

ARAVIND EYE CARE SYSTEM¹

1 – Introduction

In May 2003, Dr. Govindappa Venkataswamy (Dr. V) observed once again the number of ophthalmologic physicians interested in visiting and training at the Aravind Hospital next summer. He wondered whether the number of letters received was larger than in the previous years, particularly those by well known specialists and other personnel from different countries connected with hospital management.

There was an increased interest for the work undertaken by Aravind. The innovating system established there was recognized as a model to be adopted in other countries. The outcomes of its application were clearly visible for all; after 1976, more than a million people in India had recovered their sight – over two million eye surgeries had been performed.

To Dr. V, the feeling that he was contributing to giving people the capacity to see again was so wonderful that no words could express his satisfaction. As he noted “*When we grow in spiritual consciousness, we identify ourselves with all that is in the world, and there is no exploitation. It is ourselves we are helping; we do not act out of some feeling of doing good to some poor, deprived person*”.

He had lived with this dream to find a way to give the blind the possibility to recover their sight. He asked himself frequently if the system he had introduced at Aravind could be ‘franchised’ around the world, as widely as McDonald’s had. The question was how should he proceed to see within his own lifetime the dream to give those in need the possibility to recover sight?

Dr. V ceased working on operating theatres in the late eighties and handed over the directorship of the Hospital in 1997. Old age did not let him perform delicate eye surgery. As Chairman however, he remained active participating in Hospital activities of R&D and training.

He was aware that, though good results had been achieved, all his work needed to be assessed. The project had been the fulfilment of his life’s dream, but he remained concerned with the continuity of his work. So, he prepared a meeting to discuss matters with his staff and evaluate all activities undertaken previously, as well as for the future.

¹ Case prepared by AESE's Research Division.

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He remembered the words he had said to finish his last meeting: *“Someone asked me recently whether 20 years ago I would have thought that Aravind could have progressed to where it is today. You set goals, of course, and there is perhaps a vague idea of how the future appears. But if work is approached from a spiritual perspective then it becomes divine work. If in your actions you allow the divine force to flow through you, you will accomplish things far greater than you might have imagined”*.

2 – Dr. Govindappa Venkataswamy

Dr. V was born in Vadamalpuran, South India on the 1st October, 1918. After graduating in Medicine as a physician, he took a specialized course in Obstetrics in 1944 and accepted a post in the *Indian Army Medical Corps*. Some years after this he was stricken with rheumatoid arthritis, a painful deforming disease, that affected his fingers and confined him to bed for a full year. After recovering he realised he could no more to work in obstetrics due to his hand’s deformities. So, he decided to return to the Medical School to graduate in Ophthalmology and trained hard to be able to perform eye surgery with the help from equipment which he had adapted to support his hand’s deformations.

From 1956 to 1976 he was responsible for the Ophthalmologic Department at Madurai Medical College, and at the same time he was eye surgeon at the Erskine Government Hospital in Madurai.’

At 58, he retired due to his age. However, he was fully aware of the dark reality in his country – that there were very few eye surgeons to deal with the number of individuals suffering from cataracts, and therefore seeking treatment.

Blindness strikes about 12 million people in India, of which 80% is due to cataracts. This affliction arises with age but is also due to other causes, such as solar incidences, eating habits, genetic factors or diabetes. In most cases though a simple eye surgical intervention, in which the opaque crystalline lens is removed and exchanged with a glass or plastic lens is enough to restore sight to blind people.

Dr. V was fully aware of the number of people without access to treatment due to being poor, or because they lived in rural areas without resources – i.e. no medical hospitals or money to treat them. Blindness was a hurdle for those people wishing to continue or even begin work, because those affected were considered by their families as an overbearing load. As he says *“Loss of sight can be the greatest tragedy next to death, yet, hundreds of thousands of people in the world are suffering from blindness. Participation by the public is the urgent cry for this mission of restoring sight to people”*.

During his pensioner status Dr. V saw an opportunity to contribute to eliminate the cases of curable blindness, by means of a system more effective and comprehensive than that which was operated by the government. To reach this goal, important considerations needed to be undertaken, particularly financial and human constraints which he tried to obtain, without success, from a number of institutions and friends.

3 – Aravind hospitals

To face this situation Dr. V created the GOVEL fund in 1976 and with family support, founded the first Aravind hospital at Madurai, in a rented house where he could place 11

beds. His sister, Dr. G. Natchiar and his brother-in-law P. Namperumalashamy (Dr. Nam), both ophthalmologic surgeons, took part from the beginning in a medical capacity. This hospital treated paying and non-paying patients.

In 1977 a new building with increased capacity for 30 beds was made available, and the following year it was enlarged to 100 beds. In 1980 the present premises were put into practice, then not yet finished, and by 1982, accommodation for more than 200 beds and 3 operating theatres was available. Working simultaneously with the hospital where paying patients were present, in 1984, a hospital equipped with 400 beds and 3 operating theatres was made available for patients in need, completely free of charges for the less better off.

Later, 4 more Aravind hospitals were established as “satellite hospitals” in several cities: Theni, 1985; Tirunelveli, 1988; Coimbatore, 1997; Pondichery started operating on the 21st February 2003. (See Exhibit 1 – Map of India, State of Tamil Nadu and hospitals' location). All have much more capacity to attend free of charge patients than to accept/attend to paying ones. In the Aravind hospital in Madurai, 268 beds exist for ‘paying’ patients, whilst there are 1200 beds for ‘free’ ones. Both have access to physicians working in specialities such as Retina, Cornea, Glaucoma, intra-ocular lenses (IOL), Pediatric ophthalmology, and *inter-alia*. This hospital is also the Madurai Eye Bank Association’s headquarters (Eye Bank). The Aravind hospital in Theni, the first satellite hospital, serves a rural area of about 1 million people, having as its main focus prevention and rehabilitation. It has 60 beds for ‘paying’ patients and 40 for ‘free’ ones. In Tirunelveli, the satellite hospital serves a population of 5 million and is also a teaching institution with 100 beds for ‘paying’ patients and 300 for ‘free’ ones. Coimbatore hospital has 175 beds for ‘paying’ and 600 for ‘free’ patients, serving a population of around 25 million. Pondichery Hospital has about 750 beds – 150 for ‘paying’ and 600 for ‘free’ patients. Also, Aravind hospitals employ 1,384 people, in several medical specialities and service activities (See Annex 2 – Characterization of the personnel working at Aravind System).

4 – Hospital internal working system and financing

Aravind does not use a conventional system for booking consultations. Instead, patients may go directly to the hospital from 0730 to 1800 with no need for booking an appointment. The ‘paying’ patients who have means to support their fees have to pay a 50 rupees tax (about •0,94) which is valid for 90 days, and the patient may have access to 2 consultations without extra payment. The patient who needs a surgical intervention may choose the room type for such an operation. The payment differs for each room type, varying according to its level of privacy, sharing of bathroom or with a single mattress. Besides the lodging, the cataract surgeries’ costs depend upon the type of lenses and if the surgery is with suture (•110) or without it (•200). For ‘free’ patients the surgical intervention cost is 1200 rupees, a price that is subsidised with 500 rupees by the patient when he comes by his own means or through the government as part of an Eye Camp. The remaining 700 rupees are covered by the Aravind System. ‘Free’ patients benefit from free food and lodging whilst being treated. Regardless of whether they are ‘paying’ or ‘free’ patients the same high medical standards are assured for both. The sole difference is in which area of the hospital that they stay.

The hospital revenues come from fees collected from patients who had surgery interventions and/or utilisation of hospital services from a government subsidy. The ‘paying’ patients represent 35% of all patients treated. Those revenues generate an excess that enables the remaining 65% of non-paying patients to be assisted/subsidised (See Annex 3: Earnings and Expenses and profits: 1998-2003). NGOs donations, stand for 10% of budget, and are used mainly to provide new services and training people for identical activities. The more free surgeries

that are created, the more subsidies attributed – however, the present system is installed so as to enable Aravind to remain self-reliant.

5 – Productivity, quality and people

In 2002, 1,399,371 consultations were undertaken in Aravind hospitals and subsequently 196,430 surgical interventions performed (see Annex 4A: Number of external consultations and surgical interventions in 2002; also see Annex 4B: Number of external consultations and surgical interventions from 1978 to 2002).

With the organization of patient flow, and the systematisation of all steps that patients must follow for tracking and diagnosis, medical teams and surgeons working in Aravind hospitals are able to reach very high productivity. They work for long periods in the operating theatres, and in some cases, a surgeon performs more than 50 cataract surgeries a day. So, though the number of surgeons in Aravind hospitals are about 1% of all working in India, they perform about 5% of all cataract surgeries in the country. A surgeon at Aravind performs on average 2,000 surgeries a year, significantly exceeding the national average of about 400. This productivity value makes Aravind the first ophthalmologic treatment Centre in the world, thanks to the presence of such factors as medical specialisation and a “assembly-line production model”

Each physician, as a rule, specialises in a particular eye problem and this enables them to treat a large number of patients with the same ailments and develop more effective and specific procedures. All ophthalmologists at Aravind, as well as those training in Aravind methods all over the world, have a training period of 8 weeks for microsurgery techniques intended for cataract extraction and placement of intra-ocular lenses. There are also training programs for personnel at all levels including ophthalmologic specialists, technicians, clinical assistants, hospital coordinators and managers, which contribute to the highest standards of quality and productivity.

The application of a ‘serial production model’ is manifest when entering the cataract surgery room where two beds exist side by side. When one is being operated on, the other is being prepared in the side-by-side table. As soon as the surgeon finishes an operation, they pass to the other microscope on the other table, and so, in a continuous manner without any breaks.

Each patient in the surgical room is assisted by two assistants. One to attend the surgeon’s needs, the other, for preparing the surgical instruments. This means that in the surgery room there is a team of one surgeon and four nurses besides the patients. This team is maintained in service for as long as possible, a rule that enables surgery times to be reduced due to the accrued coordination amongst its members.

Nowadays, in almost all cataract surgeries that are performed, an intra-ocular lens is exchanged for the affected crystalline natural lens. An exception is made for cases in which this is medically not advisable. In early years, due to the lack of resources available, there would be no new lens introduced. Instead, only the opaque crystalline lens would be extracted and a pair of high powered spectacles was provided, a procedure that rendered sub-optimal vision to the patient. The use of intra-ocular lenses enables the hospital to reach a very high level of sight recoveries, with a very short post-operation time. This has passed from some weeks for lens application to some days with intra-ocular lenses.

The intensive use of the operation theatre gives the medical community ground for concerns over the problem of possible infection incidents, particularly more so than when the surgery room is aerated and disinfected for longer periods. Aravind’s experience however, states

that no further problems arise due to the intensive utilisation of rooms, and the rate of complications is also reduced. (See annex 5 – Comparison of Clinical Quality). The records of post-operation complications are a subject of study by a senior specialist. The study gives very interesting clues about the eventual need for more people to be better trained on a permanent basis.

Besides medical specialization, Aravind recruits young females from rural villages with secondary studies. Some receive two years training and after that they are able to use their skills as nurses. When beginning, they receive a relatively low salary. However, they receive accommodation and meals without any cost. Compared to an average nurse that has just graduated, their salaries are inferior; nevertheless they receive specific training and formation that they value very much.

Young females from nearby villages are also recruited by Aravind to perform other functions such as cleaning, meal preparation or optical techniques. Aravind gives them the necessary training which thanks to their willingness to work, learn and employ their intellectual vivacity, results in high quality and productivity standards.

6 – Clinical specialities and hospital support services

The first speciality service at Aravind, now regarded as pioneering the way, was for *Retina and Vitreous*. Nowadays, about 23 million people in India are affected by diabetes, a disorder causing retina problems. The service was created to respond to the needs of those affected, being this the second cause of blindness after cataracts. In 2002, this speciality was attended in several Aravind hospitals, with 72,802 patients treated. Of these, 12,087 laser surgeries were undertaken and 3,639 surgical interventions. Specialities such as Cataract and Intra-Ocular Lenses have the largest number of surgical interventions performed at Aravind hospitals. Other specialities available in Aravind hospitals are Neuro-Ophthalmology, Cornea, Refractory Surgery, Pediatric Surgery and Strabismus, Contact Lenses, Glaucoma, Uvea, Orbit and Oculoplasty.

To give support to the specialities of Aravind hospitals a number of services have been created:

- Ocular Microbiology Laboratory to help with diagnostics and investigation of disorders;
- Radiology Department for processing RX activities;
- Instrument Maintenance Laboratory to execute conservation and repair of instruments and other equipments in use in the hospitals.

A counselling Centre for patients is also active at Aravind where, besides counselling and help, work as a rehabilitation Centre, called the Reduced Sight Centre. This was established to support and help treated patients to adapt to their new life conditions.

Aravind Communications Division covers editing and audio-visual activities, as well as a Library and Information Centre related to health and ophthalmology publications.

7 – Aravind System

Some complementary structures have been created at Aravind hospitals that integrate the whole system – *The Aravind Eye Care System* (see Annex 7 – Aravind System

Structure) with the mission of “*eradicating blindness through the offer of eye care in the best, appropriate and compassionate way, to all in need*”.

7.1 – The Lions Aravind Institute of Community Ophthalmology (LAICO)

LAICO is an institution established to expand internationally the techniques and organizing methods created by Aravind and to fulfil its mission through healthcare operators all over the world. It contributes to the prevention and control of blindness in general – training personnel for dealing with sight disorders and specialised managers for hospital services.

International recognition of Aravind’s surgical and organization techniques has brought more than 1,000 surgeons from all world to visit and train at Aravind hospitals in the last 7 years. LAICO offers consultancy services to visitors from many hospitals who come to learn and understand the Aravind system for application in their hospitals. So LAICO has helped to share its knowledge with more than 160 hospitals from India, Asia, Africa, Europe and Latin America. Aravind also invites medical teams from different hospitals to participate in workshops by LAICO so that they may share their experiences and spread their innovative ideas.

7.2 – Aravind Medical Research Foundation

This foundation was created to develop and support research programs, and has responsibilities in coordinating all research at Aravind hospitals, as well as clinical studies on certain patients.

7.3 – Aurolab

Aurolab was started in 1992 because of the high price of imported intra-ocular lenses (\$20), unacceptable to the local population. The solution Dr. V conceived was to take on production by Aravind. The technology used for executing such lenses demands very high production levels and adequately covers Aravind hospitals’ needs. Similarly, a considerable amount of lenses are sold also to other entities such as NGOs. With Aurolab, the cost of production has dropped to •4. Nowadays, 25% of all 700,000 lenses made are used by Aravind hospitals; the remaining is exported to more than 85 countries.

Aurolab is part of a goodwill global consortium, where also includes Seva Foundation, Combat Blindness Foundation, CBM and Sight Savers International. In exchange for financial help for acquisition of equipment and technical knowledge to produce such lenses, Aravind supplies all consortium members with lenses at subsidized prices.

The Aurolab department for Needles and Sutures was created in 1998. With the skills acquired it has also diversified into needle production, manufacturing such items for cardio-vascular surgery. The Pharmaceuticals and ophthalmology products department was also created to manufacture products not available in the local markets, or where prices were excessive; first, for own consumption at Aravind, and later, for sales abroad. The growing demand for spectacles for patients and light plastic lenses for them led to the creation of a spectacle lenses department. Besides manufacturing, they control the quality, as well as give technical support and training to spectacle shops in Aravind hospitals. With increased internal production, it is possible to place in the hospital shops a wide range of high quality and price accessible plastic lenses.

Aurolab departments and their teams are still developing accessible products not available in local markets to be sold at low prices, as well as identifying the need for new products. As the demand is very large, sales of these products enable Aravind to generate high revenues.

7.4 – Eye-Camps

Dr. V was fully aware that his fight to eradicate curable blindness imposed the need to reach rural areas where the majority of those in need lived, without enough means or accessibility to treatment in the city hospitals. It became Dr. V's main concern to find ways to reach such patients.

So “eye-camps” were created to identify blind people or those with sight difficulties in villages, so they could be assisted through Aravind hospitals as non-paying patients or paying a ‘proportionate’ price according to their means. The majority of these camps is sponsored by local entrepreneurs who take responsibility for finding a place to the camp, recruit willing people to organize the camp, advertise it and direct those in need to the hospital.

Every time an “eye-camp” takes place, Aravind personnel, with medical doctors and ophthalmologic assistants, go to the “eye-camp” to track the patients who have assembled there. With help of the camps' sponsors, local volunteers take registration details for each patient. Sight tests follow by ophthalmologic assistants and previous diagnostic tests by physicians. After all such tests, a final assessment is made by senior physicians who then decide on which treatments should follow. The patients who need spectacles then may buy them through an Aravind Specialist who is present at the camp. If they are unable to provide the specific lenses, the optician prepares the spectacles with appropriate lenses and delivers them a few days later at the camp.

Usually the “eye-camps” take place on Sundays. Those in need of surgery are taken to the nearest Aravind Hospital, the same day. The day after they undergo surgery and two days later, they are delivered back to the camp. The surgery with intra-ocular lenses, the stay in the hospital and the journey to and back from the camp is free for most patients.

Now, mainly to alleviate the ‘surcharge’ of surgeries on Mondays and to spread those evenly during the week, eye-camps now take place on different week days, in several villages. During 2002, for example, 1,549 camps took place, where 461,762 patients were observed. Of these, 89,198 were taken to Aravind hospitals where they underwent cataract surgery (97% of the cases), or were treated for other sight pathologies (3%). (See Annex 7: “Eye-camp” statistics: 2002)

7.5 – Other Programs

Aravind also developed other programs such as the *School Program*, the *Diabetes Program*, the *Rehabilitation Program*, and the *Village Volunteers Program*. These were made available in the villages and focused on prevention, healing and rehabilitation so as to give information in order to contribute to the reduction of curable blindness.

Through the School Program – *School Eye Health Screening Program* – the teachers are asked to identify children with visual deficiencies and to measure their sight capacity.

From 53,802 children observed in 58 schools during 2001, 1,625 received spectacles to overcome their problems with vision.

The Diabetes program – *Diabetic retinopathy management in the community* – has a main goal of informing the population about diabetes related retina pathologies. In 2001, as a result of this program, 15,843 individuals were submitted to test for diabetes. 866 individuals were tested positively.

The Rehabilitation program focuses on helping blind people to return to as normal a life as possible, moving about and working with ease, through training them in new activities as well as providing financial support.

People working for NGOs also take part in the *Village Volunteers Program* – counselling, teaching and motivating people. They are prepared to identify cataract affected people, explain to them the methods of surgery and the support process for helping to heal their blindness.

8 – Conclusion

Dr. V said frequently to his fellow doctors: *«Doctors have many patients to see. But do they really see the patient, or just the patient's wallet? Do they see whether the patient is a rich man who is going to pay them well, or do they see his soul and really become interested in his problems? Intelligence and capability are not enough. There must also be the joy of doing something beautiful. Being of service to God and humanity means going well beyond the sophistication of the best technology, to the humble demonstration of courtesy and compassion to each patient.»*

He believed that Aravind hospitals were accomplishing the mission he had dreamed, to help thousands of people to recover their sight. Nevertheless, he thought that it was necessary to extend Aravind's reach.

Aravind's work and outcomes were winning international recognition. It was a well structured organization with a core goal of fighting blindness, not discriminating people according to their means of paying for the services received. Aravind was regarded as an outstanding international centre for ophthalmologic professionals and all people involved in health activities, both its management and administration. Aravind also has an effective research institute and can supply many ophthalmologic products.

Efficient resources management has enabled Aravind improve the productivity and deliver high quality services at low costs. The volume of surgeries performed and the number of patients assisted places Aravind as the worlds most efficient eye treatment centre. Dr. V himself has performed more than 100,000 surgeries.

Such a large number of surgeries had been achieved thanks to the high productivity of every surgeon, helped by well trained assistants and the "serial production model". Being able to produce all the necessary materials for surgeries, as well as doing a careful study of the procedures to support this has enabled cost reductions, and even generates a profit each year to support the development of more hospitals, training programs and research.

Dr. V after reviewing what has been achieved believes his concept, which has

aroused new hope of restoring sight to those in need, could be valuable outside India. Hope in recovering sight could be offered to such individuals all over the world.

The Aravind model already implemented in a number of countries concludes that good results can be reported whenever the hospital has good leadership and is totally committed towards the local community.

When the WHO, together with the International Agency for Blindness Prevention, launched their initiative – “Vision 2020 – the Right to See”, Dr. V could not have been happier for seeing that his lone endeavour had definitely gained followers, in a way that he could only have dreamed possible.

However, at 85, Dr. V is concerned with the long term Aravind survival. Would this way of reviving and communicating the Aravind value be assumed, in order to proceed vigorously with the mission of "eradicating avoidable blindness" among the rich and the poor? He wondered what else might be done towards this purpose.□

EXHIBIT 1

ARAVIND EYE CARE SYSTEM

Map of India, Tamil Nadu State and localization of Aravind Hospitals

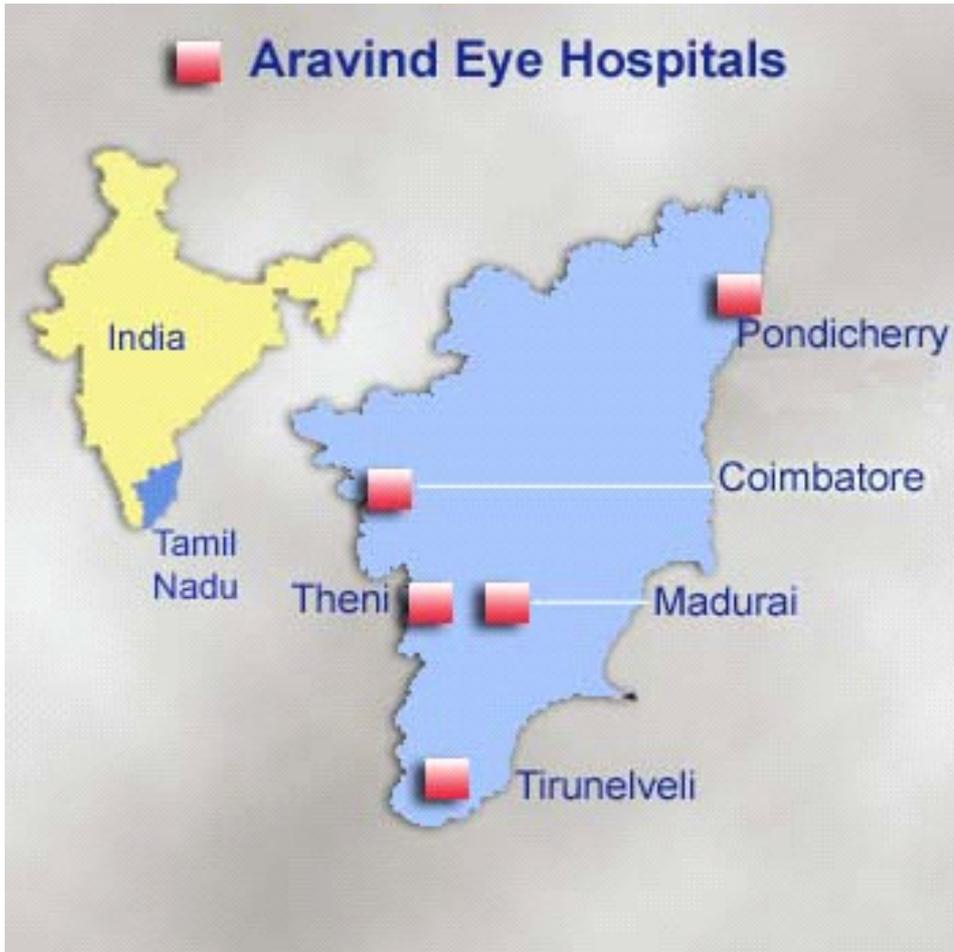


EXHIBIT 2

ARAVIND EYE CARE SYSTEM

Characterization of the Aravind System Personnel

1. Doctors

CATEGORY	TOTAL
Doctors	197
Research	12
Ward	81
Theatre	152
Outpatient	136
Refraction	105
New Batch	104
Radiography	4
Eye Bank	2
Lab	30
Reception	82
Social Worker	78
Housekeeping	73
Sanitary Workers	51
Administration	58
EDP	23
Camp	30
Library	6
Bio-Statistics	6
Photography/Videography	9
Faculty	7
DTP	6
Stores	14
Maintenance	47
Transport	19
Support Services	24
Security	15
Project	11
Nursing	2
TOTAL	1384

CATEGORY	TOTAL
Director	1
Joint Director	1
Chief Medical Officer	1
Senior Medical Officer	1
Medical Consultant	22
Physician	1
Chief - Microbiology Lab	1
Medical Officer	56
lol Fellow	19
Paediatric Fellow	4
Glaucoma Fellow	2
Cornea Fellow	6
Retina Fellow	11
Orbit Fellow	1
General Oph. Fellow	1
Senior Resident	16
Dip.Nb.resident	24
M.S. Resident	12
D.O. Resident	16
MRCO Resident	1
TOTAL	197

2. Research

CATEGORY	TOTAL
Director-Research	1
Senior Research Associate	1
Research Medical Officer	1
Post Doctoral Fellow	2
Senior Scientist	1
Senior Research Fellow	3
Junior Research Fellow	3
TOTAL	12

EXHIBIT 3

ARAVIND EYE CARE SYSTEM

Income & Expenditure Accounts (in Rupees)

INCOME	1998/1999	1999/2000	2000-2001	2001-2002	2002-2003
Consulting Fees	13,491,560.80	14,793,162.00	20,135,501.15	21,101,009.00	23,783,283.00
Surgery Charges	158,281,440.55	176,810,419.78	207,583,874.00	227,293,300.41	254,324,198.04
Treatment charges	14,356,450.94	15,895,832.00	18,207,090.00	20,453,507.00	22,835,136.04
Medical service charges	10,349,970.74	13,985,567.75	16,587,051.71	15,354,454.64	16,207,150.98
Laboratory charges	2,390,803.50	2,918,206.00	2,951,912.00	3,579,099.00	3,897,620.00
X ray charges	412,213.00	539,125.00	444,349.53	406,641.34	419,228.23
Grants in aid	4,164,419.74	10,951,298.50	18,213,672.35	33,587,260.15	37,803,937.00
Building amenities	1,138,109.00	1,691,743.00	3,017,231.50	2,639,781.50	2,042,215.00
Donation	3,736,883.00	1,370,480.50	1,322,881.75	2,366,177.00	3,738,637.00
Tuition/course Fees	1,343,423.62	2,279,169.00	2,595,074.27	3,162,413.10	4,785,433.59
Sale of applications	120,775.00	190,175.00	0.00	122,600.00	139,200.00
Dietary Revenue	2,477,101.70	3,045,361.47	3,880,264.31	2,664,683.97	2,815,126.32
Micro surgery course fee	1,352,906.00	817,359.56	276,465.00	418,560.14	72,408.50
Sale of books	363,299.05	212,172.45	321,646.84	317,544.00	286,430.63
Interest received	23,239,301.73	28,500,651.80	34,912,504.26	49,373,877.10	45,921,633.95
Dividend received	1,039,037.44	1,900,472.48	3,000,591.13	3,124,703.17	2,496,749.45
Agriculture income	47,303.00	0.00	43,662.65	66,692.30	0.00
Income on sale of securities	0.00	124,018.43	495,551.56	0.00	0.00
Profit on sale of assets	0.00	0.00	174,256.00	273,734.00	156,781.00
Miscellaneous income	231,182.27	257,515.23	6,248,389.32	1,653,348.4	1,931,704.65
TOTAL	238,536,181.08	276,282,729.95	340,411,969.33	387,959,386.22	423,656,873.38
EXPENDITURE	1998/1999	1999/2000	2000/2001	2001/2002	2002-2003
IOL Cost	22,324,643.45	24,245,807.70	27,487,092.10	35,079,639.25	39,739,211.43
Medicine & cotton	11,718,664.05	12,628,723.20	17,649,004.63	17,025,968.61	15,972,527.65
Hospital Linen	672,865.14	1,095,701.55	991,043.03	728,270.65	1,022,137.87
Cleaning & sanitation	1,911,483.22	1,620,586.46	2,689,075.47	2,790,230.43	2,747,712.56
Staff Salary	17,465,674.72	25,818,023.80	34,428,838.37	38,649,889.85	41,221,521.49
PF Contribution	2,109,887.90	2,714,999.85	3,548,843.00	4,203,055.00	4,531,819.00
Electricity charges	8,722,168.30	10,725,020.75	12,625,281.15	13,099,989.36	15,397,932.89
Electrical items & bulbs	1,495,949.32	5,642,031.71	1,323,476.63	906,655.73	1,543,986.05
R&M-Instrmts & equipts	3,465,417.20	845,823.46	5,414,340.36	8,525,109.81	8,871,286.75
Buildings	4,008,159.95	3,371,733.15	3,835,448.90	1,768,404.91	3,830,744.66
Generators	318,336.65	590,652.95	846,197.91	0.00	0.00
Vehicles	1,038,544.46	1,141,874.11	959,120.97	1,572,286.46	1,578,053.39
Others	317,270.40	3,633,152.91	206,375.70	1,479,410.65	325,498.20
Travelling Expenses	2,635,471.37	3,098,692.16	4,114,521.15	2,167,357.84	4,400,421.29
Camp expenses	4,307,080.85	3,682,642.64	4,664,902.70	6,677,580.69	6,567,798.78
Printing & stationery	2,261,622.14	1,705,809.95	2,455,018.43	3,291,971.05	3,592,882.45
Postage, Teleg. Telephones	745,774.20	842,744.26	774,258.70	1,909,266.43	210,524.66
Building Rent	52,732.00	55,450.00	140,880.00	145,200.00	145,200.00
Subscription	195,122.46	282,909.15	214,243.00	517,811.00	718,414.00
Bank charges	8,147.00	3,338.00	809.00	2,685.65	
Interest Paid	158,484.62	161,372.32	173,641.00	143,144.00	153,095.00
Library Books	198,636.10	545,679.57	844,635.57	686,896.78	280,515.70
Res.Doc.Hostel Expense	121,251.00	114,098.15	375,110.57	222,368.00	355,590.28
Microsurgery Trg.Exps.	2,654,337.19	1,357,300.56	43,590.00	0.00	0.00
Research & special study	2,152,626.04	3,066,179.83	413,073.25	470,761.50	502,708.50
Water supply charges	732,382.25	793,811.00	1,003,493.00	1,129,596.00	1,311,731.50
Taxes & legal fees	7,856.00	362,616.00	108,314.50	117,200.00	136,021.00
X ray & Photography	464,862.45	594,456.22	341,586.47	260,481.79	160,261.61
Audit Fees	29,200.00	38,550.00	55,240.00	55,290.00	57,305.00
Agricultural expenses	7,676.25	43,182.75	115,981.98	136,496.35	0.00
Miscellaneous Expense	1,396,539.04	1,661,906.58	111,7708.05	170,2750.73	972,545.16
Project expenses	0.00	0.00	0.00	0.00	462,423.36
Contn.to Relief funds	50,000.00	93,145.00	425,000.00	0.00	0.00
Depreciation	28,468,556.92	30,600,360.29	27,237,032.02	32,062,437.63	45,998,503.71
Total expenditure	122,217,422.64	143,178,376.03	156,623,177.61	177,528,206.15	204,700,373.94
Excess of Income Over Expenditure	116,318,758.44	133,104,353.92	183,788,791.72	210,431,180.07	218,956,499.44
TOTAL	238,536,181.08	276,282,729.95	340,411,969.33	387,959,386.22	423,656,873.38

EXHIBIT 4

ARAVIND EYE CARE SYSTEM

Number of out-patient visits and surgeries – 2002

	Madurai	Tirunelveli	Theni	Coimbatore	Total 2002
Out-patient visits					
Paying	276,548	132,272	40,149	201,078	650,047
Free	328,651	138,425	41,685	240,563	749,324
Total out-patient visits	605,199	270,697	81,834	441,641	1,399,371
Total hospital out-patient visits	409,755	182,356	60,035	285,463	937,609
Total eye out-patient visits	195,444	88,341	21,799	156,178	461,762
Total out-patient visits	605,199	270,697	81,834	441,641	1,399,371
Surgeries					
Paying	34,510	12,107	1,863	19,575	68,055
Free	66,363	19,719	5,273	37,029	128,384
Total Surgeries	100,873	31,826	7,136	56,604	196,439

Number of out-patient visits and surgeries – 1978 to 2002

	2002	1978-2002
Surgeries	196,439	1,601,748
Out-patient visits	1,399,371	14,669,094

EXHIBIT 5

ARAVIND EYE CARE SYSTEM

Comparison of clinical quality
Aravind Eye Care System with The Royal College of Ophthalmologists, UK

The quality of eye care at AEH was as good as, or better than, the best centers for eye care in the world. For example, given below, is a comparison of medical complications at Coimbatore hospital compared to the standards obtained in the U.K. as documented by a national survey by The Royal College of Ophthalmologists, UK.

Adverse Events During Surgery			Adverse Events within 48 hours of surgery		
Event	Aravind, Coimbatore N=22,912	UK national Survey N=18,472	Event	Aravind, Coimbatore N=22,912	UK national Survey N=17,257
Capsule rupture and vitreous loss	2,0%	4,4%	Corneal Oedema	8,0%	9,0%
Incomplete Cortical Clean up	0,75%	1,00%	Uveitis more than expected	5,0%	5,6%
Iris Trauma	0,3%	0,7%	Peri-ocular bruising and oedema more than expected	1,0%	1,4%
Persistent Iris prolapse	0,01%	0,07%	Weak leak/rupture	0,67%	1,2%
Anterior Chamber Collapse	0,3%	0,5%	Hyphaema	0,9%	1,1%
Loss of nuclear fragment into vitreous	0,2%	0,3%	Retained lens material	0,87%	1,1%
Wounds	0,30%	0,25%	Vitreous to section	0,1%	0,3%
Choroidal Haemorrhage	—	0,07%	Endophthamitis	0,05%	0,03%
Loss of intra Ocular lens into vitreous	0,01%	0,16%	Hypopyon	0,04%	0,02%
			Other*	0,7%	1,5%

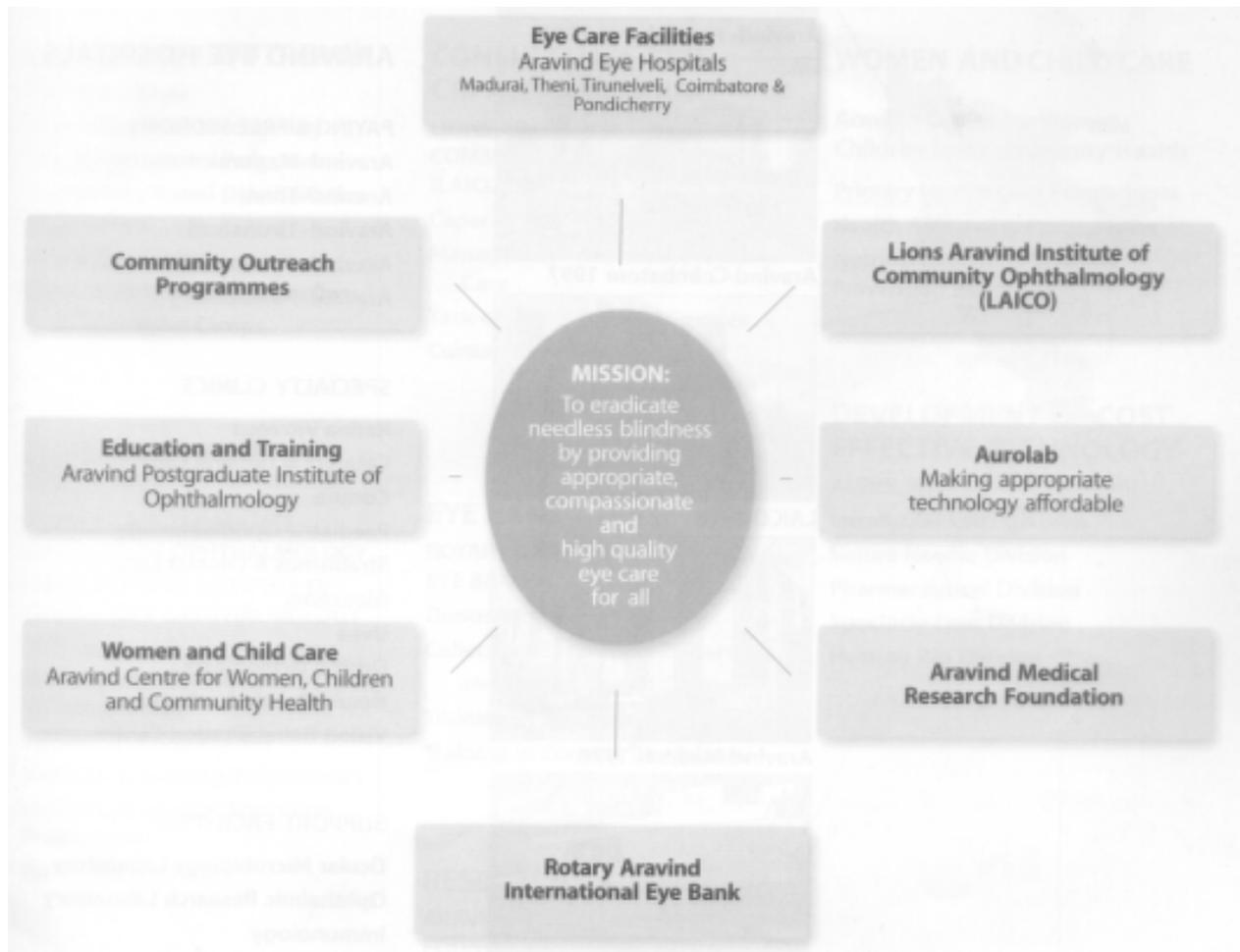
* Other includes iris abnormality, intraocular lens dislocation, cystoid acula oedema, choroiditis, optic neuropathy, and capsule opacity.

Source: Aravind Hospital, Coimbatore: "[Aravind Eye Care System](#)".

The Royal College of Ophthalmology, "Cataract Surgery Guidelines Outcome of Cataract Surgery", UK National Survey, 2001.

EXHIBIT 6

ARAVIND EYE CARE SYSTEM



1 - Aravind Eye Care System

Chairman - Dr. G. Venkataswamy
 Director - Dr. P. Namperumalsamy
 Joint Director - Dr. G. Natchiar

2 -Govel Trust - Board of Trustees

President - Dr. G. Venkataswamy
 Trust Secretary - Mr. G. Srinivasan
 Members:
 - Dr. G. Nallakrishnan
 - Mr. R. S. Ramasamy
 - Dr. P. Namperumalsamy
 - Dr. G. Natchiar
 - Mrs. Lalitha
 - Dr. R. Kim
 - President, Rotary Club, Madurai, Main Branch (Ex-Officio)

EXHIBIT 6 (cont.)

3 - Aravind Eye Hospitals & Postgraduate Institute of Ophthalmology**3.1. - Aravind - Madurai**

Chief Medical Officer - Dr. M. Srinivasan
 Administrator - Dr. S. Aravind

3.2. - Aravind - Coimbatore

Chief Medical Officer - Dr. R. D. Ravindran

3.3. - Aravind - Tirunelveli

Chief Medical Officer - Dr. R. Ramakrishnan

3.4. - Aravind - Theni

Medical Officers - Dr. Parvathi, Dr. T.R. Murali

4 - Lions Aravind Institute of Community Ophthalmology

Chairman - Dr. G. Venkataswamy
 Director - Dr. P. Namperumalsamy
 Executive Director - Dr. R.D. Thulasiraj

Institute Faculty

Dr. Keerti Bhusan Pradhan
 Dr. R. Muralikrishnan
 Dr. Praveen Kumar
 Dr^a. Preethi Pradhan
 Dr. P.Rajendran
 Dr. S. Saravanan
 Dr^a. K.M. Sasipriya
 Dr. A.K. Sivakumar
 Prof. V. Srinivasan
 Prof. N. Sukumaran

5 - Aravind Centre for Women, Children and Community Health

Chairman - Dr. G. Venkataswamy
 Director - Dr. P. Namperumalsamy
 Director - Dr. Lalshmi Rahamathullah

6 - Aravind Medical Research Foundation

President - Dr. G. Venkataswamy
 Vice President - Dr. P. Namperumalsamy
 Director - Dr. V. Muthukkaruppan

7 - Rotary Aravind International Eye Bank

Medical Director - Dr. M. Srinivasan
 Administrator - Brinda Priyadarshini

8 - Aurolab

Trust President - Dr. G. Venkataswamy
 Trust Secretary - Dr. G. Srinivan
 Managing Director - Dr. P. Balakrishnan

EXHIBIT 7

ARAVIND EYE CARE SYSTEM

“Eye-Camps” Statistics – 2002

Sponsors	Camps	Out-patients	Cat+IOL	Others	Total
Lions Club	400	145,707	28,834	1,057	29,891
Rotary Club	102	39,141	8,961	333	9,294
Vivekananda Kendra	59	12,769	2,509	83	2,592
Sri Satya Sai Samithi	8	2,634	615	13	628
Religious Organizations	91	35,361	7,444	219	7,663
Jaycees	7	3,237	590	23	613
Banks	43	11,227	1,431	55	1,486
Mills and Factories	23	12,077	2,789	86	2,875
DBCS	170	25,299	6,852	227	7,079
Educational Institutions	80	17,306	2,665	83	2,748
Hospitals	69	17,573	2,912	101	3,013
Trusts	47	20,681	4,645	140	4,785
Youth and fans Associations	35	8,227	1,447	55	1,502
Other Voluntary Organizations	199	53,146	7,773	339	8,112
Others	216	57,377	9,731	358	10,089
Total	1,549	461,762	89,198	3,172	92,370

Source: Aravind Eye Care System Activities Report 2002