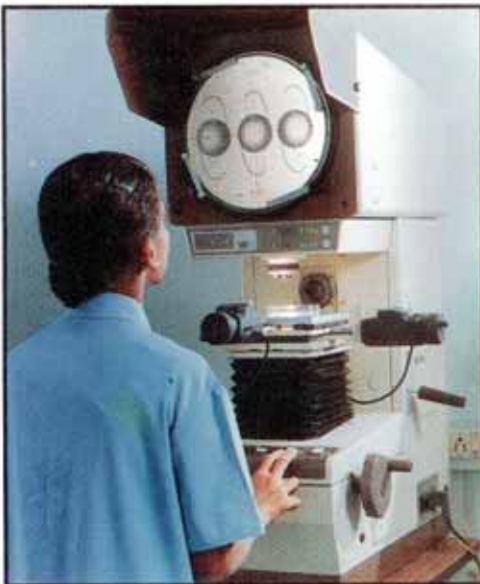

ARAVIND: ACTIVITY REPORT 1993



Aravind Eye Hospitals
Aravind Children's Hospital
Aurolab
Lions Aravind Institute of Community
Ophthalmology



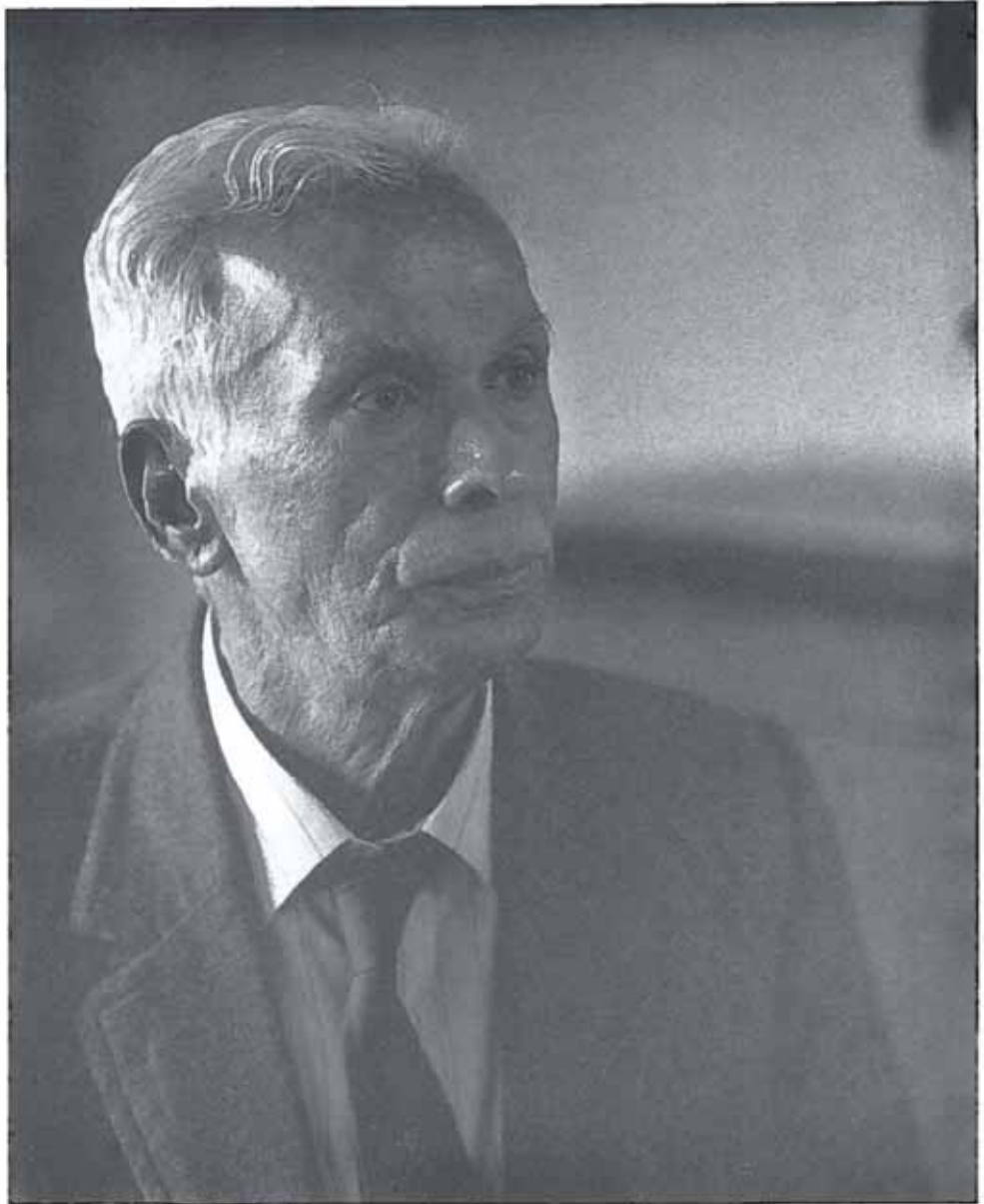
1993



The Mother, Sri Aurobindo Ashram

*My light shall be in thee, my strength thy force.
Let not the impatient Titan drive thy heart,
Ask not the imperfect fruit, the partial prize.
Only one boon, to greaten thy spirit, demand;
Only one joy, to raise thy kind, desire.
Above blind fate and the antagonist powers
Moveless there stands a high unchanging Will;
To its omnipotence leave thy work's result.
All things shall change in God's transfiguring hour."*

- 'Savitri', Sri Aurobindo



Dr. G. Venkataswamy - Director

Under the guidance of Dr. G. Venkataswamy, Aravind has evolved to be more than an eye hospital. It is a social organisation committed to its goal eliminating needless blindness through its network of three hospitals, extensive outreach work and willingness to provide services to all, regardless of their capacity to pay.

It is an international training centre for ophthalmic professionals and trainees who come from within India and around the world to teach or to learn, to offer their skills and to acquire new ones.

And it is an institute contributing to the development of eye care in India through research from understanding patient needs to seeking better treatment for eye diseases.

Aravind is named after Sri Aurobindo. He lived his life in service to God and man, the principle, on which Aravind was established and continues to be guided by.

Looking back to the beginning

- 1976 - *Aravind had a humble beginning with only 11 beds in a residential house (1)*
 - 1977 - *Hospital for free patients was started with 30 beds (2)*
 - *Govel Trust - a non-profit Public Charitable Trust was formed*
 - *Foundation stone was laid for the permanent hospital*
 - 1978 - *As a result of the increased number of free patients, an annex was built with accommodation for 100 free patients (3)*
 - 1980 - *Inauguration of the main paying hospital with the ground and first floor completed*
 - 1981 - *Recognition for residency training by the National Board of Examinations (Dip. N. B.)*
 - 1982 - *Completion of the main hospital with a total of 250 beds*
 - *Recognition for residency training - Diploma in Ophthalmology (D. O.)*
 - *WHO began to send Fellows for orientation and training*
 - 1983 - *Doctors from various international organisations began to visit Aravind for additional training*
 - 1984 - *The free hospital moved into the present facility with accommodation for 400 patients (4)*
 - *Aravind's Children's Hospital was started at the old free hospital*
 - *The first satellite hospital with accommodation for 40 paying and 60 free patients was established at Theni (5)*
 - *Aravind Medical Research Foundation was formed*
 - 1986 - *Recognition for residency training for MS in Ophthalmology*
 - 1988 - *Inauguration of Aravind Eye Hospital at Tirunelveli with accommodation for 200 paying and 200 free patients (6)*
 - *Beginning of Fellowship training in Retina & Vitreous Services*
 - 1989 - *Fellowship training in Anterior Segment Microsurgery was added*
 - 1990 - *Aravind's Cornea, Paediatric Ophthalmology and Glaucoma Clinics also began to offer Fellowship training*
 - 1991 - *Aravind's facilities at Madurai expanded to accommodate 325 paying and 650 free patients*
 - 1992 - *The Intraocular Lens Manufacturing Unit of Aurolab was inaugurated*
 - *Aravind was recognised by the World Health Organisation as a Collaborating Centre for Prevention of Blindness*
 - 1993 - *The Aravind Sight Savers Microsurgery Training Programme was started*
 - *Foundation stone was laid for the Lions Aravind Institute of Community Ophthalmology*
-



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6

Performance

In 1993, Aravind received 660,000 out-patient visits from various parts of India. Its surgeons performed 69,000 eye operations and laser surgeries.

This has been made possible through the dedication of a caring and committed staff. Working in partnership with the community and with continued support from well wishers, Aravind has become what it is today: An internationally respected centre dedicated to achieving excellence in patient care, teaching and research.

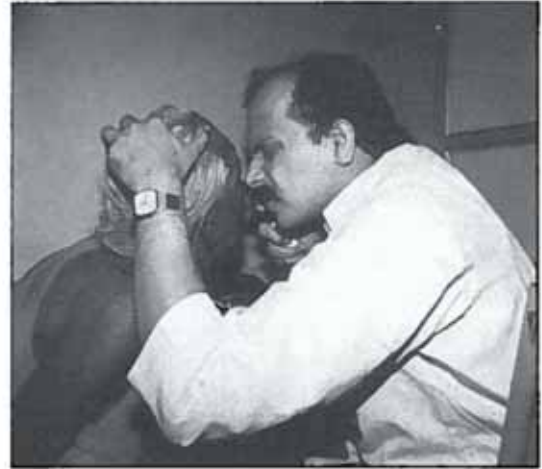
Blindness in India: Magnitude of the Problem

There are 13 million blind in India (vision less than 6/60). This represents more than one in six of those blind in the world.. 81% of this blindness is due to cataract. (From a recent NPCB -National Programme for Control of Blindness-Survey)

The social and financial hardships created by blindness gravely affect individuals and families in particular, and the nation at large.

Only a global effort can reduce this avoidable blindness.





Aravind Eye Hospitals Statistics - 1993

		Madurai	Tirunelveli	Theni	Total
Out patient visits	- Paying	2,10,523	61,321	21,305	2,93,149
	- Free	2,53,926	91,457	19,311	3,64,694
Surgery	- Paying	22,812	4,466	701	27,979
	- Free	31,921	8,177	1,304	41,402

Hospital out-patients visits	3,25,915	98,542	29,284	4,53,741
Eye Camp out-patients visits	1,38,534	54,236	11,332	2,04,102
Total out-patients visits	4,64,449	1,52,778	40,616	6,57,843
Screening camps	453	288	56	797

Surgery Details

Cataract & other lens removal procedures (without IOL)	23,078	4,609	1,102	28,789
IOL Implantation	19,833	4,833	629	25,295
Trabeculectomy	843	120	20	983
Retinal Detachment	542	46	-	588
Vitreous Surgery	338	16	4	358
Membranectomy	97	7	-	104
Squint Correction	328	72	-	400
Keratoplasty & Therapeutic Graft	191	-	-	191
Ptosis	65	18	-	83
DCT, DCR & other Septic Operations	2,559	1,201	155	3,915
Pterygium	360	223	44	627
Laser & Xenon Photocoagulation	1,821	698	-	2,519
Nd. Yag Iridectomy	1,315	144	-	1,459
Nd. Yag Capsulectomy	1,612	255	-	1,867
Argon Laser Trabeculoplasty	94	6	-	100
Others	1,657	395	51	2,103
Total	54,733	12,643	2,005	69,381

Community Outreach

'The real India lives in the villages' said Gandhiji. He also stressed the need to make proper health care facilities available for the millions residing in rural India. Along these lines Aravind strives diligently, to serve the underserved through conducting free eye camps.

These eye camps provide a link to the rural masses, helping Aravind to achieve its mission by reaching out and treating a large number of poor rural patients.

Aravind's camp activities include: providing guidelines to local organisations which take care of arranging the camps; planning for equipment, supplies and manpower, food and transport; making arrangements for the patients; and taking care of hundreds of other details to ensure that the eye camps run smoothly.

Aravind runs 15-20 camps each week.

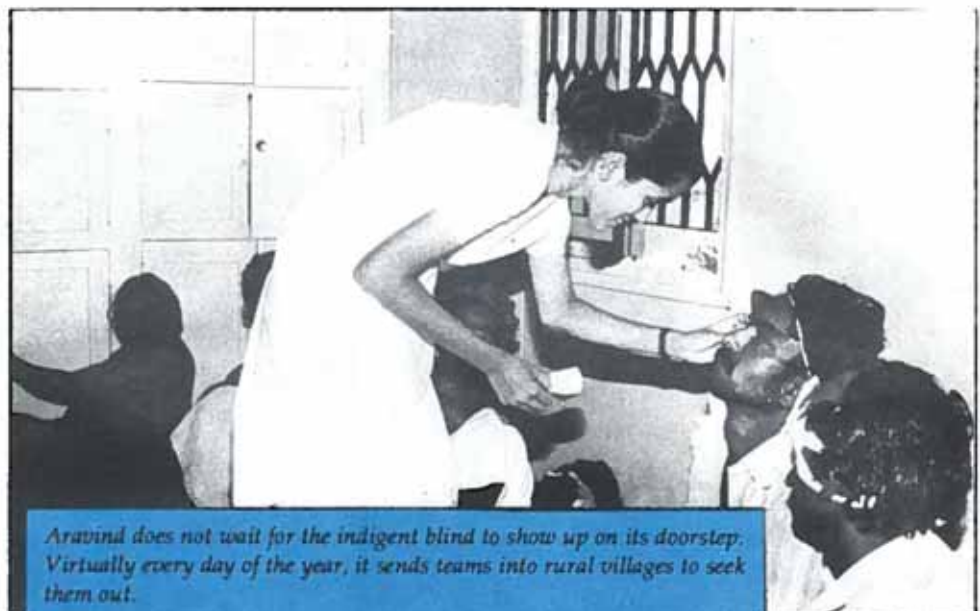
Aravind's group of organisers serve as the backbone of this operation. However, they recognise that a high degree of community participation and involvement are the key to serving patients of that community. Thus, with the assistance of local leaders, they form community groups who look after publicity and camp arrangements. They also serve as volunteers and counsel the patients about the surgery.

Aravind's extensive eye camp activity has been possible through the generous support of Sight Savers, UK, and Combat Blindness Foundation, USA.

Camps - 1993

Name of Organisation	Number of Camps	Number of Out-patients	Number of Surgery		Total
			Cataract	Others	
Lions Clubs	147	52,449	6,617	329	6,946
Rotary Clubs	24	11,199	1,473	71	1,544
Vivekananda Kendra	200	27,651	2,311	223	2,534
Bhagavan Sathya Sai Seva orgns.	36	9,442	1,707	101	1,808
Religious orgns.	39	14,147	2,041	82	2,123
Jaycees	3	1,727	194	10	204
Banks	25	4,953	389	25	414
Mills & Factories	19	5,871	836	68	904
ASSEFA	7	805	88	8	96
Schools & Colleges	54	8,451	528	44	572
Hospitals	7	4,717	1,099	74	1,173
Trusts	17	5,842	1,112	56	1,168
Youth & Fans Associations	50	5,925	448	27	475
Other voluntary service orgns.	109	30,308	2,414	148	2,562
Others	60	20,615	1,666	102	1,768
Total	797	2,04,102	22,923	1,368	24,291

In addition to the above statistics, Aravind also sent a medical team to a camp organised by Gurudev Siddha Peeth at Ganeshpuri, Maharashtra. The team consisted of nine ophthalmologists, four of whom were Aravind Alumni from that area and six nurses. Aravind's team assisted in the screening of the 17,000 patients and performed 815 surgeries out of a total of 1,299. Of these, 1,250 received IOL implants, making this the largest IOL surgical camp.



Aravind does not wait for the indigent blind to show up on its doorstep. Virtually every day of the year, it sends teams into rural villages to seek them out.

- Judith Randall, 'Research Partners Half a World Apart'



Facilities

Aravind-Madurai

Paying Section

325 Beds

7 Operation Theatres

Average number of
out-patient visits per day : 673

Average number of
surgeries per day : 73

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

Free Section and Free Eye Camps

Can accommodate 600 patients

4 Operation 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.

At the screening camps, patients selected for cataract surgery are brought to the main hospital for surgery.

Average number of
out-patient visits per day : 812

Average number of
surgeries per day : 102

Support Facilities

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

Aravind-Tirunelveli

In-patient facilities for:

200 Paying patients

200 Free patients

4 Operation Theatres

Serves a population of approximately six million in and around Tirunelveli, V.O.C and Kanyakumari districts.

Paying, Free Section and Camps:

Average number of
out-patient visits per day : 487

Average number of
surgeries per day : 40

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 number of
out-patient visits per day : 128

Average number of
surgeries per day : 6

Aravind Children's Hospital

Aravind Children's Hospital (ACH) was set up in 1984 to address the issue of blinding malnutrition in children. Apart from hospital based patient care, ACH offers

- Prenatal and postnatal care
- Immunisations
- Rural outreach programmes
- Help with formation of women's Service Groups

ACH 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-1993

Out-patient visits	-	24,343
Children < 5 years old	-	1,745
In-patients	-	91
Camps	-	21
Camp cases	-	1,476
Children under the age of five are monitored regularly for nutritional status and weight gain.		

Vitamin A Deficiency Cases

Night blindness & Bitot's spots	-	244
Corneal Xerosis	-	3
Keratomalacia (< 1 year = 8)	-	18
Corneal scar	-	1

Community Training Programmes

- Six training sessions on vitamin A deficiency control were held during 1993. Approximately 120 community health volunteers of various voluntary agencies attended these programmes.
- Vitamin A training programmes were held for 104 rural mothers in and around Madurai.
- 125 traditional healers from various villages of Kallupatty block attended the ACH workshop on Vitamin A deficiency Control.

Workshop for PVOs on Conducting a Community Assessment of Vitamin A Deficiency

5-14 July

ACH and Vitamin A Technical Assistance Programme (VITAP) of Helen Keller International, USA conducted this workshop.

Twenty five participants from various organisations working on vitamin A deficiency control participated in this workshop along with Aravind Eye and Children's Hospital staff. The workshop included dietary assessment of vitamin A deficiency among

preschoolers using HKI seven days food frequency methodology. The field work was conducted at Kallupatti Block.

Projects:

- VITAP-ACH/ASSEFA collaborative project of developing vitamin A education materials, cooking demonstrations for rural mothers in Kallupatti area.
- Assisted in training, monitoring and analysing of the KAP survey of the World Vision of India at Ramanathapuram district.

Outreach Programmes

- Lay persons trained in first aid were nominated and are functioning in the adopted villages.
- The pre-school and creche started in the Indira nagar village are progressing well with government assistance.
- Cooking demonstrations were conducted for the mothers attending the hospital.

Publications

- *Save the child's sight* - A pamphlet and a poster on vitamin A deficiency control were developed for distributing among general medical practitioners.



Cooking demonstration for mothers

Education Programmes

The education of ophthalmologists and ophthalmic technical personnel is one of Aravind's major contributions to the advancement of eye care. Aravind's fellowship programmes and postgraduate education programmes draw postgraduates and medical residents from all over the country.

Postgraduate Education

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

Dr. Sujatha Rao
Dr. D. P. Prakash
Dr. G. Rohini
Dr. Leela Vergis
Dr. S. Raja Vengal Reddy
Dr. R. Deepti
Dr. K. S. Ramadevi

MS in Ophthalmology (MS)

Dr. S. Aravind
Dr. Rajesh Gupta

Diploma in Ophthalmology (DO)

Dr. Bharathy
Dr. Usha
Dr. Dinukumar Arthur
Dr. Ishrath Sultana
Dr. Ganesh Maiya
Dr. A. R. Reshmy
Dr. Praveenkumar
Dr. Sathyan
Dr. Mathew Zachariah
Dr. R. Krishnapriya

Senior House Surgeons

Dr. N. Radhika
Dr. R. Sivasakthi
Dr. C. B. Shanthi
Dr. Neerja Lajju Bisht

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

- Postgraduate training for ophthalmologists
- Ophthalmic nurses training
- Masters in Hospital Management Programme

Postgraduate Training for Ophthalmologists

Aravind is recognised by

the **Medical Council of India** for:

- Diploma in Ophthalmology (DO) Course
 - MS in Ophthalmology course
- the **National Board of Examinations** for:
- Diplomate of the National Board (Dip. N. B.)

It is also affiliated to the **Tamil Nadu Dr. M.G.R. Medical University.**

Aravind offers Fellowship programmes in the following specialities:

- Retina and Vitreous
- IOL and anterior segment microsurgery
- Cornea and external eye diseases
- Paediatric Ophthalmology
- Glaucoma
- Neuro-ophthalmology
- Orbit and Oculoplasty

Ophthalmic Nursing Training

The efficiency of Aravind's ophthalmic nurses is an important reason for the hospital's low costs and high quality. Twice in a year, about 30 high school graduates are recruited and trained in basic nursing with special focus on ophthalmic care.

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.

Resident Training

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

St. Vincent's Hospital, NY, USA
Dr. Michael Tepedino
Dr. Susan Kessler

Wilmer Institute, USA
Dr. Anisa B. Threlkeld
Dr. Rohit Varma
Dr. Deborah Keenum

University of Illinois, Chicago, USA
Dr. Austen-Kum Chai
Dr. Ellen Dehm
Dr. Karen Winchester
Dr. Aida Wakil
Dr. Deepak Edward
Dr. Fred Bodker
Dr. Geoffrey Marx

Brookdale Hospital, NY, USA
Dr. Gordon Lui
Dr. Amiya Prasad

Sinai Hospital, Baltimore, USA
Dr. Michael E. Snyder
Dr. Michael Altman

Mass. Eye & Ear Infirmary, Boston, USA
Dr. Lisa McHam
Dr. Martin Arkin
Dr. John Berestka
Dr. Scott Smith
Dr. James McMillan
Dr. Eric Pierce

University of California, USA
Dr. Adam Abrams

Greater Baltimore Medical Centre, John Hopkins University, Baltimore, USA
Dr. Tim Polk
Dr. Marc Honig

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

Continuing Medical Education

In addition to the regular educational programmes, Aravind also conducts frequent conferences, lectures and workshops to help address the current needs and provide continuous medical education.

Courses and Workshops conducted at Aravind in 1993

Course on Corneal Diseases, Corneal Surgery & Uveitis

16th & 17th, January

Course Director:
Dr. M. Srinivasan

Dr. John P Whitcher, Proctor Foundation, USA

- Conjunctivitis
- Peripheral Bacterial Corneal Ulcer
- Central Bacterial Corneal Ulcer
- Dry Eye Syndrome
- Treatment of Postoperative Endophthalmitis

Dr. Ananda Kannan, Regional Eye Institute, Egmore, Madras

- Viral Infections of Cornea
- Techniques of Keratoplasty

Dr. Robert A. Nozik, University of California, USA

- Systemic Approach to Diagnosis and Management of Uveitis
- Use of Clinical History in Uveitis

- Use of Physical Examinations in Uveitis
- Non-specific Treatment of Uveitis

Dr. David Heiden, UCSF, San Francisco, USA

- P. Acnes Endophthalmitis

Dr. Terry O'Brien, Johns Hopkins University, USA

- Antifungal Drugs
- Newer Bacterial Infections of cornea
- Peripheral Corneal Degeneration
- Viral Infections of Cornea

Dr. M. Srinivasan

- Fungal Infections of Anterior Segment of the Eye
- Corneal Dystrophies
- Nocardial Endophthalmitis
- Post Keratoplasty Complications

Neuro-ophthalmology Workshop

6th & 7th November

Course Director:
Dr. G. Natchiar

Dr. G. Natchiar

- Importance of Neuro-ophthalmology
- Guidelines to Neuro-ophthalmic examination
- Field defects in chiasmal and post chiasmal lesions

Dr. Banumathy

- Anatomy & blood supply of visual pathway
- Surgical anatomy of orbit
- Video on the above subject

Dr. Harihara Subramaniam

- Neurophysiology of vision
- Video on retinal layers

Dr. Jayakumar

- Pupil and its reactions
- Nystagmus
- Supranuclear eye movement systems - clinical significance
- Ocular myasthenia and myopathy

Dr. Krishnadas

- Visual fields: Techniques & analysis

Dr. Shahul Hameed

- Neuro-ophthalmic manifestation of ENT lesions

Dr. P. Vijayalakshmi

- Infranuclear eye movements

Dr. Jeffrey Nichols

- Botulinum Toxin-Treatment for acquired nystagmus
- Optic neuritis treatment trial
- Neuro-ophthalmic manifestations of AIDS

Dr. Subburam

- Headache: Diagnostic approach
- Pseudo tumor cerebri
- Neuro-ophthalmic manifestations of vascular lesions of the brain
- Head injury: Ocular manifestations
- Neuro-ophthalmic manifestations of C-P Angle tumors
- Transcranial approach

Dr. P. Namperumalsamy

- Optic neuritis

Dr. Ramakrishnan

- Optic atrophy

Dr. Muthukumar

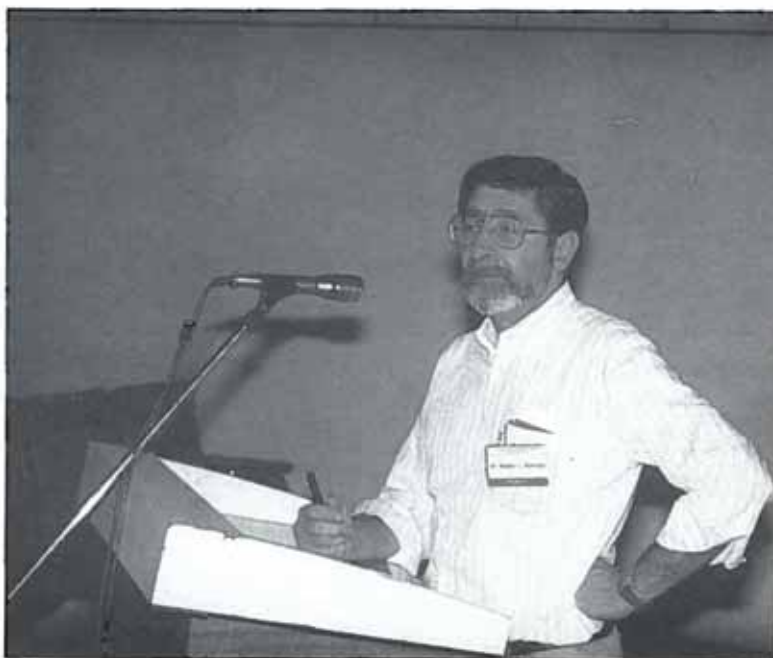
- Neuro-ophthalmic manifestations of cerebral hemisphere lesions

Dr. N. Nagappan

- Proptosis of neuro-ophthalmic interest
- Orbitotomies

Dr. Madhavan Unni

- Radiology in neuro-ophthalmology
-



Dr. Robert L. Stamper at the Glaucoma Symposium

Symposium on Glaucoma Update

5th & 6th December

Course Director: Dr. Ramakrishnan

Dr. G. Venkataswamy

- *Inaugural address*

Dr. Robert L Stamper

- *Psychophysics in glaucoma - An Update*
- *Early detection of glaucoma*

Dr. Marc Libermann

- *Automated Perimetry - Basics and interpretation*
- *Challenges in glaucoma surgery*
- *Ancillary techniques in Glaucoma*

Dr. Alan L Robin

- *Current concepts in medical management of glaucomas*
- *Update on lasers in glaucoma*

Dr. Kuldev Singh

- *Video on surgical procedures in glaucoma*

Dr. Ramakrishnan

- *Management of refractory glaucomas*

Dr. Krishna Das

- *MMC vs 5 FU*

Live demonstration of surgical procedures in glaucoma - case presentations and discussions.

Ophthalmology Course for General Practitioners at Aravind-Tirunelveli

19th December

Course Director:

Dr. R. D. Ravindran

Dr. P. Namperumalsamy

- *Recent Advances in Ophthalmology*

Dr. B. Niranjan Kumar

- *Refractive Errors and Ocular Headache*

Dr. M. Srinivasan

- *External Eye Diseases*

Dr. C. Premachandran

- *IOL*

Dr. R. Ravichandran

- *Paediatric Eye Problems*

Dr. R. Ramakrishnan

- *Glaucoma*

Dr. R. D. Ravindran

- *Diabetic Retinopathy*

Dr. R. Kumaraswamy

- *Applications of Lasers in Ophthalmology*

Courses and Workshops attended by Aravind Staff in 1993

51st Conference of the All India Ophthalmological Society

Jaipur, 3rd, 4th & 5th February

Free Paper Session

Dr. Susil Kumar Pani

- *Need to extend IOL implantation facilities in remote rural eye care centres in developing countries*

Dr. M. Srinivasan

- *Low-dose, short period Mitomycin drops after pterygium surgery*

Dr. Sandeep Prabhakar Wagh

- *Angiomas of retinae - our experience*
- *Prognostic factors and surgical management of IOFB*

Dr. R. D. Ravindran

- *Fibrous membrane formation on the PC IOL during the early postoperative period. A comparison of indigenous and imported lenses*
- *Extracapsular cataract extraction and IOL implantation in phacolytic glaucoma*

A video presentation on 'large volume hospital based cataract surgery'

Dr. R. Ramakrishnan

- *Mitomycin - C in primary filtering surgery*
- *Trabeculo - Suprachoroidal shunt - in the management of intractable glaucoma*

Dr. Deva Prasad Kar

- *Secondary IOL implantation - A myth exploded outcome of 149 cases*

Dr. Javeed M. Khan

- *Axial length errors in asteroid hyalosis*

Dr. Arup Chakrabarti

- *Our experience with posterior chamber lens in subluxated cataract*

Dr. Aniruddha R. Nalgirkar

- *Posterior capsular breaks in patients with pseudoexfoliation*

Dr. C. Premachandran

- *Effect of optic design of posterior chamber lens on capsular opacification - A four year follow up*

Scientific Exhibits & Posters

Dr. Javeed M. Khan

- *Avoiding Anisometropia in pseudophakia*
- *IOL in high myopia*

Dr. P. Lakshmana Rao

- *Clinical observations in 150 patients with Duane's retraction syndrome*

Dr. Sandeep Prabhakar Wagh

- *Posterior chamber intraocular lens implantation in IOFB cases*

Meeting of the Indian Medical Association

Sankarankoil, January 24th

Dr. Kumarasamy

- *Common Ocular Problems*

Tenth Meeting of the World Health Organisation Programme Advisory Group on the Prevention of Blindness

Geneva, Switzerland, March 2nd to 5th

Dr. P. Namperumalsamy attended this meeting

Salem Ophthalmic Association

Salem, April 4th

Dr. R. D. Ravindran

- *Complications in IOL surgery*

Certificate Course in Community Ophthalmology

ICEH, London,
21st April to 25th June

Mr. Raheem Rahmathullah, Manager, Aravind-Free Section, Madurai was among 18 participants from around the world to attend this 10 week course.

Workshop on Concomitant strabismus

Regional Ophthalmic Institute, Madras
April 24th

Dr. P. Vijayalakshmi

- *Vertical strabismus and its management*

ARVO (Association for Research in Vision and Ophthalmology) meeting

Sarasota, Florida, USA, May 2nd

Dr. Ramakrishnan presented 2 posters on

- *Efficacy of Mitomycin in Trabeculectomy in South India - A pilot study*
- *Complications of Mitomycin C in primary trabeculectomy*

International conference on Cornea, Eye Banking and External Disease

Jerusalem - Israel, June 20th to 24th

M. Srinivasan

- *Infective keratitis in South India*
-



Dr. Alan Robin and Dr. Ramakrishnan at the ARVO Meeting

WHO meet on "Effect of Ultra Violet Radiation on the Eye"

Geneva, Switzerland
30 August - 3 September

Mr. R. D. Thulasiraj attended this meeting by the Division of Environmental Health and Prevention of Blindness Programme of the World Health Organisation. The gathering reviewed available evidence linking UV (Ultra Violet) exposure and occurrence of eye diseases.

41st Tamil Nadu Ophthalmic Association (TNOA) Conference

Tuticorin, 3rd - 5th September

Dr. P. Namperumalsamy

Convenor for the course on
- *Vascular lesions on Retina*

He gave a talk on
- *Eale's Disease*

Dr. G. Natchiar
- *Future Trends in IOLS*

Dr. M. Srinivasan
- *Industrial Ocular Injuries*
- *Fungal Corneal Ulcer*

Dr. M. Srinivasan, Dr. P. Balakrishnan
- *Decision making in selection of Operating Microscope*

Dr. M. Srinivasan, Dr. Jagadish Kumar Reddy, Dr. P. Sundar, Ms. Celin George
- *Changing Pattern of Acanthamoeba Keratitis*

Dr. M. Srinivasan, Dr. Arup Chakrabarthy
- *Orbital cellulitis following peribulbar anaesthesia*

Dr. Jagadish Kumar Reddy, Dr. M. Srinivasan
- *Infectious Scleritis of fungal aetiology*

Dr. C. A. K. Shanmugham, Dr. P. Vijayalakshmi
- *School Eye Health Scheme: A study of 24,000 children*

Dr. R. Ramakrishnan
- *Glaucoma in Pseudophakes*

Dr. R. Ramakrishnan, Dr. R. Krishnadas, Dr. Ponnamm Sridhar
- *Filtering Surgery in Pseudophakic Glaucoma*
- *Antimetabolites in Glaucoma Filtering Surgery*

Dr. N. Nagappan, Dr. Y. Sujatha
- *Orbital Meningioma-Treated as thyroid orbitopathy*
- *Cosmetic Surgery for lagophthalmos*
- *A simple out-patient surgery for socket reconstruction*

Dr. R. Ravichandran, Dr. R. D. Ravindran, Dr. Maya Devi
- *A comparative study of Atracurium, Vecuronium and Suxamethonium on IOP in paediatric ocular surgery*

Dr. C. Premachandran, Dr. R. D. Ravindran
- *Error in IOL power calculation in high axial myopia*

Dr. R. Kumaraswamy, Dr. R. D. Ravindran, Dr. Niranjana
- *A Case Report of Stickler's Syndrome*

Dr. Arup Chakrabarthy, Dr. G. Natchiar, Dr. N. Ganesh
- *IOL implantation following ECCE in patients with siderosis bulbi*
- *ECCE with PC IOL in Fuch's heterochromic Iridocyclitis*
- *New techniques of scleral fixation of PC IOL implantation*

Dr. B. Ganesh, Dr. G. Natchiar, Dr. Arup Chakrabarthy
- *Retrospective study of lens exchange*

Dr. D. P. Prakash, Dr. Susil Pani, Dr. R. Ramakrishnan
- *Aniridia: Analysis of 20 cases*

Dr. Susil Kumar Pani, Dr. D. P. Prakash, Dr. Rohini
- *Adie's Pupil: A clinical puzzle*

Dr. Anuradha Chavan, Dr. P. Vijayalakshmi
- *Surgical Management of Intermittent Exotropia*

Dr. R. D. Ravindran
- *Symposium in IOL - Types of PC lens*

Dr. R. Kumaraswamy
- *Laser in Ophthalmology in the pre-conference course for General Practitioners*



Dr. Prabjot Channa , Dr. P. Namperumalsamy and Dr. Annabele Okada at the Aravind International Alumni Meet

**Aravind International Alumni
First Meeting**

Chicago, USA

16th November

With the initiative of St. Vincent's Hospital, New York, Aravind International Alumni was formed consisting of all residents who spent time at Aravind as part of their residency. Over 50 residents from various institutes in USA had assembled together for the Aravind Alumni Meeting on the 16th of November under the chairmanship of Dr. D'Amico.

XII Annual Maharashtra State Ophthalmic Conference

Ahmednagar Ophthalmic Academy
9th to 11th October

Dr. P. Namperumalsamy

Guest Lecture:

- *Management of Eale's Disease*

Symposium on vitreo-retinal disease

- *Role of perfluorocarbon liquid in vitreo retinal surgery.*

Fourth International Conference on Bibliometrics, Informetrics and Scientometrics

Berlin, Germany, 11th to 16th September

Sponsored by the Association for Science Studies, Germany

Mr. Palaniyandi

- *Analysis of citation pertaining to post-graduate engineering theses submitted to South Indian Universities - A Bibliometric study leading to generalisation with reference to third world countries.*

Workshop on Training of Trainers in ECCE & IOL Cataract Surgery

Madras, 21st & 22nd September

Dr. Natchiar

Criteria for selection of Training Institute - Equipments, facilities, staff, patient load, boarding & lodging facilities, capability in terms of number of candidates that can be trained

Indian Medical Association Meeting

Sathanur, Kerala, 25th September

Dr. R. Ravichandran

- *Paediatric Eye Diseases*

American Academy of Ophthalmology Meeting

Chicago, USA, 14th to 18th November

A scientific poster on

- *Characteristics of exfoliation syndrome in Asian Indians*

was displayed at the conference of which Dr. R. Ramakrishnan was a co-author.

Dr. P. Namperumalsamy and

Dr. G. Natchiar attended the AAO meeting.

They also attended the first Aravind International Alumni Meeting.

Meeting on Evaluation of National Eye Care Programme in Nepal

Kathmandu, 23rd November

Mr. R. D. Thulasiraj attended this meeting along with representatives from WHO-PBL, Geneva (Dr. Dominic Negrel), NEI, Bethesda, USA (Mr. Ed McManus) in addition to local ophthalmologists and representatives of International NGOs working in Nepal.

Workshop on Sustainability of Eye Care Programmes in Nepal

Nepal Netra Jyothi Sang (NNJS),
Kathmandu, 25th to 26th November.

This workshop was organized by the Nepal Netra Jyothi Sang (NNJS) at Kathmandu on the 25-26 November. Mr. R. D. Thulasiraj delivered the keynote address.

Glaucoma Society of India meeting

Madras, 2nd & 3rd December

Dr. Ramakrishnan

- *Suprachoroidal Shunt in the management of refractory glaucoma*

VIII National Diabetes Congress

Organised by Diabetes Association of India
Calcutta, 3rd to 5th December

Dr. P. Namperumalsamy

- *Diabetic Retinopathy: Recent Trends in Management*

Publications

- Dr. P. Namperumalsamy is the managing editor of the Tamil Nadu Ophthalmic Association (TNOA) Journal. It is a quarterly, published by Aravind with the TNOA funds since 1990.
- Dr. G. Natchiar is the managing editor of 'Kannoli', a Tamil monthly newsletter brought out by the Madurai Eye Bank. Through this newsletter, Aravind creates awareness among the public regarding common eye diseases, eye injuries etc and informs them of recent diagnostic and treatment techniques.

Archives of Ophthalmology

Volume 111; January 1993

- Dr. R. Ramakrishnan, Dr. G. Natchiar
- *Bilateral Extensive Persistent Pupillary Membranes treated with the Neodymium - YAG Laser*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXI; No.1; March 1993

- Dr. D. Dwaraknath
- *Etiopathogenesis and Classification of Uveitis*
- Dr. K. Lakshmana Murthy
- *General Treatment of Uveitis*

Archives of Ophthalmology

Volume 111; May 1993

- Dr. G. Natchiar, Dr. R. Krishnadas
- *Posterior Capsule Tears During Extracapsular Cataract Surgery in India*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXI; No.2; June 1993

- *Concussion Injuries of Anterior Segment*
- *Perforating Wounds of the Eye*
- *Ocular Effects, Diagnosis and Localisation of Intraocular Foreign Body*
- *Management of Intraocular Foreign Body*
- *Traumatic Hyphema - Medical and Surgical Management*

- Dr. P. Namperumalsamy
- *The Role of Pars plana Surgery in the Management of Retained Intraocular Foreign Body*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXI; No.3; September 1993

- Dr. R. Ramakrishnan
- *Glaucoma in Diabetes Mellitus*
- *Post Laser Rise of Intraocular Pressure*

- Dr. M. Srinivasan
- *Posterior Chamber Intraocular Lens Implantation in a Patient with Aniridia*

- Dr. P. Vijayalakshmi
- *Study of Accommodative Insufficiency in a Pre-presbyopic Age Group*

- Dr. Krishnadas & Dr. R. Ramakrishnan
- *Setons in Refractory Glaucomas*

Ophthalmic Surgery

Volume 24; October 1993

- Dr. G. Natchiar, Dr. R. Ramakrishnan
- *Intraocular Lens Implantation in Rural India*

Ophthalmology

Volume 100; November 1993

- Dr. R. Ramakrishnan, Dr. R. Krishnadas
- *Safety and Efficacy of Mitomycin C Trabeculectomy in Southern India - A short term pilot study*

Journal of Tamil Nadu Ophthalmic Association

Vol. XXXI; No.4; December 1993

- Dr. R. Ramakrishnan, Dr. Ponnamm Sridhar & Dr. R. Krishna Das
- *Trabeculectomy in Pseudophakic Glaucomas*
- *Anti Metabolites in Glaucoma filtering Surgery - To Use or Not to Use*

- Dr. Anuradha & Dr. P. Vijayalakshmi
- *Surgical Management of Intermittent Exotropia*

- Dr. N. Nagappan, Dr. Y. Sujatha
- *A Simple Outpatient Surgery for Socket Reconstruction*
- *Orbital Meningioma Treated as Thyroid Orbitopathy*

- Dr. B. Ganesh, Dr. G. Natchiar & Dr. Arup Chakrabarti
- *Retrospective Study of Lens Exchange*

Invest. Ophthalmol. Vis. Sci.

1993;34(suppl):727

- Dr. R. Ramakrishnan, Dr. R. Krishnadas
- *The Efficacy and Safety of Mitomycin C in Trabeculectomy in India*
-

Ongoing Research

Aravind Medical Research Foundation (AMRF) was formed in 1984 to investigate issues concerned with causes and treatment of various eye diseases and problems related to delivery of eye care .

MIOL Study

Cataract blindness challenges the worldwide ophthalmic community to restore the sight of millions of people on every continent. Currently two principal surgical techniques are used: Intracapsular cataract extraction (ICCE) and extracapsular cataract extraction (ECCE) with posterior chamber intraocular lens (PC IOL) implantation.

Madurai IOL study (MIOLS) is a randomized, hospital based, clinical trial to evaluate the long term outcome of PC IOL implantation as compared to the common ICCE. This study sponsored by the WHO (World Health Organisation) and National Eye Institute, USA was started in 1992.



The Data and Safety Monitoring Committee meeting in progress

In the context of large scale intervention in developing countries, MIOLS aims to determine whether the final visual result of an ECCE/PC-IOL is sufficiently superior to that of ICCE with aphakic glasses to justify its increased technical complexity and cost.

In 1993, a pilot study was carried out on 100 patients as per the study protocol. The first meeting of the Data and Safety Monitoring Committee was held at Aravind from 13th to 15th June 93. Dr. Carl Kupfer, Dr. Leon Ellwein, and Dr. Bangdiwala from USA, Dr. G. Maraini from Italy, Dr. Dominic Negrel from Switzerland and Dr. G. N. Rao from Hyderabad attended the meeting along with Aravind staff. The study protocol and questionnaires were further modified for the main trial as per the recommendations of the Data

Monitoring Committee. Currently the main trial is in progress. 11% of the total sample have been enrolled so far.

Dr. Astrid Fletcher and Ms. Martine Donaghue from London School of Hygiene and Tropical Medicine were at Aravind to develop and review the quality of life aspects of the MIOL Study.

The Aravind Glaucoma and Ocular Disease Survey

Blindness and ocular morbidity have an enormous social and economic impact on the community. Early treatment of affected individuals by targeting interventions at the population at risk is a vital aspect of health management in a community. Population based epidemiologic data are not available in India on diseases of the cornea, optic nerve head and retina. Hence Aravind in collaboration with Wilmer Institute, USA, has undertaken a population based eye disease survey. Preliminary mapping of sample villages and segmenting have been completed. When completed, this study will give data on the prevalence of various causes of visual impairment. This will help in planning ways to

tackle the problem of preventable and needless blindness due to cataract, glaucoma, corneal and external infections and disorders, diabetic retinopathy, etc.

A pilot survey of a village in Madurai district has already been completed and response from the community has been encouraging. The investigators plan to initiate the survey in April 94.

Dr. James Tielsch, an epidemiologist and Dr. Joane Katz from Dana Centre, John Hopkins University, USA came to Aravind to assist in the implementation of the Survey.

Aravind Medical Research Foundation is grateful to Allergan and Zeiss who have donated equipment for this study and to Dr. Alan Robin who made it possible.

Mitomycin C in Primary Glaucoma Filtering Surgery

This is an ongoing randomised, clinical trial being conducted in collaboration with Wilmer Eye Institute, Baltimore, USA. The study aims to determine the optimum concentration and exposure of Mitomycin C to ocular tissues in glaucoma filtering surgery.

Patients are randomised into four treatment groups, and the efficacy of various concentrations of mitomycin C with placebo will be compared. The patients will be followed for one year and the results will be analysed. Dr. Ramakrishnan and Dr. Krishnadas of Aravind Glaucoma clinic and Dr. Alan Robin of Wilmer Institute are the primary investigators of this study.

Glaucoma Drug Trial

Prostaglandins are a new class of antiglaucoma drugs. Though several animal studies have been conducted to study the pharmacokinetic effects of prostaglandins on aqueous humor dynamics, very little has been done to substantiate clinical effects of this drug.

Dr. Robert David and Ms. Amy Batoosingh from Ophthalmic Clinical Research, Allergan Pharmaceuticals were at Aravind in November to coordinate the preliminary arrangements and initiated the clinical trial.

Prospective study on the effectiveness of anti-oxidants in slowing the progression of cataract

This study is being planned by the Proctor Foundation in coordination with Dr. M. Srinivasan to observe the effectiveness of anti-oxidants in slowing the progression of cataract. Dr. Gil Smolin and Dr. John Whitcher from Francis I. Proctor Foundation, USA, and Dr. John Wilkins from Oregon USA were at Aravind to initiate the study.

Epidemiology of Corneal Ulceration in Madurai

Recent studies in Nepal, India, and a number of other developing countries have implicated corneal trauma with subsequent ulceration as an increasingly important cause of blindness second only to cataract. Since the epidemiology of corneal ulcers varies significantly from region to region, it is necessary to delineate these patterns and document the pathogens responsible for infection in a given area to aid in developing more effective methods of diagnosing and treating corneal ulcers. Ultimately, this information would be valuable in implementing public health programs aimed at prevention of blindness.

Epidemiological characteristics, predisposing factors, and etiology of corneal ulcers

In this prospective hospital-based study, all patients presenting with central corneal ulcers to the cornea clinic at Aravind Eye Hospital between January 1, 1994 and March 31, 1994 will be included in the study. After a detailed history and examination, the corneal ulcer

will be cultured to determine the etiologic organism. By documenting the demographic factors and etiologic agents of corneal ulcers, more appropriate interventional measures can be instituted. The primary investigators are: Dr. M. Srinivasan from Aravind Hospital, Dr. J. Whitcher and Dr. Gil Smolin from Francis I. Proctor Foundation, San Francisco, USA. Ms. Christine Gonzales, a medical student from the University of San Francisco at California, will also assist with this study.

Incidence of corneal ulceration in Madurai district

A retrospective out-patient/hospital-based study will also be conducted to determine the incidence of corneal ulceration in Madurai district. By reviewing the medical records from all the hospitals and private ophthalmology offices in Madurai district, the number of patients seen with corneal ulcers in 1993 will be determined. From those offices which do not keep records, an estimate of the number of ulcers seen over the past year will be obtained. Ms. Christine Gonzales will be collecting the data for this study.

Childhood Cataract in South India: Prospective Investigations of aetiology and the outcome of surgical management

A major preventable cause of childhood visual loss can be attributed to cataract, due to which an estimated 200,000 - 250,000 children are rendered blind worldwide. Visual loss results from amblyopia, unoperated cataract, uncorrected aphakia and post-operative complications. Information regarding the aetiology of childhood cataract and the visual outcome of surgical management from developing countries is insufficient.

The Paediatric Ophthalmology Clinic at Aravind and the International Centre for Eye Health at London have undertaken these studies to determine the aetiology and the best surgical treatment for children with cataract in situations where presentation is late, facilities limited, and follow-up poor.

Aetiology study

The objective of the study is to investigate the aetiology in children presenting with cataract, specifically to identify the major preventable causes. Over a 12 month period, children aged 0-10 years attending Aravind Eye Hospital with cataract are recruited for the study. Saliva is taken from all children with cataract to look for antibodies against rubella, CMV and vaccinia which indicate intrauterine infection. As a method of quality control, antibody levels in serum samples from a subset of patients will be analysed.

Outcome of surgical management study

The specific objectives of this study are:

1. To determine the suitability of the method of treatment, (lensectomy vs. ECCE) for the children of south India.
2. To determine the reasons for poor visual outcome after cataract surgery on children in South India and to determine the frequency and cause of operative, early postoperative and late complications.

Children aged 0 - 10 years with bilateral symmetrical cataracts who require surgery will have an eye randomised to undergo either a lensectomy procedure or ECCE with a primary capsulotomy. The other eye will automatically have the alternative procedure. Children who are unsuitable for randomisation but who otherwise fulfil the entry criteria will be followed up similarly and for the same time period. The children will be examined immediately postoperatively, and at 4 weeks, 3 months, 6 months, 1 year, and annually for four years, thereafter.

Dr. P. Vijayalakshmi, Paediatric Ophthalmology Clinic at Aravind and Dr. Michael Eckstein, Research Fellow, at the International Centre for Eye Health at London are the Primary investigators of this study.

Aurolab

Aurolab was established as a non-profit charitable trust for developing appropriate technology in instrumentation, equipment and supplies. The beginning was made on 20th January 1992 with the inauguration of the intraocular lens manufacturing facility. The lab was established with the initiative of Aravind and Seva Foundation, USA, with additional funding support from Seva Service Society, Canada, Combat Blindness Foundation, USA, and Sight Savers, UK. 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.



Lens power checking



Drilling dialling holes



Checking the quality of optics

Aurolab achieved considerable increase in production and sale of lenses during 1993. The production facility including the space was expanded to meet the increasing need. Additional production staff were recruited and trained. New equipment was purchased to increase the production efficiency with support from Sight Savers. Mr. David Green and Dr. Suzanne Gilbert of Seva Foundation, provided valuable assistance in improving operational efficiency and for implementing the expansion of production capacity.

In 1993, about 85% of lenses were supplied to non-profit institutions at a concessional price, while the remaining 15% of lenses were supplied to the commercial market. Aurolab lenses were also exported to non-profit institutions around the world.

For independent assessment of quality, lenses from various production lots are sent periodically to Dr. David Apple, a well known authority on IOLs in USA, for evaluation. He has certified that Aurolab lenses are the 'state of the art lenses'.

Aurolab is playing a catalytic role in lowering the cost of IOL surgery,

making it affordable to a large segment of needy patients. The number of patients at Aravind Free Hospital who opt for IOL surgery at a nominal fee increased by 160% from the previous year. The availability of high quality IOLs from Aurolab at a concessional price is making it possible for many non-profit institutions to provide IOL surgery to their patients. IOL surgery motivates more people to come for early surgery when they still have the capacity to pay. As a result, these non-profit institutions now have an opportunity to increase their efficiency and attain financial self sufficiency.

The low cost of IOLs manufactured by Aurolab makes it possible for Aravind to train 100 eye surgeons a year in IOL surgery in its recently launched "Aravind Sight Savers microsurgery course".

In order to satisfy the increasing market needs Aurolab is planning to introduce new lens styles such as three piece and single-piece biconvex lenses. Aurolab is also 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.



5th December 1977

- The foundation stone for Aravind Eye Hospital, Madurai is laid by Dr. Charles Schepens and Mrs. Cette Schepens

22nd September 1980

Dr. and Mrs. Schepens return to inaugurate the hospital

24th March 1993

- Thirteen years later, Aravind ventures to realise yet another of its dreams - an institute for community ophthalmology.

Dr. and Mrs. Schepens make a special trip to Madurai for the 'Bhoomi Pooja' for the Lions Aravind Institute of Community Ophthalmology

('Bhoomi Pooja' is a religious ritual invoking divine blessings before the construction of a building)

Lions Aravind Institute of Community Ophthalmology

Developments '93

Laying of the Foundation Stone:

Ln. Rohit C. Mehta, the first Indian Lions International President, laid the foundation stone for the Institute building on May 26th, 1993.

Institute Building:

The institute building plan has been jointly developed by the architect firms - Payette Associates at Boston and Auroservice at Pondicherry. The plan was sent to the City Planning authorities for final approval. The tendering process for the building construction is scheduled to start in January 1994.

Hostel building:

The building plan for the hostel has been approved and construction is in progress. The plan provides for six independent units in a building with three floors. Each unit can house 4 persons with independent rooms.

Faculty Recruitment :

Faculty recruitment is in progress. The selection process focuses to achieve a balance between technical competence and commitment to serve.

Blindness is on the rise in most countries, despite the continuing creation of infrastructure. In most instances, lack of appropriately trained manpower combined with lack of proper systems, procedures, and orientation to community work are the major contributing reasons.

It was in 1986, that the idea of starting an institute of community ophthalmology at Aravind was born. Although the institute could not be started in a formal way due to lack of resources, Aravind has been offering training programmes in clinical and management areas for eye health personnel from India and several neighbouring countries.

Seva Foundation, USA, and Seva Service Society, Canada, with funding support from CIDA (Canadian International Development Agency), arranged several meetings for needs assessment and to further develop the concept of the institute.

Around this time, Lions Clubs worldwide launched the 'SightFirst' programme to combat blindness. An institute to develop managerial skills and community orientation was very relevant to their global effort. Hence Aravind's initiative was of particular interest to them.

Objective

To establish a centre of international excellence using the broad environment of the Aravind Eye Hospitals, Aravind Children's Hospital and Aravind Medical Research Foundation to contribute to the prevention and control of global blindness through the training of health related and managerial personnel, in the development and implementation of community eye care programmes.

Training Philosophy

The unique model of Aravind Eye Hospital, in which 70,000 surgeries are performed annually, will provide the institute a practical and stimulating learning environment. The institute endeavours to train teams from blindness programmes and provide appropriate opportunities for members of the teams to develop strategies relevant to their situations.

The energy for Aravind's activities comes from a strong value system that guides the individual's performance resulting in a unique work culture. It is a value system, based on compassion, integrity in one's action, knowledge of what is right, perseverance and a sincere desire for altruism. This quality in individuals and programmes is a factor common to all successful developmental activities, even though it is not always well articulated. The training at the institute will encourage the students to explore the potential of such values, allowing further empowerment of their work and the development of a value-based work culture in their eye care programmes.

Training Activities

Masters in Hospital Management Course (MHM)

Madurai Kamaraj University in collaboration with Aravind offers this two year postgraduate course on hospital management.

Short-term Visiting Fellows

Fellows are sponsored regularly by World Health Organisation, Sight Savers, Helen Keller International, Seva Foundation and other international and national NGOs for study at Aravind. Each year about 40-50 such fellows visit Aravind mainly to get a better understanding and appreciation of community eye care work and its management.

Foundation Stone Laying Ceremony of LAICO

26th, May

A momentous occasion for Aravind and the Lions of Madurai.

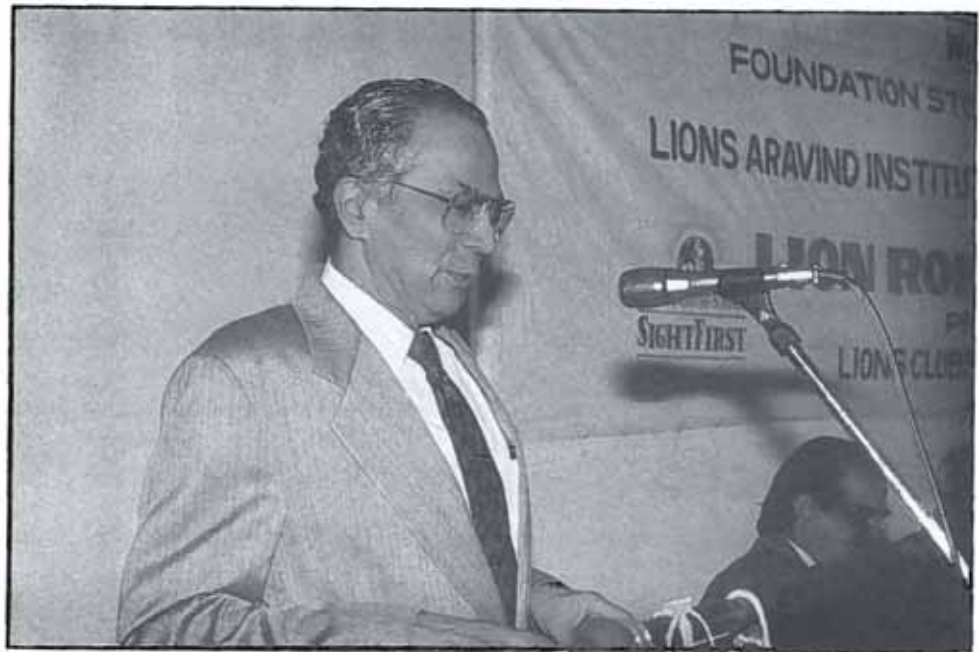
Ln. Rohit C. Mehta laid the foundation stone for the Lions Aravind Institute of Community Ophthalmology.

This significant event started with a welcome address by the Grant Administrator Ln N. A. K.

Gopalakrishna Raja MJF, . Ln A. R. Arputham MJF, District Governor - Dist 324 B3 delivered the presidential address.

Dr.G.Venkataswamy the Director of the Institute read the project report.

Ln P. S. Ranganathan MJF, Chairman, National SightFirst Committee gave the address on SightFirst Programme.



Ln. Rohit C. Mehta, the first Indian Lions International President, addresses the gathering

Events

- Dr. Suzanne Gilbert from Seva Foundation, USA was at the institute from 13th to 17th September '93. During her visit, LAICO Faculty had detailed discussions on the curriculum development for the District Blindness Control Society Coordinators. She reviewed the course curriculum developed by LAICO. Seva has been one of the promoters of the Institute. Its future involvement and support was discussed. Dr. Gilbert agreed to coordinate and assist the institute in developing the curriculum for training programmes, purchasing of books, journals, software, etc. and identifying resource persons for the institute who can serve as invited faculty.
- At the request of Seva Foundation, Mr. G. Srinivasan and Mr. R. D. Thulasiraj visited the Lumbini Eye Hospital at Bhairawah in Nepal. They worked with Mr. David Green, Dr. Suzanne Gilbert and the Lumbini

Training Programmes

The Institute is responsible for co-ordination of training activities for the Ophthalmic Nurses, Ophthalmology Residency/Fellowship training Programmes and Continuing Medical Education programmes.

In addition to continuing the existing training programmes, additional programmes are offered. In the initial stage this will be limited to short adhoc training programmes that are custom designed to meet specific needs.

In the second stage, the above programmes will be supplemented by more structured courses of longer duration designed to train mid-level personnel in the eye care programmes.

On-Site Support & Consultancy

The institute is committed to assist in the improvement of quality and productivity of other eye care programmes. This will be done by following up the training at the institute with on-site consultancy support. The training programmes will be designed to reflect the needs of such eye care programmes. This process is not only relevant in increasing the quality and level of service but will also provide a rich and diversified practical experience which will further enrich the teaching process. The institute will also develop a strong network of participants who can professionally support each other and the institute.

Research

In the field of Community Eye Care and in the Management of Eye Care Delivery, there is constant need to develop new strategies. A lot of this will be done in conjunction with Aravind Eye Hospital while some collaborative research will take place with other institutions. The institute will also provide necessary design and data management support for conducting clinical and basic research.

hospital staff to decide on the appropriate fee structure and to assist in the development of managerial systems and procedures.

- Mr. R. D. Thulasiraj was invited to Baltimore, USA as a guest faculty to the Dana Centre at Johns Hopkins. This is part of the growing relationship with other teaching and research institutes.
- Mr. R. D. Thulasiraj was one of the faculty for the course on Strategic Management in Hospitals organised by Foundation for Research in Health System held from 27th September to 1st October '93 at Bangalore. Senior level Hospital Administrators from major hospitals in India including Mr. G. Srinivasan from Aravind attended the course.
- At the invitation of the Ministry of Health, Mr. R. D. Thulasiraj went to Delhi to participate in a one day workshop on the blindness control programme at district level held on 12th March. From about 50 districts all over the country, the collectors and district ophthalmic surgeons attended the meeting. Mr. Thulasiraj was one of the main speakers of this sensitizing workshop and spoke on generating demand for eye care services.
- Ms. Katherine Hecht, Mr. Larry Schwab and Mr. Thomas A Weingiest from American Academy of Ophthalmology (AAO) were at Aravind from 25th to 29th November for a visit and also to assess the possibility of how the AAO could be involved with the Lions Aravind Institute of Community Ophthalmology.
- Dr. G. Venkataswamy and Mr. R. D. Thulasiraj participated in the Ministry of Health meeting at Delhi on "Training of Trainers Programme" under the World Bank Project. This meeting

Infrastructure

The grant from Lions SightFirst has enabled the institute to build its own building to house all its activities and provide accommodation facilities. In addition, it has access to all existing facilities of Aravind Eye Hospital in the following areas:

Research Infrastructure

In order to focus on research activities, a separate organisation called Aravind Medical Research Foundation (AMRF) was established.

The AMRF along with Aravind Eye Hospital currently conducts research in clinical ophthalmology as well as operational research designed to improve health service delivery. The AMRF is strong in field work, data gathering, monitoring and analyzing data. It has access to a well-equipped laboratory and an excellent computer network with statistical and other software.

Nutrition and Vitamin A

In order to address the issue of blinding malnutrition in children, Aravind Children's Hospital was set up in 1984. Pioneering work has been done in the area of vitamin A deficiency and child survival. Its vitamin A resource centre provides support to governmental and non-governmental agencies working to control vitamin A deficiency.

Service delivery, Management and Social marketing

Aravind Eye Hospital provides the largest volume of surgery and out-patient consultations. About 70,000 operations and 660,000 out-patient visits are handled each year. It provides tertiary eye care with state-of-the-art-technology and yet has a strong community orientation. This high volume combined with high quality has been made possible through an efficient management system and social marketing.

Library & Resource Centre

The library at Aravind has a good collection of books on clinical ophthalmology, community ophthalmology, public health, nutrition, and management. It has in-house facilities for computerised searching of material available in the library and other databases such as the Medline.

Collaborating Agencies

Since its inception, the hospital has been working closely with international organisations like World Health Organisation (WHO), Seva Foundation (USA), Seva Service Society (Canada), Sight Savers-RCSB (UK), Helen Keller International (USA), and National Eye Institute (USA). Exchange programmes take place with international institutes such as University of Michigan, University of Illinois, Harvard University, Johns Hopkins, International Centre for Eye Health (UK), Proctor Foundation, etc. Aravind has academic collaborations with Medical Council of India, National Board of Examinations, MGR Medical University, and research agencies (ICMR, Dept. of Science & Technology). The hospital also works in partnership with community-based agencies such as Lions, Rotary, etc. At the national level there is a close relationship between Aravind and the Government of India, DANPCB, Government of Tamilnadu, and the National Society for the Prevention of Blindness. The institute will now relate to these organizations for academic and research activities.

Funding

The funding for the initial developmental activities was provided by Seva Foundation (USA) and Seva Service Society (Canada).

The SightFirst programme launched by Lions International is supporting the operating costs for the first five years and construction of the building that will house teaching and administrative facilities and a hostel to accommodate visiting faculty and students.

Sight Savers have funded the Microsurgery training centre and a hostel for the microsurgery trainees.

was called for by the Ministry of Health and World Bank officials to discuss the programme for Training of Trainers in Microsurgery and Extra Capsular Cataract Extraction with IOL implantation.

- Mr. R. D. Thulasiraj was a guest faculty for the Training for the District Programme Managers under the National Programme for the Control of Blindness (NPCB) held at Tumkur, Karnataka on the 7th December to orient the participants to hospital based delivery of eye care services. This programme was organised by the DANPCB of DANIDA.
- Dr. G. Venkataswamy and Mr. R. D. Thulasiraj attended the Conference of Hospital Chairmen organised by Foundation for Research in Health Systems at Bangalore and School of Public Health at Harvard University. It was held at Bangalore on 24th and 25th September.

Training Activities

Aravind Sight Savers Microsurgery Training Centre

Aravind joined hands with Sight Savers to establish a centre for rapidly training ophthalmologists to perform IOL surgery so that it can eventually reach the poorer sections of the people and possibly prevent blindness due to cataract through early intervention.

This project was conceived to meet an urgent need for training practising ophthalmologists to upgrade their skills in cataract surgery using Extra Capsular Cataract Extraction (ECCE) method with Posterior Chamber Intraocular lens (PC-IOL) implant. IOL surgery has gained attention in the developing countries and is now getting firmly established. However, in India and other developing countries, the non-availability of



Dr. G. Venkataswamy and Dr. G. Natchiar with Mr. Thomas A Weingiest and Ms. Katherine Hecht



Dr. G. Venkataswamy with Mr. James Beale, Mr. Nagarajan and Mr. Alan Johns at the inauguration of the Microsurgery Centre

proper training infrastructures has slowed down the process of transition to IOL surgery. In order to meet this urgent need for training, Aravind, in partnership with Sight Savers has established a microsurgery training centre to provide structured and high quality training for ECCE-IOL surgery. It was inaugurated on 11th January 1993 by Mr. Alan Johns from Sight Savers, UK. Mr. James Beale and Mr. Nagarajan from Sight Savers were also present at the inauguration.

Since the commencement of this programme, 31 candidates including 2 candidates from other countries have received training.

In addition to the surgical training, the candidates are also exposed to record keeping, documentation, reporting, community ophthalmology work, and practical application of social marketing.

Courses and Workshops

Course on Management for Eye Care Delivery

January 3rd to 8th

This course was developed by the National Eye Institute, USA and was offered for the first time in Madurai in collaboration with Aravind Eye Hospital. It was a full time residential course lasting six days from 3rd to 8th January 1993. It was attended by 35 participants from 10 countries with maximum representation from India. The students were mostly ophthalmologists, managers of national or regional eye care programmes and hospitals. Dr. Leon Ellwein, Dr. Kasthuri Rangan, Dr. Fred Munson, Dr. William Reinke, Dr. Michael Drummond and Dr. Allen Foster formed the core faculty. Dr. Carl Kupfer, Dr. G. Venkataswamy and Mr. R. D. Thulasiraj were the guest faculty. Mr. Terry Gillen as the course manager co-ordinated all logistics and other course related activities. The course covered areas of social marketing, resource management, health economics, operations research and organization development.

Dr. R. D. Ravindran, Rita James and Raheem Rahmathullah from Aravind attended the workshop.



Dr. Fred Munson, Dr. Leon Ellwein and Mr. Thulasiraj



Dr. Kasthuri Rangan



Mr. Amarjeet Singh, with Dr. G. Venkataswamy

Orientation Programme in Management of Eye Care Delivery for Lions SightFirst Coordinators

29th October to 1st November

This four day training programme was conducted at Aravind Eye Hospital, Madurai at the request of the Lions SightFirst national chairman.

The objective of the training programme is to orient the Lions SightFirst coordinators to the problem of blindness, and the issues involved in increasing cataract surgery output under the SightFirst programme.

Thirteen coordinators from different parts of India attended the course. The Aravind faculty Dr. G. Venkataswamy, Mr. R. D. Thulasiraj, Dr. Premarajan, Dr. G. Natchiar and Mr. Raheem Rahmathullah was supplemented by Ln. P. S. Ranganathan, Ln. N. A. K. Gopalakrishna Raja, Dr. Chandrashekar Shetty and Mr. Peter Lynch from the Lions.



Participants at the Orientation Programme with Mr. Peter Lynch from Lions International

World Bank Workshop on Surgical Quality

January 9th & 10th

This workshop was conducted under the chairmanship of Dr. Carl Kupfer assisted by Dr. Leon Ellwein, both representing the World Bank and Mr. Amarjit Singh of the Ministry of Health, Govt. of India.

A panel of experts consisting of Dr. G. Venkataswamy, Dr. G. Natchiar, Dr. G. N. Rao, Dr. Khosla, Dr. A. K. Gupta, Dr. Lamba and Mr. R. D. Thulasiraj and senior ophthalmologists representing each of the seven World Bank project states attended the workshop.

The focus of the workshop was training for surgical skills in cataract surgery with a special attention to IOL surgery. The workshop reviewed the existing training programmes, identified its shortfalls, identified centres of excellence and outlined a strategy for future action.

Course on Epidemiology for Eye Care Delivery

February 22nd to 26th

Mr. Richard Wormald and Ms. Jennifer Evans from St. Mary's Hospital, London formed the core faculty.

Dr. Clare Gilbert and Ms. Victoria Francis from ICEH, London, Dr. Prem Pais from St. John's Medical College & Hospital, Bangalore, Dr. G. Venkataswamy and Mr. R.D. Thulasiraj were the guest lecturers.

The course was attended by 17 participants from all over India. This was an appreciation course to introduce the participants to the various aspects of Epidemiology and how it can be used for effective eye care delivery.

Dr. Prajna, Dr. Dutta, Dr. Premachandran, Raheem Rahmathullah, Ganesh, Selvaraj and Manohar of Aravind attended the course.

Orientation Programme on Problem of Blindness and Eye Care Delivery Management

August 25th to 27th

This three day orientation programme on the problem of blindness and eye care delivery management was held for the different State Programme Officers under the World Bank Project.

Courses Developed

- Training Programme for District Blindness Control Society Coordinators & District Ophthalmic Surgeons.

As part of the decentralisation of eye care services programme, District Blindness Control Society is being formed in all the Districts in India. As per 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. This project will be implemented in batches starting in February '94.

- Training in the organization of "High Volume cataract surgery" for Ophthalmic Surgeons.
- IOL-Microsurgery training for practising ophthalmologists offered by Aravind Sight Savers Microsurgery Training Centre.
- Curriculum developed for training trainers to teach IOL-Microsurgery to ophthalmic surgeons at Govt. District hospitals.

Training Programmes to suit the individual needs were developed and carried out for the following:

- Mr. Sambunath Seth from Vivekananda Mission, West Bengal was trained for four months to become the Administrator of a 30-bed eye hospital, constructed by the Vivekananda Mission at Chaitanyapur in Midnapore District.
- Mr. Him Kant Adhikari and Mr. K. B. Karki of Lumbini Eye Hospital, Bhairawah, Nepal were at the hospital for three months for clinical training in the areas of Fluorescein Fundus Angiogram, outpatient clinics and laboratory services. Mr. Adhikari also received training in administrative aspects.
- Dr. Manjusha and Dr. Uday Gajiwala of Sewa Rural Hospital, Jhagadia, Gujarat were at the institute in July. Assistance was given to them in analysing their blindness survey data. They also received input on organising school eye health programmes and developing grass root volunteers.
- Dr. Karki, Dr. G. P. Pokhrel, Mr. S. Sharma from Nepal Eye Hospital, Kathmandu, visited the institution under WHO fellowship.
- Under CBM sponsorship, fifteen ophthalmologists from Vietnam visited the institute from 14th to 15th September '93. They visited the different departments and had detailed discussions with the faculty on the system of eye care delivery services at Aravind. This interaction also facilitated understanding of the blindness problem in Vietnam by the LAICO faculty.
- "Arogya Agam" - a voluntary organisation doing leprosy relief work in Madurai district with support from Danien Foundation India requested LAICO to assist them in training their workers about eye problems in leprosy. On 23rd December, a half-day workshop was arranged at "Arogya Agam", where the faculty from LAICO trained the field workers of the organisation.

Future Activities

Management Development Project for Lions Eye Hospitals in India

A project proposal has been submitted to improve the functioning of Lions Eye

Hospitals in India. The main objectives of this project are,

- to enable high volume surgery
- to improve the administration and management information system
- and to achieve financial self-sufficiency.

Initially, a total of 12 Lions Eye Hospitals from all the four multiple districts will be included in the project. The strategies include situational analysis by making an on-site visit to the hospitals by the Lions Technical Advisors; a meeting to evaluate the findings, course development - workshop, and a 7-day workshop for a team of ophthalmologists, administrative and paramedical personnel from each selected Lions Eye Hospital, followed by two on-site visits to the eye hospitals three months after the workshop to assess the impact and to help them in managing any implementation problems.

Beneficiary Assessment Survey for the World Bank Project

The institute has been requested by Government of Tamilnadu to conduct a beneficiary assessment survey for the World Bank Project for control of Blindness in the state.

Comprehensive Eye Disease Prevalence Survey

The institute is conducting a comprehensive eye disease prevalence survey - "Aravind Eye Survey" with special stress on prevalence of glaucoma. This study is being done in collaboration with Wilmer Eye Institute, Baltimore, U.S.A. The Pilot project is already complete.

Training of Personnel in 'Participatory Rural Appraisal'

Another area the Institute is working on is to develop and train personnel in "Participatory Rural Appraisal" to achieve better participation and decision making responsibility by the community and better utilisation of eye health care services.

Six Months Course in Management of Eye Care Programmes

The institute is in the process of developing a six months intensive training schedule for ophthalmologists, hospital administrators, and programme managers from Government, NGO and private sectors to train them in different aspects of management so that they can effectively contribute to the prevention and control of blindness.

A Partnership of Concern and Commitment

Aravind shares its success with the many individuals and organizations who have provided continued support.

The following organizations 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, UK:

Aravind's ability to offer free services and run rural camps have been made possible to a great extent by financial and moral support provided by Sight Savers.

In 1993, Sight Savers and Aravind together established a centre for training ophthalmologists to perform IOL implantation surgery. A hostel for the trainees is also under construction with their support.

With support from Sight Savers, Aurolab purchased new equipment to increase production efficiency.

Mr. Nagarajan, Field Director, Sight Savers visited Aravind several times during the last year, to discuss the Sight Savers supported programmes.

Seva Foundation, USA

Since its inception, Seva Foundation has whole-heartedly teamed up with Aravind in its mission of eradicating curable blindness.

Mr. David Green and Dr. Suzanne Gilbert of Seva Foundation visited Aravind and provided valuable assistance in improving operational efficiency and for implementing the expansion of production capacity at Aurolab. Dr. Gilbert also discussed Seva's role in the development of the Lions Aravind Institute of Community Ophthalmology.

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.

Direct Relief International (DRI), USA

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

Ms. Katy Wyckoff from DRI, visited Aravind along with her husband Mr. Bruce Wilder.

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.

Dr. Todd Perkins from University of Wisconsin, USA visited Aravind representing the Board of CBF. As a glaucoma specialist, he gave several lectures to the Aravind residents and also worked in the Glaucoma clinic. Ms. Tracey Perkins, his wife from Clinical Sciences Centre, USA gave talks on Patient Education.

Helen Keller Foundation (HKI), USA

HKI through VITAP supports Aravind Children's Hospital's vitamin A work. Dr. Jordan Kassalow visited Aravind to structure the optometrist training programme. His visit was sponsored by HKI, USA

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.

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 Aetiology and the Outcome of Surgical Management
- Course on Epidemiology for Eye Care Delivery

National Eye Institute, USA

- Course on Management for Eye Care Delivery
- Madurai IOL Study

Dana Centre, John Hopkins University, USA

- Glaucoma Prevalence Study
 - Mitomycin C in Glaucoma Surgery
-

Volunteers and Visitors

- Swami Apoorvananda, Catherine A. Parrish, Shubhakari Anthony and Sachidanand Bholay from Gurudev Siddha Peeth, Ganeshpuri visited Aravind and held discussions with Dr. G. Venkataswamy, Mr. G. Srinivasan and Mr. R. D. Thulasiraj regarding the establishment of a hospital they propose to build at Ganeshpuri
- Prof. A.K. Roy, Management consultant from St. John's Medical College and Hospital, Bangalore visited Aravind to study Aravind systems in Finance and Materials Management.
- Ms. Sidik, Health Economist from World Bank, visited Aravind to get a better understanding of economic benefits following cataract surgery.
- Tracye Skinner from UK helped with the editing of the activity report 1992 and also volunteered her time at Aravind free section and Aravind children's hospital.
- Dr. David Heiden from UCSF, San Francisco, USA examined uveitis patients and gave lectures to residents at Aravind. As a renowned photographer, he took many pictures during his stay here. Some of his photographs are used in the Aravind activity report 1992 & 93.
- Dr. Sankaranarayanan, retd. Professor of statistics from Annamalaiagar on Aravind's request visited the hospital to explore ways in which statistics could be applied in our eye care work.
- William Beaver from Washington, USA assisted the social workers' training and wrote articles on Aravind's work relating to human interest.
- Ms. Ana Sanchez Congdon and Dr. Nathan Congdon from Dana Centre for Preventive Ophthalmology, Baltimore, USA tested an equipment based on the principle of 'Dark adaptation' as a method for screening vitamin A deficiency.
- Dr. Robert L. Avery, chief resident from Wilmer Eye Institute, USA
- Dr. George Khouri from Suburban Eye Associates, USA
- Dr. Ashok Agarwal from Indian Institute of Health Management(IIHM), Jaipur to explore ways in which both Aravind and IIHM can work together
- Raj Woolever and Cynthia Dechenes, New York USA were here to incorporate Vitamin A supplementation plan into primary health care programme in ASSEFA project area.
- Christina Gudmundson and Carsten Oegard from University of Copenhagen, Denmark performed a retrospective study regarding the occurrence, progress and treatment of diabetic retinopathy in a randomly selected patient population.

*Mr. Oswald Font from ORBIS
with Mr. R. D. Thulasiraj*



- Dr. Damji Ph.d.(Nutrition) from Canada worked with Dr. Lakshmi Rahmathullah of the Children's free hospital on making nutrition information accessible to the public.
- Ms. Judy Macmillan helped Aravind staff in arranging patient education material in the patient waiting areas.
- Mr. Oswald Font from ORBIS was here to make an overview video on Aravind concentrating specifically on its management and clinical aspects to adapt the efficient Aravind technique of high volume low cost surgery in other developing countries.
- Dr. Jay Enoch and Mr. Richard Knowles, School of Optometry, Univ. of California are currently conducting a hyper acuity study project. They have brought with them a prototype hyper acuity tester and other instruments by which it will be

Father of Retinal Surgery



It was a memorable occasion for Aravind and a celebration for Dr. Namperumalsamy and his department. He had invited all those who had completed their fellowship under him and are now working in different parts of the country to come to Aravind during Dr. Schepen's visit. Dr. Schepen delivered special lectures for postgraduates and staff of Aravind and held clinical discussions with former and present Retina fellows.

possible to predict postoperative visual out-come in dense cataracts.

- Dr. Morton Goldberg, Head of Wilmer Eye Institute, USA, visited Aravind in July with his son . He gave a lecture on 'Lasers in Ophthalmology'. He had discussions with the senior staff of Aravind about the residency exchange programme and Aravind's activities.
- Dr. Fred and Mary Munson visited Aravind in November. Dr. Fred Munson assisted in the curriculum development process of the institute. Mrs. Munson helped in the interior decoration of the doctor's offices and quarters.
- Meg Munson from Presbyterian Hospital, Albuquerque, USA conducted classes on General Nursing and Emergency Care to the junior and senior nurses. Once again, as in 1992, she came equipped with several teaching aids such as video tapes, human anatomy models and model eye balls.
- Dr. Leon and Sarah Ellwein visited Aravind in November. Dr. Leon assisted the MIOL Study staff in preparing for the Data Monitoring Committee Meeting scheduled for January 94.
- Ms .Linda Elizabeth Day from Albert Einstein College of Medicine, USA assisted in the development of a training programme to train adult literacy volunteers in recognising common eye diseases.
- Katherine Elizabeth Anna Darling-Medical Student from Royal college of Physicians, London Hospital Medical College conducted a study on Vitamin A deficiency and observed clinical work at the children's hospital.
- Dr. Andrew Pyott from Royal College of Physician and Surgeons of Glasgow
- Ms Jasmeliz M. Lugtu (Rush Med. College) USA - was here for training in ophthalmology and for a mini-project on socio-economic barriers and motivating factors in the acceptance of intraocular lens implants by cataract patients.
- Dr. Stewart R. Lake from UK came to Aravind for an 8-week stay to conduct a cohort study on a group of retinoblastoma cases. The study was designed by ICEH, London
- Ms. Tela C.Zasloff, Assistant Professor of English & Professor Joseph Zasloff from University of Pittsburgh, USA
- Dr. Nathan Ravi , ophthalmologist from Washington University, St. Louis, USA
- Dr.Mark Tso, Professor of Ophthalmology, Director-Macula Clinic, Director-Georgiana Theobald Eye Pathology Department, University of Illinois, USA
- Mr. Alan Levenson, Director of Technical Services, ORBIS, USA
- Dr K.J. Sheth, Professor and Head -Medical College, Baroda
- Mr. Ray Avery from Fred Hollows Foundation, Australia came to visit the Aurolab.
- Dr. John Cheetam from Guatemala
- Dr. Pinaki Ray, from the National Society for Prevention of Blindness, Malda, West Bengal.
- Dr. R. R. Doshi, Kheda District, Gujarat
- Mr. Jerry Jones and Ms. Shannon, friends of Seva Foundation from Oregon, USA
- Dr. Roman Graemiger, Switzerland
- Dr. Premsingh Vridhi, Ophthalmologist from Chicago.
- Dr. G. Gupta and Mrs. Vinnila Gupta, Pondicherry
- Dr. Fortunato Euselio, ophthalmologist from Philippines visited Aravind with sponsorship from CBM

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Senior Medical Officer: Dr. G. Natchiar MS

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Aravind- Madurai

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Fellow:

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Ocular Microbiology & Pathology Department:

Dr. K. Sundar Ph.D.

Aravind- Tirunelveli

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& Postgraduate Institute of Ophthalmology

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