ARAVIND EYE CARE SYSTEM

ACTIVITY REPORT 2010 - 2011

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Sukumar, Aravind-Pondicherry
Vijayakumar, Aurolab
Willie Davis, USA
In a contrary balance to earth’s truth of things
The gross weighs less, the subtle counts for more;
On inner values hangs the outer plan.
As quivers with the thought the expressive word,
As yearns the act with passion of the soul
This world’s apparent sensible design
Looks vibrant back to some interior might.

‘Savitri’ by Sri Aurobindo
Book II: The Book of The Traveller of the Worlds,
Canto VI: The Kingdoms and Godheads of the Greater Life
Aravind Eye Care System

Mission:

To eliminate needless blindness . . .

Aravind Eye Hospitals
. . . by providing compassionate and high quality eye care for all

Lions Aravind Institute of Community Ophthalmology (LAICO)
. . . through teaching, training, capacity building, advocacy, research and publications

Dr. G. Venkataswamy Eye Research Institute,
Aravind Medical Research Foundation
. . . by providing evidence through research and evolving methods to translate existing evidence and knowledge into effective action

Aravind Eye Banks
. . . by reducing corneal blindness through eye banking activities, training, research and public awareness programmes

Aurolab
. . . by making high quality ophthalmic products affordable and accessible worldwide
To some of us realisation of Divine and bringing Divine Consciousness, Power and Knowledge to our daily activities is the goal. The hospital work gives an opportunity for this spiritual growth.

In your growth you widen your consciousness and you feel the suffering of others in you. You learn to overcome mental and physical obstacles in your work.

- Dr. G. Venkataswamy
The founding team in 2001:
L-R : Dr. Natchiar, Mr. Thulasiraj, Dr. Vijayalakshmi,
Dr. M. Srinivasan, Dr. P. Namperumalsamy and
Mr. G. Srinivasan with Dr. V seated at the centre
All organisations have milestones. Some are planned far ahead of time and achieved only through strategic goals and objectives, and careful resource allotment. But there are also milestones that are crossed more organically – and are a cause for special celebration. The transition in executive leadership that happened at Aravind this year falls into the latter category. Aravind’s founding team that built a revolutionary organisation from scratch, made the momentous decision to pass the reins on to the next generation of leadership.

Dr. R. D. Ravindran was named the new Chairman of Aravind Eye Care System. The mantle was passed to him from Dr. P. Namperumalsamy, who stepped down on 12th July 2010. The erstwhile chairman brought many laurels to the organisation, including a spot on Time Magazine’s list of the 100 most influential people in the world.

Dr. G. Natchiar, who served as the Director of HR, literally handpicking the 3000 strong workforce of Aravind, handed over her responsibilities to Dr. S. R. Krishnadas. Dr. R. Kim took over the role of Director of IT from Mr. R.D. Thulasiraj, who kept Aravind at the cutting
edge of technology. Meanwhile Dr. N.V. Prajna has been identified to oversee the organisation’s finances, the role Mr. G. Srinivasan has so ably managed to-date. The latter has ensured Aravind’s financial viability through the decades, even with 60% of its patients receiving free or steeply subsidised care.

Aravind’s founding members continue to serve as invaluable mentors, enriching the transition process with their insights and hard-won expertise. With the leadership transition, a new governance system is emerging, that is increasingly inclusive and gives voice to all facets of the organisation. The strategic decision making that was unerringly guided by the instincts of the founding team, is now transforming into a more multi-stakeholder, evidence-based, decision-making process.

An anticipated milestone this year was the “Silver Jubilee Celebrations of Aravind Eye Hospital, Theni,” on 10th October 2010. The event brought together the community served by the hospital and government officials who appreciated Aravind’s sustained contributions to the people of Theni district. A four day exhibition on eye care was arranged for the public as part of the celebrations.
Aravind Continues to Grow

As the awareness and need for eye care increase, so does the demand. In order to meet these expanding needs and improve access, Aravind is creating a series of smaller eye hospitals in areas of high demand, based on current trends in patient load. As part of this new initiative, Aravind opened two secondary eye care centres at Dindigul and Tirupur in September and October, respectively.

The newly built inpatient building at Aravind – Madurai is getting ready for occupation. It will house superbly-designed operating rooms, offer an elegant ambience for inpatients, and provide ample basement parking. Once this building is ready for occupation in April 2011, it will in turn release much needed space for the expansion of Aravind’s outpatient services.

The new Inpatient Building at Aravind Madurai
Continuing with the strategy to deepen the reach through primary eye care, new Vision Centres were opened at Singampunari, Kariyapatti, Peraiyur and Kalayarkovil, increasing the total number of vision centres to 36.

New Initiatives
Aravind’s research activities continue to make significant contributions in understanding the basic biological mechanisms of eye diseases. A one-week workshop on Stem Cells for Vision was organised by Aravind Medical Research Foundation to provide hands-on experience to young scientists. This training course, sponsored by Indian Council of Medical Research and Defense Research and Development Organisation, New Delhi, was the first of its kind in India.

The multidimensional growth of Aravind has been made possible by its constituents diversifying their activities rapidly – with everyone fully involved in the growth process. This and the geographical distances between each Aravind facility deterred opportunities for Aravind staff to meet informally. In order for the staff to stay connected AARANYA (An ARAvind New Year Aggregation), an informal get together of the senior staff of Aravind and their families was hosted for the first time by Aravind-Madurai during the New Year. The events organised for the staff and their families were enriching, informative and full of laughter. They included the “Helen Keller” dance performance by Mrs. Chitra Krishnamoorthy and her team, as well as an early morning hike at Keelakuyilkudi led by Professor Venkatraman, Madurai’s very own historian. His enlightening tour of the Jain caves in the area was a highlight of the programme.

In keeping with the organisation’s ethos of continuous innovation, Aurolab introduced a range of new products in 2010: Voriconazole, a ready-to-use anti-fungal eye drop; Auroflex 360° Square Edged IOLs, that help prevent Posterior Capsular Opacification; Flures, a pyrogen and preservative free sodium dye for Fundus Fluorescein Angiography; Aurochart, a LCD vision chart incorporating several optotypes and diagnostic charts; Auro K Pro licensed by Boston Keratoprosthesis that offers a ray of hope for patients with multiple corneal graft failure, and Aurosharp, round stock blades.
**Innovating a Learning Platform**

Sharing expertise freely and widely is an integral part of Aravind’s organisational ethos. Current mechanisms for this include publications, ongoing skill development courses and structured capacity building activities by Lions Aravind Institute of Community Ophthalmology.

This year’s innovation on this front was the launch of “Aurosiksha,” a web-based, hybrid learning platform. With built-in pedagogical methods that promote effective adult learning, Aurosiksha aspires to make time-tested lessons available to individuals and teachers. Several hundred lessons are already online, with more being added continually. Trainers can use these lessons, designed by experts, and enhance them with their own nuanced understanding, as well as local context. Over time, Aurosiksha aims to boost the development of high-quality human resources in eye care, especially in areas with a dearth of quality training options.

**Integration with the Community**

When serving the community is the core purpose of an organisation, it takes special efforts to preserve key supporting values: compassion, concern and continuous engagement.

Aravind chanced upon a unique opportunity in the cultural arts realm when Dr. Chitra Krishnamoorthy, the Director of Nrityalaya School of Indian Classical Odissi Dance in Washington DC, USA, offered to have her troupe perform a multicultural dance drama honoring the life and work of Helen Keller as a fundraiser for Aravind. Instead the organisation chose to have the performance offered as a free-of-cost programme to the people of Madurai and played a key role in hosting the event. The Sathguru Sangeetha Samajam at Madurai came forward to schedule it as the inaugural event of their annual music and dance festival on January 1, 2011 and the citizens of Madurai enjoyed a spectacularly moving dance performance by the Nrityalaya team.

Aravind staff participate in cleaning temples in and around cities where Aravind Eye Hospitals are located, volunteer with other developmental organisations, host the “Madurai Readers Club” and address groups of students on career goals. Along these lines, a major activity taken up last year was a joint clean up initiative organized by EXNORA in co-operation with Aravind Eye Hospital, Soroptimist International and Indian Red Cross Society, in two neighbourhoods of the hospital – Melamadai and Gomathipuram. The clean-up programme included clearing garbage, creating alternatives for safe, residential garbage disposal, and public hygiene awareness campaigns.
For the third consecutive year, Aravind hosted the visit of TATA Jagriti Yatris, a highly motivated group of Indian youth and professionals who visit exemplary social initiatives all across India as part of an annual eighteen day national odyssey. This year over 400 members participated, all of them eager to understand the “business” of scalable, sustainable service. These young individuals are the true shapers of India’s future and Aravind considers it a rare privilege to share its insights and experiences from the field with this dynamic and deeply sincere group.

Eye care, like many other fields, is evolving rapidly with several technological advancements. Aravind feels the responsibility to keep the community up-to-date. To this end, a grand eye care awareness exhibition was organised by Aravind Eye Hospitals at Madurai, Pondicherry, Theni and Tirunelveli, which was visited by thousands of community members and students.

In Memory of the Founder
Vizhi Vaevli, the biography of Dr. G. Venkataswamy written by Mr. Sivalingam, was released by Dr. APJ Abdul Kalam, former President of India, who readily accepted the
Dr. G. Natchiar, Dr. G. Nallakrishnan, Dr. Mayilvaganan, former President Dr. APJ. Abdul Kalam, Dr. P. Namperumalsamy, Mr. G. Srinivasan and Mr. Sivalingam at the launch of Vizhi Vaelvi

invitation, and believes in the importance of sharing Dr. V’s work with the greater community. The Dr. G. Venkataswamy Endowment Oration Award, instituted in memory of Aravind’s Founder Chairman, was bestowed on Dr. Jack P. Whitcher of Francis I Proctor Foundation, USA, for his outstanding and ground-breaking work in the field of corneal disorders. At a stellar ceremony held at Dr. G. Venkataswamy Eye Research Institute on January 8, 2011, Honourable Justice P. Sathasivam, Judge, Supreme Court of India, presented the award. In his speech, the Honourable Judge stressed that the medical profession stemmed out of the traits of humanity – compassion, kindness and benevolence. Dr. Whitcher in his oration mentioned about learning from Aravind’s founder that whatever one gave away in the spirit of service always found its way back tenfold.

The October Summit, a series of workshops held each year as a meaningful way of paying tribute to the Founder Chairman on his birth anniversary, received wide appreciation from participants. The workshops

Dr. Srinivasan, Dr. Jack P. Whitcher, Mr. Srinivasan, Justice Sathasivam, Dr. Namperumalsamy and Dr. Ravindran at the Oration award ceremony

Dr. G. Natchiar, Dr. G. Nallakrishnan, Dr. Mayilvaganan, former President Dr. APJ. Abdul Kalam, Dr. P. Namperumalsamy, Mr. G. Srinivasan and Mr. Sivalingam at the launch of Vizhi Vaelvi

**Keeping Dr. V’s Vision Alive and Green**

The idea of building a memorial centre first surfaced when the leadership at Aravind reflected on ways to honor Dr. V’s vision and keep his spirit alive within the organisation. The initial thought was to have it house Dr. V’s writing, memorabilia, his library collection and the like. But on further reflection, it was clear to the founding team and others that Dr. V would have shied away from the idea of creating a static “shrine” in his memory. He would wish for the building to serve a living and dynamic purpose. The idea for creating a space for contemplative practice as well as collective strategic planning and organisational retreats soon evolved. As various architectural options were considered it was agreed that the building should reflect Dr. V’s passion for solar power and green building. Over the period of two years several architectural plans were drawn up and each one dismissed for various reasons, before the final one was selected. The architect Mr. Gnanaraj, had hit upon the perfect design. The brilliant floor plan even incorporated the Mother’s symbol through a stunning combination of building, landscaped garden and ponds. As serendipity would have it, the entrance of the building lines up directly with a beautiful banyan tree Dr. V himself planted. The centre is currently under construction on the same grounds as Aurolab and Aurofarm. Its completion, slated for October 2011 will offer up a serene and inspirational space for internal practice as well as external dialogue and creative thinking.
The year 2010 – 2011 was one of significant developments at Aravind with the inauguration of a new inpatient block at Madurai and addition of two hospitals. The new hospitals at Dindugul and Tirupur were opened in September and October 2010 respectively and have since registered a steady growth in their performance.

To cater to the increasing patient load, the new inpatient facility at Aravind – Madurai is being readied for occupation and will become fully operational in April 2011. Sprawled over roughly 115,000 square feet, the new facility will offer an ambience well suited to providing compassionate and holistic eye care with excellence.

As Aravind gears to handle steadily increasing patient volumes, it puts equal emphasis on improving the quality of clinical services offered. All lessons learnt in the process are documented and are almost simultaneously shared both across the Aravind Eye Hospitals and with eye care workers from around the world. Listed below are some of the clinical developmental activities in the various departments across all Aravind Eye Hospitals in the last year.

The Paediatric Ophthalmology Clinic at Aravind – Madurai started a genetic counseling department in November 2010 to screen patients with genetic eye disorders and to provide them genetic counseling. Patients are informed of the genetic condition of the relevant
disease, its inheritance pattern, and any potential risk to other family members, as well as the benefits and limitations of genetic testing. The department currently concentrates on eye diseases like aniridia, albinism, Leber’s hereditary optic neuropathy, Leber’s congenital amaurosis, FEVR, congenital cataract, congenital glaucoma and X-linked retinoschisis.

In the Retina clinics, the screening procedure for Retinopathy of Prematurity was standardized. A new machine for performing vitrectomy and a new yellow laser machine have been installed at the Aravind-Madurai centre. To minimise crowding inside the Retina Clinic at Aravind-Madurai, the department has now formed a separate investigation area where examinations like FFA, OCT etc are conducted.

Kidzone – an optical shop exclusively for kids was opened at the Paediatric Ophthalmology Clinic at Aravind-Coimbatore on April 14, with facility for immediate delivery of glasses. The hospital also opened a new, exclusive library for trainees on August 27.

At Aravind - Tirunelveli and Pondicherry, the Glaucoma clinics added to their equipment inventories Anterior segment OCT for better diagnosis of anterior segment disorders. It also opened a new library for Mid Level Ophthalmic Personnel.

Dr. Paul Homer, an ophthalmologist and low vision specialist from California visited the Aravind Vision Rehabilitation centre at Madurai. He donated several low vision aids to the clinic and shared his insights and expertise with the low vision team. He also delivered special lectures for Aravind’s postgraduate students and for its doctors in the Retina and Paediatric ophthalmology departments.

Quality Management Initiatives

Aravind has developed parameters to benchmark the performance of each department holistically, considering quality, service, costs, staff retention and academic activities. These parameters are developed for regular monitoring and to standardise the system and manpower across the various clinical and non-clinical departments. The departments present the parameter report in their weekly and monthly meetings and decide the actionable items. A quarterly review meeting is conducted in the presence of each hospital’s Chief Medical Officer and its department heads. The annual parameter audit was conducted in January 2011 during which the team assigned for each hospital reviewed its performance and shared their feedback.

As part of the Total Quality Management Initiative, several activities were carried out at the IOL Clinic, Medical Records Department, Operation Theatre and Ward at Aravind - Madurai. A seminar was organised on May 20 by the CII (Confederation of Indian Industry) as a follow up to these Total Quality Management initiatives.

Staff of clinical trials department received training in ‘Harmonization – Good Clinical Practice’ (GCP) from Allergan faculty on July 7.
## Out-Patient Visits

### April 2010 - March 2011

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunveli</th>
<th>Coimbatore</th>
<th>Pondy</th>
<th>Dindigul</th>
<th>Tirupur</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td><strong>OUT PATIENT VISITS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying (new+review)</td>
<td>472,407</td>
<td>72,458</td>
<td>245,967</td>
<td>323,587</td>
<td>207,315</td>
<td>24,867</td>
<td>31,549</td>
<td>1,378,150</td>
</tr>
<tr>
<td>Free (new+review)</td>
<td>148,433</td>
<td>21,075</td>
<td>65,513</td>
<td>104,941</td>
<td>65,215</td>
<td>-</td>
<td>-</td>
<td>405,177</td>
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<tr>
<td><strong>OUTREACH</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td><strong>FREE EYE CAMPS</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Comprehensive</td>
<td>100,315</td>
<td>22,309</td>
<td>44,447</td>
<td>83,893</td>
<td>61,043</td>
<td>-</td>
<td>122</td>
<td>312,129</td>
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<tr>
<td>Diab. Ret. screening</td>
<td>6,453</td>
<td>3,447</td>
<td>2,288</td>
<td>43,825</td>
<td>4,322</td>
<td>-</td>
<td>-</td>
<td>60,335</td>
</tr>
<tr>
<td>Refraction</td>
<td>20,917</td>
<td>4,723</td>
<td>8,680</td>
<td>12,975</td>
<td>7,788</td>
<td>-</td>
<td>193</td>
<td>55,276</td>
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<tr>
<td>School Children</td>
<td>7,524</td>
<td>932</td>
<td>17,482</td>
<td>7,629</td>
<td>20,722</td>
<td>-</td>
<td>-</td>
<td>54,289</td>
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<tr>
<td>- through base hospitals</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>School Children</td>
<td>2,404</td>
<td>1,270</td>
<td>522</td>
<td>2,165</td>
<td>466</td>
<td>-</td>
<td>-</td>
<td>6,827</td>
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<tr>
<td>- through vision centres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Children below 16 years</td>
<td>2,786</td>
<td>326</td>
<td>11,694</td>
<td>1,797</td>
<td>12,529</td>
<td>-</td>
<td>-</td>
<td>29,132</td>
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<tr>
<td>Mobile van refraction</td>
<td>-</td>
<td>6,405</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,405</td>
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<td>VISION CENTRES</td>
<td>74,441</td>
<td>44,776</td>
<td>37,083</td>
<td>25,666</td>
<td>19,546</td>
<td>-</td>
<td>-</td>
<td>201,512</td>
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<td>COMMUNITY EYE CLINICS</td>
<td>73,724</td>
<td>18,560</td>
<td>44,613</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>136,897</td>
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<td><strong>TOTAL OUTPATIENT VISITS</strong></td>
<td>909,404</td>
<td>196,281</td>
<td>478,289</td>
<td>606,478</td>
<td>398,946</td>
<td>24,867</td>
<td>31,864</td>
<td>2,646,129</td>
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</tbody>
</table>

In the year ending March 2011, over 2.6 million out-patient visits were handled and over 315,000 ophthalmic surgeries and laser procedures were performed across all Aravind Eye Hospitals.
Vision Centres / Community Eye Clinics 13%
Free Camps (Others) 8%
Free Camps (Comprehensive) 12%
Free Direct 15%

Out Patient Visits

Paying (Base Hospitals) 52%

Surgeries

Free Camp 24%
Paying (Base Hospitals) 49%
Free Direct 27%
## Surgeries and Laser Procedures
### April 2010 - March 2011

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tiruneveli</th>
<th>Coimbatore</th>
<th>Pondy</th>
<th>Dindigul</th>
<th>Tirupur</th>
<th>Total</th>
</tr>
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<tr>
<td><strong>SURGERIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying</td>
<td>64,957</td>
<td>6,057</td>
<td>24,583</td>
<td>38,231</td>
<td>19,856</td>
<td>992</td>
<td>413</td>
<td>155,089</td>
</tr>
<tr>
<td>Free Hospital Direct (Free and Subsidised)</td>
<td>36,563</td>
<td>2,881</td>
<td>11,095</td>
<td>24,193</td>
<td>9,487</td>
<td>-</td>
<td>-</td>
<td>84,219</td>
</tr>
<tr>
<td>Free camp</td>
<td>29,460</td>
<td>2,710</td>
<td>11,029</td>
<td>18,886</td>
<td>14,085</td>
<td>-</td>
<td>5</td>
<td>76,175</td>
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<tr>
<td><strong>TOTAL SURGERIES</strong></td>
<td>130,980</td>
<td>11,648</td>
<td>46,707</td>
<td>81,310</td>
<td>43,428</td>
<td>992</td>
<td>418</td>
<td>315,483</td>
</tr>
</tbody>
</table>

|                  |         |       |            |            |       |          |         |        |
| **SURGERIES IN DETAIL** |       |       |            |            |       |          |         |        |
| Cataract surgeries | 86,156  | 9,252 | 31,346     | 51,284     | 28,792| 719      | 325     | 207,874|
| Trab and comb. procedures | 2,403  | 163   | 1,161      | 2,089      | 544   | -        | 6       | 6,366  |
| Retina and vitreous surgery | 3,448  | 10    | 594        | 2,898      | 1,141 | -        | -       | 8,091  |
| Squint correction | 918     | -     | 228        | 601        | 140   | -        | -       | 1,887  |
| Keratoplasty      | 1,027   | -     | 162        | 685        | 193   | -        | -       | 2,067  |
| Pterygium         | 1,457   | 126   | 290        | 1,043      | 620   | 11       | -       | 3,547  |
| Ocular injuries   | 383     | 23    | 97         | 397        | 374   | -        | -       | 1,274  |
| Lacrimal surgeries | 3,056  | 94    | 900        | 943        | 893   | -        | -       | 5,886  |
| Laser procedures  | 24,546  | 1,626 | 9,607      | 16,679     | 7,893 | 236      | 74      | 60,661 |
| Other orbit and oculoplasty surgeries | 3,300  | 213   | 843        | 1,778      | 977   | 18       | -       | 7,129  |
| Others            | 2,129   | 141   | 590        | 2,082      | 1,120 | 8        | 13      | 6,081  |
| LASIK refractive surgery | 2,157  | -     | 889        | 831        | 741   | -        | -       | 4,620  |
| **TOTAL SURGERIES** | 130,980 | 11,648| 46,707     | 81,310     | 43,428| 992      | 418     | 315,483|
NEW VISION CENTRES
April 2010 - March 2011
To address the steep escalation in the incidence of diabetes in India, Aravind’s outreach department considerably increased the number of diabetic retinopathy screening camps in the last year. Similarly, to identify and treat the large number of children afflicted with childhood eye diseases, the number of screening camps for children was scaled up.

A new approach to community outreach was adopted under the “Vision Screening Programme in Private Schools”. In this method, instead of training teachers to perform screening tests, refractionists from the hospital were sent for conducting the same at schools. Those detected with problems were referred to the base hospital on allotted Sundays. This approach has been extremely beneficial in promoting better health seeking behavior as well as better acceptance by the schools. Under this initiative, 16,982 students were screened by refractionists, and 460 among them were examined by ophthalmologists at the base hospital.

At Aravind – Madurai, from January 2011, family screening for glaucoma patients was more focused through specific counseling. A free family screening camp was conducted on March 6 at the free hospital premises for the siblings of Glaucoma patients. In total, 333 patients were screened and 25 among them were newly diagnosed with the disease. Glaucoma screening camps were conducted in...
vision centers and community centers. A total of 22 such camps were conducted. 1,461 patients were screened in total, and 676 were newly diagnosed with glaucoma.

Special camps were conducted in vision centres and community centres to reach those visually impaired people who find it difficult to access low vision services.

In the year ending March 2011, a total of 2,639 camps were conducted and 524,393 patients were screened and 76,033 underwent surgery. As part of the 3 year Lavelle project “Eye Care for A Million Children”, Aravind - Tirunelveli and Pondicherry screened close to 2 lakh school children with the help of teachers trained by ophthalmologists.

**Vision Centres**

Vision centres and community eye clinics established in different parts of the state, over the years, have brought a paradigm shift in the scale of penetration of eye care services amongst the rural and semi urban community. The mobile refraction unit introduced by Aravind in March 2010 proved to be a timely initiative in enhancing the uptake of refraction services.

Aravind established new vision centres at Singampunari, Kariyapatti, Peraiyur, and Kalaiarkovil thus bringing the total number to 36. Two of the existing centres were relocated to Ulunthurpet and Kandamanur.

**Eye Care Awareness Programmes**

Apart from screening patients through vision centres, community eye clinics and camps, the outreach department organises eye care awareness programmes. Anniversaries of vision centres and special days like World Glaucoma Day, World Diabetes Day, etc. present
themselves as occasions for conducting eye care awareness seminars and speciality eye screening programmes for the public. A series of awareness exhibitions, named “KANNAE NALAMAA” was arranged at Aravind-Madurai, Tirunelveli and Pondicherry.

Refractive errors still remain a major cause of vision impairment in India. Special training programmes for the school teachers to detect refractive errors in children were also arranged.

“Payanam” an audio visual aid – was prepared by the Aravind paediatric ophthalmology department with support from A2Z Micronutrient and Child Blindness Programme. The video focuses on early detection and treatment of childhood diseases, like refractive error, cataract, strabismus and amblyopia. It is introduced as an approach to increase awareness on childhood diseases in the community.

Seminars are conducted for the new office bearers of the Lions clubs, with focus on educating them on common eye diseases, enabling them to organise eye camps more effectively. In the last year, four such seminars were held at different centres of Aravind.

**Sponsors’ Day at Aravind**

Sponsors’ Day is organised once in two years to honour the camp sponsors and to acknowledge their invaluable contribution to Aravind’s community outreach programmes. Conducted in October 2010 at Aravind – Madurai, Tirunelveli and Pondicherry, this opportunity was also utilised to get the sponsors feedback on how to conduct the camps more effectively.
# Outreach Performance April 2010 - March 2011

### 1. Regular comprehensive eye camps

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camps</strong></td>
<td>359</td>
<td>108</td>
<td>272</td>
<td>385</td>
<td>256</td>
<td>1</td>
<td>1,381</td>
</tr>
<tr>
<td><strong>Patients examined</strong></td>
<td>100,315</td>
<td>22,309</td>
<td>44,447</td>
<td>83,893</td>
<td>61,043</td>
<td>122</td>
<td>312,129</td>
</tr>
<tr>
<td><strong>Glass advised</strong></td>
<td>19,331</td>
<td>6,090</td>
<td>9,739</td>
<td>18,272</td>
<td>14,995</td>
<td>20</td>
<td>68,447</td>
</tr>
<tr>
<td><strong>Glass ordered</strong></td>
<td>17,093</td>
<td>5,286</td>
<td>8,307</td>
<td>14,921</td>
<td>13,019</td>
<td>18</td>
<td>58,644</td>
</tr>
<tr>
<td><strong>On the spot deliveries</strong></td>
<td>13,220</td>
<td>3,271</td>
<td>6,486</td>
<td>13,686</td>
<td>9,672</td>
<td>10</td>
<td>46,345</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>77%</td>
<td>62%</td>
<td>78%</td>
<td>92%</td>
<td>74%</td>
<td>56%</td>
<td>79%</td>
</tr>
</tbody>
</table>

### 2. Diabetic retinopathy screening camps

<table>
<thead>
<tr>
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<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camps</strong></td>
<td>42</td>
<td>24</td>
<td>22</td>
<td>208</td>
<td>23</td>
<td>-</td>
<td>319</td>
</tr>
<tr>
<td><strong>Patients screened</strong></td>
<td>6,453</td>
<td>3,447</td>
<td>2,288</td>
<td>43,825</td>
<td>4,322</td>
<td>-</td>
<td>60,335</td>
</tr>
<tr>
<td><strong>Diabetics identified</strong></td>
<td>3,351</td>
<td>1,449</td>
<td>1,170</td>
<td>11,203</td>
<td>1,480</td>
<td>-</td>
<td>18,653</td>
</tr>
<tr>
<td><strong>DR Patients Identified</strong></td>
<td>3,351</td>
<td>1,449</td>
<td>1,170</td>
<td>11,203</td>
<td>1,480</td>
<td>-</td>
<td>18,653</td>
</tr>
</tbody>
</table>

### 3. Refractive error camps

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camps</strong></td>
<td>92</td>
<td>20</td>
<td>48</td>
<td>59</td>
<td>35</td>
<td>1</td>
<td>255</td>
</tr>
<tr>
<td><strong>Patients examined</strong></td>
<td>20,917</td>
<td>4,723</td>
<td>8,680</td>
<td>12,975</td>
<td>7,788</td>
<td>193</td>
<td>55,276</td>
</tr>
<tr>
<td><strong>Glasses prescribed</strong></td>
<td>6,012</td>
<td>1,322</td>
<td>2,398</td>
<td>3,867</td>
<td>3,024</td>
<td>50</td>
<td>16,673</td>
</tr>
<tr>
<td><strong>Glasses ordered</strong></td>
<td>5,304</td>
<td>1,141</td>
<td>2,041</td>
<td>3,207</td>
<td>2,517</td>
<td>33</td>
<td>14,243</td>
</tr>
<tr>
<td><strong>On the spot deliveries</strong></td>
<td>3,387</td>
<td>639</td>
<td>1,634</td>
<td>2,027</td>
<td>859</td>
<td>26</td>
<td>8,572</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>64%</td>
<td>56%</td>
<td>80%</td>
<td>63%</td>
<td>34%</td>
<td>79%</td>
<td>60%</td>
</tr>
</tbody>
</table>

### 4. Eye screening of school children - BH*

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schools</strong></td>
<td>56</td>
<td>5</td>
<td>120</td>
<td>20</td>
<td>152</td>
<td>-</td>
<td>353</td>
</tr>
<tr>
<td><strong>Teachers trained</strong></td>
<td>275</td>
<td>44</td>
<td>461</td>
<td>135</td>
<td>468</td>
<td>-</td>
<td>1,383</td>
</tr>
<tr>
<td><strong>Total Strength</strong></td>
<td>81,074</td>
<td>11,036</td>
<td>115,547</td>
<td>40,843</td>
<td>139,035</td>
<td>-</td>
<td>387,535</td>
</tr>
<tr>
<td><strong>Children screened</strong></td>
<td>7,524</td>
<td>932</td>
<td>17,482</td>
<td>7,629</td>
<td>20,722</td>
<td>-</td>
<td>54,289</td>
</tr>
<tr>
<td><strong>Children with eye defects</strong></td>
<td>3,491</td>
<td>605</td>
<td>7,680</td>
<td>3,643</td>
<td>6,645</td>
<td>-</td>
<td>22,064</td>
</tr>
</tbody>
</table>

### 5. Eye screening of school children - VC*

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schools</strong></td>
<td>20</td>
<td>76</td>
<td>2</td>
<td>10</td>
<td>7</td>
<td>-</td>
<td>115</td>
</tr>
<tr>
<td><strong>Teachers trained</strong></td>
<td>64</td>
<td>-</td>
<td>18</td>
<td>47</td>
<td>10</td>
<td>-</td>
<td>139</td>
</tr>
<tr>
<td><strong>Total Strength</strong></td>
<td>22,284</td>
<td>30,123</td>
<td>2,500</td>
<td>8,065</td>
<td>5,116</td>
<td>-</td>
<td>68,088</td>
</tr>
<tr>
<td><strong>Children screened</strong></td>
<td>2,404</td>
<td>1,270</td>
<td>522</td>
<td>2,165</td>
<td>466</td>
<td>-</td>
<td>6,827</td>
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<tr>
<td><strong>Children with eye defects</strong></td>
<td>983</td>
<td>1,149</td>
<td>390</td>
<td>888</td>
<td>198</td>
<td>-</td>
<td>3,608</td>
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</tbody>
</table>

### 6. Paediatric camps

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camps</strong></td>
<td>19</td>
<td>3</td>
<td>44</td>
<td>21</td>
<td>45</td>
<td>-</td>
<td>132</td>
</tr>
<tr>
<td><strong>Children Examined</strong></td>
<td>2,786</td>
<td>326</td>
<td>11,694</td>
<td>1,797</td>
<td>12,529</td>
<td>-</td>
<td>29,132</td>
</tr>
<tr>
<td><strong>Refractive Error</strong></td>
<td>471</td>
<td>21</td>
<td>340</td>
<td>71</td>
<td>436</td>
<td>-</td>
<td>1,339</td>
</tr>
<tr>
<td><strong>Glasses prescribed</strong></td>
<td>370</td>
<td>13</td>
<td>10</td>
<td>11</td>
<td>98</td>
<td>-</td>
<td>502</td>
</tr>
<tr>
<td><strong>Glasses ordered</strong></td>
<td>364</td>
<td>12</td>
<td>39</td>
<td>11</td>
<td>143</td>
<td>-</td>
<td>569</td>
</tr>
<tr>
<td><strong>Other defects identified</strong></td>
<td>213</td>
<td>3</td>
<td>115</td>
<td>100</td>
<td>414</td>
<td>-</td>
<td>845</td>
</tr>
</tbody>
</table>

### 7. Mobile van refraction camps

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camps</strong></td>
<td>-</td>
<td>84</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>84</td>
</tr>
<tr>
<td><strong>Patients screened</strong></td>
<td>-</td>
<td>6,405</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,405</td>
</tr>
<tr>
<td><strong>Glasses prescribed</strong></td>
<td>-</td>
<td>2,182</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,182</td>
</tr>
<tr>
<td><strong>Glasses ordered</strong></td>
<td>-</td>
<td>1,550</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,550</td>
</tr>
</tbody>
</table>

### 8. Vision centres

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centres</strong></td>
<td>13</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>36</td>
</tr>
<tr>
<td><strong>New + Review</strong></td>
<td>74,441</td>
<td>44,776</td>
<td>37,083</td>
<td>25,666</td>
<td>19,546</td>
<td>-</td>
<td>201,512</td>
</tr>
<tr>
<td><strong>Outpatients / day</strong></td>
<td>20</td>
<td>18</td>
<td>24</td>
<td>17</td>
<td>13</td>
<td>-</td>
<td>18</td>
</tr>
</tbody>
</table>

### 9. Community eye clinics

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centres</strong></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td><strong>New + Review</strong></td>
<td>41,247</td>
<td>18,560</td>
<td>13,235</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>73,042</td>
</tr>
<tr>
<td><strong>Outpatients / day</strong></td>
<td>67</td>
<td>60</td>
<td>43</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>59</td>
</tr>
</tbody>
</table>

### 10. City centre

<table>
<thead>
<tr>
<th></th>
<th>Madurai</th>
<th>Theni</th>
<th>Tirunelveli</th>
<th>Coimbatore</th>
<th>Pondicherry</th>
<th>Tirupur</th>
<th>AECS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centres</strong></td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td><strong>New + Review</strong></td>
<td>32,477</td>
<td>-</td>
<td>31,378</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>63,855</td>
</tr>
<tr>
<td><strong>Outpatients / day</strong></td>
<td>105</td>
<td>-</td>
<td>101</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>103</td>
</tr>
</tbody>
</table>

*BH - Base Hospitals; VC - Vision Centres*
Education and training of eye care personnel is a major focus at Aravind, and seen as an integral part of its service delivery at scale. Over the years, like its patient volume, the number of education programmes offered at Aravind has risen considerably. Today, it offers about 45 long-term and short-term courses for ophthalmologists, eye care management personnel, ophthalmic assistants and technicians. These courses are offered across all Aravind Eye Hospitals and through LAICO.

Last year the Retina clinic at Madurai launched an annual, 15-day virtual vitreo retinal training programme for retinal surgeons. Paediatric Ophthalmology Clinic at Aravind – Madurai developed an Audio-visual guide ‘Step by Step Strabismus Surgery’ as a teaching aid for ophthalmologists aspiring to perfect this procedure.

Ophthalmology residents from various institutions around the world choose a rotation at Aravind as part of their residency programmes. Last year, ten residents from Mass Eye and Ear Infirmary, California Pacific Medical Center, and Wilmer Eye Institute in USA spent two to three weeks at Aravind.

The organisation continues to build on its continuing education efforts and enhance the capabilities of its staff at all levels.
## CANDIDATES TRAINED 2010-11

### POSTGRADUATE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma in Ophthalmology (D.O)</td>
<td>2 years</td>
<td>4</td>
</tr>
<tr>
<td>Master of Surgery in Ophthalmology (M.S)</td>
<td>3 years</td>
<td>6</td>
</tr>
<tr>
<td>Diplomate of the National Board (Dip.N.B)</td>
<td>3 years</td>
<td>13</td>
</tr>
<tr>
<td>Post DO DNB</td>
<td>2 years</td>
<td>13</td>
</tr>
</tbody>
</table>

### LONG TERM - OPHTHALMOLOGY FELLOWSHIP

<table>
<thead>
<tr>
<th>Fellowship Area</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior Segment / Intraocular Lens Microsurgery</td>
<td>2 years</td>
<td>13</td>
</tr>
<tr>
<td>Orbit &amp; Oculoplasty</td>
<td>18 months</td>
<td>3</td>
</tr>
<tr>
<td>Paediatric Ophthalmology &amp; Strabismus</td>
<td>18 months</td>
<td>10</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>2 years</td>
<td>11</td>
</tr>
<tr>
<td>Retina Vitreous</td>
<td>2 years</td>
<td>14</td>
</tr>
<tr>
<td>Cornea</td>
<td>18 months</td>
<td>10</td>
</tr>
<tr>
<td>Uvea</td>
<td>18 months</td>
<td>1</td>
</tr>
<tr>
<td>General Ophthalmology</td>
<td>18 months</td>
<td>1</td>
</tr>
<tr>
<td>Comprehensive Ophthalmology</td>
<td>2 years</td>
<td>2</td>
</tr>
</tbody>
</table>

### SHORT TERM - FELLOWSHIP (ONLY FOR INTERNATIONAL CANDIDATES)

<table>
<thead>
<tr>
<th>Fellowship Area</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orbit &amp; Oculoplasty</td>
<td>6 months</td>
<td>2</td>
</tr>
</tbody>
</table>

### SHORT TERM - CLINICAL COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOL Microsurgery</td>
<td>1 month</td>
<td>27</td>
</tr>
<tr>
<td>Small Incision Cataract Surgery</td>
<td>1 month</td>
<td>47</td>
</tr>
<tr>
<td>Phacoemulsification</td>
<td>1 month</td>
<td>45</td>
</tr>
<tr>
<td>Diagnosis and Management of Glaucoma</td>
<td>1 month</td>
<td>34</td>
</tr>
<tr>
<td>Lasers in Diabetic Retinopathy</td>
<td>2 months</td>
<td>47</td>
</tr>
<tr>
<td>Short Term Training in Vitrectomy (Virtual)</td>
<td>2 weeks</td>
<td>17</td>
</tr>
<tr>
<td>Management of Retinopathy of Prematurity</td>
<td>1 month</td>
<td>1</td>
</tr>
<tr>
<td>Orientation to Paed. Ocular Anesthesia for Anaesthetist</td>
<td>1 month</td>
<td>3</td>
</tr>
</tbody>
</table>

### SHORT TERM - PARAMEDICAL COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical Dispensing</td>
<td>3 months</td>
<td>10</td>
</tr>
<tr>
<td>OT Techniques</td>
<td>2 months</td>
<td>5</td>
</tr>
<tr>
<td>Refraction Techniques</td>
<td>2 months</td>
<td>14</td>
</tr>
<tr>
<td>Orthoptist</td>
<td>6 months</td>
<td>4</td>
</tr>
<tr>
<td>Paediatric Nurse</td>
<td>3 months</td>
<td>7</td>
</tr>
<tr>
<td>Paediatric Counsellors</td>
<td>2 months</td>
<td>3</td>
</tr>
<tr>
<td>Ocularist</td>
<td>3 weeks</td>
<td>6</td>
</tr>
<tr>
<td>Fundus Fluorescein Angiography and Ultrasonography</td>
<td>2 months</td>
<td>5</td>
</tr>
</tbody>
</table>

### MANAGEMENT COURSES OFFERED AT LAICO

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mgt. Priorities in Eye Care Delivery</td>
<td>1 week</td>
<td>20</td>
</tr>
<tr>
<td>Mgt. Training for Eye Care Programme Managers</td>
<td>2 weeks</td>
<td>30</td>
</tr>
<tr>
<td>Mgt. Training and Systems Development for Hospital Administrators / Managers</td>
<td>6 weeks</td>
<td>13</td>
</tr>
<tr>
<td>Project Management for Eye Care</td>
<td>4 weeks</td>
<td>4</td>
</tr>
<tr>
<td>Eyexcel – Expanding Global Eye Care Workforce through Excellence in Training</td>
<td>4 days</td>
<td>30</td>
</tr>
<tr>
<td>Research Methodology</td>
<td>5 days</td>
<td>34</td>
</tr>
<tr>
<td>Community Outreach and Social Marketing of Eye Care Services</td>
<td>1 month</td>
<td>15</td>
</tr>
<tr>
<td>Instruments Maintenance - For Ophthalmologists</td>
<td>5 days</td>
<td>1</td>
</tr>
<tr>
<td>Instruments Maintenance - For Technicians</td>
<td>6 weeks</td>
<td>23</td>
</tr>
</tbody>
</table>

**TOTAL** 548
MAJOR CONTINUING MEDICAL EDUCATION PROGRAMMES ORGANISED AT ARAVIND

Apart from organising several guest lectures, awareness exhibitions, seminars and grand rounds for the staff and doctors, Aravind Hospitals conduct CME programmes on varied topics to maintain competence and further develop their skills in their respective fields. Listed below are the major CME programmes conducted at Aravind:

Update in Ophthalmology for Medical Practitioners
Aravind – Tirunelveli, October 24
This one day CME was conducted for general medical practitioners of Tirunelveli, Tuticorin and Kanyakumari. The purpose is to share the knowledge and create awareness about especially diabetic retinopathy, retinopathy of prematurity and paediatric refractive error among medical practitioners. A total 55 medical professionals attended the CME. Eminent team of faculty handled different sessions. Hands-on fundus examination and interactive sessions were arranged as part of the programme.

Update in Ophthalmology for Postgraduates
Aravind – Pondicherry, October 25 – 29
The update focused on a wide range of discussions on various eye disorders, their pathological and microbiological mechanisms. A total of 30 delegates attended the CME. Eminent faculty members from various institutions handled the sessions. A mock examination and Objective Structured Clinical Examination (OSCE) were also conducted.

Neuro Ophthalmology Update 2010
Aravind – Pondicherry, October 30 – 31
A wide variety of topics discussed during the CME focused on evaluation of patients with oculomotor cranial nerve palsy, pupillary abnormalities, Optic neuritis management and disc edema management and covered different radio imaging techniques. A total of 280 delegates attended the programme. Dr. Neil Miller, Prof. of Neuro ophthalmology, Wilmer Eye Institute, Baltimore, USA, Dr. Jayakumar, neurologist, JK Institute of Neurology, Madurai, Dr. Palani, neurologist, Chennai, Dr. K.G. Srinivasan, radiologist, KGS Advanced Scan Centre, Madurai, Dr. Santhosh Joseph, interventional neuro radiologist, Sri Ramachandra Medical College,
Chennai were the experts who handled the sessions apart from Aravind faculty.

**PHACOEXCEL**
Aravind – Coimbatore, November 19 – 21
The three-day conference on Phacoemulsification aimed at the twin objectives of reinforcing the basics of cataract surgery and to offer a forum for the experienced surgeons to interact with peers. A total of 153 participants from Tamilnadu, Kerala, Andhra Pradesh, Karnataka and trainees from Philippines, China, Argentina, Zambia and Albania attended the conference. Eminent faculty who joined alongside the Aravind team included, Dr. Ronald Yeoh from Singapore, Dr. Charith Fonseka from Sri Lanka, Dr. Sriganesh from Bangalore and Dr. Purendra Bhasin from Gwalior.

**OPTOCON**
Aravind – Coimbatore, December 4 – 5
The conference mainly intended for optometrists, post graduates and practitioners in ophthalmology aimed to refresh the participants on the essentials of optometry. Around 75 participants attended the CME.

**Symposium on Prevention of Blindness in Neonates, Infants and Children**
Aravind – Madurai, December 3
This one day symposium was organised by the paediatric department in association with Madurai Obstetrics and Gynecological Society. It focused primarily on the role of obstetricians and gynecologists in early recognition of eye problem in children.
Cornea Connect 2011 at Aravind Madurai

Electroretinography (ERG) Workshop
Aravind – Coimbatore, December 13 – 15
Aravind’s Retina department at Coimbatore organised an Electroretinography (ERG) Workshop in which 18 participants from ophthalmic institutes across India participated. Dr. Eric Sutter, President and Clinical Scientist - EDI Inc. Redwood City, San Francisco, USA was the chief instructor.

CME on Childhood Eye Disorders for Private Practitioners
Aravind – Madurai, December 30
Orbit and Oculoplasty department conducted a half day CME for the medical officers of the primary health centres of Madurai district. The CME aimed at increasing their awareness on retinoblastoma and its management. A total of 44 delegates participated and the discussions included retinoblastoma manifestations and treatment.

Cornea Connect 2011
Aravind – Madurai, January 8 – 9
The Cornea department of Aravind – Madurai organised an international symposium on corneal disorders graced by ten renowned and eminent international faculty members in addition to the Aravind team. These global figures included Dr. Jack Whitcher, Dr. Tom Lietman, Dr. Jeremy Keenan from Proctor Foundation, San Francisco, USA, Dr. Antony Aldave, UCLA Laser Refractive Centre, Jules Stein Eye Institute, Los Angeles, USA, Dr. Sudeep Pramanik, Dr. Edwin Chen, Spectrum Eye Physicians, San Jose, CA, Dr. Roberto Pineda, Mass Eye and Ear Infirmary, USA, Dr. John Dart, Moorfields Eye Hospital, London, Dr. Maghizh Anandan, Nuffield Health Derby Hospital, London and Dr. Sathish Srinivasan, Ayr Hospital, Scotland, UK. Around 200 participants attended the symposium. The symposium discussed on current trends in the diagnostic and treatment procedures in the field of corneal diseases.

CME on Molecular Diagnosis - Polymerase chain reaction
Aravind – Tirunelveli, February 12 – 13
The field of Molecular biology and Microbiology has undergone revolutionary changes and the main purpose of the CME was to familiarise the participants with these changes and update their knowledge. Renowned and experienced faculty in the field of molecular biology and microbiology discussed the recent advances and developments at length. Experts from various states of the country, postgraduates and students from various colleges attended the CME.

ARAVIND STAFF IN PREMIER EDUCATIONAL FORA
Numerous Aravind staff members hold significant positions in national and international educational councils and fora. In these capacities, they attend various high-level policy and strategic planning meetings both within India and abroad.

Dr. N. Venkatesh Prajna, advisory council member – ICO attended the marking / question setting and advanced examination meeting at the International Council of Ophthalmology, London from May 11 - 17.
Aravind’s large patient base affords its doctors considerable experience dealing with both complex as well as routine disorders. As such, Aravind ophthalmologists are both highly competent, and highly regarded, and are often invited to important conferences to share their experiences and observations. Participation in these conferences also gives Aravind staff an opportunity to gain in depth information about the latest developments in diagnosis and treatment modalities.

In the year ending March 2011, Aravind doctors made over forty presentations at the Tamil Nadu Ophthalmic Association Conference (TNOA), Salem and over 50 presentations at the All India Ophthalmological Society Conference (AIOS), Ahmedabad. The staff also made their mark at the various international fora and clinical society meetings as chief instructors for sessions and also by performing live surgeries at instructional courses.

Listed below are the main conferences attended by the staff during the year ending March 2011:

**World Cornea Congress**
Boston, USA, April 7 – 9
**Dr. K. Thiruvenkadakrishnan**
- Poster Presentation: *Unusual case series of postoperative endophthalmitis due to Mycobacterium Tuberculosis*
He also participated as chief instructor for the course on Manual SICS.

**American Society of Cataract and Refractive Surgery**
Boston, USA, April 9 – 13
**Dr. R. Venkatesh**
- *Safe and effective technique to tackle lens induced glaucoma in developing world* (Best Video Award)
**Dr. Haripriya Aravind**
- *New techniques in iris fixation of rigid IOLs* (Best Video Award)
**Dr. K. Thiruvenkatakrishnan**
- Poster presentation: *Dematiaceous versus filamentous fungal keratitis at a tertiary eye care center in South India: Incidence and outcomes*

**Association for Research in Vision and Ophthalmology**
Florida, USA, May 2 – 6
**Dr. P. Sundaresan**
- *Spectrum of candidate genes mutation associated with Indian familial oculocutaneous Albinism patients*
**P. Murugeswari**
- *Angiogenesis induced by proliferative diabetic retinopathy and Eales’ disease vitreous is mediated by a common pro-inflammatory mechanism*

**B. Hemadevi**
- *Protein profile of autosomal recessive congenital hereditary endothelial dystrophy (CHED2) and Fuchs endothelial corneal dystrophy (FECD)*

**S. Ananthi**
- *Proteomic analysis of tear and cornea in patients with fungal keratitis*

**M. Valarnila**
- *Evaluation of haptoglobin and its isoforms as plasma/serum biomarker for diabetic retinopathy*

**R. Siva Ganesha Karthikeyan**
- *Innate immunity in Aspergillus and Fusarium keratitis in Tamilnadu, India*

**Ashwini Shanker**
- *EPHA2 polymorphisms and age related cataract in India: Findings from the INDEYE Genetics study*

**Drug Trial Meeting**
Frankfurt, Germany, May 21 – 22
Dr. S.R. Rathinam, Dr. Manohar Babu and Dr. V. R. Saravanan attended investigators meet for drug trial in Uveitis named Interleukin antagonist in treatment of posterior uveitis at Frankfurt, Germany.

**World Ophthalmology Congress (WOC)**
Berlin, Germany, June 2 – 11
**Dr. N. Venkatesh Prajna**
- *Challenges and solutions from India*
- *The need for and approach to teaching manual cataract surgery*
**Dr. V. Narendran**
- *Risk factors and screening of retinopathy of prematurity*
He was also the chief instructor for the course on *Current trends in management of ROP*
**Dr. Parag K. Shah**
- *Pathogenesis and classification of retinopathy of prematurity*
Ms. Valarnila, Ms. Ashwini Shanker, Ms. Murugeswari, Dr. Sundaresan, Mr. Siva Ganesh Karthikeyan, Ms. Ananthi, and Ms. Hemadevi at ARVO
Dr. Kalpana Narendran
- Rehabilitation of Retinopathy of Prematurity

Dr. Rodney J Morris
- Tele-ophthalmology as a screening tool for diabetic retinopathy in rural population
Poster presentation:
- Anatomical and visual outcome following posterior segment intraocular foreign body removal

Dr. P. Namperumalsamy
- The Aravind telemedicine system for detecting and treating DR
He also chaired the session on New challenges to Vision 2020: Glaucoma and Diabetic Retinopathy.

Dr. P. Vijayalakshmi
- Optimising the visual outcome in paediatric cataract surgery - Clinical aspects
- Paediatric infectious eye diseases - prevention and management

Mr. R.D. Thulasiraj
- Role of large NGOs
- Neglected areas in research
He also chaired the session on Changing realities in eye care.

Visit to Chittagong Eye Infirmary and Training Centre (CEITC)
Chittagong, Bangladesh, June 15 – 18
Dr. Haripriya Aravind formally inaugurated the phaco training centre at CEITC, Chittagong. She worked with some of their phaco surgeons and performed live surgery as part of teaching. She gave lectures on phacodynamics and recent advancements in phaco technology.

Intraocular Implant and Refractive Society of India
Chennai, July 10 – 11
Dr. Haripriya Aravind
- Iris Fixation of rigid IOLs
- Travails of a surgeon- Cionni ring in Spherophakia
Dr. R. Venkatesh
- Laser Assisted Deep Sclerectomy

Paediatric Ophthalmology Symposium
Salalah, Oman, July 19 – 25
Dr. P. Vijayalakshmi
- Dissociated vertical deviation
- Basics of strabismus surgery
- Optimising visual outcome in childhood cataract
- Visual acuity assessment in children

Dr. M. Srinivasan
- Infective keratitis
- Paediatric keratoplasty
- Secondary bacterial keratitis

ICMR Registry Meetings
New Delhi, July 27
The Indian Council of Medical Research has instituted a programme to develop a national retinoblastoma registry where retinoblastoma cases from various centers will be systematically recorded. Dr. P.M. Aravind attended a training programme in this regard at New Delhi on July 27. Along with Dr. Usha Kim, he attended the Principal Investigators (PI) meeting for the same on November 24.

Dr. Vijayalakshmi and Dr. Srinivasan at the symposium at Salalah, Oman
19th Annual Scientific Session of the College of Ophthalmologists of Srilanka
Colombo, Sri Lanka, August 2 – 4
Dr. Kalpana Narendran
- Challenges in the paediatric cataract surgery
- Muscle transposition in Strabismus Surgery
- Recent trends in the management of Amblyopia

African Glaucoma Summit
Accra, Ghana, August 6 – 7
Dr. R. Venkatesh participated in the African Glaucoma Summit organised by World Glaucoma Association and contributed to the following panel discussions:
- How to enhance glaucoma management in African hospitals?
- How to enhance awareness of glaucoma in public, government, and among health care professionals?

Asia Cornea Society Infectious Keratitis Study (ACSIKS) Investigators Meeting
Singapore National Eye Centre, Singapore, August 7
Dr. N. Venkatesh Prajna participated in the ACSIKS Investigators Meeting held at Singapore National Eye Centre.

ASRS (American Society of Retina Specialists) Conference
Vancouver, Canada, August 24 – 28
Dr. R. Kim and his team consisting of Dr. Naresh Babu, Dr. Rajiv, Mr. Muneeshwaran, Mr. Palanikumar and Mr. Raj Arjunan won the Rhett Buckler Award for the best video screened at ASRS film festival.

Euretina 2010
Paris, France, September 2 – 5
Dr. Rodney J. Morris
- Anti VEGF treatment for retinal vascular disorders
From September 6 - 15, he visited Moorfields Eye Hospital, London, United Kingdom for an observership on Electro Retino Gram (ERG) under Dr. Graham Holder.

Global Forum on Medical Devices
Bangkok, Thailand, September 9 – 11
Prof. V. Srinivasan and Dr. P. Balakrishnan attended the First Global Forum on Medical Devices organised by World Health Organization. Prof. Srinivasan presented a poster on the Instruments Maintenance Courses conducted at Aravind hospital. Dr. P. Balakrishnan participated in the discussions related to affordability and local production of medical devices.

International Strabismological Association (ISA) conference
Istanbul, Turkey, September 11 – 26
Dr. Shashikant Shetty participated in the ISA meeting held at Istanbul and also underwent observation training under Dr. Birsen Gokyigit at Dr. R.N. Belger Eye Institute, Istanbul from September 13 – 22.

The 25th APAO congress – A Joint Meeting of APAO/AAO
Held in conjunction with the 15th congress of the Chinese Ophthalmological Society
Beijing, China, September 15 – 18
Dr. P. Sundaresan,
- Molecular genetics of ocular anomalies in Indian population

Dr. Usha Kim, Dr. P.M. Aravind, Dr. Ravindran with some of the participants of APAO-AAO Congress, Beijing, China
He visited Beijing Genome Institute (BGI) at Shenzhen and Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong.

**DR. R. KIM**
- How to set up CME programs in developing countries?
- E-Grand Rounds in Asia

**DR. R. D. RAVINDRAN**
- Rock hard lens – Phaco vs ECCE?
He chaired the scientific programme on Manual Small Incision cataract surgery and participated in the panel discussion on Rock hard cataract.

Dr. V. Narendran, Dr. Thomas C. Lee, Dr. Mahesh P. Shanmugam, Dr. Parag K. Shah and Dr. V.R. Saravanan participated in the instruction courses on Retinopathy of prematurity and paediatric retinal disorders.

Dr. Usha Kim was the senior instructor for the instruction course on Lid reconstruction: An overview.

**DR. P.M. ARAVIND**
- Poster presentation: Hemodynamic response to routine phacoemulsification among normal healthy ophthalmic surgeons during high volume cataract surgery
He was also the senior instructor for the following courses
- The ophthalmologist's role in managing facial palsy
- High volume, high quality cost-effective surgery for the developing world

**DR. KALPANA NARENDRAH**
- Double elevator palsy: How to tackle?
- Management of paediatric cataract in normal and subluxated lens
She was also the chair for the following instruction courses
- Management of vertical and restrictive strabismus
- Pediatric cataract: An approach to effective surgical management including difficult operative situations
- Visual assessment in children and effective amblyopia management: Issues and recent advances

**International Advanced Vitreoretinal Surgery Course**
Stockholm, Sweden, September 18 – 19

**DR. DHANANJAY SHUKLA**
- Macular hole in an RRD: To peel or not to peel in
- Optic disc cavitations: surgical caveats

**Dr. Dhananjay Shukla at St. Eriks Hospital in Stockholm, Sweden with the Director Prof Stefan Seregard and other ophthalmologists from India**

**DR. RAJESH PRAHIL**
- Dissociated vertical deviation and its management
- Vision assessment in paediatric age group

**DR. RAMAKRISHNAN**
- Surgical options for oblique muscles

**DR. SANDRA C. GANESY**
- Controversies in paediatric cataract surgery and our approach
- To treat or not to treat- Tips on amblyopia management using case examples

**International Advanced Vitreoretinal Surgery Course**
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- Optic disc cavitations: surgical caveats

**Dr. Balakrishnan, Dr. Shivalkumar, Mr. Venketasa Kannan, Dr. Naresh Bahu, Dr. Rathinam, Dr. Haripriya and Dr. Kim at AAO, Chicago, USA**
40th Annual Meeting of Institute of Medicine of National Academies
Washington, USA, October 16 – 19
Dr. R. Kim was the invited speaker and also participated as a panelist in the panel discussion on Innovative Designs for Providing Health Care: Systems Approaches.

Annual meeting of the American Academy of Ophthalmology
Chicago, USA, October 16 – 19
Dr. Haripriya Aravind performed live surgery, -2.2 mm phaco with Aspheric implant. She was also the faculty at the skill transfer workshop on SICS and ECCE.
Dr. Shivakumar Chandrashekharan participated as instructor at the skills transfer course on Extracapsular cataract extraction. Non-phacoemulsification large and small-incision approach and also attended various instruction courses. He also held discussions with prominent cataract surgeons - Dr. Bradford Shingleton (Ophthalmic Consultants of Boston), Dr. David Lubeck (Arbor Centers for Eye Care, Chicago) and Dr. David Chang (San Francisco) and upgraded his skills.
Dr. S.R. Rathinam participated in the panel discussion on Filling the gap: Upcoming potential treatments for Uveitis and ocular inflammatory diseases.

Uveitis Society Meet
Chandigarh, October 30 – 31
Dr. S.R. Rathinam
- Epidemiology of Uveitis in India
- Algorithm for managing a patient with granulomatous anterior uveitis
- Leptospirosis and uveitis

Fifth International Congress on Glaucoma Surgery
New Delhi, November 11 – 13
Dr. R. Ramakrishnan
- High volume surgery for demanding regions
- Glaucoma surgery in the developing world
He also chaired a plenary session and participated in the instruction course, Trabeculectomy in challenging situations.
Dr. Mohideen Abdul Khadar
- Effect of Phacoemulsification with IOL implantation in eyes with cataract and pre-existing Trabeculectomy
Dr. R. Venkatesh
- Laser assisted deep sclerectomy
- Glaucoma in pseudophakia
- Implant tube obstruction
Speaker for the session on Learn from the old hands and also led the basic course session, Step by Step: NPGS.

Dr. P. Sathyar
- SICS trabeculectomy in glaucoma management
- Surgical management of lens induced glaucoma
Dr. George V. Puthuran
- What can I do before and during surgery to improve outcomes?
Dr. S.R. Krishnadas
- Ahmad glaucoma valves: An Indian perspective
Dr. Sharmila
- Role of ologen implant in glaucoma filtering surgery
Dr. Manju R. Pillai
- Subtenon anaesthesia in glaucoma surgery
She won Best Poster Award for Health literacy and barriers to follow-up after initial diagnosis of glaucoma in a south Indian population.

GSI (Glaucoma Society of India) Meeting
Scientific Programme
New Delhi, November 14
Dr. R. Ramakrishnan
- Trabeculectomy: Why it is my surgery of choice?
He participated in the panel discussion on Surgical management of glaucoma.

Dr. Mona Khurana
- Single site versus Two site Phaco trabeculectomy: A comparative study of efficacy complications and change in corneal topography (Rapid fire presentation).
Dr. Manju R. Pillai
- Bilateral and simultaneous angle closure glaucoma following spinal anesthesia (case presentation).

Dr. R. Venkatesh
- Implant tube obstruction
Dr. Sharmila
- Safer modification of subtenon’s anaesthesia in Glaucoma filtering surgeries (video)

6th International Conference of Telemedicine Society of India
Bhubaneswar, Orissa, November 14 – 16
Dr. R. Kim
- Creating access through telemedicine
5th Congress of the Asia Pacific Vitreo-Retinal Society
Bayfront Avenue, Singapore, November 18 – 20

Dr. Dhananjay Shukla
- Retinal vascular diseases – Macular Telangiectesia

Dr. Anand Rajendran
- The Macular hole coefficient – An OCT predictor of macular hole closure (Best paper of the session)

Dr. Thomas Chacko
- Plaque Brachytherapy using indigenous I-125 seeds for choroidal melanoma

Dr. Abhishek Kothari
- OCT in peripheral degenerative lesions of retina

21st Annual Conference of Oculoplasty Association of India
Mumbai, November 19 – 21

Dr. Usha Kim
- Tarsal Sling Simplified!
She performed a live surgery at the surgical workshop and also chaired the Video Assisted Skill Transfer session.

Dr. Subhashis Mukherjee, Dr. Sridevi, Dr. Kamalpreet Likhari, Dr. Usha Kim
- Outcome of dacryocystorhinostomy in paediatric population in a tertiary eye care centre

Dr. Shilpa Taneja, Dr. Subhashis Mukherjee, Dr. P. M. Aравind, Dr. Kamalpreet Likhari, Dr. Usha Kim
- Profile of lacrimal gland masses in a tertiary eye care centre in south India:

Dr. Subhashis Mukherjee, Dr. Hari Krishna, Dr. Usha Kim
- A prospective study of idiopathic orbital inflammatory diseases in a tertiary eye care hospital

Dr. Aravind P. Murugesan, Dr. Usha Kim, Dr. Vidya
- Surgical outcome of orbital floor fracture repair

Annual Conference of Vitreo Retinal Society of India
Mysore, December 2 – 4

Dr. Parag K. Shah
- Outcome of Group C/D Retinoblastoma after subtenon carboplatin I injections (free paper)

Dr. V.R. Saravanan
- Micro incision vitrectomy surgery instrumentation
- Macular hole surgery in RRD and high myopia

Dr. R. Kim was the chairman for the scientific session named Dr. J.M. Fahwa Medal Award Session.

Dr. Naresh Babu, Dr. Rajiv Shah, Dr. Aditi Patwardhan
- Removal of an unusual giant intraocular foreign body
- FnNsc YAG Laser Hyaloidotomy combined with pneumatic displacement: An alternative to vitrectomy for premacular haemorrhage

Dr. Anand Rajendran
- The macular hole coefficient – A novel optical coherence tomographic predictive factor for macular hole closure
- Age – related degeneration or dystrophy – A diagnostic dilemma

Dr. T.P. Vignesh
- A case of IIT with serous retinal detachment and a RAP like lesion

Dr. Jay Kallath
- Embolic septic retinitis masquerading as viral retinitis
- A comparative study of Trypan Blue and Brilliant Blue G in macular hole surgery

Dr. Poonam Limbad
- Retinal imaging using Optical Coherence Tomography and quantitative analysis of foveal anatomy in nanophthalmic eyes

Dr. Praveen Murley
- A comparative study of single session versus multiple session of panretinal photocogulation in proliferative diabetic retinopathy
- Traumatic macular hole – observation versus surgical management: A comparative study

Dr. Umesh Chandra Behara
- Epiretinal exudates in endophthalmitis: Drug vs disease

Asia – Pacific Joint Glaucoma Congress
Taipei, Taiwan, December 3 – 5

Dr. R. Ramakrishnan
- How to manage complications of Trabeculectomy

Dr. P. Sathyavan
- Video presentation: Manual SICS Trabeculectomy
DR. GANESH RAMAN
- Poster presentation: To study the accessibility and ability
to use mobile phone for follow-up and medication reminders in
patients attending glaucoma clinic

DR. SHARMINA
- Poster presentation: Trabeculectomy with subconjunctival
biodegradable implant (Ologen) for the treatment of glaucoma

Strabismus Society of India Conference
Jaipur, Rajasthan, December 17 – 19
DR. MURALIDHAR
- Strabismus surgical dosage and outcomes
DR. RENUKA RAJAGOPAL
- Results of unilateral medial rectal recession in small and
moderate angle esotropia.
- Lateral rectus deactivation in synergistic divergence (video)

DR. ALOKA
- Surgical outcome of Intermittent Exotropia
- Silicon expander in Brown syndrome (video)

DR. KALPANA NARENDRAN AND DR. ARUNA
- Current trends in treatment of Amblyopia
- Advanced strabismus techniques
- Duanes refraction syndrome type II with synergistic divergence
(Case report)

International Society for Genetic Eye Diseases and
Retinoblastoma (ISGEDR) meeting
Narayana Nethralaya, Bengaluru, January 14 – 16
Dr. Usha Kim chaired the session on advanced retinoblastoma,
retinoblastoma chemotherapy and retinoblastoma pathology
Dr. P. SUNDARESAN
- Genomic and proteomic analysis of corneal endothelial dystrophy
Ms. C. Jayashree and Ms. P. Mohanapriya presented their
works on Leber’s Hereditary Optic Neuropathy (LHON)
and keratoconus respectively.

Annual Meeting of Asia - ARVO
Singapore, January 20 – 22
Dr. S.R. KRISHNADAS
- The burden of glaucoma in India

Dr. Venkatesh Prajna
- Is Voriconazole better than Natamycin in treating fungal
keratitis?
- Innate immunity in filamentary fungal keratitis

Dr. P. SUNDARESAN
- Genome and proteome wide approach towards corneal
endothelial dystrophies

Dr. C. Gowri Priya
- A specific marker for corneal epithelial stem cells and a simple
method for their ex vivo expansion under Xenobiotic-free
Condition

Ms. K. Renugadevi
- Poster presentation: Molecular genetic analysis of Tyrosinase
(TYR) Gene with oculocutaneous albinism (OCA) patients in
Indian population

Mr. Sushilkumar Dubey
- Poster presentation: Evaluation of Lysyl Oxidase-
like 1 and Clusterin genes polymorphisms in south
Indian population with pseudoexfoliation syndrome and
pseudoexfoliation glaucoma

Mr. G. Gowtham
- Poster presentation: Screening of Aldose Reductase Gene
promoter region with Type-2 diabetic retinopathy in south
Indian population

Dr. M. Jayahar Bharathi
- Topical Nepafenac in the treatment of center involving diabetic
macular edema: Current perspectives on ocular mycoses in India

Dr. Parthasarathi Sathyoo
- Predictors of and barriers associated with poor follow-up in
patients with glaucoma in south India

Mr. Gowtham, Mr. Sushilkumar Dubey, Dr. Padma Sathyoo, Dr. Jayahar Bharathi, Dr. Venkatesh Prajna, Dr. Krishnadas, Dr. Sathyoo,
Dr. Gowri Priya, Dr. Sundaresan, Ms. Renugadevi at Asia - ARVO meeting, Singapore
ARTICLES PUBLISHED IN PEER REVIEWED JOURNALS

In the year ending March 2011, Aravind staff published 54 articles in various national and international peer reviewed journals.

INTERNATIONAL JOURNALS

ARCH OPHTHALMOL

VOL: 128 (6) 2010 JUN. P.672-678

PRAJNA, N VENKATESH; JEENA MASCARENHAS; THIRUVENGATA KRISHNAN; RAVINDRANATH REDDY, P; LALITHA, PRAJNA; SRINIVASAN, M; VAITILINGAM, C M; HONG, KEVIN C; LEE, S; McLEOD, STEPHEN D; ZEGANS, MICHAEL E; PORCO, TRAVIS C; LIETMAN, THOMAS M; ACHARYA, NISHA R

Comparison of natamycin and voriconazole for the treatment of fungal keratitis

ASIAN J OPHTHALMOL

VOL: 11 2010 P.50-52

MOHIDEEN ABDUL KADER; RAMAKRISHNAN, R; CHANDRASHEKARAN

Granulomatous anterior uveitis and follicular conjunctivitis due to brimonidine tartrate

BIOINFORMATION

5 (9) 2011 P.398-399

RANGACHARI K; DHIVYA M; ESVARI PANDARANAYAKA PJ; PRASANTHI N; SUNDARESAN P; KRISHNASWAMY S

- Glaucoma database

BMC MED GENET.

VOL: 11 (1) 2010 NOV. 10 P.158. [EPUB]

SUGANTHALAKSHMI, BALASUBBU; SUNDARESAN, P; ANAND RAJENDRAN, KIM, R; GOVINDARAJAN G, NAMPERUMALSAMY, P; HEJTMANCIK JF

- Association analysis of nine candidate gene polymorphisms in Indian patients with type 2 diabetic retinopathy

BR J OPHTHALMOL.

2010 AUG. 7 [EPUB]

RATHINAM, SIVAKUMAR R; KRISHNASWAMY, R; RAMAKRISHNAN, R; THULASIRAJ, R D; TIELSCH, J M; KATZ, J; ROBIN, A L; KEMPEN, J H; for the Aravind comprehensive eye survey research group

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VOL: 53 (2) 2010 APR.–JUN. P.281-286

Ramakrishnan, R; Ramesh, S; Jayahar, M Bharathi; Amuthan, M; Viswanathan, S
- Prevalence of bacterial pathogens causing ocular infections in south India
The past year at LAICO was utilised to strengthen the foundation for its future work. Several proposals, seeking to increase the capacity building of eye hospitals located in different parts of the world, received grant funding. LAICO continued to share the Aravind model with a wide spectrum of visitors from eye care institutions, academic visitors, and from other health care settings through a range of workshops, projects and training programmes. To date, LAICO has engaged with 273 eye hospitals in India and other developing countries. Its structured capacity building process is geared toward sustainable organisational development.

Consulting and Capacity Building

Last year LAICO’s consulting division ran capacity building programmes for 12 eye hospitals in India, Bangladesh, China, South Africa, Nigeria and Paraguay with support from IAPB Capacity Building Grant Fund. LAICO is identified by IAPB (the International Agency for the Prevention of Blindness) as one of nine resource centres in the world.

LAICO hosted the Global Sight Network Initiative Mentoring Programme from February 26 – 28 organised by Seva Foundation. This included members from the eight mentor institutes (also the Centres for Community Ophthalmology) engaged in IAPB Capacity Building.
Grant Fund (CBGF) programme. Over a two-year period these mentor institutes including LAICO are working with 35 hospitals from various countries and supporting them through a capacity building process. This particular workshop was designed to strengthen the impact of the mentoring and to create a clear documentation and reporting process for achieving results. Mr. Colin Williams and Vikki Osborne from Westcott Williams (previously W2) facilitated the meeting.

Along with the Eye Fund team, LAICO conducted quarterly performance assessments of the three Eye Fund loan beneficiary hospitals – He Eye Hospital, China, Eye Foundation in Lagos, Nigeria and Fundacion Vision in Paraguay.

LCIF approved a grant for enhancing eye care delivery through SF 1588 - Enhancing Eye Care Services at Lions Eye Hospitals in India project amongst 73 Lions Eye Hospitals in India that have undergone Manpower Management Development Programme prior to 2007. This two-year project aims at helping the selected hospitals develop a roadmap that will take them from being cataract-centric hospitals to comprehensive eye care service centers.

As part of LAICO’s consulting activities, needs assessment visits were made to around ten hospitals and three vision-building workshops were conducted. In connection with the IAPB capacity building programme, follow up visits were made to various Catholic hospitals in Nigeria to gauge progress. As part of the Leapfrog Fund technology transfer capacity building process, there was a close monitoring of the progress made by Fundacion Vision and Fundacion Paraguayan, Paraguay with regard to the implementation of strategic plans and the discussions revolved around strengthening leadership at strategic and operational level, pricing and outreach strategies, standardisation of protocols and processes etc.

LAICO has been closely associated with the Grameen Hospitals since November, 2005 and last year, from June 20 - 26 the Aravind team held discussions with the senior leadership team at Bogra and Barisal regarding future projects and planning.

Developing Eye Care Resource Centres
Shenyang, China, November 1 – 5
LAICO, supported by International Agency for Prevention of Blindness (IAPB) is under a mandate to assist two eye hospitals in becoming resource centres for their respective regions.

The hospitals that have been selected for this process are He Eye Hospital, Shenyang, China and Al- Noor Foundation, Cairo, Egypt. The LAICO team made an
assessment visit to He Eye Hospital, Shenyang, China, in order to better understand how well the hospital is poised to strengthen eye care services for the country. LAICO will soon make a similar visit to the Al-Noor Foundation.

**Onsite support**

LAICO offers onsite support to other eye hospitals on request. Its consulting services were extended to five county hospitals and two private hospitals in Guanzhou province, China during visits to these hospitals from June 21 - 28. Aravind staff members were invited as resource persons for the capacity building workshop conducted by Zhongshan Ophthalmic Center (ZOC), Guanzhou. This workshop included visits to three different county hospitals and handling a session on Sustainable Outreach Programmes.

LAICO posted an eye care management professional at Fundacion Vision, Asuncion, Paraguay for a period of three months from February to provide guidance and support in areas like pricing policy and implementation, streamlining of the Medical Records Department and making necessary updates to existing software for better management of the clinic.

The consultancy visit to Oudomxay Provincial Eye Unit, Lao PDR July 11 - 18 facilitated a participatory process to assess the Oudomxay provincial eye unit’s potential as a regional resource center, identify the key areas that need to be addressed for it to be a more sustainable model, and outline a business model for it.

Aravind team facilitated a vision building workshop organised by Netra Niramay Niketan, West Bengal as part of Centres for Community Ophthalmology activity. The workshop was attended by participants from five hospitals in India and Bangladesh.

**Programme Evaluation**

The Evaluation of Pilot County Eye Care System Strengthening Project, Jiangxi Province, China was carried out during November 22 – 26, 2010. This involved assessing the effectiveness of the primary level and secondary level service delivery mechanism to provide affordable and sustainable eye care services to rural areas.

Mr. Suresh Kumar during the facilitating visit to Netra Niramay Niketan, West Bengal
populations. The project was supported by Fred Hollows Foundation, China. In Oman, during a December 11-15 visit, LAICO assessed the current state of the country’s diabetic retinopathy programme and offered recommendations to strengthen it. This was carried out in consultation with the WHO office in Oman.

**October Summit**

The October Summit is an annual series of workshops and consultations held in honour of the birth anniversary of the Aravind Eye Care System’s founder chairman, Dr. G. Venkataswamy. These events are held to discuss important issues related to eye care service delivery and to find innovative solutions through sharing experiences and mutual consultation.

Listed below are the workshops conducted under October Summit 2010:

**Workshop for Global Blindness Prevention (supported by ICO and IAPB), September 27 – 29**

The purpose of this workshop was to develop plans for the identification and implementation of research priorities for the next ten years. Thirty-four delegates from Australia, Austria, Brazil, China, Ethiopia, Ghana, India, Saudi Arabia, South Africa, Tanzania, UK, and USA participated.

**Private Practice in Ophthalmology, October 2 – 3**

The workshop aimed to bring together private practitioners to provide a platform for discussing various issues relating to private practice in eye care. A total of 37 participants attended.

**Evidence Based Management Practices, October 4-5**

The workshop was designed to enhance management practices in eye care institutions and to promote the
culture of evidence-based decision making. A total of 43 participants from India, Nepal, Cameroon, Uganda and Bangladesh benefitted from the workshop.

Workshop on Preferred Practices for Sustainable Primary Eye Care Services
April 8 – 9
The objective of the workshop held at LAICO was to study different models of primary eye care services (vision centres) and distil preferred practices. Representatives from eight implementing agencies of vision centres participated and presented their models. The representatives from INGOs and the eye hospitals interested in setting up such services also attended this workshop. The outcome of the two day workshop was the distillation of preferred practices in terms of comprehensiveness of the services provided, demand generation strategies, infrastructure planning, human resources, programme sustainability, financial viability and its impact on the base hospital for providing primary eye care services. These various best practices will be released as a manual.

LAICO Services Extend to Developed World
Aravind team assessed the current systems at Tampere University Hospital, Tampere, Finland and discussions were held to improve the operational efficiency leading to increased surgical volume. A surgical management team from Aravind will visit the hospital at a later date to demonstrate a process for clearing the backlog and help the Finnish team integrate the efficiency processes into their regular routine.

Teaching and Training
LAICO offers a total of nine long and short-term courses in eye hospital management as well as short-term skill development courses in the areas of instrument maintenance, community outreach and social marketing. Apart from these structured courses, various custom designed courses are also offered. Around 140 eye care professionals from 20 countries were trained through the different courses conducted during the last year. Details of these programmes are listed on page 26.

Eye Care Training Goes Online
Aravind Eye Care System launched Aurosiksha, an online eye care training platform on April 6, 2010. Leveraging Aravind’s 30 years of experience in training eye care personnel, Aurosiksha seeks to provide world class continuing education for ophthalmic professionals through an e-learning portal. The courses offered include orientation to eye care, common eye conditions, refraction techniques, medical records management, counseling for Paediatric eye care, basics in care and maintenance of eye care instruments etc.
Training on Quality Assurance in Eye Hospitals
February 10 – 20
This ten day custom-designed course was organised with support from ORBIS-South East Asia. The participants consisted of a team of two ophthalmologists and a programme manager from Vietnam and an Ophthalmologist from Lao PDR.

Strengthening Eye Care Management
The sixth batch of Fellowship in Eye Hospital Management, consisting of six members joined Aravind Eye Care System on August 16. On completion of the structured training programme, they will be employed as managers at the different centres of the organisation or partner institutions.

PRISM 2011-National conference on hospital and healthcare management
February 19 – 20
PRISM-2011, the annual conference was organised by the fellows in Eye Hospital Management. Eminent resource persons from different parts of the country handled different sessions. The deliberations were organised in 4 modules focused on the latest developments in the field of healthcare and hospital management. Around 90 participants attended the conference.

Onsite Training
Apart from the courses and workshops conducted at the headquarters in Madurai, LAICO also conducted training programmes at other eye care centres on request. In the year ending March 2011, three such training programmes were conducted:
- Workshop on Eye Care Programme Management for the District Managers of the Eastern Cape Province, South Africa supported by Fred Hollows Foundation, South Africa from December 6 – 10
- Instruments Maintenance Courses
  - Eighteen ophthalmic technicians were trained at Asmara, and Keran, Eritrea, North Eastern Africa with support from Fred Hollows Foundation, Australia during March 22 – April 16.
  - A total of 24 technicians were trained at the courses organised by the ORBIS Flying Eye Hospital (FEH) at the University of Ilorin Teaching Hospital, Ilorin, Nigeria during February 28 – March 18.
- Workshop on Introduction to Biostatistics and STATA at African Vision Research Institute Durban, South Africa, August 16 – 20

Projects Development and Management
With the successful completion of the TIFAC-CORE in Diabetic Retinopathy, Aravind - WDF Diabetic Retinopathy Management projects and Vision Centre projects, the division is geared up for promoting the right approaches to project development with the main focus on paediatric eye care and low vision management, its implementation and evaluation.

The developments in the year ending March 2011 in the major current projects are discussed here:

Primary Eye Care through Vision Centres
Aravind has established 36 Vision Centres till date with support from
- Lavelle Fund, USA (20 Vision Centres in the service areas of Aravind Eye Hospital, Madurai, Tirunelveli, Coimbatore and Pondicherry)
- Standard Chartered Bank’s Seeing is Believing Vision Centre project supported by International Agency for the Prevention of Blindness (10 vision centres in the service area of Aravind Eye Hospitals, Theni and Madurai)
- Friends of Aravind (two Vision Centres and proposed to establish one each in the service of Aravind Eye Hospitals, Tirunelveli and Coimbatore)
ORBIS – Aravind Paediatric Ophthalmology Learning and Training Centre (POLTC)
The centre has been conducting long term fellowship for ophthalmologists and short term certificate courses for paediatric anesthetists, mid-level ophthalmic personnel, instruments maintenance and community outreach workers. The three year project, ORBIS-POLTC II was concluded in December 2010, with a total of 119 candidates trained under it.

A2Z Child Blindness and Eye Health Project
This project was supported by USAID - A2Z Micronutrients and Child Blindness Project through Academy for Educational Development, USA. The project was concluded on February 28, 2011. The following are the main services rendered to the community during the project period:

- 1,224 school teachers were trained to screen preliminary vision of the students at schools.
- 248,371 students were screened by the teachers for refractive errors and other paediatric eye diseases
- 125 school screening camps were conducted covering 206 schools. 8,197 pairs of spectacles were distributed.
- 6,169 children were examined in 32 paediatric eye camps and 797 spectacles were distributed.
- Totally 725 children got support for cataract surgery, out of which 590 were provided with Acrysoft foldable lens.
- 1,375 newborn babies were screened for ROP and 100 laser procedures were performed at base hospital.
- 500 ROP posters were printed and distributed
- A documentary was developed for creating awareness on paediatric eye diseases.
New Projects
Eye Care for a Million Children - Lavelle Paediatric Eye Care Project
(Strengthening Paediatric Services at Aravind Eye Hospitals, Tirunelveli and Pondicherry)
Lavelle Fund for the Blind, a US based organisation supports this project which is being implemented in the districts of Tirunelveli, Kanyakumari, Tuticorin, Cuddalore, Villupuram and Pondicherry State. The project goal is to build capacity and processes to effectively address the problem of visual impairment and blindness among children in the age group of 0 – 17 years in the service area of Aravind Eye Hospitals at Tirunelveli and Pondicherry. Aravind Eye Hospitals are proposed to reach one million children in the age group of 0 – 17 years starting from September 2010, through comprehensive eye screening and providing medical intervention. The major activities include awareness creation, eye screening for children including screening for ROP and providing support for sight restoring cataract surgeries, school teachers training programmes for screening children etc.

Research at LAICO
The primary objective of the Research Division at LAICO is to develop health systems and operational research in order to contribute to eye care service delivery globally. More concrete plans are being laid out to strengthen the research capacity at LAICO.

The major operations research studies undertaken by LAICO in the year ending March 2011 are:
- Investigating gender associations amongst the users of cataract surgical services in south India (funded by Seva Canada)
- A cluster randomised trial of spectacle uptake for Refractive Errors across Multiple Delivery Systems in South India (funded by Champalimaud Research Grant).

- Assessment of the prevalence and socioeconomic burden of near vision impairment caused by uncorrected presbyopia (funded by World Health Organization)
- HR practices that influence patient satisfaction and employee satisfaction (research study in part fulfillment of Ph.D at IIT Madras)

Major Meetings/Conferences Attended
Near Vision Impairment and Presbyopia Study Data Review, Analysis and Follow up Protocol Development Meeting
WHO, Geneva, Switzerland, April 27 – 29
Mr. R.D Thulasiraj as advisor and Mr. Ganesh Babu participated in the meeting to review the prevalence and socio-economic burden of near vision impairment and conduct comparative data analyses. The meeting also aimed to draft a longitudinal follow-up study protocol. Mr. R.D. Thulasiraj participated in the Sixth Meeting of the ICO (International Council of Ophthalmology) Task Force on Uncorrected Refractive Errors held at Berlin, Germany on June 3.
He also attended the meeting on research inputs in school screening and the IAPB-HR Committee meeting.

16th Asia Europe Foundation (ASEF) University Conference on Public Health and Vulnerable Groups: Access to Quality Health Care Services
Lodz, Poland, June 29 – July 10
Mr. R. MEENAKSHI SUNDARAM - Nongovernmental initiatives towards public health

Vision 2020 Global Meeting
Geneva, Switzerland, October 12
Mr. R.D. Thulasiraj participated in the Vision 2020 global meeting convened by Department of Chronic Diseases and Health Promotion / Prevention of Blindness and Deafness, WHO. The purpose of the meeting was
to take stock of Vision 2020’s progress till date and to review the challenges and lessons learnt at global and regional levels.

**Access Telemedicine Meeting**
Organised by Access Health International, Hyderabad, October 26
Mr. R.D. Thulasiraj participated in the meeting where strategies - to improve access to information and capacity for efficient health care and to improve link between different sources of capital and health care providers - were developed.

**Connect 2010**
Organised by Confederation of Indian Industries (CII), Chennai, September 8 – 9
Mr. R.D. Thulasiraj participated in Connect 2010, organised to create a vision and strategy for the next ten years of the ICT sector.
Mr. R.D. Thulasiraj took part in the first Global Stakeholders’ meeting organised at World Health Organisation, Geneva, Switzerland on September 14.

**Confluence 2010**
Organised by IIM, Ahmedabad, November 26
Dr. P. Namperumalsamy was invited as a distinguished speaker for Confluence 2010 - annual business summit towards the theme Inspiring Innovations, Expanding Horizons.

**Wavelength 2011 Leadership Workshop**
London, United Kingdom, March 7
Ms. Preethi Pradhan, presented Aravind as an example of social innovation to a group of social innovators and leaders from corporates at the workshop.

**Innovations in Health Care Management and Informatics**
Kuala Lumpur, Malaysia, March 16 – 17
Mr. R.D. Thulasiraj
- Extending the health care network to underserved populations: Case studies from India

Ms. Preethi Pradhan at Leadership workshop wavelength 2011, London, UK
Skoll World Forum on Social Entrepreneurship  
University of Oxford, UK, March 30 – April 1, 2011  
Mr. R.D. Thulasiraj participated in the Forum at the Said Business School, University of Oxford.

Other Events

Guest Lectures
- Mr. Sanil Joseph delivered a lecture on Core concepts in eye care management for the students of M.Sc - Community Eye Health at L.V Prasad Eye Institute, Hyderabad on April 13.
- Mr. R.D. Thulasiraj delivered a lecture to the students of Stanford Business School, San Francisco, USA in April.
- He handled a session for the students of M.Sc Community Eye Health at ICEH (International Centre for Eye Health), London on May 5.
- Mr. R.D. Thulasiraj delivered a guest lecture on Aravind’s unique service model during the Lean symposium organised by Wipro GE Health care on July 21.
- Ms. Sasipriya K.M handled a discussion on the Harvard case study on Aravind for the students of Post Graduate Programme in Public Policy Management at Indian Institute of management – Bengaluru on July 31.
- Mr. K. Jeyaram Illiyaraja, biostatistician delivered a lecture on Applications of bio-statistical methods in medical research at Manonmaniam Sundharanar University, Tirunelveli on November 11.

Vision 2020 Workshop  
New Delhi, May 13 – 14  
Mr. R.D.Thulasiraj and Ms. Preethi Pradhan participated in the workshop on Creating an Actionable Advocacy Roadmap for Eye Health in India.

Sightsavers 60th Anniversary Celebrations  
London, United Kingdom, June 23  
Mr. R.D. Thulasiraj participated in the social gathering hosted by HRH Princess Alexandra at Buckingham Palace in commemoration of the 60th anniversary celebrations of SSI.

Third National Workshop on Application of Biostatistics in Nursing Research  
Madurai, October 29  
Miss T.B. Soubhyaa was invited as a resource person for the statistical package practical session at the Workshop conducted at Ultra Mission Hospital & Research Centre, Madurai.

LIBA Beacon ‘11  
Loyola College, Chennai, February 5  
Ms. Preethi Pradhan delivered a special address on the importance of social innovation and the contributions of Aravind Eye Care System at Loyola Institute of Business Administration (LIBA).

Dr. Manohar Babu and Ms. Preethi Pradhan with the students at ICEH, London
While there is a steady rise in the number of eyes donated each year, there is still a yawning gap between the need and availability. Aravind Eye Banks play a vital role in creating awareness about eye donation among the public, and every year there is a substantial increase in the number of eyes procured. In the year ending March 2011, the Aravind Eye Banks together collected over 4,300 eyes.

Eye Donation Awareness Programmes
Several eye donation awareness programmes and lectures were arranged for school / college students, hospital staff, primary health centres and self help groups. Ms. Hepsiba Jawahar, Manager, RAIEB, addressed several gatherings on the importance of eye donation, process of eye collection, and enucleation. She also delivered a lecture on Non Governmental Initiatives towards Public Health.

Eye Donation Fortnight Celebrations
August 25 – September 8
The 25th national eye donation fortnight was observed at all Aravind Eye Hospitals with a variety of programmes intended to increase awareness among the public, regarding eye donation. Programmes included exhibitions, motivational talks, propaganda through notices, cinema theatres and local television and FM channels.
Rotary Aravind International Eye Bank – Madurai collected 84 eyes during the fortnight celebrations. At a combined function to mark the end of the 25th national eye donation fortnight and commencement of the second year of Dr. Kalaaimar Kapitu Thittam, Mr. C. Kamaraj, District Collector, Madurai felicitated Aravind hospitals for the excellent service they are rendering in reducing corneal blindness. Parents of two young children whose eyes were donated were also felicitated by the Collector. Rotary and Lions members, and staff of Aravind Eye Care System participated in the function.

The staff of Aravind – Tirunelveli formed an awareness human chain and an awareness walk was conducted in the heart of the city. The need for strengthening the Hospital Cornea Retrieval Programme was stressed by Aravind – Coimbatore at an eye donation awareness programme organised by Ganga Hospital, Coimbatore. At Aravind – Pondicherry, around 350 persons pledged to donate their eyes. In order to honour the Lions / Rotary Clubs and the participant hospitals of Hospital Corneal Retrieval Programme (HCRP) which were instrumental in enhancing eye donation, a function was organised at the hospital auditorium. Around 150 voluntary organisations participated in the function. MJF Lion P. Kuppusamy, Lions Districts Governor 324 - A3, and Mr. B. Natarajan, Chief Regional Manager, Indian Overseas Bank, were the chief guests. Mementos were distributed to the participant clubs.

**Strengthening Eye Collection Centres**

The Seva Foundation project has proposed strengthening the existing eye collection centres in terms of infrastructure development and also setting up new eye collection centres in and around Madurai. Under this project new sets of instruments were distributed and thermacol boxes and other accessories were replaced in some collection centres.

**Standard Operating Procedure (SOP)**

During the international inspection for renewal of accreditation of RAIEB, Madurai in September 2009 by the IFETB (International Federation for Eye and Tissue Banking), the standard operating procedures were greatly emphasised by the accrediting body and the same were revised in January 2010.

**EBAI (Eye Bank Association of India) National Accreditation**

The EBAI in association with Sight life International, ORBIS international and Sightsavers, started the process of accreditation of member eye banks, across the country. Dr. M. Srinivasan, Past President-EBAI has been appointed chairman of the Board. Dr. Jeena Mascarenhas, cornea Consultant, Aravind - Madurai has been appointed on the team of assessors for accreditation.

Rotary Aravind International Eye Bank was inspected in September 2010 as a preliminary process for accreditation. Mr. C. Kamaraj, District Collector, Madurai presenting certificate of appreciation to a donor family

Dr. Samar K. Basak, secretary, EBAI and Mr. Kamalesh Gadghe, technician, Elmex Eye Bank, Gujarat inspected the RAIEB. The medical director, eye bank manager and technicians were interviewed individually. The recommendations given by the team were reviewed and implemented. The second round of accreditation was held on February 11, 2011. Dr. Radhika Tandon, MD, National Eye Bank, RP Centre, New Delhi and Mr. Ashish Biswas, Technician, Prova Eye Bank were the assessors. Finally the RAIEB has been accredited for 2 years by the EBAI accreditation board on May 11, 2011.

**New Eye Donation Centre**

A new chapter of the Lions Club - Lions Dindigul Bright Vision has signed an MoU with Rotary Aravind International Eye Bank for setting up of a new eye donation centre.

**Eye Bank Training**

- Eye Bank Coordinator Training – A coordinator from Tirunelveli was trained in Eye Banking from June 7 - 12, 2010
- Physician Training – A government doctor from Patna was trained in eye banking and corneal transplantation from September 1 - October 30, 2010.
- Grief Counseling Training – Offered to a counsellor from M.P. Birla Eye Hospital, Kolkata.
- Eye Bank Technician Training – Offered to two technicians from M.P. Birla Eye Hospital, Kolkata from October 6 – November 5, 2010.

**Eye Collection and Utility 2010 – 2011**

<table>
<thead>
<tr>
<th>Place</th>
<th>Eyes procured</th>
<th>Eyes utilised for surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madurai</td>
<td>1855</td>
<td>723</td>
</tr>
<tr>
<td>Coimbatore</td>
<td>1430</td>
<td>574</td>
</tr>
<tr>
<td>Pondicherry</td>
<td>932</td>
<td>185</td>
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<tr>
<td>Tirunelveli</td>
<td>169</td>
<td>90</td>
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Research at Aravind contributes to Aravind’s mission through providing evidence and evolving methods to translate existing evidence and knowledge into effective action. Basic and translational research is done under the aegis of Aravind Medical Research Foundation at the Dr. G. Venkataswamy Eye Research Institute, Clinical research in Aravind Eye Hospitals, Operations research in LAICO and Product development in Aurolab.

Basic Research
In the last year, the institute continued to make significant contributions in understanding the basic biological mechanisms of eye diseases such as diabetic retinopathy, age related cataract, age related macular degeneration, Leber’s congenital amaurosis, albinism, Fuch’s endothelial corneal dystrophy, fungal keratitis, leptospiral and trematode associated uveitis, primary
open angle glaucoma, keratoconous, anophthalmia and microphthalmia. These eye diseases are examined in the areas of molecular genetics, microbiology, immunology, cell biology, pharmacology and proteomics. On the basis of the above research, the institute now has developed several applications to patients in Aravind ophthalmic clinics.

**On-going Projects**
- Molecular genetics of albinism, diabetic retinopathy, cataract, age-related macular degeneration, keratoconus, exfoliation glaucoma, leber congenital amaurosis, anophthalmia and microphthalmia in the Indian population
- Molecular insights and mechanism of infectious uveitis, anterior chamber granulomatous uveitis, leptospiral uveitis
- Characterisation of the host immune response during corneal infection with pathogenic fungi and bacteria, Type 3 secretory virulence proteins of pseudomonas aeruginosa causing keratitis
- Biology of human limbal epithelial stem cells with reference to molecular signature, factor relation to stemness, niche factors and xenobiotic-free culture conditions for ex-vivo expansion
- Proteomic profiling of serum / vitreous / aqueous humor/ tear in diabetic retinopathy, biomarkers for primary open angle glaucoma, host pathogen interaction in human aspergillus keratitis
- Pathogenesis of diabetic retinopathy and age related macular degeneration
- Exploratory study on ascorbate (vitamin C) and haptoglobin in cataract patients.

**Translational Research**

**Corneal Epithelial Stem Cells**
In the last year, the institute established a simple, cost effective method for ex-vivo expansion of autologous limbal epithelium and also developed a method to identify and quantify stem cells. The transplantation of stem cell rich cultured epithelium has been found to be an effective therapy to bring back vision in patients with unilateral stem cell deficiency due to chemical injury. In patients with bilateral LSCD, cultured autologous buccal epithelium is being used for corneal surface reconstruction. For the purpose of culturing these tissues, a class 1,000 Good Manufacturing Practice (GMP) facility, with the required equipment and quality control have been established.

**Genetic Counseling**
Genetic counseling is needed to create awareness among public especially on the increased rate of autosomal...
recessive diseases and also on the genetic aspects of illness including the inheritance pattern. It was started in November 2010 in the Paediatric clinic of Aravind Eye Hospital and is now offered for diseases like albinism, Leber congenital amaurosis, retinitis pigmentosa, congenital cataract, aniridia associated eye diseases, Leber hereditary optic neuropathy and familial exudative vitreoretinopathy.

The institute is in the process of creating a genetic counseling database and installation of Geographic Information System (GIS) which may help find the disease prevalence in a particular community.

**Molecular Diagnostic Methods**
Molecular diagnostic methods like Polymerase Chain Reaction (PCR) are more sensitive and faster than conventional culture methods. Nested PCR has been developed for the detection of viruses Cytomegalovirus (CMV), Herpes Simplex Virus (HSV), Varicella Zoster Virus (VZV), and bacteria (Mycobacterium Tuberculosis, Eubacteria, Propionibacterium acnes), Toxoplasmo Gondii and this test is being used routinely in the diagnosis of ocular infections. During the last year, 426 tests were done by nested PCR on ocular fluids, from all Aravind centers. More recently, Real Time PCR which is a quantitative measure of the infectious load helps differentiate acute infection from latent/past infection and this test has been standardised for viruses, Mycobacterium Tuberculosis, Eubacteria, Leptospira and more importantly for new emerging infections like West Nile, Dengue, Chikungunya and Rickettsia.

**DNA Based Diagnosis of Trematode Induced Uveitis**
Sub conjunctival and anterior chamber granulomatous uveitis in children of South India is one of the newly recognised ocular diseases and it closely mimics the endemic disease tuberculosis. On histopathological analysis, a parasitic cause was suspected, but could not identify the exact etiology. DNA-based methods, like qRT-PCR and Molecular sequencing confirmed the parasitic etiology. In future this technique can help the clinician confirm the trematode ocular disease.

**Ocular Drug Delivery**
The transcorneal entry of topically applied drugs as eye drops is restricted due to the corneal barriers. Voriconazole, a newer anti-fungal agent had been proved for its efficacy in fungal keratitis. The Pharmacokinetic guided dosing regimen was elucidated for 1% topical voriconazole in patients undergoing cataract surgery. Based on multidose kinetics studies, the frequency of topical voriconazole instillation may be designed for “every 2 hr regimen” to maintain a therapeutic concentration for the successful therapy for fungal keratitis.
**Clinical Research**

**Glucoma**
- Health literacy and barriers to follow-up after initial diagnosis of glaucoma in a South Indian population.
- Pharmacoeconomics of various brands of Timolol for patients with glaucoma or ocular hypertension.
- A multi-center, double-masked study of the safety and efficacy of Travoprost APS compared to TRAVATAN® in patients with open-angle glaucoma or ocular hypertension.
- A multicenter, open-label, active control, parallel group randomised study to demonstrate non inferiority of Brinzolamide 1% ophthalmic suspension compared with Dorzox (Dorzolamide) 2% ophthalmic solution in treatment of elevated intra-ocular pressure in patients with primary open angle glaucoma or ocular hypertension.
- Brinzolamide 1% ophthalmic solution for the treatment of primary open angle glaucoma and ocular hypertension.
- A Prospective non-randomised efficacy and safety clinical trial, 1 year study with a 1 year extension to evaluate the efficacy and safety of ADDI (Aurolab Artificial Drainage Implant) in controlling intraocular pressure in patients with mature cataracts.
- A multicenter, open-label study to evaluate the safety and efficacy of twice-daily 0.01% Bimatoprost / 0.15% Brimonidine / 0.5% Timolol ophthalmic solution (triple combination) in patients in India, who have glaucoma or ocular hypertension with elevated IOP, and are on twice-daily 0.2% Brimonidine / 0.5% Timolol ophthalmic solution (dual combination) therapy.
- Study protocol for glaucoma counseling and follow-up study.
- Assessing the safety and efficacy of changing to TRAVACOM® (Travoprost/Timolol fixed combination), as replacement therapy in patients with uncontrolled intraocular pressure across India.
- Indian Family Angle Closure Evaluation study (IFACE).
- Assessing safety and efficacy of laser assisted deep sclerectomy in eyes with open angle glaucoma by a non-randomised prospective study.

**Cornea**
- Steroids for Corneal Ulcers Trial (SCUT).
- A multi-center, Placebo-controlled, randomised, parallel-group dose-ranging study to assess the efficacy and safety of LX201 for prevention of corneal allograft rejection episodes or graft failure following penetrating keratoplasty with LX201 implantation in subjects who are at increased immunological risk.
- Mycotic Ulcer Treatment Trial (MUTT).
- Sjögren’s International Collaborative Clinical Alliance (SICCA).

**Cataract**
- Role of wetlab training in donor eyes and simulator for learning capsulorhexis.
- Aravind cataract surgical complication study.
- Clinical evaluation of hydrophobic foldable intraocular lenses.
- Comparison of phacoemulsification Vs SICS: A randomised control trial.
- Outcomes of high volume phacoemulsification compared to standard volume phacoemulsification.
- The natural history of artificial intraocular lenses in eyes with Exfoliation Syndrome.
- Posterior capsular opacification after implantation of square edge PMMA, round edge PMMA and hydrophobic acrylic intraocular lenses: A prospective, randomised comparative trial.

**Significant Finding of ASCRS Grant Winner’s Research**
Dr. R. Venkatesh, a 2007 ASCRS Foundation research grant winner compared two leading cataract surgery techniques namely the more expensive phaco surgery and low cost manual small incision surgery in patients with mature cataracts. He has come out with findings in April 2010 that there is no significant difference in best corrected visual acuity between the two techniques. This finding is of immense benefit to the ophthalmic community in the developing world who cannot, owing to various challenges, provide phaco. This research study is unique as it was the first randomised study in this area.

**Paediatric**
- A2Z child blindness and eye health project.
- Effect of square edge PMMA IOL in preventing lens epithelial cell migration in paediatric cataract surgery: A randomised controlled trial.
- Lavelle paediatric project Eye Care for Million Children.

**Uvea**
- Protocol No.2301: A 24 week multicenter, randomised, double-masked, placebo controlled, dose-ranging phase III study of AIN 457 versus placebo for maintaining uveitis suppression when reducing systemic immunosuppression in patients with quiescent, non-infectious intermediate, posterior or panuveitis (ENDURE study).
- CAIN457C2303: A 24 week multicenter, randomised, double-masked, placebo controlled study to assess the difference in the rate of recurrent exacerbations in Behçet’s patients with posterior or panuveitis treated with AIN457 vs placebo adjunctive to standard-of-care immunosuppressive therapy.
- A double – masked, placebo-controlled, multicentric, parallel group, dose ranging study to assess the efficacy and safety of LX2II as therapy in subjects with non-infectious intermediate, anterior and intermediate, posterior or pan-uveitis.
- First-line Antimetabolites as Steroid-sparing Treatment (FAST) uveitis pilot trial.
- A prospective study of Transpupillary Thermotherapy (TTT) for Chronic Central Serous Retinopathy.
- Radial optic neurotomy for ischaemic central retinal vein occlusion: A case-control study.
- Laser photocoagulation for diabetic macular edema with serous retinal detachment.
- Optical Coherence Tomography for subhyaloid haemorrhage of various etiologies.
- A study of combined occlusion of central retinal artery and vein.
- Vitrectomy for macula-threatening tractional retinal detachment in diabetic retinopathy.
- Silicone oil tamponade in 23 gauge sutureless vitrectomy: long term anatomical and functional outcome.
- Yag hyalidotomoy with gas tamponade as a viable option for premacular haemorrhage in PDR against surgical intervention by pars plana vitrectomy.
- IVTA Vs macular PHC for diffuse diabetic macular edema–prospective study.
- Isolated intravitreal bevacizumab therapy for choroidal neovascular membranes of multiple aetiologies.
- Intravitreal bevacizumab as a preoperative adjuvant for diabetic macular tractional detachments with active new vessels.
- Intravitreal bevacizumab therapy for polypoidal choroidal vasculopathy.
- Retinohchoroidal coloboma - a comparison of laser barrage photocoagulation versus natural history.
- Acute posterior multifocal placoid pigment epitheliopathy with serous retinal detachment: Clinical features and management.
- Evolution and management of macular tractional detachment with a macular hole in the presence of non-perfused hemiretinal vein occlusion.
- Management of rhegmatogenous retinal detachment with macular hole.
- Surgical management of optic nerve pits with macular schisis.
- Occult optic nerve pits with macular schisis.
- Use of “heavy BBG” dye for macular hole surgery.
- Surgery for macular hole secondary to macular telangiectasia.
- Adjuvant role of intravitreal corticosteroid in the surgical management of macular epimacular membrane or hole secondary to uveitis.
- The macular hole coefficient – A novel OCT based mathematical predictor for macular hole closure type.
- A randomised controlled clinical trial comparing panretinal photocoagulation with yellow laser (577nm) versus green laser (532nm) for proliferative diabetic retinopathy.

**Aurolab Clinical Trials**

- Posterior capsular opacification after implantation of square edge PMMA and acrysof intraocular lenses in paediatric cataract: Randomised controlled trial.
- Posterior capsular opacification after implantation of square edge PMMA, round edge PMMA and acrysof intraocular lenses: Randomised controlled study.
- Clinical evaluation of silicone implant for primary or secondary volume rehabilitation of anophthalmic sockets.
- Randomised, active comparator-controlled, three months, open label clinical trial to compare the efficacy and safety of refrigeration-free latanoprost (0.005%) stored at refrigeration temperature in patients with open angle glaucoma or ocular hypertension.
- Clinical evaluation of a new cartridge for the implantation of foldable intraocular lenses.
- Evaluation of safety and efficacy of glaucoma shunt (Aurolab artificial drainage implant) in refractory glaucoma.
- Clinical evaluation of toric intraocular lens made by Aurolab.
- Clinical evaluation of corneal collagen cross linking with riboflavin and ultraviolet for keratoconus.
- Clinical assessment of AuroKPro.

**Operations Research**
- Investigating gender associations amongst the users of cataract surgical services in south India (funded by Seva Canada)
- A cluster randomised trial of spectacle uptake for refractive errors across multiple delivery systems in south India (funded by Champalimau research grant)
- Assessment of the prevalence and socioeconomic burden of near vision impairment caused by uncorrected presbyopia (funded by World Health Organization)
- HR practices that influence patient satisfaction and employee satisfaction

**Workshop / Conferences conducted**

**Workshop on “Stem Cells for Vision”**
October 25 – 30, 2010
The workshop was conducted as part of ‘October Summit’, in honour of Dr. V, the Founder Chairman of Aravind Eye Care System. It was organised by Scientists at the research institute in collaboration with the Cornea Clinic of Aravind Eye Hospital and sponsored by ICMR and DRDO, New Delhi. This ‘hands on’ training course is the first of its kind in India to teach a variety of modern laboratory techniques to show how stem cells could bring back vision to patients. This is the only method to bring vision to patients who became blind due to thermal or chemical injuries. Research students and young scientists from across the country had the opportunity to learn methods of identifying and growing patient’s stem cells under specific culture conditions.

In addition to Aravind faculty, experts from LV Prasad Eye Institute, Hyderabad, Sankara Nethralaya, Chennai, Sri Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram, Invitrogen Bioservices India, Bangalore delivered lectures during the sessions. All the basic techniques and culture methods for ex-vivo expansion of corneal / buccal epithelial stem cells for human application were carried out using human cadaver globes.

**Ph.D Awarded by Madurai Kamaraj University**
October 2010
**Ms. B. Suganthalakshmi**
- Molecular genetics of diabetic retinopathy
In keeping with the organisation’s ethos of continuous innovation, Aurolab introduced a whole range of new products in the last year. With an efficient manufacturing system combined with uncompromising quality measures Aurolab has obtained various certifications and is now poised for a quantum jump in its international market share.

**New Products**

**Voriconazole**  
August 2010  
Aurolab’s pharmaceutical division introduced an anti-fungal eye drop, the first of its kind in the world, and one that has a broad spectrum of action. This product has been extremely well received by the ophthalmic community and many ophthalmologists have endorsed Voriconazole as their drug of choice to treat fungal keratitis.

**Auroflex Square Edge**  
November 2010  
Square edge design in intraocular lenses prevents posterior capsular opacification. Having experimented with the square edge design in an earlier high end hydrophilic foldable product named Auroflex EV that was well received, Aurolab consequently designed a process to manufacture it at scale and also introduced the feature
in its standard hydrophilic foldable product, Auroflex - a popular model in the market. Aurolab plans to phase out the previous model and focus on the square edge product for the benefit of more patients.

**Flures**  
**December 2010**  
Aurolab launched Flures, a fluorescein sodium dye at the Vitreo Retinal Society of India conference. This pyrogen and preservative-free product provides excellent contrast for diagnosis during Fundus Fluorescein Angiography.

**Aurochart**  
**January 2011**  
Launched during the AIOS conference at Ahmedabad, Aurochart is the first mass-market product from Aurolab’s equipment division. With Aurochart this division is well positioned to create a wider customer base and establish credibility. Some of its unique features and carefully designed optotypes based on international standards give Aurochart an edge in the market. Within a very short period a large number of units have already been sold.

**Auro KPro**  
**January 2011**  
Designed along the lines of the Boston Keratoprosthesis with their permission, Auro KPro is a product that offers a ray of hope for patients with multiple corneal graft failure. It addresses both availability and affordability concerns by successfully manufacturing a complex keratoprosthesis in India. Though the usage of this product is yet to increase, Aurolab’s introduction of the product at an affordable price enables many corneal surgeons to offer the service to their patients.

**Aurosharp Round Stock Blades**  
**January 2011**  
These blades made from round stainless steel wire are an addition to the existing range of surgical blades from Aurolab. The response has been favourable and a steady entry is underway in domestic and international markets.

**Regulatory Activities**  
The regulatory department paved way for increased international marketing of Aurolab products with the successful registration of a selection of products in various countries. Absorbable sutures were registered in Philippines, Auroblue in Mexico, eye drops in Kenya and blades in Indonesia.
The annual ISO and CE certification audits were carried out successfully.

**Human Resource Department Activities**

Aurolab networks with the teachers of village schools to recruit higher secondary students as production staff once they graduate tenth standard. To strengthen the relationship with the teaching community, Aurolab conducted a “Teachers’ Get Together” for the first time. Heads and teachers from twenty-five schools attended this interactive program. The guests were taken on a tour to the various divisions of Aurolab.

Aurolab’s 18th anniversary was celebrated in February and graced by the presence of senior leaders of Aravind. Dr. P. Balakrishnan, Managing Director delivered a report on the activities and Mr. R.D. Sriram, Director of Operations shared Aurolab’s growth plans. Employee service awards were distributed.

Aurolab observed Mission Day on July 7 in commemoration of the Aravind Eye Care System’s Founder Chairman, Dr. G. Venkataswamy. Staff shared their powerful memories of working with Dr.V.

A week long training module conducted in December for the field staff across all cadres including sales and service engineers provided an opportunity for intensive learning and sharing of individual experiences. Key products were focused on with special attention to their technical, marketing, USP and competition analysis aspects.

Graduation Day was conducted for children of the staff in the crèche. Those eligible to join school in the ensuing academic year were awarded certificates.

**IT Department Activities**

Aurolab has gone live with the implementation of Microsoft Dynamics ERP (Enterprise Resource Planning).

The purchase, manufacturing, finished goods and accounting modules have been successfully implemented. The adoption of ERP software has resulted in uniformity of data and abolishes the need for multiple entries in different departments.

This initiative is expected to deliver even more benefits in the future by offering a system for better monitoring and control of costs, flexibility and accuracy in planning, maintaining optimum inventories etc. HR module and CRM module are also to be implemented thus integrating the entire organisation on a single platform.

**Marketing Activities**

**Dealers Meet**

After a gap of over a decade, Aurolab conducted Dealers Meet at Madurai on July 5th. Nearly 60 dealers from all over the country including long-term associates who partnered with Aurolab at its inception were present. Senior leaders of Aravind were present at the occasion. Special invitee for the day, Prof. D.V.R. Seshadri, IIM, Bangalore, in his inspiring address, stressed the need for a strong and amicable relationship between manufacturers and dealers, citing examples from companies like Tata Steels and The Caterpillar. Later the group was taken for a visit to Aurolab’s state-of-the-art manufacturing facility. The meet concluded with a two-day trip to Kodaikanal that included a mix of healthy discussions around the future along with fun events.

**International Marketing**

The International Marketing Department was successful in appointing distributors in Sri Lanka, Greece, Peru and Nepal. This will help Aurolab gain a foothold across more territories. Aurolab also completed the additional
registration that is required to sustain and grow its market in Philippines, Kenya and Ethiopia. This has resulted in the increase of business volume in these regions. Aurolab has also won tenders from several other countries for supply of intraocular lenses and pharmaceutical products.

The International Marketing Division also expanded its workforce by 4 people to better market its presence and sustain its growth in the years to come. A strong focus has helped Aurolab grow its private label business by 50% compared to prior years.

**Major Conferences Attended**

Participation in various conferences, both national and international helps Aurolab establish new contacts worldwide thereby extending the reach of its products. Listed below are the major conferences attended by the staff during the year ending March 2011:

- 114th American Academy of Ophthalmology conference at Chicago, USA, October 16 – 19, 2010
- 12th European Society of Cataract and Refractive Surgeons conference at Paris, France, September 4 – 8, 2010
- American Society of Cataract and Refractive Surgery conference at Boston, USA, April 10 – 13
- 25th Asia Pacific Academy of Ophthalmology conference at Beijing, China, September 16 – 20, 2010
- 69th All India Ophthalmic conference at Ahmedabad, February 2 – 6, 2011
- 26th Asia Pacific Academy of Ophthalmology conference, Sydney, Australia, March 20 – 24, 2011
- American Society of Cataract and Refractive Surgery conference at San Diego, USA, March 26 – 29, 2011
- Dr. P. Balakrishnan, Managing Director was invited as the speaker at the Indian Medtech Summit organised by Stanford India Biodesign in Delhi in December 2010.
- Mr. R.D. Sriram was invited to IIM–Banglore and Ahmedabad to facilitate the case discussion on Aurolab’s go-to-market strategy.
Functions which are central to all Aravind facilities—Finance, IT and Systems, Communications, Human Resource Development—function from Madurai and are housed in the LAICO and hospital premises. Apart from these, Aravind is strongly backed by a full-fledged Biostatistics Department and a well-equipped library and information centre.

Listed below are the major activities of the other central divisions during the year ending March 2011:

**INFORMATION TECHNOLOGY AND SYSTEMS**

Over the years, Aravind has leveraged information technology extensively in the effective delivery of eye care and in reaching out to the millions. During the year ending March 2011, the department has implemented IT solutions in new areas, upgraded several existing systems and provided software solutions to other organisations.

**New installations**

- Electronic Medical Recording (EMR) is implemented in all vision centres and is under trial run at Aravind-Madurai City Centre.
- A web-based cataract surgical outcome benchmarking and monitoring tool was installed at Aravind-Madurai.
- A community outreach system software is installed at Madurai to manage the various outreach programmes from planning to monitoring activities.
- A new Medical shop management system has been developed and replaced the existing software at Aravind-Madurai.

**AuroRMIS**

AuroRMIS is a web-based research management information system. It enables the user to submit project details, related documents and update the status. It captures the activities related to all the project studies.

**IT Solutions to other Organisations**

In the year ending March 2011, the department installed the Integrated Hospital Management System (IHMS) in seven hospitals, Opticals Management System software in two hospitals in Bangladesh and Community Outreach System software at CHEF International, Pakistan.

The IT team visited 17 user hospitals to assess their utilisation of system and train them further to enhance the software utilisation.

**IHMS Users Meet**

In order to understand the users’ feedback on the utilisation of software and new requirements in terms of enhancements, training and support services, the department organised Users Meets. One such meet was conducted at BNSB Eye Hospital, Mymensing, Bangladesh in April 2010. There were 12 participants from different user hospitals. Another meet was conducted at LAICO in October in which 15 participants attended.

**ARAVIND TELE-OPTHALMOLOGY NETWORK**

Developed mainly with the objective of benefitting the rural masses with better eye care, the Aravind Tele-ophthalmology Network (ATN) in vision centres has become a role model for replication in India and other developing countries. This innovative approach has helped Aravind overcome the issues of transportation and inadequate specialist availability. Aravind collaborates with various diabetes centres in the screening of diabetics through tele-consultation with the help of Aravind Diabetic Retinopathy Evaluation Software (ADRES). In the year ending March 2011, 656 such cases were evaluated.

ATN plays a major role in different educational interactions between all Aravind Eye Hospitals which include grand rounds, journal clubs, clinical meetings, post graduate classes and classes for mid level ophthalmic personnel and paramedics. Around 376 video conferencing sessions including international conferences were conducted during the last year.

*Mr. Ganesh Babu assessing and demonstrating IHMS software at Khartoum, Sudan*
ARAVIND COMMUNICATIONS

In the last year, the focus at Aravind Communications was on revamping. The mega eye care exhibitions ‘Kanne Nalamaa?’ planned to be held at all Aravind Eye Hospitals provided the pretext to rework the patient information posters for the various eye diseases and for eye donation awareness. Over seventy 2’ X 3’ posters were developed - updating the old ones with the help of the various department doctors, nurses and patient counselors - and used in the exhibitions, held first at Aravind-Madurai, and next at Aravind-Pondicherry and later at Aravind-Tirunelveli. Apart from these, over 50 scientific posters were developed for the staff attending national and international conferences. Supported by Sightsavers, the department is currently involved in developing a manual for planning tertiary eye care services and also an outreach manual for developing nations in collaboration with Seva Foundation. The Aravind website developed and maintained in house was totally revamped during the year. The department takes care of the intranet system which is used as a powerful platform for information sharing and internal communication. The Aravind website was totally revamped with help and guidance from Mr. Mike Myers with a new appealing layout and added features.

The videography department made various instructional videos for the different departments in the last year. Four of the videos developed for presentation won awards at various conferences.

HUMAN RESOURCES

Last year saw the HR department organising various training programs and workshops to empower the employees thereby paving the way for their professional as well as personal development. With a view to identifying and applying best practices throughout the organisation, various operating models and strategies were created. The HR department’s primary focus was on working towards the theme of the year, “Employee empowerment”, by creating an enabling environment.

Employee Development Programmes

Skill Development and Training

CME on Prophylaxis of Post-operative Ocular Infections
Aravind – Tirunelveli, May 16
The CME for the mid level ophthalmic personnel focused on the different pre-operative procedures and infection preventive measures.

Training on Laser Assisted Deep Sclerectomy (LADS)
Aravind – Pondicherry, May 27 – 29
Prof. Ehud. I. Assia, Director, Department of Ophthalmology, Tel Aviv University, Israel and Dr. Ami Eyal and Mr. Allon Bogin from Bio Light Life Sciences Investment Ltd., Israel visited Aravind, Pondicherry to train Aravind’s Glaucoma consultants on LADS (Laser Assisted Deep Sclerectomy). Consultants from Madurai, Tirunelveli, Coimbatore and Pondicherry received hands-on training during the wet lab session.
Training of Trainers
Aravind – Madurai, July 24 – 25
A workshop was conducted for the tutors, senior MLOPs, academic committee members, HR personnel and nursing superintendents. Participants from seven departments - OPD, OT, Ward, Refraction, Housekeeping, MRD and Opticals attended the workshop.

Retina CME
Aravind – Tirunelveli, September 19
A CME was organised for the MLOPs to keep them updated on the recent developments in the field of retinal diseases and treatments. It attempted to identify, develop, and promote standards for the maintenance of quality. Nearly 90 MLOPs attended the CME.

PMOA Refresher Training Programme
Aravind – Pondicherry, November 8 – 13
At the refresher training for paramedical ophthalmic assistants (PMOA), total of 21 ophthalmic technicians from various health centers and government and general hospitals in Pondicherry, Karaikal, Mahe and Yanam regions participated. The six day training covered all the clinical aspects and recent developments in ophthalmology.

Library CME
Aravind – Madurai, November 26 – 27
A two day library CME was conducted by Aravind Library and Information Centre, Madurai to evaluate the services and performance of Aravind libraries. The CME aimed to further enrich the library services and to redefine the librarians’ role in the various developmental activities of the library. Librarians from all Aravind Eye Hospitals attended.

Continuous Technical Education Programme
Aravind – Coimbatore arranged a technical education programme for the drivers during which they visited an exhibition on road safety measures.

Seminar on the Follow up of TQM (Total Quality Management) Initiatives
Aravind – Madurai, May 20
Concerned greatly about quality management, a seminar was organised by CII (Confederation of Indian Industries) on the follow up of TQM initiatives carried out in IOL Clinic, Medical Records Department, Operation Theatre and Ward. This was done as a follow up of the TQM workshop organised in December 2009. Representatives from Medical Records, Ward, IOL and Operation Theatre got an opportunity to share their experience on 5S initiatives (part of Total Quality Management).

Training on the Use of Safety Measures
Aravind – Pondicherry, December 18
A training programme on the use of fire extinguisher was organised for all staff members.
Workshop on Patient Satisfaction
Aravind – Tirunelveli, December 30
Mr. R. Ganesan, Manager - DCW handled a session on patient satisfaction and its importance to the staff of Aravind – Tirunelveli.

Employee Welfare Activities
To make the employees health conscious, Aurowel, a routine health check up programme is conducted every year for all Aravind employees. The employees undergo basic health screening under this programme, in batches of different age groups. Health insurance identity cards were distributed to the managers and senior staff as part of the Dr. V. Mediclaim Group Insurance scheme.

Graduation Day was organised in May for the MLOPs who completed their two year training programme. Cash awards were distributed to the toppers on the occasion as an incentive.

Aravind always acknowledges the invaluable service rendered by its staff. To inspire them for a better performance, retention awards were distributed to the staff who completed 5, 10, 15 and 20 years at Aravind.

Recreation Events
Excursions were arranged for the different cadres of staff to get to know each other and to have relief from the mundane and hectic work schedule. Several variety entertainments were organised at the monthly recreation programme organised in different centres.

Sharing the joy of season, the HR department organised celebrations on the occasion of Diwali, Navaratri, Pongal, Christmas and New Year.

Commemorating special days
Special programmes were arranged to mark the Republic Day and Independence Day celebrations. Mission Day was celebrated on July 7 to align the staff towards the organisation’s mission of eliminating needless blindness. Vision Day was observed on October 1 to reflect on the founder chairman, Dr. G. Venkataswamy. International Womens Day was celebrated with a variety of programmes and competitions. Special celebrations were also arranged on the occasion of the anniversary of all the hospitals.
A ravind and its team members continue to be recognised in different forums by diverse organisations, signifying both the relevance and significance of Aravind’s work beyond just eye care:

**Conrad N. Hilton Humanitarian Prize**
Though announced earlier, the **Conrad N. Hilton Humanitarian Prize**, considered the most prestigious global award for humanitarian endeavours, was presented at a ceremony held in conjunction with the annual meeting of the Global Philanthropy Forum on 20th April 2010, in Redwood City, USA.

Dr. R. Kim receiving Indian Express India Innovation award from Mr. Nandan Nilekani

Dr. P. Namperumalsamy and Dr. G. Natchiar, were awarded the **For the Sake of Honour** awards by the A & T Network Systems, Pvt, Ltd on the 13th of April in recognition of their extensive humanitarian services.

**IERG Recognition**
The Indian Eye Research Group (IERG) honoured Dr. P. Namperumalsamy at Hyderabad on 31st July by presenting an award in recognition of his seminal role in energising and catalysing vision research in India and for creating a global platform for the creative exchange of ideas in the field.
**Vocational Excellence Awards**

Dr. R. Ramakrishnan received the Vocational Excellence Award conferred on Aravind Eye Care System by the Rotary Club of Nagercoil in recognition of its adherence to highest ethical standards, and promotion of humanitarian service in eradicating avoidable blindness on the 3rd of July.

Dr. Usha Kim was conferred the Vocational Excellence Award by Rotary Club of Madurai North West on July 4 for her noble and committed services to the needy and visually impaired patients.

**Best Organiser Award**

Aravind’s senior camp organiser Mr. S. Selvam was conferred with the “Best Organiser’ award by the Lions District 324 A2 in recognition of his outstanding performance in organising camps collaborating with various Lions Clubs in the district during 2009-10.

**Best Video Awards**

At the American Society of Cataract and Refractive Surgery (ASCRS) conference held in Boston, USA Dr. R. Venkatesh’s video on ‘Safe and effective technique to tackle lens induced glaucoma in developing world’ and Dr. Haripriya Aravind's video presentation on New techniques in iris fixation of rigid IOLs won the Best Video Awards in the 2010 Film Festival held on the 19th of April.

**Honoured by the TIME**

Time Magazine honoured Dr. P. Namperumalsamy, the Chairman of Aravind Eye Care System, as one among the ‘100 Most Influential People in the World’ in its May 2010 issue.

**Doctor of Science**

Dr. G. Natchiar’s four-plus decades of work in eye care and in training thousands of ophthalmologists, was recognised by the Dr. M. G. R Medical University at the 20th convocation ceremony by conferring on her the Doctor of Science, Hon. Causa on the 10th of July.

**Honour by the Paris Tamil Kalachara Sangam**

Dr. P. Sundaresan was honoured for his contribution to Ocular Genetics by Tamil Kalachara Sangam, Paris, France on the occasion of its fifth anniversary celebrations in April 2010.
FICCI Awards in Health Care
At the national level, Aravind Eye Care System won two of the 2010 Awards in Healthcare instituted by Federation of Indian Chambers of Commerce and Industry (FICCI), under the categories of “Excellence in HR Practices and Personnel Welfare,” and “Excellence in Patient Experience” on 6th September.

EMPI-Indian Express India Innovation Award
The EMPI-Indian Express India Innovation Award was presented to Aravind on 13th July, in recognition of Aravind’s remote-diagnosis system structured to provide timely and affordable specialised eye screening for prevention of diabetes triggered vision loss thereby bridging the hitherto insurmountable, accessibility and economic gap between specialists and patients. Dr. Kim received the award from Chairperson, Unique Identification Authority of India (UIDAI).

Lifetime Achievement Awards
On the occasion of its 102nd anniversary, Bank of Baroda conferred “Baroda Sun Lifetime Achievement Award” on Dr. P. Namperumalsamy, for his extraordinary contributions to the field of medicine on July 20 at NCPA Auditorium, Mumbai. ‘Lifetime Achievement Award’ was presented to Dr. P. Namperumalsamy on 30th July at the annual TNOA conference held at Salem in recognition of his contribution to the science of ophthalmology and the functioning of TNOA.
BOA Gold Medal
The Bombay Ophthalmologists’ Association (BOA) presented Gold medal to Dr. Venkatesh Prajna for his outstanding contribution to the field of ophthalmology at a function held at Mumbai on August 13th.

Rhett Buckler Award
Recognition from peer ophthalmologists came through the Rhett Buckler award to Dr. R. Kim and his team at Aravind, during the annual meeting of the American Society of Retina Specialists (ASRS) in Vancouver, Canada from August 28 – September 1.

Outstanding Achievement Award
Soroptimist International Madurai chapter honoured Dr. G. Natchiar with the ‘Outstanding Achievement Award’ for her meritorious service in the field of health care on the 14th of September.

Teacher of Teachers
At the Eye-PEP (Postgraduate Education Program) held at LVPEI, Hyderabad on September 24, the Eye-PEP Icon and Teacher of Teachers award was presented to Dr. P Namperumalsamy, who encouraged the students to dream big and work hard to achieve their goals.

Appreciation by the Lions Club
Lions Club of Palayamkottai felicitated Sr. Chidambaram, Nursing Superintendent and Sr. Pappa Ramalakshmi, Free Hospital Manager from Aravind-Tirunelveli in appreciation of their selfless service to the society on November 21.
**Best Poster Award**

At the fifth International Congress of Glaucoma Surgery held at New Delhi on November 13, Dr. Manju R Pillai received the Best Poster award for her presentation on ‘Functional health literacy and barriers to follow up in patients initially diagnosed with glaucoma’.

**Heroes of Humanity Award**

Dr. R.D. Ravindran, Chairman, Aravind Eye Care System was conferred the Heroes of Humanity Award in recognition of his selfless service to the society by the Art of Living Foundation on the occasion of its 30th anniversary celebrations at Chennai on January 30.

**Sujatha Savitri Award**

Dr. Parag K. Shah was presented the Sujatha Savithri Rao Award for his paper on ‘Ophthalmic Brachytherapy using Indigenous BARC Ocu-Prosta Iodine 125 seeds for Choroidal Melanomas’ at the All India Ophthalmological Society conference held at Ahmedabad, February 3 – 6.

**Best Affordable Specialty Hospital Award**

The Federation of Indian Chambers of Commerce and Industry (FICCI), in association with Ministry of Health and Family Welfare, Government of Tamil Nadu, conferred the Best Affordable Specialty Hospital Award to Aravind Eye Care System on March 12.

**Appreciation by the Govt. of Tamil Nadu**

Aravind Eye Hospital – Madurai received the award for the best implementation of Kalaignar Kapitu Thittam, a government sponsored health insurance scheme for the poor from the Government of Tamil Nadu on January 26.
Partners in Service

Aravind is fortunate and immensely grateful to have a growing network of partner organisations which provide inspiration, technical and material support to all Aravind endeavours. Currently Aravind partners with the following organisations in its various activities to carry on with its mission of eliminating needless blindness.

The Friends of Aravind, an organisation formed in the USA to help Aravind Eye Care System achieve its broader mission is now renamed as the Aravind Eye Foundation.

For Service Delivery, Training and More

- Acumen Fund, USA
- Adopt-a-Business, UK
- Alcon Laboratories Inc, USA
- Aravind Eye Foundation, USA
- Artemisia International - Social-Business Ventures, Brazil
- Canadian International Development Agency, Canada
- Carl Zeiss Meditec, Germany
- CBM International, Germany
- Combat Blindness Foundation, USA
- Essilor, India
- Fred Hollows Foundation, Australia
- Google Foundation, USA
- Indian Institute of Management, Bangalore, India
- Indian Space Research Organisation, India
- International Federation of Eye Banks, USA
- Indian Overseas Bank, Chennai, Madurai
- International Agency for Prevention of Blindness
- International Eye Foundation, USA
- International Council for Ophthalmology (ICO), London
- Lavelle Fund for the Blind, USA
- Leapfrog Foundation, USA
- Lions Club International Foundation, USA
- Light for the World, Austria
- Narotam Sekhsaria Foundation, Mumbai
- ORBIS International, USA
- Project Impact, USA
- Rotary International, USA
- Right to Sight, Ireland
- Schwab Foundation and Social Entrepreneurship, Switzerland
- Seva Foundation, USA
- Seva Service Society, Canada
- Sightsavers International, UK
- State Bank of India, Madurai
- Stanford University, Center for Global Business and the Economy
- Standard Chartered Bank, UK
- TIFAC-CORE, Department of Science and Technology, Government of India
- Topcon, Japan
- University of Michigan, USA
- University of California, Berkeley
- VISION 2020 – The Right to Sight, India
- W2 Consulting, UK
- World Diabetes Foundation, Denmark
- World Health Organization (WHO), Geneva, Switzerland

For Research

- Allergan Pharmaceuticals, USA
- Defence Research and Development Organisation, Government of India
- Department of Biotechnology, Government of India
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- Francis I Proctor Foundation for Research in Ophthalmology, UCSF, USA
- Indian Council of Medical Research, India
- International Centre of Eye Health, UK
- Indian Institute of Technology, Chennai
- London School of Hygiene and Tropical Medicine, UK
- Madurai Kamaraj University, India
- National Eye Institute, USA
- National Institute of Nutrition, Hyderabad
- Royal Tropical Institute, Netherlands
- Singapore National Eye Centre, Singapore
- Tamil Nadu Dr. M.G.R. Medical University, Chennai, India
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- University of Iowa, USA
- Wellcome Trust, UK
- World Health Organization, Switzerland
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ARAVIND MEDICAL RESEARCH FOUNDATION
1, Anna Nagar, Madurai 625 020, Tamilnadu, India. Phone: (0452) 435 6550

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1, Siragangai Road. Veerapanjan, Madurai 625 020, Tamilnadu, India. Phone: (0452) 244 6100

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