

RIGHT TO SIGHT: A MANAGEMENT CASE STUDY ON ARAVIND EYE HOSPITALS

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ABSTRACT

With the aim of providing affordable eye care services to a country which has about 20 million blind citizens and 80% of it due to curable cataracts, at the age of 58, Dr. V. Started, the Aravind Eye Hospital. Popularly known as the McDonald's of cataract surgery, with a bed strength of more than 4000 beds and serving 0.25 million patients every year, this is one of the world's largest eye care systems catering largely to the poor population. Poor people with cataract can regain their eye-sight at a price as low as \$40 or even free, if they can't afford. It was demonstrated by this non-profit system that it is practically possible to combine high quality, low cost, world scale and sustainability. It has been seen as a unique business model by many Organizations and has proven that care provided at low cost can also yield sustainability and even profitability. Aravind system's successful manufacturing unit, Aurolab, has produced 6%-7% of the low-cost lenses world-wide in 2002, which were sold in more than 100 countries. This Organization has been a source of case studies to not only national, but International agencies as well.

INTRODUCTION

CASE STUDY

Dr. V. created a system for sight-saving cataract surgeries that produces enviable medical outcomes in one of the poorest regions of the globe. Its rapid expansion over three decades was not built through government grants, aid agency donations or bank loans. Instead, Dr. V took the unusual step of asking even poor patients to pay whenever they could, believing the volume of paying business would sustain the rest. Poor people with cataracts in Tamil Nadu can get their sight restored for about \$40. If they can't afford that, it's free. Starting with an 11-bed clinic in 1976, Dr. V's system is now a five-hospital system. His model became the subject of a Harvard Business School case study, and is being copied in hospitals around the subcontinent. The cheap, high-quality implantable lenses the system manufactures are exported to more than 80 countries around the world, Aravind says. Dr. Venkataswamy's basic insight was that health care can be marketed to the poor if a program is closely tailored to a local niche, something that has come to be known as social marketing. In a country with, by some estimates, 20 million blind eyes -- 80% of them due to curable cataracts -- the appeal for patients was financial. "A blind person is a mouth with no hands," is an Indian saying that Dr. V liked to

quote. In India, health professionals say, the years of life left to those who go blind can be counted on one hand. With sight restored, the patient can return to work.

The Aravind system offers services that range from a simple pair of spectacles to optical oncology. The bulk of surgeries are to treat cataracts -- removing the cataract and replacing it with an artificial intraoptical lens. The assembly-line approach is most evident in the operating room, where each surgeon works two tables, one for the patient having surgery, the other for a patient being prepped. In the OR, doctors use state-of-the-art equipment such as operating microscopes that can swivel between tables. Surgeons typically work 12-hour days, and the fastest can perform up to 100 surgeries in a day. The average is 2,000 surgeries annually per surgeon -- nearly 10 times the Indian national average. Despite the crowding and speed, complication rates are vanishingly low, the system says. Outside the operating rooms, conditions are as spartan as the tables at a fast-food restaurant: Often only a straw mat on a ward floor for postsurgical recovery. Patients who pay more than the basic \$40 -- about 30% of patients -- can receive cushier treatment such as private rooms for extended recovery, and hot meals.

Dr. V liked to say that his ambition was to stamp out needless blindness in India, and broaden his model all over the world. "Tell me, what is this concept of franchising?" Dr. V commented to the Harvard Business School researcher who conducted a case study in 1994. "Can't we do what McDonald's and Burger King have done in the United States?" He has laid the groundwork for it. Aravind says its model has made significant gains in the subcontinent in recent years, with the basic model being adopted in hospitals in Mumbai, Kolkata and Nepal, and the Indian government adopting its medical protocol for training centers around the country. Teams of Aravind consultants advise hospitals in East Africa and the Far East. Aurolab, the Aravind system's successful manufacturing arm, says it produced 6%-7% of the low-cost lenses world-wide in 2002, and has sold them in 120 countries -- though not in the U.S., where Food and Drug Administration regulations are a prohibitive hurdle. But Dr. V's dream of McDonald's-style eye-care franchises around the world may prove difficult, because the culture of Aravind involves more than the profit motive and a fast-food manual. Like Dr. V, many of the highly dedicated surgeons and staff are devotees of Sri Aurobindo, a Hindu master for whom the hospital was named. Dr. V has said they are "building an organization that seems to be linked to the higher consciousness." The work is grueling, and while pay is comparable to that of government surgeons, retention is still a problem. A quarter of the professional staff defects each year to better-paid jobs in the private sector, the system says. Management is still largely with Dr. V's family. But where are the charismatic capitalists to open new Aravinds abroad? "So far we have not been able to develop entrepreneurs in health from the management side," Dr. V lamented in a 2004 interview with an Indian business journal. "Everybody wants to be an entrepreneur in information technology or an associated field."

ARAVIND EYE CLINICS

Medical science has achieved some amazing breakthroughs in terms of innovation, pushing the frontiers of surgery, drug therapy, transplant technology and a host of other research fields to enable more of us to live healthy and dignified lives. Impressive though such radical innovation is, we shouldn't forget that a great deal can be achieved through more modest change but systematically applied.

Yet for nearly fifty million people around the world – nine million of whom are in India – cataracts mean blindness. Dr V's vision was to target and treat this group, using the simple tools and techniques which he and colleagues had worked with over many years but bringing them into the reach of everyone. This was not an insignificant problem – whilst the treatment itself – diagnosis, operation and after-care – is well-developed in the eye hospitals of the world, it comes at a price. In the USA, for example, treating cataracts costs between \$2500 and \$3000 and even in an Indian hospital the cost works out around \$300. For a country like India where most people, especially in rural environments, earn less than \$2/day such a price tag puts treatment out of reach. What Dr V wanted to do was find a way of making it available to people like this at what C.K. Prahalad calls, 'the bottom of the pyramid'. That vision drove a programme of innovation which persists today – and has already achieved significantly against the original goals. The Aravind Eye Care System is the largest and most productive eye care facility in the world – for example, in the year 2007 /2008, about 2.4 million persons received outpatient eye care and over 285,000 underwent eye surgeries at the Aravind Eye Hospitals at Madurai, Theni, Tirunelveli, Coimbatore and Puducherry.

The innovation challenge here is significant – how to carry out a high quality process at low cost? But it also reminds us of a key principle – whilst different sectors may appear to have little in common, there is often a rich opportunity to learn across these worlds. Dr V. Looked long and hard at other fields where the same challenge of carrying out activities systematically, reproducibly and to a high quality standard – but at low cost – and eventually developed a new approach to the eye care problem. He found inspiration in McDonalds, the fast food company which has managed to spread its golden-arched empire across the planet based on systematic, high volume production of a range of meals offered at low cost. Central to their success is the idea of reproducibility – despite huge variations in the context in which they are located, all Mc Donalds outlets operate on the same model, and staff are trained in a core set of skills which are common to all its operations. It's a model which the Croc brothers developed back in the 1950s - but one that was borrowed from an earlier exponent, Henry Ford. When he and his team of skilled engineers were setting up the business back in the early 1900s they faced the same challenge – how to make a complex product (the Model T Ford) systematically and reliably but at a low enough price that it could become 'a car for Everyman'? Their solution was to design a system which standardised as much of the process as possible and reduce the key skills and discretionary elements to a minimum – and then apply this across a high volume of production. In turn these ideas weren't new – the principles of division of labour go right back to the 18th century and the observations of Adam Smith on pin-making in the early days of the UK's factory system – but they represent a powerful model which Dr V. was able to adapt.

The basis of the Aravind eye clinics is standardisation and 'engineering' cataract surgery for high volume production. He opened his first hospital in 1977 with 30 beds and managed to generate a surplus in the first year of work so that a second 70 bed hospital could be opened catering exclusively to the poor and offering operations free of charge. In 1981 a fee-paying hospital with 250 beds was opened and another free hospital with 350 beds followed in 1984; by the turn of the century there were around 1500 beds (of which the majority were free) in Madurai. The model spread out to other locations across Tamil Nadu so that by 2003 there were five Aravind hospitals with a total of 3649 beds of which 2850 were free.

Just as Ford, McDonalds and Toyota focused on continuously improving and extending their system models, so the Aravind Eye Hospitals gradually shifted to become the Aravind Eye Care System. Key elements were added – for example, a dedicated factory for producing lenses, a training centre to provide key skills, specialist ophthalmic research centres, and an international eye bank. Of particular importance has been the Aravind Eye Camp model which takes the system out to rural locations, offering advice and diagnosis and feeding patients into the core hospitals where the high productivity model can treat them. This brings an element of preventive medicine into the system – by identifying early symptoms, particularly amongst children, relatively low cost measures (such as corrective glasses) can be implemented. There is now an extensive education programme linked to the camps which reaches out to rural communities. (For example, in 2002 around 70,000 children were screened and 3000 given glasses to correct refractive errors).

Another important element in the system approach is the attention given to training to ensure an adequate supply of key skills. 900 ophthalmic assistants are taken on and trained each year to support the specialist doctors, whilst other skills such as counselling and education are also developed via dedicated training courses. Significantly recruitment and motivation are still strongly linked to the core values of Dr V – there is a strong social welfare commitment which means that staff often work for less than they could earn in other parts of India's health system.

Central to the success of the model have been the economics. Target costing is a well-known tool in product innovation for engineering the design of production systems, and in the case of the original cataract operation Dr V. set this as being around \$50/operation (assuming no complications ensued). This compares to around \$300 as an average cost for treatment in a conventional Indian hospital (and \$1650 in a US hospital). Developing and refining the system has meant that the average cost in the Aravind system is \$25, based on a proportion of patients paying between \$50 and \$300 but over 60% being treated free. In 2003 Aravind became the largest single cataract surgery provider in the world. The key is in the volumes – around 200,000 patients are treated each year, based on the high volume/low margin kind of business model which Henry Ford used on the Model T and which now drives the low cost airline industry. Inevitably the approach involved rethinking the underlying model. In a conventional Western hospital an eye operation would typically take 30 minutes – yet the Aravind system needs only 10. This high productivity is achieved by significant process innovation driven by close analysis of value adding time. For example, each surgeon works on two operating tables alternately, and is supported by a team of paramedics to carry out less-skill dependent aspects such as washing the eye, putting in sutures, giving anesthetic injections etc. 70% of activities are carried out by a team of 4 nurses supporting the surgeon, 2 assisting directly and 2 acting as 'running nurses' bringing fresh instruments from the sterile area. Of considerable importance is the fact that this treatment is not provided at low cost by compromising on quality. A key statistic in medical care is infection rate – and the Aravind system actually has better performance than many Western hospitals. For instance in 2004 it was about 4 per 10,000 cases at Aravind, while the UK published rate was 6 per 10,000. (Interestingly the idea of having two patients in the same operating area is prohibited in many US hospitals because of fears of infection). Aravind also operate a very close outcome monitoring system, especially for cataract surgery, where every case sheet on discharge is fed into the computer and then analysed. In turn this feeds a continuous improvement process – measuring, reviewing and then changing. They put in a lot of effort to follow up on every camp patient and around 90% of the patients are interviewed as part of

this process which provides valuable feedback on factors like outcomes of cataract surgery, the number of people recovering normal vision, intermediate vision and so on.

The same high volume/low margin model has been applied to hit target costing in other areas. For example early operations often involved fitting an ‘intra-ocular lens’ which was expensive as an imported product. Value engineering the design and then setting up manufacture within a division of Aravind – Aurolab – now means that the IOLs can be made for a fraction of the import price (\$6 vs. \$100-\$150 for a US made lens of the same quality). In the process Aurolab have become a major producer with about 10% of the global market share. But there is another important feature to this story. With such a high volume of surgery – 200,000 plus cases per year, with each doctor carrying out around 2600 operations/year (against an Indian average of around 400) – comes a rich learning opportunity. The principles of the ‘experience curve’ (which demonstrates that the more we do something the better we become at doing it) have applied across many different industrial sectors – and there is no reason to suppose that healthcare is any different. Learning by doing is a powerful aid to developing robust systems – and in the Aravind case the model is now being looked at by many health authorities around the world. Significantly the core principles can be applied to other operations – and, for example, complex high cost operations like heart by-pass surgery (with a US cost of around \$50,000) are being explored – the Indian equivalent operation costs \$4000.

EYE CAMPS AND COMMUNITY OUTREACH PROGRAMMES

The Aravind Eye Care System considered its community outreach programmes as absolutely vital to its mission. The only way people in many rural areas could get access to eye care was through eye camps. Eye camps were organized by different agencies and conducted differently. Aravind organized about 1500 eye camps per year. Each Aravind Hospital had its own set of camp organizers who planned their activities for each calendar year. Generally each district had a camp organizer who set a target for the year based on the population, estimated percentage of blind people, estimated turn out at the camps and percentage needing surgeries. The camp organizers then had to find the needed sponsors. The case writers were told that finding sponsors was not a problem.

Generally, local NGOs, Lions and Rotary Clubs, local industrialists and businessmen and philanthropists were the sponsors. Sponsors took care of the expenses connected with publicity such as posters, pamphlets, banners, and announcement from vehicles, and the organization of the camps (usually in some school or public place). The camps were held usually on Saturdays and Sundays and started early in the morning. Lunch arrangements were made for those who were to go for surgery to the hospital. These expenses were also borne by the sponsors. Patients requiring surgery were provided free transportation to and from the hospital in addition to the free surgery, stay, and food in the hospital. This expense is borne by the hospital. All medication that was needed for 40 days after surgery was also provided free by the hospital.

Doctors (mostly post graduate residents) and paramedical staff usually reached the previous evening and camped for the night depending on the distance. They saw the patients in the morning. The patients were registered with the help of local volunteers, and given a case sheet and an identity card. The identity cards helped in future follow-up. The paramedical staff did the preliminary tests for refraction and all patients above 40 years of age were tested

for their intra-ocular pressure to screen for glaucoma. Doctors examined the patients and gave their advice (for surgery, glasses etc.). Senior doctors evaluated the test findings, performed the final examination, reviewed the patient records, made the final diagnosis, and prescribed the treatment. An optician also accompanied the team and based on forecasts took a stock of ready lenses and a wide selection of frames.

The grinding equipment required to edge and fit the lens to the selected frame was also taken along. Thus those who were advised glasses could purchase them on the spot, and the glasses could be delivered within one hour right at the site. About 75 to 90 percent of those prescribed glasses opted to purchase them at the camp site itself. Over 85 percent of those who opted to purchase the spectacles at the camp site got them immediately. For the others, the optician took the order and delivered the spectacles the next week at the same campsite, or couriered it to the patient at the optical shop's cost. This innovation of having a mobile optical shop was devised after a study of barriers to refractive correction. The costs associated with activities involved in procuring a pair of glasses such as going to the shop at least twice, going to the doctor for a final check etc. were higher than the cost of the pair of glasses themselves. If the cost of time, cost of travel, and other incidental costs were put together, getting a pair of glasses became prohibitively expensive. As a result we found out that many people who were checked at the camps did not end up getting a pair of glasses and the cycle of needless blindness/poor sight continued. It was thus decided that if the cycle of refractive error blindness had to be circumvented it was important to be able to provide glasses to the eye camp patients soon after their refractive errors were detected. It was found through an analysis of data that the most time-consuming part of readying the spectacles was

preparing the glasses correctly as per the prescription. Based on the large data AEH had of the probable refractive needs of patients, a forecast was made before each eye camp as to how many lenses in each power should be taken to the camp to meet the projected need. The fitting of the glass to the frame was done at the campsite and spectacles were provided there and then to the patients. However, patients did have the choice to not buy spectacles at the camp.

In the advertisement of the camp, the blind patients were usually advised to come prepared to go to the base hospital for surgery. Thus most came with their bags and, often, with relatives who would accompany them. The persons needing surgery and willing to undergo it were then counselled regarding the procedure, length of stay, and facilities at the base hospital. If they agreed to go to surgery then they were taken to the base hospital after lunch. After rest, they would either be operated the next day or the day after depending on the workload. Their basic needs such as food during their stay were taken care of by AEH.

The persons from one camp belonged to the same or adjoining villages travelled together, were operated on the same day, and stayed together in the hospital. They thus formed a network of mutual support. This group of patients and relatives returned after about three days in a common transport. The hospital met the cost of surgery including cost of IOLs, sutures and post-operative medication for forty days, of which the government reimbursed to the extent of Rs.500 per patient.¹³ The cost of the doctors' travel to and from the campsites was mostly met by the hospital.

The cost of an eye camp to the sponsor varied with the nature of the camp. A "small" camp with 300 outpatients (leading to about 60 patients for surgery) cost Rs.6700 while a large

camp, with 1000 outpatients and 200 surgeries cost Rs.42,500 to the sponsor. The Theni hospital did eye camps in two districts in the adjoining state of Kerala. The hospital opened in Pondicherry was expected to reach out to some of the villages in Andhra Pradesh, another adjoining state.

OTHER COMMUNITY OUTREACH PROGRAMMES

Diabetic Retinopathy Management Project: Started in 2000, this project aimed at creating awareness about diabetic retinopathy in communities. In the year 2002, 46 eye camps were organized in which 11,644 persons were examined. Of these, 3,443 were diabetics, who all were screened for retinopathy. Of the persons screened, 533 turned out to have retinopathy. Patients needing surgery were so advised. Extensive campaigns were also conducted through leaflets, posters, and booklets on diabetes and its effect on retina.

Community Based Rehabilitation Project, a project undertaken by Theni unit since 1996 and supported by Sight Savers International aimed at rehabilitating incurably blind persons through community based support. House-to-house identification of eye problems and screening camps were organized and patients with eye problems were treated. Rehabilitation consisted of teaching the incurably blind people skills in orientation, mobility and activities of daily living. Some were economically rehabilitated through building of appropriate skills.

Eye Screening of School Children was another program aimed at screening school children for eye defects and taking corrective measures early. Teachers were trained to measure visual acuity and identify signs of squint and vitamin deficiency and screen the children. The identified children were then tested by ophthalmic assistants and later by ophthalmologists. In 2002, 68,528 children in 80 schools were screened and 3,075 given glasses to correct refractive errors.

Use of IT Kiosks for Tele advice. This initiative was launched with the help of the Indian Institute of Technology (IIT), Chennai. Under the guidance of Dr. Ashok Jhunjunwala, a professor at IIT, Chennai, a number of IT kiosks were being put up all over Tamil Nadu by a company called n-Logue. In one cluster of villages near Melur, about 40 kms. From Madurai, the IT kiosks were provided with web cameras which enabled patients to screen the picture of their eyes and send them as attachments to E Mails along with a voice description of the problem to doctors at AEH, Madurai. One doctor was nominated to take care of these E Mails. The doctor would make the diagnosis based on the description given by the patient and the picture sent, and give the advice to the patient. This was not, however, an on-line service.

After recruitment, we give them two years' training. The training is considered to be excellent and is recognized in U.S.A., and the Government of India is considering adopting our training syllabus for nurses' training. During the training period, we rotate them among all our different hospital units. The ophthalmic assistants in the first 4 months were trained in basic sciences and details about human anatomy and physiology. By the end of the first four months, the trainers and Dr. Usha, who headed the training of nurses, selected the ophthalmic assistants for the different tasks, such as, out patient department, operation theatre, counselling, etc. The criterion for making such decisions were not very clearly articulated but were clearly understood by the team. In the next eight months they received special training for the department they were chosen for. Following this, the next six months were spent in apprenticeship with a trainer nurse working in the same department. There was one-on-one

training at each step. During the last six months they worked on their own with some guidance from senior nurses and doctors. The training for the nurses was essentially in Tamil (the vernacular language spoken in the state); they were also taught some basic medical terminology in English and trained in basic conversational English.

This training was designed after the training program for ophthalmic assistants that Dr. V. coordinated in 1973 for rehabilitation work funded by USAID. The training program did not lead to a degree recognized for the ophthalmic assistants. There were efforts underway in February 2003 to formalize and write up the training modules with the help of qualified volunteers from USA. Dr. Natchiar also added that At the end of two years, we ask the parents to accompany the girls who would like to be absorbed permanently. Parents' consent is always taken. In our experience, 99 percent of the trainees stay on with us. Those who we consider to be unsuitable, mainly due to their attitude, are not given job offers. During the three years of their service as permanent employees, the ophthalmic assistants were also imparted training in cooking, housekeeping, tailoring, etc. This helped them to be prepared for becoming good housewives in the future. The cost for these programs was borne by the Aravind Eye Care System. Voluntary bhajan (devotional songs) and yoga sessions were also organized in the evening. The nurses were encouraged to be kind to the patients at all times and approach them with thankfulness for providing them an opportunity to serve. The nurses were asked to save a part of their salary, saved in a bank account in their name, so that they had a sizeable sum saved for their marriage.

The bottom of the pyramid is coming sharply into focus today, and the corporate world is beginning to sit up and take notice. According to C K Prahalad, 'If we can start thinking commercially about the poor, and respect them as customers rather than as wards of the state, we have a fundamentally different way of thinking about product development, use of technology, scaling and price performance.' Confirming this theory, a new business model is emerging in health care, exemplified by the Aravind Eye Care System, which reaches out to the masses and aims at being inclusive and affordable. In terms of productivity, quality, scalability and transferability, the model is of interest to management professionals and academics worldwide. Professors Janat Shah and L S Murty met with Dr G Venkataswamy, Founder and Chairman of the Aravind Hospitals, and R D Thulasiraj, Executive Director, to try and understand the essentials of the Aravind Model.

A sense of compassion and commitment, and strong leadership are key elements of the model. The central principle that productivity is fundamentally related to demand makes it a viable business proposition. Volume brings down the cost and ensures the viability of the enterprise. Volume in turn is ensured by the combination of low cost, high quality and efficient procedures, as well as the appropriate use of technology. Aravind Eye Hospitals try to maintain a ratio of 1:2 between paying and free patients, which keeps the enterprise financially viable. Integrating backward, a separate company has been set up to manufacture the intraocular lens, which helps provide quick and low cost cataract surgery. The model can be replicated, and some of its principles are universally applicable, such as the appropriate use of manpower, reducing the time and costs, and sharing innovative practices to improve quality. It is Dr Venkataswamy's firm belief that the focused efforts of top management experts could help usher in a health revolution in India.

Though Aravind Eye Hospitals group conducts 75% of surgeries free of cost, it runs profitably. Even 65% of the outpatients are offered free consultancy. Last year, doctors

performed 2.70 lakh surgeries and treated over 23 lakh outpatients. Starting on rental with 11 beds in Madurai in 1976, today the group founded by Dr G Venkataswamy runs hospitals in Theni, Tirunelveli Coimbatore and Pondicherry with a capacity of more than 3,500 beds. Executive director RD Thulasiraj outlines the business model as:

WHAT ARAVIND FEEL ABOUT THEIR SUCCESS?

They look at it from two perspectives. From an internal perspective, they rate ourselves to be quite successful when we use indicators like number of patients treated, number of people trained, level of capacity utilisation, financial sustainability, etc.

However, when they look at it from the community perspective they are far from being successful. This comes from the vision—‘Eliminate Needless blindness’—which makes them feel responsible to reach out to a larger community in the immediate surroundings of Aravind and its service area, our country and beyond our country.

IS IT ONLY A MATTER OF SCALE?

While they have made reasonably good progress and have been successful in treating cataract, they are nowhere near being successful in handling other eye conditions including refractive errors. They estimate that less than 10% of those who can benefit by a pair of glasses are wearing them.

Similarly for many other conditions like diabetic retinopathy, glaucoma, etc, very little has been done. In addition, there are many parts of the country where the level of eye care is a very small percentage of what it needs to be. From this perspective we can't claim to have been successful (yet) in eliminating needless blindness.

HOW THIS MODEL MAKES BUSINESS SENSE?

This model makes very sound business sense because it's fundamentally built on a few core principles. The first one is in terms of market development and through that demand generation. This is a process of converting a need into a demand and in the process we get a significant percentage of this to our own facilities.

The second core principle is excellence in execution of ensuring a high level of efficiency in providing the treatment, including outpatient services and surgeries.

The third core principle is one of quality. The aim is to ensure that the patient regardless of whether he is a free or a private patient gets value for his investment in money or time.

The fourth principle is of sustainability wherein they set the prices not so much based on what it costs us but on how much the various economic strata of the community can afford to pay. It then works backwards to contain the costs within these estimates. This leads to not just financial viability but a higher order of management, as well as inculcating a certain culture in the organisation.

The combination of these four principles builds a sustainable programme as they have demonstrated over the last three decades and replicated with similar results in over 200 other eye hospitals.

VIEWS ABOUT PRIVATE HEALTHCARE FACILITIES

In private healthcare facilities the focus is essentially on paying patients and more on the financial bottomline. Since this approach drives the systems, policies and procedures, patients feel that they are manipulated and there is an erosion of trust and a feeling of helplessness when the options for care are limited. This mindset also leads to investments being made on the physical infrastructure to make it attractive and on technology, which may or may not have direct impact on the quality of care.

PRESCRIPTION FOR TAPPING THE POOR MARKET

In India, as in most developing countries, the level of healthcare is far from where it needs to be. This is especially true in poorer communities where it is not reaching them and we often tend to blame the community in terms of health behaviour, awareness, etc. So our advice would be that we take the approach of market development and be outwardly focussed. Design the services with a deeper understanding from the patient perspective in terms of understanding their barriers, issues, paying capacity, etc. With one billion people, the healthcare needs are huge. We really need to demystify the healthcare process and become a lot more patient-centric in what we do.

ASSEMBLY LINE APPROACH TO CATARACT SURGERY

Henry Ford standardised and streamlined automobile production to lower the cost of his cars enough so that everyone could afford one. Aravind Eye Care Hospitals has done the same for cataract surgery in India. The Aravind system relies on intensive specialisation in every part of the workflow to generate efficiencies. A surgeon, for example, typically performs 150 surgeries every week, six times the number common among Western specialists. To further lower costs, Aravind has created a sister organisation, Aurolab, to manufacture intraocular lenses locally at prices one-fiftieth of US prices, as well as the sutures and drugs used in surgery.

Aravind screens millions of people each year to identify those whose eyesight is threatened by cataracts and performs nearly 2,00,000 surgeries a year. An important part of its business model is multitiered pricing or cross-subsidisation: fee from paying patients ranges from \$50 to \$330 per operation, including the hospital stay, but it performs 65% of its operations free of charge, including patients from most BOP (the base of the pyramid) households, who can't afford to pay. Through its fee income, Aravind is self-supporting and generates enough profit to fund its expansion. With a 30-year record of world-class care, the Aravind model demonstrates that affordable quality healthcare for the BOP is possible.

CONCLUSION

Aravind has proved that by using Human Resource efficiently and by bringing in innovation in Healthcare, affordable services with high standards can be provided even at the remotest

part of the country. It has also brought this concept for debate that the techniques and interventions used in any Industry can be successfully employed in the Healthcare Industry. Ultimately, it revives the concept that if an Organization is willing to serve the masses with quality product and services, it is bound to generate revenue and earn profits.

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