Dr. P. Ravichandran at the free hospital

Support Facilities

- Ocular Microbiology and Pathology Laboratory
- Biochemistry Laboratory
- Radiology Department
- Library and Resource Centre
- Workshop for maintenance of surgical instruments and other equipment
- Patient Counselling

Free Section

Two-thirds of Aravind's services are done free of cost through the free hospital and free eye camps. Aravind-Free section at Madurai can accommodate 600 in-patients. It has four operating theatres.

The free hospital is largely staffed on a rotation basis, with doctors and nurses from the main hospital to ensure that all patients, non-paying as well as paying, receive the same high quality eye care.

Free Section & Camps:

Average out-patient visits per day	: 930
Average surgeries per day	: 125

Aravind-Tirunelveli



Dr. R. D. Ravindran examining a patient

Situated on the banks of the river Tamarabarani, the hospital has a serene and peaceful character. In the seven years since its inception, the hospital has built up a good reputation and has truly become a community hospital. Several of the community social workers consider this as their own institution and have initiated and run several activities ranging from screening school children to regular monthly eye camps. Periodically, these community workers meet with the hospital community outreach staff to review the work done and identify new opportunities to serve. Vivekananda Kendra with its network of social workers and preschool teachers, has been a steady partner in the community outreach work.

The hospital has in-patient facilities for:

200 Paying patients

200 Free patients

4 Operation Theatres

Paying, Free Section and
Camps:

Average out-patient
visits per day : 552

Average surgeries
per day : 50

There has also been substantial growth in the clinical work. In 1994, the hospital performed about 15,000 surgeries. A fullfledged Retina & Vitreous department is functioning with sophisticated equipment such as laser and ultrasound. Other speciality clinics are being added to provide comprehensive eye-care services.

In recent years, it has been recognised as a training centre by the Medical Council of India and the National Board of Examinations. In addition, two practising ophthalmologists are enrolled each month for intensive training in IOL microsurgery. This course is supported by Sight Savers. The hospital is also carrying out a comprehensive eye survey and will soon be involved in several other research projects. It is steadily evolving to become a centre of excellence in eye-care for the people of southern Tamilnadu and Kerala.



Aravind-Tirunelveli

Aravind-Theni

In-patient facilities for:
60 Paying patients
40 Free patients
2 Operation Theatres

Serves a population of one million in and around Theni

Paying, Free Section and Camps:

Average out-patient visits per day : 151

Average surgeries per day : 10



Aravind-Theni



Dr. Dutta examining a patient

Aravind-Theni, a ninety minutes drive from Madurai - nestles close to the Kodaikanal hills of the Western Ghats. It was inaugurated in 1985 as Aravind's first satellite hospital to cater to the needs of the community around Theni. This 100 bed hospital is efficiently run by a small team. The hospital is staffed by just one full time ophthalmologist supported by a junior doctor and 20 support staff comprising of ophthalmic nurses and other non-clinical staff. This small and cohesive workforce has been serving its community well by doing about 3,000 surgeries in 1994. 70% of these surgeries were provided free of cost to the poor patients. The hospital is financially self-sufficient in meeting all its expenses.

In 1994, the hospital has taken on a new role, demonstrating how so much could be achieved with so few resources. All the students of the eight weeks microsurgery course and participants of the "Management Development Programmes" conducted by LAICO, visit this hospital and spend an inspiring day there. This hospital demonstrates in very simple terms, how good organisation and efficient management can support one doctor to perform over 2,000 surgeries a year and also generate through patient fees, all

the revenue required to support the free patients and to meet all the recurring expenses. The visiting eye doctors and administrators relate to this hospital more easily and feel that it is a model that can be adapted to their own setting. Through this process, Aravind Theni has begun to make a major contribution in enhancing the effectiveness of eye-care delivery.

Community Outreach Programmes:

Aravind Eye Hospitals-Madurai, Tirunelveli and Theni

Aravind's community outreach programme forms a vital link to the rural masses, helping the hospital to successfully attract a large number of patients. In these screening camps sponsored by various voluntary organisations, minor treatment, prescription of glasses and screening for cataract and glaucoma are performed at the camp site. Patients who need surgery are brought to the base hospital. Voluntary agencies provide these patients with free transportation and food.

In 1994, a total of 876 camps were held in which 2,17,011 patients were examined resulting in 28,464 surgeries, mostly performed in one of the base hospitals. All the ophthalmologists working in the hospital are posted on regular rotation to these camps.

Screening of School children

Aravind has a regular programme for screening school children in addition to the eye camp activity. Teachers from participating schools are trained to measure the children's vision. Those with poor vision or with other eye problems are examined by Aravind medical team. Specially appointed field workers co-ordinate this programme.



Camp patients returning home after surgery from the base hospital

Camps - 1994

Name of Organisation	Number of Camps	Number of Out-patients	Number of Surgery		
			Cataract	Others	Total
Lions Clubs	230	75,771	10,627	467	11,094
Rotary Clubs	20	8,310	1,282	60	1,342
Vivekananda Kendra	166	19,861	1,916	127	2,043
Bhagavan Sathya Sai Seva orgns.	55	12,648	2,140	118	2,258
Religious orgns.	52	19,458	2,145	123	2,268
Jaycees	7	3,110	295	13	308
Banks	18	3,329	288	12	300
Mills & Factories	29	8,595	1,160	38	1,198
ASSEFA	5	527	84	7	91
Schools & Colleges	51	7,017	487	38	525
Hospitals	10	4,433	722	39	761
Trusts	13	5,494	1,085	35	1,120
Youth & Fans Associations	45	6,576	621	43	664
Other voluntary service orgns.	107	23,152	2,303	106	2,409
Others	68	18,730	1,950	133	2,083
Total	876	217,011	27,105	1,359	28,464

Aravind Children's Hospital-Madurai



Dr. Lakshmi Rahmathullah examining a child

Aravind Children's Hospital was inaugurated in 1984 in Madurai primarily to address the issue of blinding malnutrition in children. ACH places great emphasis on preventive services. It has done pioneering work in the area of vitamin A deficiency and child survival. Through workshops and training programmes, ACH provides support to governmental and non-governmental agencies working to control vitamin A deficiency.

Statistics 1994

Outpatients	-	20540
Inpatients	-	48
Camps	-	18
Cases seen in camps-		1631

Immunisation

DPT	-	892
OPV	-	1126
AMV & MMR	-	243

Vitamin A Deficiency Cases

Night blindness	-	21
Bitot's spot	-	22
Corneal xerosis	-	1
Keratomalacia	-	23
Corneal scar	-	-

Research Studies

Review of keratomalacia children who attended the Aravind Children's Hospital (ACH) from 1991-1993: All infants below the age of one with keratomalacia were visited in their homes. The data revealed that 93% of these children were not breastfed. A study is being undertaken to establish the breastfeeding pattern among women in the lower socio-economic group.

Another study is being done in collaboration with Food Science and Nutrition Dept. of Agricultural College, Madurai. This study explores the feasibility of using some of the plants rich in vitamin A used in Hindu rituals to improve nutrition in pregnant women and infants.

Projects and Training Programmes

Traditional healers from Natham and T.Kallupatty were invited to become involved in educating the public on the importance of nutrition. At Natham, 25 traditional healers and at T. Kallupatty 150 participated.

There was a one day Training Programme on "Primary Child Care" for 25 field workers of non-formal educational organisations.

Conferences

Annual Meeting of the Tamil Nadu Voluntary Health Association (TNVHA)

Gandhigram, 13th and 14th August.

Dr. Lakshmi Rahmathullah was elected member of the Board of Governors for the year 1994-1995.

16th IVACG Conference

Chiang Rai, Thailand, October 24th to 28th

Dr. Lakshmi Rahmathullah

- *Changing trends in nutritional blindness in children*

International Workshop on Childhood Blindness in South East Asia

Aravind Eye Hospital, Madurai 5th to 8th December

Dr. Lakshmi Rahmathullah

- *Childhood Causes: Vitamin A Deficiency*

Workshop on Dr. J. Jayalalitha 15 point programme for Child Welfare

Organised by Tamil Nadu Government Social Welfare Department

Madras, 21st and 22nd of December 1994

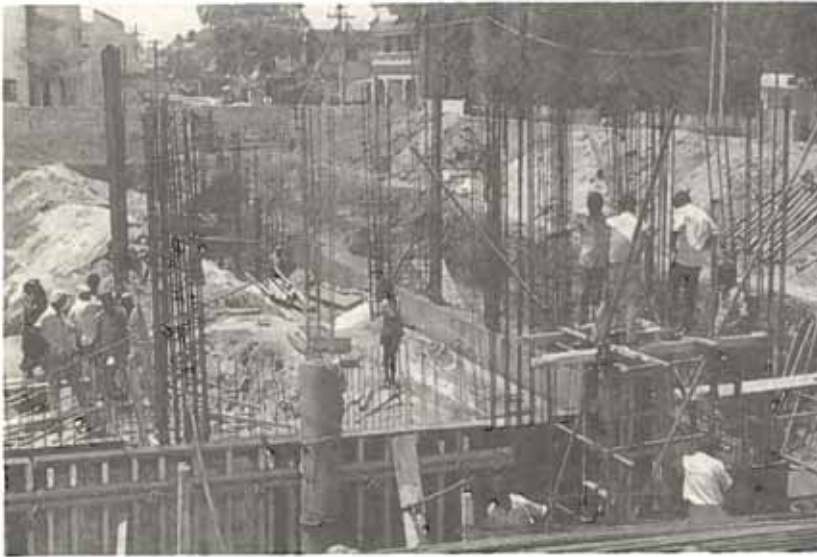
Dr. Lakshmi Rahmathullah was invited as a resource person to participate in the meeting to find out ways NGOs could participate in the implementation of the programme.

Publications

The following three articles were published in Tamil "Grama Rajyam".

1. *Importance of Breastfeeding*
2. *Methods for cooking nutritious food*
3. *Hello Vegetarians!*

Highlights-1994



Construction of LAICO begins - July 1994

Construction of the Institute building

The construction of the Lions Aravind Institute of Community Ophthalmology (LAICO) building started in July '94 and the basement work has been completed. The construction is expected to be completed by September '95.

Hostel for Short-term Trainees

With Sight Savers' support, a hostel was built for the Aravind-Sight Savers Microsurgery and Indirect Ophthalmology trainees. Ms. Catherine Cross, Overseas Services Director of Sight Savers inaugurated the hostel on 25th March '94.

Indirect Ophthalmoscopy Course

The success and encouraging results of the microsurgery course led to the designing of a second skills development course. This again fills a void in the residency training and to help the patients through early diagnosis especially of the diseases of the posterior segment (retina & vitreous diseases). This four-week course trains the candidates in the use of indirect ophthalmoscope to examine the retina and vitreous. Due to widespread lack of this expertise amongst the ophthalmologists, such diseases are often missed in the early stages and present themselves at end stages when the prognosis after treatment is not very good. The training also exposes them to other diagnostic procedures (ultrasound scan, fluorescein fundus photography), various options available for treatment of such diseases and follow-up, so that they can promptly refer patients to an appropriate facility for treatment. This course was started in June 1994 with an intake of 4 trainees a month and it is offered at Aravind Eye Hospital, Madurai. Sight Savers supported the course by meeting the initial costs for equipments and part of the recurring costs.

42nd Annual Conference of Tamil Nadu Ophthalmic Association

Aravind - Madurai conducted the 42nd Annual Conference of Tamil Nadu Ophthalmic Association from the 2nd to 4th September '94.

For more than ten months, Dr. R. Ramakrishnan and his organising team had been very meticulous and systematic in planning this conference.

The pre-conference session was held at the Aravind auditorium. In the morning there were updates by experts on uveitis, neuro-ophthalmology, paediatric ophthalmology and strabismus. The whole afternoon was devoted to the well



Dr. G. Venkataswamy presents a memento to chief guest Dr. Abdul Kalam



Dr. R. Ramakrishnan, the Organising Secretary delivers the vote of thanks

appreciated IOL skill transfer course. The participants had the opportunity to work individually under microscopes on animal eyes. Besides video presentation, the participants were also able to see live demonstration of various IOL surgeries.

Dr. Abdul Kalam, Scientific Adviser, Ministry of Defence, New Delhi inaugurated the conference.

Dr. Sembon David, Director of Medical Education inaugurated the Scientific Session, Dr. Guhanandham, President, TNOA presided over the function, Dr. Rajappa, Dean, Madurai Medical College released the Souvenir and Dr. Krishnasami Rajivan, Collector, Madurai, opened the Trade Exhibition. Dr. P. Namperumalsamy, chairman of the organising committee delivered the welcome address. Dr. Sathya Albert, Honorary Secretary of TNOA presented the Secretary's report. The inaugural function came to an end with a vote of thanks by Dr. R. Ramakrishnan., the Organising Secretary.

A record number of 147 delegates attended the pre-conference session and 401 delegates participated in the conference session. 55 companies participated in the Trade exhibition.

Best Video Award

Dr. R.D. Ravindran bagged the award at the annual meeting of the All India Ophthalmological Society at Calcutta for the instructional video film "Systems Approach to High Quality Large Volume Cataract Surgery".

HRH Princess Alexandra, President, Sight Savers-Royal Commonwealth Society for the Blind visits Aravind

On 22nd October 1994, Her Royal Highness Princess Alexandra as the President of Sight Savers - Royal Commonwealth Society for the Blind (RCSB) and her husband Sir Angus Ogilvy came on a goodwill visit to Aravind.

Mr. Richard Porter, Exec. Director of RCSB, Mr. Nagarajan Regional Director, South Asia and Mr. Thanawalla Director-Finance & Admn., RCSB-Bombay were also at Aravind during the Princess' visit.



Dr. P. Namperumalsamy takes the Princess around the hospital



Dr. Kamalesh Jain, Director, Lions International inaugurates the Lions students hostel

The royal couple were welcomed by the Chief Medical Officer Dr. P. Namperumalsamy. A small group consisting of RCSB and Aravind's senior staff met the royal couple and Dr. G. Natchiar, Senior Medical Officer gave a slide presentation of RCSB's role in Aravind's growth. They were taken around the different speciality clinics and Aurolab, the intraocular lens manufacturing facility at Aravind.

Later, a reception was held in her honour, where many of Aravind's senior employees were introduced to the royal couple. She distributed certificates to the doctors who underwent the Aravind-Sight Savers short term training courses in Microsurgery and Indirect Ophthalmoscopy. She handed over the key of the van donated to Aravind by RCSB to Mr. G. Srinivasan, Secretary, Govel Trust.

Lions Students Hostel

The International Lions Students Hostel was inaugurated on 15th December by Lions International Director, Kamalesh Jain. This hostel provides fully furnished accommodation for 24 trainees. The trainees coming to LAICO for training programmes will be accommodated here.

Resource Centre

With the Lions Aravind Institute of Community Ophthalmology coming up rapidly, there is constant need for information regarding blindness statistics of different nations, eye care programmes around the world and information regarding training programmes on eye care delivery. To serve this purpose, a separate resource centre has been formed.

Ms. Linda Peterson, a Seva volunteer from Appalachian State University, USA helped set up the resource centre and develop a database for the same.

Educational Programmes

Postgraduate Education- Admissions-1994

Diplomate of the National Board (Dip.N.B.)

Dr. R. Usha
Dr. Dinukumar
Dr. M.V.B. Latha
Dr. Asim Kumar Sil
Dr. Sudeep Das
Dr. Parekh Mustafa

MS in Ophthalmology (MS)

Dr. N. Naveena
Dr. C.B. Santhi

Diploma in Ophthalmology (DO)

Dr. Radhika
Dr. Sivasakthi
Dr. Nirupama
Dr. Venkatesh
Dr. Sonia Modi
Dr. Neerja L. Bisht

Junior Resident

Dr. S. Gopinath

The major educational activities of the hospital are concentrated in three formal training programmes:

- Postgraduate training for ophthalmologists
- Ophthalmic nurses training
- Hospital management programme

Postgraduate Training for Ophthalmologists

Aravind is recognised by the

Medical Council of India for:

- Diploma in Ophthalmology (DO) Course : started in 1982
- MS in Ophthalmology course : started in 1986

National Board of Examinations for:

- Diplomate of the National Board (Dip. N. B.): started in 1981

Royal College of Ophthalmologists, London

- Fellow of Royal College of Ophthalmologists, London (FRCOph.) starts in 1995.

Apart from these regular courses offered in affiliation with Dr. M.G.R. Medical University-Madras and Madurai Kamaraj University, there are various other short term training programmes as follows.

1. One and half year (18 months) *fellowship programmes* in various subspecialities of ophthalmology for M.S. or Dip.N.B. degree holders.
2. One year *senior general ophthalmology* fellowship for M.S. or Dip.N.B. degree holders. One year *junior general ophthalmology* fellowship for D.O. passed candidates.
3. 8 week *Intensive Intraocular Lens (IOL) training* programme.
4. 4 week *Intensive Indirect Ophthalmoscopy training* programme.
5. 4 months course to train selected faculty members as *trainers in IOL surgery*.
6. *Seminars & Workshops*: Several times a year, the hospital arranges short courses, seminars, workshops and clinical / surgical demonstrations with faculty from India and abroad.

Resident Training Programmes

Ophthalmology residents from various university hospitals in the US, Italy and Germany come to Aravind-Madurai and Aravind-Tirunelveli for additional training as part of their residency programme.

In 1994, residents from the following institutes visited Aravind.

From USA: St. Vincent's Hospital, NY; Wilmer Institute, Philadelphia; University of Illinois, Chicago; Brookdale Hospital, NY; Sinai Hospital, Baltimore; Mass. Eye & Ear Infirmary, Boston; Greater Baltimore Medical Centre, Baltimore

From Italy: University of Degli Studi Di Parma

From Germany: Municipal Clinical Hospital, Frankfurt

From UK: Taunton & Somerset Hospital

Aravind is grateful to the following organisations in the US for generously donating medical supplies through the ophthalmology residents from USA.

- Global Links
- Alcon
- Allergan
- Zeiss
- Johnson & Johnson
- IOLAB

*Let me notice and
acknowledge
the needs of others.
Let me see, feel and be an
example of
equality and respect.
Let me consider all
outcomes and effects
And then know what is right.
- Laurel Carson*



Nursing Superintendent Radha with Seva volunteer Julie Johnston at the nurses' graduation ceremony

Ophthalmic Nurses Training

Twice in a year, high school graduates are recruited and trained in basic nursing with special focus on ophthalmic care. The efficiency of Aravind's ophthalmic nurses contributes significantly to the hospital's low costs and high quality. Aravind now has over 275 ophthalmic assistants and technicians. This training facility is also used by World Health Organisation and several national and international NGOs.

Masters in Hospital Management Programme

Aravind participates in the teaching of the course in Hospital Management offered by the Department of Management Studies of the Madurai Kamaraj University.



Dr. Krishnadas with Dr. Alan Robin at John Hopkins University

Speciality Training

To gain exposure to the methods of diagnosis and management of glaucomas as practised in the US, Dr. R. Krishnadas from Glaucoma Service spent two months there. His visit was co-sponsored by Seva Foundation and John Hopkins University. Dr. Alan Robins, Asso. Prof. of Ophthalmology at Baltimore arranged for his working in various eye centres such as Wills Eye Hospital in Philadelphia, California Pacific Medical Centre in San Francisco, Wheaton Eye Clinic in Chicago, Sinai Eye Hospital and Wilmer Ophthalmological Institute in Baltimore. He attended an update course on 'Glaucoma-under pressure' and the Annual Conference of the American Academy of Ophthalmology in San Francisco.

Continuing Medical Education Programmes

Workshops, Seminars and Advanced Training Workshops

Several times a year, the hospital arranges short courses, seminars, workshops and clinical / surgical demonstrations with faculty from India and abroad.

Conference on Strategies in receiving donated eyes

17th April

Jointly organised by the Madurai Eye Bank Association and the Lions Club of Kumbakonam, this conference was held at Aravind. It was presided over by Dr. M. Srinivasan. Its objective was to improve eye donation strategies in India and the distribution of medical instruments for enucleating eye balls.

Workshop on Advances in Retinal Detachment and Pars Plana Surgery

30th & 31st July

Guest Faculty:

Dr. George Hilton, University of California, USA

- *Pneumoretinopexy - Technique, current status and future directions*
- *Diagnosis and classification of macular holes - Surgical management*
- *Pneumotic retinopexy - Use of Fragmentome*
- *Vitreous surgery in uveitis*
- *Management of complicated retinal detachments ie., coloboma, choroid, optic pit*

Dr. P. N. Nagpal, ASO-PALOV Eye Hospital, Ahmedabad

- *PVR classifications and management*
- *Perfluorocarbon liquids - Indications and future*
- *Vitreous surgery in diabetic retinopathy*

Dr. Taraprasad Das, L. V. Prasad Eye Institute, Hyderabad

- *Recurrent retinal detachment- Causes*
- *Instrumentation and basics of pars plana surgery*
- *Epiretinal membrane surgery and premacular fibrosis*
- *Management of endophthalmitis*

Aravind Faculty:

Dr. P. Namperumalsamy

- *New developments in retina- vitreous -Diagnosis and management of retinal detachment*
- *Complications in retinal detachment surgery*
- *Giant retinal tear - Management*
- *Uses of gases and silicone oil in vitreoretinal surgery*
- *Vitreous surgery in Eales' disease*

Dr. R. D. Ravindran

- *Basic surgical steps in retinal detachment surgery*
- *Prophylaxis of retinal detachment*

Dr. Meena Chakrabarti

- *Pseudophakic retinal detachment surgery*
- *Indications of pars plana surgery*
- *Vitreous surgery in penetrating Injuries*

Dr. Ravi Kulkarni

- *Management of intra and post-operative complications of pars plana surgery*

Dr. R. Kim

- *Lasers in retinal detachment and pars plana surgery*

International Workshop on Childhood Blindness in South East Asia

5th to 8th December

This workshop was initiated by International Centre for Eye Health (ICEH), London and was held at Aravind as a joint activity of the two WHO collaborating centres. The aim of the workshop was to present the magnitude of childhood blindness in Southeast Asian countries, their causes and evolve strategies for managing this problem. The discussions covered not only clinical aspects, but also the management of intervention strategies. This workshop was attended by specially invited resource persons and participants from several countries.

Participants

From Aravind

Dr. P. Vijayalakshmi, Department of Paediatric Ophthalmology

Dr. Lakshmi Rahmathullah, Aravind Children's Hospital

Others:

Dr. Allen Foster, ICEH, London, UK

Dr. Anthony Moore, Addenbrookes Hospital, Cambridge, UK

Dr. Charith Fonseca, Colombo Eye Hospital, Sri Lanka

Dr. Clare Gilbert, ICEH, London, UK

Dr. Hans Limberg, DANPCB, New Delhi, India

Dr. Haroon R. Awan, Al Shifa Trust Eye Hospital, Rawalpindi, Pakistan

Dr. T. P. Ittyerah, Little Flower Hospital, Angamaly, India
 Dr. Janet Silver, Moorfields Eye Hospital, London, UK
 Dr. Marilyn T. Miller, University of Illinois, USA
 Dr. Mike Eckstein, ICEH, London
 Dr. Nguyen Chi Dung, Institute of Ophthalmology, Hanoi, Vietnam
 Dr. Reggie Seimon, Sri Lanka Eye Foundation, Sri Lanka
 Dr. I. Russell Eggitt, GOS Hospital for Children, London, UK
 Dr. Saradha David, Schell Eye Hospital, Vellore, India
 Dr. Srikumari Srisailapathy, UGC Research Scientist, Madras, India
 Dr. Walter Mascarenhas, Venu Eye Hospital, New Delhi, India

The following topics were discussed during the workshop.

- Overview of childhood blindness
- Review of available data on causes and present services at India, Pakistan, Thailand, Nepal, Sri Lanka and Vietnam
- Childhood causes: Measles
- Vitamin A deficiency
- Genetic diseases
- Epidemiology, basis of molecular genetics, genetics of eye diseases, principles of genetic counselling and case studies.
- Congenitally acquired Rubella in India
- Teratogenic disorders
- Perinatal causes of childhood blindness
- Retinopathy of prematurity
 - Illrd World epidemiology
 - Clinical aspects
- Lesions of the CNS/optic nerve
 - Cataract in childhood
 - Corneal blindness in childhood
 - Glaucoma in childhood
 - Screening of school children
 - Amblyopia
 - Low Vision:
 - Epidemiology of low vision, Aims of low vision services, optimal management
 - Control of childhood blindness by disease strategy and service delivery
 - Retinoblastoma
 - Childhood causes: Vitamin A deficiency



Participants of the International Workshop on Childhood Blindness in South East Asia

Course on Paediatric Ophthalmology & Strabismus
 9th to 10th December

Following the workshop, several of the faculty members stayed on to share the outcome with a wider group of practitioners. The course was attended by 96 outside participants. Preventive and curative strategies for all the conditions leading to blindness in children were discussed in this course.

Dr. Allen Foster
 - Control of childhood blindness
 - Vitamin A deficiency

Dr. Clare Gilbert
 - Epidemiology of childhood blindness
 - Retinopathy of prematurity

Dr. Isabelle Russell Eggitt
 - Visual assessment and surgical complications of childhood cataract
 - Childhood glaucoma

Dr. Janet Silver
 - Low vision services

Dr. Marilyn Miller
 - Duane's retraction syndrome
 - Accommodative esotropia and amblyopia
 - Refractive problems

Dr. Michael Eckstein
 - Aetiology of childhood cataract

Dr. Natchiar G.
 - Retinoblastoma

- Dr. Srinivasan M.
 - *Trauma in children*
 Dr. Tony Moore
 - *Genetic eye diseases*
 - *Inherited macular dystrophies*
 - *Visual pathway problem*

- Dr. Vijayalakshmi P.
 - *IOLs in children*
 - *Management of childhood cataract*
 - *Vertical strabismus*

Second Meeting of the Aravind Alumni

17th December

The second Aravind-Alumni meeting was hosted at Aravind to coincide with the hospital day celebrations. Following the scientific session, the alumni members joined the hospital day functions.



At the second Aravind Alumni meet

- Dr. Arup Chakrabarti, Dr. Prajna,
 Dr. Purendra Bhasin
 - *Small incision cataract surgery sans Phaco*
 Dr. Jeena Mascarenhas
 - *Early diagnosis & Management of Acanthamoeba Keratitis*
 Dr. Krishnadas
 - *Congenital glaucomas*
 Dr. Rathinam
 - *Newer Uveitis entities*
 Dr. Ravi Kulkarni
 - *Perfluorocarbon liquids in vitreo-retinal surgery*

- Dr. Ravindran R.D.
 - *Fundus photographs of rare macular diseases*
 Dr. Srinivasan M.
 - *Trauma in patients*
 Dr. Sujatha Y.
 - *Early diagnosis of orbital tumors*
 Mr. Thulasiraj R.D.
 - *Management of eye care delivery in the third world*
 Dr. Vijayalakshmi P.
 - *Etiology of congenital cataracts*

Conferences, Courses and Workshops attended by Aravind staff in 1994

All India Ophthalmological Society Conference

Calcutta, 2nd to 6th January

Dr. P. Namperumalsamy

- Co-convenor: Instruction course on 'Recent advances in recurrent retinal detachment surgery' - spoke on "Surgical management - Gas Vs Oil"
- Speaker: Instruction course on Retinal laser delivery system - spoke on "Wave-length selection in retinal photocoagulation"
- Moderator: Free paper session on Retina

Dr. M. Srinivasan

- Management of corneal ulcers
- Explantation and IOL exchange surgery-Instruction Course

Dr. P. Vijayalakshmi

- Cataract and EMG in strabismus
- Speaker in Instruction course: Frontalis sling in ptosis surgery

Dr. N. Nagappan

- Lid weight implantation technique in lagophthalmus
- Speaker in Instruction course on starting orbital surgery

Dr. Ramakrishnan

- Worm in anterior chamber: An unusual cause of secondary open angle glaucoma - Free paper
- Video presentation on Argon laser treatment of worm in the anterior chamber

Dr. Meenadevi

- Free Paper - Results and complications of 100 consecutive cases of pars plana vitrectomy for non-resolving vitreous haemorrhage.

Dr. R.D. Ravindran

- Complications in large volume IOL surgery in an eye camp
- Instruction film: Systems approach to high quality large volume cataract surgery: Received the best video award
- Convenor: Retinal laser delivery system - an Instruction course

Dr. Arup Chakrabarti

- Extracapsular cataract extraction with PC IOL in Fuchs' heterochromic iridocyclitis
- Role of intraocular lens in high myopes
- IOL in traumatic cataracts
- IOL implantation following extracapsular cataract extraction in patients with

Siderosis bulbi.

- Symposium on secondary IOL implantation: Problems created by the malpositioned IOL

Dr. Uday Gadgil

- Management of dislocated/subluxated crystalline lenses
- Expansile gases - our experience

Second meeting on the effects of solar ultra violet radiation on the eye

WHO, Geneva, 21st to 23rd March

Mr. R. D. Thulasiraj was invited as a temporary advisor to WHO. During this meeting, the group resolved several issues relating to grading of cataract, assessment of solar UVR exposure and also developed a core protocol for data collection to facilitate inter-study comparisons.

IOL Workshop

Lumbini Eye Hospital, Nepal 26th to 28th April

Dr. Natchiar attended as faculty.

Mr. V. Vijaykumar attended the Indo-UK Workshop on Total Quality Management in Healthcare at St. John's Medical College & Hospital, Bangalore from 10th to 20th May.

Dr. Y. Sujatha and Dr. Reeti Sharma attended the Course on Health Planning and Management, jointly organised by the Department of Health Services Studies, Tata Institute of Social Sciences and EPIDMAN - India at Bombay from 16th to 28th May.

Conference of the Bombay Ophthalmologists' Association

Bombay, 4th & 5th June

Dr. G. Natchiar

- Anterior segment complications in ECCE & IOL
- Neuro-ophthalmic manifestations of head injury.

Dr. P. Vijayalakshmi participated in the First World Congress on Contact Lens Education at the School of Optometry, Ontario, Canada, 7th to 12th June and the Joint meeting of the International Strabismological Association and the American Association for Paediatric Ophthalmology and Strabismus at Vancouver, Canada from 18th to 26th June.

Dr. M. Srinivasan attended the Symposium & Surgical demonstration on *Conversion to phaco-emulsification* at Bangalore on 25th and 26th June.

International Congress of Ophthalmology Conference

Toronto, Canada 26th to 30th June

Dr. P. Namperumalsamy

- *Diabetic retinopathy in rural population*

Dr. P. Vijayalakshmi

- *Poster on 'Aetiology of childhood cataract in South India'*

The Indian Medical Association and Ophthalmological Society Meeting

Solapur, 16th & 17th July

Dr. P. Namperumalsamy

- *Diabetic retinopathy*

- *Basics of vitreous surgery*

Meeting for the Welfare of the Rehabilitation of the Handicapped

New Delhi, 19th & 20th July

Dr. P. Namperumalsamy

- *Low vision aids*

Meeting organised by the Lions and Indian Medical Association

Vriddhachalam, 23rd July

Dr. M. Srinivasan

- *Eye donations*

Dr. M. Srinivasan was a faculty member at the Workshop on Phacoemulsification at Lions Eye Hospital and Corneal graft centre, Bangalore

All India Strabismological Society Meeting

Pune, 13th & 14th August

Dr. P. Vijayalakshmi

- *Diagnosis of amblyopia*

Vitreous Retinal Society Meeting

L. V. Prasad Eye Institute, Hyderabad

27th & 28th August

Dr. P. Namperumalsamy

- *Management of giant retinal tears*

- *Expansile gas in vitreous retinal surgery*

- *A guided tour of retinal valleys and mountains*

Convenor:

Management of retinal detachment

3rd Annual Scientific Session of the College of Ophthalmologists of Sri Lanka

Kandy, Sri Lanka, 25th to 27th August

Dr. M. Srinivasan

- *Fungal ulcers*

- *Cornea - Newer bacterial infections*

Dr. Krishnadas

- *Laser trabeculoplasty*

- *Refractory glaucoma*

Mr. R. D. Thulasiraj

- *Blindness in South East Asia*

Dr. Arup Chakrabarti

- *IOL skills transfer technology*

Dr. Meena Chakrabarti

- *Retina - Management of dislocated IOLs & pseudophakic detachment*

Dr. Rathinam Sivakumar

- *Uveitis - Newer etiological factors*

42nd Annual Conference of the Tamil Nadu Ophthalmic Association

Madurai, September 2nd to 4th

Pre-conference Session:

Aravind Eye Hospital, September 2nd

Instruction Course: Uveitis Update

Convenor: Dr. Rathinam Sivakumar

- *Systematic approach to uveitis patient*

Instruction Course: Neuro-ophthalmology

Convenor: Dr. G. Natchiar

- *Importance of fields in neuro-ophthalmology*

Dr. R. D. Ravindran

- *Pathogenesis of papilloedema*

Instruction Course: Paediatric Ophthalmology & Strabismus

Convenor: Dr. P. Vijayalakshmi

- *Intraocular lenses in children*

IOL Skill Transfer course

Convenor: Dr. G. Natchiar

Conference Session:

Lakshmi Sundaram Hall, September 3rd & 4th

Dr. Arup Chakrabarti

- *Secondary PC IOL through scleral tunnel incision for early and safe post-operative visual rehabilitation.*

- *Postoperative complications of capsulorhexis (FP).*

Dr. Asokan.B

- *An analysis of results of keratoplasty in keratoconus.*

Dr. Kim.R

- *Visual outcome following removal of retained IOFB - A retrospective analysis*



*IOL skill transfer course at Aravind-Madurai
42nd Annual Conference of TNOA*

Dr. Krishnadas.R

- *PC lens implantation in phacolytic glaucoma.*

Dr. Meena Chakrabarti

- *Incidence & clinical features.*
- *Management of 10 consecutive cases of dislocated lens.*

Dr. Milind A Killedar

- *Congenital fibrosis syndrome*

Dr. Namperumalsamy.P

- *Endophthalmitis - Introduction & types*
- *Eales Disease*

Dr. Natchiar.G.

- *Introduction & Importance of fields in neuro-ophthalmology - optic nerve, chiasma, optic tract, optic radiation and visual cortex.*

Dr. Purendra Bhasin

- *Capsulotomy in hypermature morgagnian cataracts - An easy and effective technique.*

Dr. Ramakrishnan.R

- *Diagnosis and management of congenital glaucoma*
- *Glaucoma - ALT*
- *Antimetabolites in combined cataract extraction with trabeculectomy*

Dr. Ramesh.R

- *Poster on 'Retinoblastoma - Various clinical presentations'.*

Dr. Rathinam Sivakumar

- *Systematic approach to uveitis patient*
- *Panuveitis and epidemic fever*

Dr. Ravindran.R.D

- *Pathogenesis of papilloedema*
- *Microbiology of endophthalmitis - Causes and contaminants.*

Dr. Revathi

- *An aetiological and epidemiological study of suppurative corneal ulcers.*

Dr. Subburam.P

- *Neuro-ophthalmic manifestations in head injury*

Dr. Sujatha.Y

- *Ultrasonography for assessing treatment response in orbital inflammatory disease*
- *Correlation of USG and histopathology in retinoblastoma*

Posters : Case reports on

- *Eosinophilic granuloma of orbit*
- *Recurrent lacrimal gland fistula*

Dr. Vijayalakshmi.P

- *Intraocular lenses in children*

26th State Conference of Ophthalmological Society

Barrackpur, West Bengal, 24th to 26th September

Dr. Natchiar.G

- *Role of trust sector in eye care*
- *Management of pre and postoperative anterior segment complications & secondary implants - Guest lecture.*

Maharashtra State Ophthalmic Society Conference

Pune, October 2nd to 4th

Dr. Ravi Kulkarni

- *Study of liquid PFC in remaining posteriorly dislocated crystalline lens & IOLs.*

16th IVACG Conference

Changrai, Thailand, October 24 to 28.

Dr. Lakshmi Rahmathullah

- *Changing trends in nutritional blindness in children.*

American Academy of Ophthalmology

San Francisco, 31st October to 5th November

Dr. P. Namperumalsamy

- *Serving the underserved: To combat cataract blindness—an instruction course sponsored by the International Committee of American Academy of Ophthalmology.*

Dr. M. Srinivasan

- *Poster on 'Nocardial endophthalmitis following cataract surgery'*

- Dr. P. Vijayalakshmi
 - *Poster on "A novel vanishing optotype acuity test validated for small children with visual impairment."*
- Inauguration of Dental Academy**
 Kodaikanal, 6th November
 Dr. Rathinam Sivakumar
 - *Ocular manifestations in dental diseases*
- Southern Regional Ophthalmic Conference**
 Cochin, 25th to 27th November
 Dr. R. Ramakrishnan
 - *Medical management of glaucoma*
 Dr. R. Kim
 - *Ocular cysticercosis : Management*

- Dr. Meena Chakrabarti
 - *Optics of JID o' scope*
 - *CRVO in young adults*
- Dr. Arup Chakrabarti
 - *Rigid 3 piece PC IOL implantation through Sutureless Sclerocorneal tunnel incision*
 - *Postoperative complications of capsulorhexis*
 Faculty: IOL Symposium
- IOL Microsurgery Training Workshop**
 Cicendro Eye Hospital, Bandung, Indonesia, 14th to 18th December
 Dr. G. Natchiar
 - *Postoperative complication & Management*
 - *Scleral fixated secondary IOL*

Publications

- Indian Journal of Ophthalmology**
 Vol. 42, No:1, March 1994
 Dr. P. Namperumalsamy
 - *Eale's disease*
- Vol. 42, No. 4, December 1994
 Dr. M. Srinivasan
 - *Current perspectives in infectious keratitis*
- Journal of Tamil Nadu Ophthalmic Association**
 Vol. XXXII, No. 1, March 1994
 Dr. B. Ganesh
 - *Viscoelastic substances in ophthalmology*
 - *Posterior capsule opacification*
 - *IOL in high myopes*
 Dr. Arup Chakrabarti
 - *New technique of scleral fixation of PC IOL - Our experience*
 - *ECCE with PC IOL in Fuch's heterochromic iridocyclitis*
- Vol. XXXII, No. 2, June 1994
 Dr. M. Srinivasan, Dr. H.V. Giriswamy, Dr. K. Sundar
 - *Our experience with polymicrobial keratitis (Mixed microbial keratitis)*

- Vol. XXXII, No. 3, September 1994
 Dr. Subangi Kulkarni, Dr. B. Ganesh, Dr. G. Natchiar
 - *Posterior chamber lens implantation in eyes with congenital coloboma*
- Dr. Arup Chakrabarti, Dr. G. Natchiar, Dr. B. Ganesh
 - *Intraocular lens implantation following extracapsular cataract extraction in patients with siderosis bulbi*
- Vol. XXXIII, No. 4, December 1994
 Dr. Sanjiv Lal, Dr. P. Namperumalsamy
 - *Combined hamartoma of the sensory retina and RPE involving the disc - A case report*
- Dr. B. Ganesh, Dr. G. Natchiar, Dr. Arup Chakrabarti
 - *Role of intraocular lens in traumatic cataract*
- Archives of Ophthalmology**
 Vol. 112, No. 7, July 1994
 Dr. G. Natchiar, Dr. Alan L. Robin, Ravilla D. Thulasiraj, Senthil Krishnaswamy
 - *Attacking the backlog of India's curable blind: The Aravind Eye Hospital Model*

Ongoing Research

Antioxidant Study: Cataract Grading - 1993

The team of ophthalmologists from the University of California, San Francisco and Proctor Foundation (Dr. Jack Witcher and Dr. Gil Smolin) Devers Eye Institute (Dr. John Wilkins) and Aravind Eye Hospital (Dr. M. Srinivasan) are completing the first stage of their study on 'Use of antioxidants to retard or prevent cataract development'. During this phase of the study, they are determining the rate of progression of cataracts during a one-year period of observation. They are grading 300 eyes for lens opalescence, color, cortical and



Dr. Jack Witcher and Dr. Gil Smolin



Dr. John Wilkins and Dr. M. Srinivasan

posterior opacity according to the LOCS III system of grading developed by Dr. Chylock in Boston.

Once the progression rate has been established, they will determine by statistical analysis, the number of people and the length of time needed to carry out the interventional part of their study. In this phase, participants will receive a tablet containing vitamin A, C and E or a placebo three times a week. The rate of cataract progression will be monitored in both groups for a specified period of time.

Childhood cataract studies-1993

These studies are being conducted in collaboration with International Centre for Eye Health (ICEH), London. The aetiology study is now over and has highlighted the importance of congenitally acquired rubella as a cause of infantile cataract in Tamil Nadu. Saliva has been used instead of blood to determine previous infection and this has proved both simple and highly reliable.

The randomised trial of surgical technique for cataract removal in children less than 10 years old has completed enrolment and short term (1 year) follow up results are being analysed.

Madurai IOL (MIOL) Study-1992

Madurai IOL study (MIOLS) is a randomised, hospital based, clinical trial to evaluate the long term outcome of PC-IOL implantation as compared to the common ICCE in terms of safety, efficacy and quality of life. After pretesting the format on 92 patients on the prepilot study and 100 patients on the pilot study, the main study recruitment has begun. The recruitment reached as on 31st December 1994 is 2541. The estimated projection for completion of recruitment to the study is 31st March 1995. The overall follow-up coverage of this study is quite high and the study is monitored by an external committee to maintain a high standard of quality. One of the major outcomes of this study would be the development of an 'instrument' to measure the "Quality of life" and "Vision Function" of cataract patients.

Aravind Comprehensive Eye Survey (ACES)-1993

ACES is a population based eye disease survey. Following the preparatory work, the pilot survey was started in August 1994. After making the necessary changes to the protocol and the data forms, the actual study has commenced and several villages have been screened. The study will cover villages around Madurai and Tirunelveli and is expected to be completed by mid 1996. Dr. Alan Robin, Dr. Jim Tilch and Dr. Joanne Katz from John Hopkins University, Baltimore,

USA are providing the technical support. This survey will not only collect data on different eye diseases, but will also document some of the potential risk factors such as sunlight exposure, nutritional status etc.



Mr. Raheem Rahmathullah and Dr. Alan Robin discussing the ACE Survey

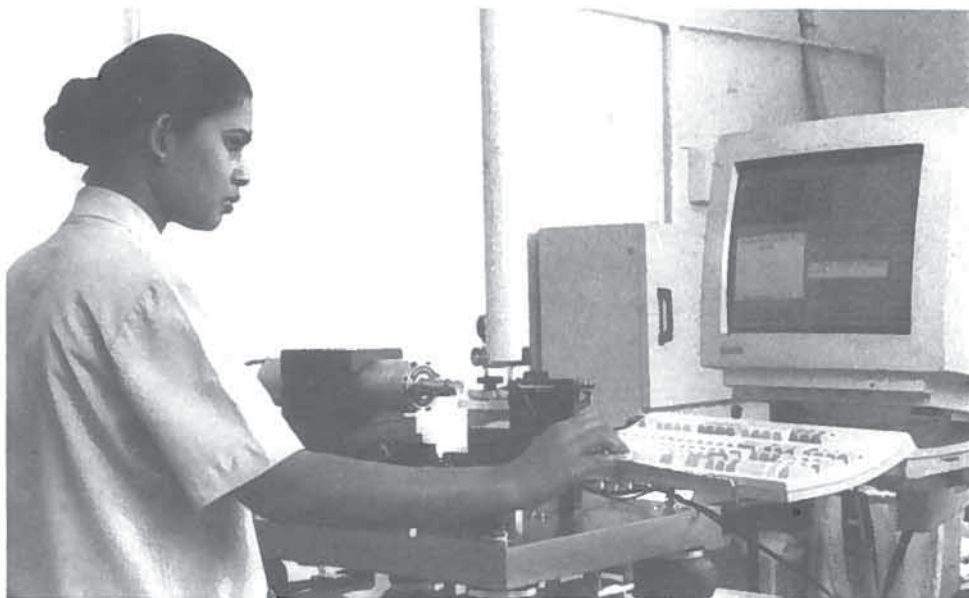
Mitomycin C in Primary Glaucoma Filtering Surgery-1992

This randomised, clinical trial was undertaken to determine the optimum concentration and exposure of Mitomycin C to ocular tissues in glaucoma filtering surgery. The study has been completed. The work on data analysis and report writing is in progress.

Aurolab

Aurolab came into existence, as an independent non-profit charitable trust, with a mandate of developing appropriate technology in instrumentation, equipment and supplies needed for eye care. Towards this goal, an intraocular lens manufacturing facility was started in January 1992 with the initiative of Aravind and Seva Foundation, USA, with additional funding support from Seva Service Society, Canada, Sight Savers, UK, and Combat Blindness Foundation, USA.

Aurolab is playing a crucial role in making high quality IOLs available at an appropriate cost to many non-profit institutions in India and abroad.



Computer Controlled Precision Lathe

Aurolab achieved substantial increase in production during 1994 through improvement in production efficiency and reduction in the rejection rate. The production process initially established was tailored for producing three piece planoconvex lenses. In order to meet the demand for biconvex lenses, Aurolab developed the process for producing three piece biconvex lenses in-house and these lenses were added to the product range after extensive trials and evaluations.

The sale of lenses also increased considerably during 1994. Over 80% of lenses were supplied to non-profit institutions at affordable price, while the remaining 20% were supplied to other users. Partners of international non-governmental organisations (NGOs), such as Helen Keller International, Christofel Blinden Mission, Lions Sight First, Sight Savers, Fred Hollows Foundation and many others are presently using Aurolab lenses in their eye care delivery programs. Aurolab lenses are

being exported to non-profit users in 35 countries around the world.

The demand for Aurolab lenses from the non-profit users is increasing steadily. In order to meet this rising demand and also to satisfy the market need for other types of lenses, Aurolab decided to increase the production capacity through the addition of single piece lens manufacturing system. Sight Savers, UK provided partial financial support for this expansion program and the rest of the needed funds were provided by Aurolab. The production facility was expanded to accommodate the single piece machinery. Additional production staff were recruited and trained. The single piece machinery was installed during the end of 1994.

The production capacity has doubled with this addition of computer controlled single piece machinery. The system is capable of producing any design of anterior or posterior chamber lenses using the latest computer aided design (CAD) and computer aided manufacturing (CAM) technologies.



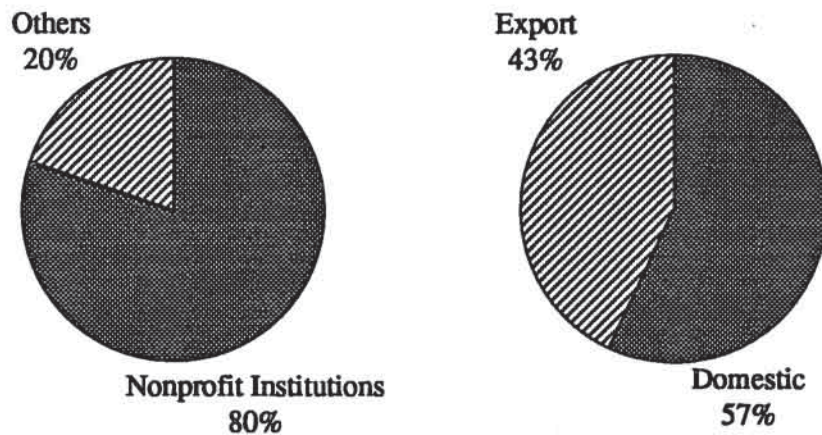
Dr. P. Balakrishnan (extreme right) visited Melbourne, Australia to participate in a meeting organised by WHO from 30th May to 2nd June. The objective of this meeting was to develop specifications for small scale manufacture of IOLs in developing countries. He was sponsored by the National Eye Institute (NEI), USA to represent the Aurolab. This meeting was attended by representatives of WHO, NEI, the Fred Hollows Foundation, FDA and the University of South Carolina.

Aurolab will be adding single piece biconvex posterior chamber and Kelman type anterior chamber lens styles to its product range.

The affordable price of Aurolab lenses is making it possible to increase the volume of IOL surgery in India and many other countries around the world. The increasing demand for IOL surgery in Aravind Free Hospitals is a

clear indication of the need for making this surgery affordable and available to the needy patients all over the world. Aurolab will continue to play a crucial role in this effort. Towards this goal, Aurolab is investigating the feasibility of producing other essential supplies and equipment needed for eye surgery in an attempt to further reduce the cost of cataract surgery.

Aurolab Sales - 1994



Lions Aravind Institute of Community Ophthalmology (LAICO)

Despite conspicuous momentum and priority for national and international action for prevention of blindness, there has been little change in the blindness problem. In many instances, the failure is due to lack of appropriately trained manpower combined with lack of proper systems, procedures and orientation to community work.

LAICO was founded with the main objective of providing such training to contribute to the prevention and control of global blindness. Using the broad environment of Aravind eye hospitals, Aravind Children's hospital and Aravind Medical Research Foundation, LAICO trains health related and managerial personnel in the development and implementation of community eye care programmes.

The energy for Aravind's activities comes from a strong value system based on compassion, integrity, perseverance and a sincere desire for altruism. The training at the institute will encourage the students to explore the potential of such values for the development of a value based work culture in their eye care programmes.

Developments-1994

Construction of the institute building: The construction of the institute building was started in July '94 and the basement work has been completed. It is expected to be completed by September '95.

Hostel for Short-term Trainees: With Sight Savers' support, a hostel was built for the Aravind-Sight Savers Microsurgery and Indirect Ophthalmology trainees. Ms. Catherine Cross, Overseas Services Director, Sight Savers inaugurated the hostel on 25th March 1994.

Lions Students' Residence: The International Lions Students Residence was inaugurated on 15th December by Ln. Kamallesh Jain, Lions International Director. This hostel provides fully furnished accommodation for 24 trainees. The trainees coming to LAICO for training programmes will be accommodated here.

Training Activities

Management Development Programme

The institute is committed to providing management training opportunities and assist in the improvement of quality and productivity of other eye care programmes.

The objective of the project is to significantly improve the surgical output, cost effectiveness, quality, overall utilisation of resources and long term viability of existing and newly developed eye care facilities.

Management Development Programme for Lions Eye Hospitals

Under SightFirst Programme, a grant of \$480,000 was sanctioned to the Lions of India to advance the management of 36 Lions Eye Hospitals in India and provide each hospital with a seed money of \$10,000 to carry out needed improvements.

The project has four primary components:

- Needs assessment: Visit to the selected eye hospitals by a team consisting of faculty from LAICO, concerned Lions Technical Advisor and the District SightFirst Co-ordinator to get a first hand knowledge about the infrastructure, manpower and functioning of the different departments; study the systems and procedures; have direct interaction with the hospital management team and assess the financial status.
- Management training and strategy development workshop at LAICO for the core team from each hospital.
- An initial financial assistance to implement the improvements identified during the training workshop.
- On-site consultancy: Following the training workshop, LAICO provides on-site consultancy support by a team consisting of Aravind staff, management consultants and technical advisors.



Ln. Dr. Madhekar, Chairman, Karimnagar Lions Eye Hospital, presenting a memento to Dr. G.Venkataswamy



Needs Assessment Team at Lions Eye Hospital, Raniganj

Based on this strategy, during the course of the year, the field visit teams drawn from the pool consisting of Dr. G. Venkataswamy, Dr. Premarajan, Mr. R. D. Thulasiraj and Dr. P.S. Ganguly from LAICO; Dr. S. Chandrashekar Shetty, Dr. A.K. Chowdhury and Dr. I. S.Roy as Lions Technical Advisors and Mr. Sushil Khanna as Management Consultant made needs assessment visits to the Lions eye hospitals in the following places.

Suryapet, Karimnagar, Vijayawada, Palakol and Nidadovole (Andhra Pradesh) Khizrabad (New Delhi) Jallundhar (Punjab) Raniganj, Siliguri, Howrah and Calcutta (West Bengal) Viramgam and Valsad (Gujarat).

Curriculum Development Workshop for Management Development Programme for Lions Eye Hospitals

Based on the needs assesment visits, a curriculum development workshop for Management Development Programme for Lions Eye Hospitals was held on the 1st and 2nd of September. Experts from the related field attended the workshop and developed a comprehensive training curriculum focussing on the following areas:

- Building a vision to develop Lions eye hospitals into model eye hospitals in the region
- Organisational development
- Marketing
- Organising for efficiency and quality
- Setting up a good information system
- Financial viability

Conferences and Workshops attended by the LAICO faculty

International Conference on Prevention of Blindness in Developing Countries

Berlin, 5th to 8th May

Mr. R.D. Thulasiraj participated as a resource person at this special workshop convened by the Government of Germany.

Fifth General Assembly of International Agency for the Prevention of Blindness

Berlin, 8th to 13th May

This meeting aimed at focusing the apex body to initiate, coordinate and regulate international action to combat needless blindness towards the theme 'affordable, accessible and appropriate eye care'. The keynote address was delivered



Mr. R. D. Thulasiraj at the meeting

by Dr. Alfred Sommer, John Hopkins University, who repeatedly referred to the Aravind model of sustainable high volume surgery.

Dr. G. Venkataswamy

- *Ophthalmic medical personnel in prevention of blindness programmes in India*

Mr. R. D. Thulasiraj

- *The cost of eye care - Is it affordable?*

- *Accessible eye care in Asia - Service delivery*

The curriculum thus developed can also be used for training personnel from other eye hospitals.

Management Development Workshops for Lions Eye Hospitals

These workshops were structured to provide practical exposure on different dimensions of running an eye hospital efficiently and to stimulate new ideas and strategies that are relevant and feasible in their own work situation. The exposure to Aravind Eye Hospital provides them an in-depth understanding of a working model. The visits and the discussions give them a clear picture of how to organise cost-effective quality eye care services and become financially self-sufficient. During the workshop, each hospital team works out a detailed strategic action plan.

First workshop: 23rd to 29th September

Teams comprising of Lion leader, hospital administrator, ophthalmologist and paramedic from the following four Lion's Eye Hospitals - Suryapet, Palakol, Karimnagar (Andhra Pradesh) and Mysore (Karnataka) - attended the workshop.

Second workshop 15th to 22nd December

Teams from the Lions Eye Hospitals at Vijayawada and Khizrabad (New Delhi) attended.

Management Development Programme for Sight Savers-Supported Eye Hospitals

LAICO has been requested by Sight Savers (RCSB) to take up a project for some of the Sight Savers collaborating hospitals to improve their overall status. This will be implemented with financial and technical assistance from Allied Dunbar (a reputed financial group in UK). Foundation for Research in Health Systems (FRHS), Bangalore is also actively involved in this project. At present, finalisation of the project proposal is in progress.

A meeting was held on 9th December'94 to discuss the project and it was attended by representatives of Allied Dunbar, Sight Savers, FRHS and LAICO.

Training Programme for District Programme Managers (DPM) of District Blindness Control Society (DBCS) and District Ophthalmic Surgeons (DOS)

As part of the decentralisation of eye care services programme, District Blindness Control Society is being formed in all the districts in India.

Responding to the request of the Ministry of Health, Government of India, a course curriculum for a ten day training programme for the DBCS coordinators and District ophthalmic surgeons from each district has been developed.

The first 'Orientation Training Programme for District Programme Managers (DPM) of District Blindness Control Society (DBCS) and District Ophthalmic Surgeons (DOS)' was held from 23rd February to 4th March. This was conducted at the request of Ministry of Health, Government of India, as a model training programme so that other training centres could observe and conduct courses in their institutions.

International Congress of Ophthalmology Conference

Toronto, Canada, 26th to 30th June
Dr. G. Venkataswamy

- *Appropriate cost effective cataract surgery in countries with moderate financial constraints*
- *Glaucoma - cost & health economics*
- *Large volume cataract surgery.*

3rd Annual Scientific Session of the College of Ophthalmologists of Sri Lanka

Candy, Sri Lanka, 25th to 27th August

Mr. R. D. Thulasiraj

- *Blindness in South East Asia*

- Mr. R.D. Thulasiraj on invitation from Dana Centre at John Hopkins University delivered a lecture on Sustainability of Eye Care Programmes and role of IOL technology in developing countries, to the students and faculty of the Public Health Ophthalmology in January.
- Mr. Ayya Rao, Management Trainee at LAICO attended the 'National Seminar on Visually Handicapped' on 23rd and 24th March, organised jointly by the National Institute for the Visually Handicapped, Dehradun and Blind Men's Association at Ahmedabad.
- Following the IAPB meeting at Berlin, Mr. Thulasiraj went to the USA to hold discussions about LAICO with National Eye Institute, Prof. Munson and Seva Foundation. He also attended the Seva Board meeting as a member of its Board of Directors.
- He spent a week at the International Centre for Eye Health in London at their invitation, teaching part of the course relating to management of eye care programmes.

Curriculum Development Workshop for District Programme Managers (DPM) and District Ophthalmic Surgeons (DOS)

7th - 9th March

This workshop was supported by a grant received from WHO to develop a detailed curriculum and administrative guidelines for the training courses for the DPM/DOS. This was attended by representatives of the Ministry of Health, Government of India, Christofell Blinden Mission, Sight Savers, SightFirst, and DANPCB.

Aravind Sight Savers Skills Development Courses

Sight Savers has entered into partnership with Aravind and LAICO for manpower development, both on the clinical and programme management areas. In pursuit of this, Sight Savers has funded the following two courses.

Microsurgery Course

This training course meets a very important need and is the first course in the country to provide hands-on skills development. The feedback from trainees, and the rush of applications for the course are strong testimony for the relevance and success of this course. Six students are admitted each month. Started in 1993, so far 108 ophthalmologists have been trained. The training is offered at both Aravind-Madurai and Aravind-Tirunelveli.

Indirect Ophthalmoscopy Course

This four-week course started in June 1994, trains the candidates in the use of indirect ophthalmoscope to diagnose the diseases of the retina and vitreous. This meets a very critical diagnostic gap. This training enables ophthalmologists to perform more comprehensive eye examinations, especially the disorders of the posterior segment.

Other Training Programmes

The Second Orientation Programme for Lions SightFirst Coordinators

4th to 7th February

This second training course was attended by six SightFirst Coordinators. This small group allowed for intense interaction and at the end they left with a much greater vision and clarity about making SightFirst Programme achieve its goals.

Training in Organisation of Community Outreach Programmes for Eye Care:

A six-week training programme was developed to train eye camp organisers in planning and organisation of community outreach activities. This is mostly a field-based training to get a better understanding of community participation and how to work with the community in providing eye care.

The first course was conducted in August-September '94 wherein the following trainees attended the course:

Mr. P.R.Sharma (Fateh Bal Eye Hospital, Nepal)

Mr. H.L.Dhami (Lumbini Eye Hospital, Nepal)

Mr. Thapan (New Hope Rural Leprosy Trust, Orissa)

Mr. Prasanth Kumar Sen (Netaji Eye Hospital, Purulia, West Bengal)

At the end of the course, the trainees prepared a detailed plan of action for community outreach activities in their respective hospitals.

Training in Instrument Maintenance:

There is a critical need to have persons trained in equipment and instrument maintenance. A six-week hands-on training programme in instrument and equipment maintenance was developed. The focus of the training is on preventive maintenance for equipments and instruments in OPD and operation

- Mr. R. D. Thulasiraj attended the programme for District Programme Managers and Trainers held at St. John's Medical College, Bangalore, from 7th - 12th November 1994 as a resource person for the session on social marketing. Dr. K.C. Premarajan also participated in the meeting.

rooms. The following received training in this area

- Mr. B. K. Narayan Singh from Lumbini Eye Hospital, Nepal
- Mr. Gopal Gorai from Netaji Eye Hospital, Purulia, West Bengal

Training programmes to suit specific needs of institutions and individuals

LAICO also provides exposure and training in appropriate fields of ophthalmic care to individuals as per their specific requirements. Needs vary from quality control and financial sustainability; organisation of clinical and non-clinical services efficiently for high volume surgery; training of doctors and paramedical staff; hospital management to community outreach programmes.

Dr. Sandeep Malhotra from Venu Eye Institute, New Delhi.

Mr. Nanda Dhulal Chakraborty, General Secretary, Sri Bijay Krishna Ashram and Netaji Eye Hospital, Purulia, West Bengal.

Dr. S.K. Shrestha, Mrs. Meena Shrestha and Mr. J.N. Parajuli, from Lumbini Rana Ambika Eye Hospital, Nepal.

Mrs. Mehra from Chattisgarh Eye Hospital, Raipur, Madhya Pradesh

Dr. Sadhvi Chetana and Sadhvi Shree Shubamji from Netra Jyoti Seva Mandiram, Veerayatam, Rajgir, Bihar
Brig M.K. Modi, Administrator from Khairabad Eye Hospital, Kanpur

Project Consultancy

Mysore Race Club Eye Hospital, Mysore

LAICO has provided administrative, management and technical training support for Mysore Race Club to start a 75 bed eye hospital at Mysore. The institute prepared the detailed project proposal. In this connection,

Dr. G. Venkataswamy and Mr. R.D. Thulasiraj made several visits to Mysore to provide on-site consultancy. The administrator Lt. Col Srikanthaiah and ophthalmologists Dr. Brinda and Dr. Ravi Shankar from Mysore Race Club Eye Hospital were at Aravind for a week to get an overall idea of the eye care services and community outreach activities here.

Eye Hospital, Ganeshpuri

Swami Apoorvananda and his team from Prasad Chikitsa, Ganeshpuri, Maharashtra were at Aravind to have discussions with LAICO faculty to discuss the plans to build an eye hospital at Ganeshpuri.

Lions Karnavati Eye Hospital, Ahmedabad

Ln. Praveen Chajed and his team from Lions Karnavati Eye Hospital, Ahmedabad visited LAICO to study the working system at Aravind. They had detailed discussions with the LAICO and Aravind Staff on the hospital plans, financial aspects and systems and procedures to guide them in their new eye hospital project.

Mr. R. D. Thulasiraj and Dr. Premarajan made a visit to the new eye hospital.

Jain Hospital, Madurai

Jain Hospital is a well established service trust in Madurai which has been running an eye department with in-patient and operation theatre facilities. Aravind has been associated with this hospital for several years. However, recently, a need was felt to strengthen its functioning and ensure its long term viability. Several discussions were held with Jain Hospital trustees leading to renovation of the in-patient facility, purchase of new equipment and training of their staff members. LAICO, in partnership with Aravind has been involved in the whole process and continues to assist in the implementation and monitoring.

Visitors to LAICO

Ms. Catherine Cross and Mr. Martin Kyndt from Sight Savers held discussions with LAICO staff regarding training of eye care personnel from African countries where no such facilities exist.

Dr. R. Pararajasegaram, SightFirst Representative at WHO, Geneva was at the Institute to help in planning for the future training programmes and advise on the further development of the institute. He had detailed discussions with the LAICO faculty on the institute's role as a WHO Collaborating Centre for Prevention of Blindness. He also participated as a special invitee at the Institute Coordination Committee meeting held on 31st March'94.

Ln. Peter Lynch, SightFirst Project Coordinator was at the institute from 30th to 31st March, to work out the detailed plans for the Lions Eye Hospital Management Development Project.

Dr. Amy Sommers, Executive Director and later Dr. Suzanne Gilbert, Director, Blindness Prevention Programmes of Seva Foundation, USA came to Aravind to discuss the role of Seva in LAICO's development

Ln. Tulsian, International Director, SightFirst, Ln. Ashok Mehta and other members of SightFirst Committee visited LAICO to have a first hand information on the status of the institute's development and the training programmes being conducted. They went around the different departments at Aravind and held detailed discussions with the institute faculty on the role of LAICO in SightFirst Programme.

Mr. Alan Johns, the retiring Executive Director and Mr. Richard Porter, the new Executive Director of Sight Savers (RCSB), UK visited LAICO along with Mr. D. Nagarajan, Regional Director, South East Asia. They had discussions on the ongoing training programmes and also how Sight Savers can play a significant role in the development of the institute.

Ms. Kay Renius, a Seva volunteer from USA spent 8 weeks working with the LAICO and Aravind staff to develop a six-month curriculum to train the administrators in the management of eye care delivery.

Research Activities

Beneficiary Assessment Survey for the World Bank Project:

The Government of Tamil Nadu has requested LAICO to conduct a Beneficiary Assessment Survey in connection with the World Bank Project for Control of Blindness. The pretesting of the questionnaire in the field has been completed. The main survey is in progress.

Supporting Agencies

Many national and international agencies have very generously extended their guidance and support to Aravind towards the common goal of eradicating needless blindness. Aravind greatly treasures the partnership with these organisations and the spirit of service that they bring to the work.

The following organisations have contributed considerably to Aravind's achievements during the last year through their generous gifts of personnel time, financial resources and in-kind donations.

Sight Savers, Royal Commonwealth Society for the Blind (RCSB)UK

Aravind Eye Hospital and the Royal Commonwealth Society for the Blind have been associates in preventing blindness and preserving eyesight in the southern parts of India for nearly a quarter of a century.

During the last few years, the relationship between Aravind and Sight Savers has been strengthened considerably, keeping in line with the changing needs of the blindness control programme in India. The present support is towards strengthening Aravind as a resource centre for providing manpower development services, developing effective models of eye care delivery and making available new technologies and ophthalmic supplies at a cost affordable by the community.

Seva Foundation, USA

Since its inception, Seva Foundation has continued to guide and assist in Aravind's growth with a spirit of partnership. Seva enriches Aravind's resources by widening Aravind's access to latest technology, and by sending volunteers who are experts in various fields of ophthalmic care. Seva has teamed up with Aravind in its mission of eradicating curable blindness.

Seva Service Society, Canada

Their support was significant to the development of Aurolab and for the initial planning of the Lions Aravind Institute of Community Ophthalmology.

Dr. Martin Spencer, a member of the Board of Directors of Seva Service Society was here to provide training in Phaco surgery.

Direct Relief International (DRI), USA

DRI continues to provide help in shipping donated medical supplies and equipment from USA under the Indo-US agreement.

Combat Blindness Foundation (CBF), USA

CBF continues to support Aravind's free service to the poor by subsidising the cost of free surgeries. Dr. Suresh Chandra, President, CBF was at Aravind to visit Aurolab which CBF helped establish.

Helen Keller Foundation (HKI), USA

HKI through VITAP supports Aravind Children's Hospital's vitamin A work.

Lions International

Aravind is especially grateful to the Lions SightFirst programme for its support towards the construction and the operating expenses of the Lions Aravind Institute of Community Ophthalmology.

Ford Foundation, USA

The grant from Ford Foundation helped Aravind Children's Hospital to disseminate information on the benefits of vitamin A in a child's diet.

Orbis

Orbis have given invaluable support to the audio visual department by providing technical support and training for its establishment. They have also produced videos on the Aravind hospital model and nurses' training.

World Health Organisation (WHO)

WHO strengthens Aravind's role as a WHO collaborating centre by sending Fellows from other countries, giving it research opportunities and networking it with other collaborating centres.

Aravind is grateful to the following organisations which have supported research projects through research grants and technical guidance.

International Centre for Eye Health (ICEH), UK

- Childhood Cataract in South India: Prospective investigations of etiology and the outcome of surgical management

National Eye Institute, USA

- Madurai IOL Study

Dana Centre, John Hopkins University, USA

- Aravind Comprehensive Eye Survey
- Mitomycin C in Glaucoma Surgery

Volunteers and Visitors

- Ms. Nancy Rudolph, a friend of Helen Keller International, and a photographer by profession from New York came to photograph Aravind's activities.
- Mr. Ned Willard one of the Directors of Seva Board from France spent a few days at Aravind, volunteering his services to improve Aravind's publications. He also visited eye camps and reviewed Aravind's activities to improve the public and patient relations.
- Dr. Gray Handley, Scientific Attache, US Embassy.
- Mr. James W. Drain, Executive Vice-President of DAC Corp., USA came to visit Aurolab.
- Dr. Allison Menezes, ophthalmologist from Canada volunteered her service in general ophthalmology and retina clinics.
- Mr. Oswald Font & Mr. M. John, Orbis, USA - To help in setting up Aravind's audio-visual facility.
- Dr. Deborah Dean & Ms. Elizabeth Ordens, Procter Foundation, USA - came to assist with the setting up of the ocular TB study.
- Dr. A.K. Roy, Professor and co-ordinator, health care administration course, from St. Johns Medical College, Bangalore, was here to discuss issues relating to finance.
- Dr. A.S. Mehrotra, Professor & Head, Department of upgraded ophthalmology, S.M.S. Medical College, Jaipur.
- Stephen-G-Waller - Senior clinical Fellow, Mass. Eye and Ear Infirmary, visited Aravind to observe the activities of the cornea service; he also delivered lectures on cornea and external diseases.
- Lisa Keeler - A volunteer, was at Aravind to bring out an update manual on Aravind, right from its evolution.
- Christopher Cunningham - A student of photography from the University of Hawai, volunteered as a photographer.
- Mr. Geoff Bugbee - A volunteer documentary photographer, sponsored by Seva, helped to improve the photography department.
- Mr. Alexandre Laflamme - A volunteer photographer helped to streamline work in the audio-visual department.
- Ms. Rebecca Hansen, a History teacher from Roland Park County School, USA visited Aravind to get an exposure to Aravind's work and to have a first hand exposure to Indian culture and lifestyle. She spent many hours at a local school here exchanging ideas with the teachers and students. At Aravind, she helped the publications department staff in compiling information and layout for the book on Aravind's work.
- Dr. Dasa V. Gangadhar, Corneal surgeon from Mass. Eye & Ear Infirmary, USA delivered lectures on corneal diseases to Aravind doctors.
- Mr. Gary Goins and Ms. Linda Hansen, USA, IOL International Inc. USA came to review Aurolab's performance.
- Ms. Linda Peterson, Seva volunteer from Appalachian State University, USA was at Aravind to work on various training programmes for the nurses. She assisted the nurses training programme. She helped develop video-skits about do's and don'ts of ophthalmic nursing for the nurses. She also helped in

preparing the classification system and profile for database for the Resource Centre.

- Dr. Jack Stoeker and Dr. Harold Jensen from Allergan, USA.
- Dr. Hannah Fall, Gambia and Dr. Moses C. Chirambo, Malawi were here to observe service, training & management at Aravind
- Dr. Surveen Singh, an optometrist from Berkley, USA, was here to conduct Research and teach refractive techniques.
- Dr. Basti and Ms. Rukmani from LV Prasad Eye Institute, Hyderabad.
- Dr. Raji Mulukutla, Pennsylvania, USA was here to study patient care and other health care system at AEH.
- Dr. H.V. Nema, Professor ophthalmology, BHU, Varanasi was here to observe Aravind activities.
- Dr. Charles Ellewein and his wife, USA, visited the Aravind Eye Hospital.
- Ms. Julie Johnston, Canada and Ms. Susan Spinola, USA--Seva volunteers assisted in the training of nurses and developed a detailed curriculum for the training programme.
- Dr. Alvan Balent & Dr. Linda Civerchia, Florida, USA were here at Aravind to train Aravind staff to use the Phaco machine.
- Prof. I.S. Roy, Calcutta & Dr. Gordon Johnson, Institute of Ophthalmology, London were here for inspection regarding the FRCOph. programme.
- Dr. Sheshadri, Dr. Jeejabai & Mrs. Valli, Shri M.M. Murugappa Chettiar Research Centre, Madras were here to discuss the spirulina project with Dr. Lakshmi Rahmathullah.
- Mrs. Claire Hicks and Mrs. Judi Stagg, Impact, UK and Ms. Hema Udeshi, Impact, Bombay were here at Aravind for the Life line express project.
- Ms. Linda Perry, and Dr. Kishore Rao, Allied Dunbar, UK, came to discuss a collaborative project with Sight Savers.
- Mr. Todd Almeter, Mr. Hayden Beaty of Lenstec came to install the new equipment in Aurolab and train the staff.
- Mr. John Nance and Mr. Jerry Jones, Seva volunteer, USA.
- Dr. Miguel F. Refojo and his wife Svetlana from the Schepens Eye Research Institute, Boston, USA.
- Dr. J. Fielding Hejtmancite, National Institute of Health, Maryland, USA, came and held discussions on genetics research.

Aravind Eye Hospitals & Postgraduate Institute of Ophthalmology

Director: Dr. G. Venkataswamy MS, FACS

Chief Medical Officer:

Dr. P. Namperumalsamy MS

Senior Medical Officer: Dr. G. Natchiar MS

Secretary: G. Srinivasan BE, MS.

Administrator: R. D. Thulasiraj MBA

Project Director: Dr. C.A.K. Shanmugham B.Sc., D.E (Prague)

Aravind- Madurai

Retina & Vitreous Clinic

Chief: Dr. P. Namperumalsamy MS

Medical Officers:

Dr. Meena Devi MS, Dip. NB

Dr. R. Kim Dip. NB

Dr. V. Narendran DO

Dr. Ravi Kulkarni MS

Dr. Dinesh Sahu MS

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Dr. Reeti Sharma Dip. NB

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Neuro-ophthalmology Clinic

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Chief: Dr. G. Natchiar MS

Neurosurgery: Dr. P. Subburam MS

Medical Officers:

Dr. K.S. Chandrakanth DO

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Fellows

Dr. S.V. Kulkarni MS

Dr. Purendra Bhasin MS

Dr. Vandana Nandeshwar MS

Dr. Ravi Shankar MS

General Ophthalmology Fellows:

Dr. Rajendra Verma MS

Dr. A.V. Asha MS

Dr. Ravindra Panandikar MS

Dr. Abhijit Tagare MS

Dr. Ravindra Panandikar MS

General Ophthalmology Junior Fellows:

Dr. Chintamani Y. Kelkar DO

Cornea Clinic

Chief: Dr. M. Srinivasan MS

Medical Officers

Dr. Asokan MS

Fellows:

Dr. Jeena MS, Dip. NB

Paediatric Ophthalmology & Strabismus Clinic

Contact Lens Clinic

Chief: Dr. P. Vijayalakshmi MS

Medical Officer: Dr. Kalpana Dip. NB

Fellows:

Dr. Anil Kumar Chhabra MS

Dr. R. Ramesh MS

Dr. Kumar Hariharan MS

Glaucoma Clinic

Chief: Dr. R. Ramakrishnan MS

Medical Officer: Dr. Krishnadas Dip. NB

Fellow:

Dr. Vijayalakshmi MS

Orbit & Oculoplasty Clinic

Medical Officer: Dr. Y. Sujatha MS

Uvea Clinic

Chief: Dr. Rathinam Dip. NB

Free Hospital

Medical Officers:

Dr. P. Ravichandran DO

Dr. N.V. Prajna Dip. NB

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Aravind- Tirunelveli

Chief: Dr. R.D. Ravindran MS

Medical Officers:

Dr. R. Kumaraswamy Dip. NB

Dr. Niranjankumar Dip. NB

Dr. N.P. Baburajan MS

Dr. Bina Kashinath Manoli DO

Dr. Saguna Dip. NB

General Ophthalmology Fellows:

Dr. Nitin Nema MS

Dr. Mohan MS

General Ophthalmology Junior Fellows:

Dr. Rajendra Malviya DO

Dr. Rabhani Begam DO

Dr. Rajkumar Patil DO

Aravind - Theni

Senior Medical Officer: Dr. D. Dutta Dip. NB

Junior Medical Officer:

Dr. R. Sivasakthi MBBS

General Ophthalmology Fellow

Dr. Manoj Kurian Philip MS

Aravind Children's Hospital-Madurai

Director: Dr. Lakshmi Rahmathullah DPH

Medical Officer:
Dr. Paulraj MBBS

Aurolab

Trust President:
Dr. G. Venkataswamy

Trust Secretary:
Mr. G. Srinivasan BE, MS

Managing Director:
Dr. P. Balakrishnan Ph. D

Production Engineer:
Mr. R. D. Sriram BE

Marketing Manager:
Mr. R. V. Duraiswamy BE

Lions Aravind Institute of Community Ophthalmology

Director:
Dr. G. Venkataswamy MS, FACS

Grant Administrator:
Ln. N. A. K. Gopalakrishnaraja MJF

Administrator:
Mr. R. D. Thulasiraj MBA

Institute Faculty:
Dr. P. S. Ganguly MD
Dr. Premarajan MD

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& Postgraduate Institute of Ophthalmology

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Aravind Eye Hospitals

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World Health Organisation
Collaborating Centre
For Prevention of Blindness

Aravind-Madurai

Aurolab

Lions Aravind Institute of Community Ophthalmology (LAICO)

1, Anna Nagar, Madurai - 625 020, Tamilnadu, India

Phone: (0452) 43301, Gram: Aravindeye, Telex: 445-340 AEH IN, Fax: 91-452-630984

Aravind-Theni

• Periakulam Road, Theni - 626 531, Tamilnadu, India

Phone: (04546) 72658

Aravind-Tirunelveli

• Swamy Nellaiappar High Road, Tirunelveli Jn - 627 001, Tamilnadu, India

Phone: (0462) 337103; 337104

Aravind Children's Hospital

Munthirithoppu, Anna Nagar, Madurai - 625 020, Tamilnadu, India
