Basic and Clinical Science Course 2004-2005
Section 13 - International Ophthalmology
Chapter 27

The Aravind Eye Care System

Background

Blindness and visual impairment are major causes of disability in India, affecting a very productive segment of the country's population. Epidemiologic data regarding the prevalence and etiology of blindness in India differ from source to source but nevertheless demonstrate a significant cause of disability and loss of productivity. The World Health Organization (WHO) estimates the prevalence of blindness (VA <3/60 in the best eye) in India to be approximately 1%. The percentage of blindness due to cataract is approximately 50%. Accordingly, approximately 4.9 million individuals in India are considered to be blind from cataract.

Jose R, Bachani D. World Bank-assisted Cataract Blindness Control Project. Indian J Ophthalmol.1995;43:35–43.

Thylefors B, Négrel AD, Pararajasegaram R, et al. Global data on blindness. Bull World Health Organ.1995;73:115–121.

Conservative estimates (excluding those under 35 years of age who are blind from cataract) published at the beginning of this decade indicated that roughly 3.8 million people in India would become blind from cataract annually. To prevent the number of cataract blind from increasing, it would be necessary for eye surgeons in India to perform a minimum of 3.5 million sight-restoring cataract operations each year; others have suggested that this number may need to be as high as 5 to 6 million.

Limburg H, Kumar R, Bachani D. Monitoring and evaluating cataract intervention in India. Br J Ophthalmol.1996;80:951–955.

Minassian DC, Mehra V. 3.8 million blinded by cataract each year: projections from the first epidemiological study of incidence of cataract blindness in India. Br J Ophthalmol.1990;74:341–343.

Venkataswamy G. Combating cataract [editorial]. Indian J Ophthalmol.1995;43:1.

Cataract surgery is an extremely cost-efficient method of medical intervention, especially when compared with others, such as cardiac bypass surgery. It is therefore prudent to consider large-scale cataract intervention, as this inexpensive procedure has an excellent chance of quickly and fully restoring a patient to productivity as a member of society. The economic burden of blindness in India for the year 1997 was estimated at Rs. 159 billion (US$4.4 billion). At this time, there is no foreseeable decrease in this figure, and, indeed, it may continue to increase. As competition for limited government resources and international assistance grows, the need for the widespread promotion of financially self-sustaining eye-care systems is increasing. Without such efforts, the social and economic burden of the blind in India may soon reach unmanageable levels.

Shamanna BR, Dandona L, Rao GN. Economic burden of blindness in India. Indian J Ophthalmol.1998;46:169–172.

Significant progress has been made in combating blindness and visual impairment in India. The Aravind Eye Care System in Tamil Nadu, India, is one such effort that has achieved great success in the battle to reduce the burden of blindness on the subcontinent. Established by Dr Venkataswamy and his family after his mandatory retirement from the local government hospital, the first Aravind Eye Hospital opened in Madurai in 1976. Since then, Aravind has grown from an 11-bed hospital with three doctors to a comprehensive system of five major hospitals with nearly 2500 beds. In 25 years, over 71 million patients have been seen as outpatients, and roughly 3 million patients have undergone surgery. The quality of surgery is high, annual profits surpass US$1 million, and, presently, close to 75% of all patients are provided with free eye care. The Aravind Eye Care System has effectively achieved sustainable provision of services while maintaining its orientation toward serving the poor.

Along with the increasing volume of patients has come the expansion of Aravind's facilities from a single hospital into a network of five hospitals, situated in Madurai, Theni, Tirunelveli, Coimbatore, and

Pondicherry. Aravind's medical staff, which has also expanded rapidly, currently comprises 75 ophthalmologists, 70 residents, and 30 fellows training in the various specialty clinics. Because the spirit of the hospital is based on appropriate utilization of staff, a team of 560 ophthalmic paramedics and 540 ancillary staff complement the medical staff.

The Equitable Development Model

The Aravind Eye Care System has realized these accomplishments through the creation and implementation of the equitable development model of quality eye-care services. As one approach to fighting blindness in low-income countries, the equitable development model relies on maximizing quality and efficiency to create demand and improve supply. By continuously reinvesting excess revenue back into the system to increase service capacity, the equitable development model provides resources to maintain an equitable service orientation while building capacity without outside investment. According to this model, a properly managed eye hospital can create revenue in excess of expenditures and can use that profit to subsidize services to individuals otherwise unable to pay. Similarly, excess revenue and production capacity can be used to improve and expand existing services.

Understanding the Model

The equitable development model of sustainable eye-care services, as conceived at the original Aravind Eye Hospital in Madurai, is founded on the concept of cost recovery from cataract surgery and, more recently, on the sales of intraocular lenses, sutures, and pharmaceuticals as well. Once an efficient surgical system is created, cost-recovery techniques may be used to generate enough revenue from cataract surgery and other operations to cover operating costs. This requires increasing productivity, decreasing costs, and lowering prices. With increasing volume, the cost per procedure decreases, making it more attainable for the poor. The efficiency of the surgery is based on a unique, extensive system of eye camps that brings patients to a high-volume, efficiently run hospital system, where eye evaluations and surgical care are then provided. Extensive business-based quality assurance processes are carried out to ensure excellent quality care at all levels.

The Equitable Development Model

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Number of Surgeries

Although the use of excess revenues to finance services to the poor is commendable, many ophthalmologists consider it unrealistic to expect user fees in resource-poor settings to exceed the cost of providing services. In fact, it has been demonstrated that other health services oriented toward serving the poor are rarely able to recover much more than 20% of their costs.

Eye-care delivery, especially refractions and cataract surgery, may be exceptions because each is usually a one-time intervention; the odds of success are excellent; patients usually perceive a rapid noticeable difference; and minimal time is lost from daily schedules. This difference is communicated to other residents in the same village, who then increase the demand for service.

The uniqueness of cataract-oriented eye care is its exceptional level of cost-effectiveness. Many public health programs aimed at prevention fail because people are often unwilling to pay for preventive services. In contrast, people are very willing to pay for a cure. Most chronic and acute diseases are costly to treat or are untreatable, and cost and treatment regimen can vary substantially from patient to patient. As a

result, creating financially sustainable health services is generally difficult, if not impossible—unless services to the poor are not included. Cataract-based eye services are different, offering low-cost curative treatment and rehabilitation services for which people are generally willing to pay.

By creating a solid financial framework centered on the provision of cataract surgery, eye-care programs can make high-quality surgery affordable to the poor while, at the same time, generating a profit. In doing so, services can be strengthened and expanded without the need for outside capital. Therefore, it is essential to change the mentality and practice of ophthalmologists and eye-care professionals by emphasizing the importance of low-cost, high-volume, high-quality eye care. By practicing and promoting the equitable development of sustainable eye-care programs, eye hospitals can establish permanent services with the potential for eliminating the backlog of treatable blindness that has, thus far, been so difficult to combat.

Green D. Financial Sustainability for High Quality, Large Volume, Sustainable Cataract Surgery Programmes. Quality Cataract Surgery Series. Madurai, India: Aravind Eye Hospitals and Postgraduate Institute of Ophthalmology; Lions Aravind Institute of Community Ophthalmology; Seva Foundation; 2000.

Clinical Services

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Demand Generation

Aravind works on a two-tier service model—those who pay and those who receive free services. This system allows relatively richer patients to subsidize the cost of services for some disadvantaged groups. Aravind's marketing system works by combining consistent service with large volumes that reduce the cost of each operation. To reach patients who need eye care and get them into the system, Aravind uses rural eye screening camps. Each geographic district is assigned to a camp organizer (an Aravind staff member), who, in turn, finds a local community partner to organize the camp. The community partner publicizes the eye camps with posters and banners. On the appointed day, the team of doctors and paramedics screen patients at the camps, transporting to the base hospital those who need operations. Those who need spectacles receive them that day at an affordable price. Patients with complex conditions, such as glaucoma or retinopathy, which require relatively sophisticated interventions, are referred back to the base hospital.

Free eye screening camps are conducted every day of the week, held in villages that cover a population of 30–35 million people. During the year 2000, a total of 1548 camps were conducted in which 426,350 patients were examined and 93,519 patients received free surgery.

While in the community, the medical team also educates the population in proper eye care. Other community projects include screening for diabetes-related eye disorders; community-based rehabilitation; integrated education for blind children; eye screening at schools; and treatment of children suffering from refractive errors, strabismus, and vitamin A deficiency. The benefits of community involvement act as a catalyst, bringing wealthier patients from various communities to the

paying hospital. If the wealthier patients come for care, poorer patients will then follow.

The hospital uses counselors to alleviate the fears and doubts of anxious patients. The counselors are women selected from the same rural community served by the hospital; they receive 2 years of intense training. Effective counseling at the hospital and the camps has increased the number of patients who come for surgery. In addition to allaying fears, counseling helps patients accept surgery as a reasonable option, have realistic outcome expectations, and comply with instructions. It has also resulted in increased patient satisfaction.

All the hospitals in the Aravind system conform to local social and cultural standards. They are open longer hours to accommodate agrarian workers. Walk-ins are welcome and the fee structure offers an affordable range of prices to paying patients and free service to poor patients (Figs 27-1 and 27-2).

Understanding Sustainability and Cost Recovery in Eye Care

The equitable development model of eye-care services requires careful planning and management based on the foundations of sustainability and cost recovery. Using four overarching themes—local ownership and fiscal self-sufficiency, social marketing, economies of scale, and efficient services—equitable development in eye care can become a reality.

Local Ownership and Financial Self-Sufficiency

A common problem of hospital administration is the source of funding and the use of funds received from that source. Whether capital is filtered down from a ministry of health or an outside agency, the receipt of funding from outside the specific activities of the eye hospital itself can be restrictive and may cause many administrative difficulties. Large international donors such as the World Bank generally require that allocated money be spent according to a strict and rigid schedule. This gives little incentive for creative solutions aimed at bringing long-term sustainability.

It is clear that dependence on outside funding sources is limiting and may inhibit the development of sustainable organizational capacity. Nevertheless, hospitals oriented toward serving the poor are seldom able to free themselves from their reliance on outside donor agencies. The implementation of cost-recovery mechanisms is one way by which eye hospitals can become self-financing and avoid this problem. By achieving self-sufficiency in this way, the control of financial resources is handed down to local authorities. Equitable development of eye-care programs encourages local doctors and administrators to achieve program ownership by defining their needs and objectives and putting them into action. Giving these community leaders control of financial resources vests them with the authority to bring about meaningful and long-lasting change.

Social Marketing

Marketing enables global corporations to successfully promote the sale and use of their products. Companies build name recognition based on a standardized image of the quality of their goods, thus effectively promoting their purchase. A good example of this is McDonald's. One can expect the "same" hamburger from this company whether one is in Chicago or Hong Kong.

By establishing unique and valued identities for brand name goods, marketing techniques create demand among targeted consumers for specific products. The use of marketing techniques need not be limited to the promotion and sale of material goods, however. Hospitals and health systems, including those specializing in eye care, can promote sound health behavior with the proper use of social marketing practices. This concept was discussed in a 1993 Harvard Business School Case Study:

Tell me, can cataract surgery be marketed like hamburgers? Don't you call it social marketing or something? See, in America, McDonald's and Dunkin' Donuts and Pizza Hut have all mastered the art of mass marketing. We have to do something like that to clear the backlog of 20 million blind eyes in India. We perform only one million cataract surgeries a year. At this rate we cannot catch up. … Why can't we bring eyesight to the masses of poor people in India, Asia, Africa, and all over the world? (Rangan VK. The Aravind Eye Hospital, Madurai, India: In

Service for Sight. Harvard Business School Case 593-098. Harvard Business School, Cambridge, MA; 1993.)

Eye hospitals can successfully encourage the use and sale of their services by changing consumer behavior through the science of social marketing. By increasing the acceptability of desired behaviors in specific target audiences, eye hospitals can effectively create a demand for their services that would otherwise be lacking.

To be successful, social marketing requires that hospitals adopt a consumer orientation. Satisfied patients will advertise a good hospital for free by spreading word of the treatment they received to friends and family.

What does it take to develop a good hospital like this? First, an appropriate location for the facility must be carefully selected. Hospitals must be convenient not only to the patients they serve but to eye-care professionals as well, for a location must be able to retain competent personnel in order to be viable. A little market research can help determine an appropriate site. The demographic indicators of a particular region can point to a suitable location for a hospital that combines the potential for income generation with an orientation toward serving the poor.

To attract and retain customers (particularly those willing to pay), a hospital must not only be efficient and maintain a level of excellence, it must also transmit this perception of quality regarding its services. The use of intraocular lenses (IOLs) in all cataract surgeries is one way to satisfy customers and convey that quality service is provided. Cataract surgery with IOL implantation greatly improves the visual outcomes of patients while eliminating the need to wear aphakic glasses postoperatively. By eliminating a patient's need for glasses, which are often lost or broken within the first year after surgery, hospitals can improve patient satisfaction. This, in turn, may lead to increased advertising of services by satisfied patients and a corresponding increase in demand from new patients. The perception of quality by the patient gives the service a real value and allows the hospital to charge a fee when a patient's income allows. This, in turn, makes the patient part of the team and somewhat accountable for the results, in terms of

showing up for appointments, taking medications as directed, and returning for follow-up.

Many hospitals oriented toward serving the poor are reluctant to charge for services, wary that it will render programs inaccessible and inequitable. However, the equitable development model of sustainable eye care proposes that, by understanding a population's capacity to pay, a hospital may charge appropriate and affordable prices for eye care and keep services financially accessible to the poor. Aravind has determined that 1 month's income is an acceptable charge for cataract surgery and is not a deterrent to care.

Reducing the cost of surgery to a level roughly equivalent to what the majority of a population is willing to pay allows a hospital to charge for services without fear of creating programs exclusively for the rich. Target populations, as distinguished by income level, can then be segmented by several distinct fees for services. A plan that fits local parameters is recommended, as in the following:

Various fee schedules employed experimentally or in routine practice can be examined to gain insights into consumer ability and willingness to pay. The problem with this approach is that findings from one setting are not necessarily applicable in another location, where attitudes, socioeconomic conditions, and available sources of health care may be quite different. … Apart from rigorously scientific approaches to setting fees, we should not underestimate the experience gained by providers as to what is likely to be acceptable in the local setting; perhaps the matter is not as mystical as it would appear. (Reinke WA, et al. Management of Health Systems in Developing Countries. Lecture notes, p 10. Johns Hopkins School of Hygiene and Public Health, Baltimore, 2000.)

A simple three-tiered pricing structure, in which services are priced at above cost, around cost, or free, has been implemented in eye hospitals in India, Nepal, Egypt, and Malawi. These tiered pricing structures allow revenue to be generated from those who can afford to pay while maintaining free services for the poor. By providing small benefits such as beds, private rooms, and separate waiting areas for patients who are willing to pay for care, hospitals can structure their services so as to encourage patients to discern a distinction in quality and voluntarily select the highest priced services they can afford.

Economies of Scale

Eye programs emphasizing cataract surgery have a distinct advantage in that a standardized, replicable approach to surgery may be taken without sacrificing service quality. By dividing labor appropriately and organizing treatment procedures into an efficient, systematized process, surgery of replicable quality can be performed at higher volumes per surgeon. As Aravind ophthalmologist and chief medical officer Natchiar observes,

One surgeon can perform approximately five extracapsular [cataract] extractions with insertion of posterior chamber intraocular lenses per hour…assisted by three scrub nurses, one orderly, one circulating nurse, and one nurse to sterilize instruments. (Green D. Financial Sustainability for High Quality, Large Volume, Sustainable Cataract Surgery Programmes. Quality Cataract Surgery Series. Madurai, India: Aravind Eye Hospitals and Postgraduate Institute of Ophthalmology; Lions Aravind Institute of Community Ophthalmology; Seva Foundation; 2000:16.)

Increasing volume per surgeon while maintaining a hospital's fixed costs allows the per-unit cost of surgery to be minimized. Known as economies of scale, mass production approaches to eye care lessen the average cost per surgery in order to maximize profit, thus making per-unit cost one measure of efficiency in eye care. By reducing per-unit cost via increases in volume, while maintaining quality, eye-care services can be provided equitably and satisfactorily to the masses of individuals with cataract blindness in low- and middle-income countries. The key to economies of scale is efficiency that drives and helps improve quality.

Systems for Highly Efficient Service Delivery

Increasing the utilization of eye-care services is by itself a major challenge that is facilitated by maintaining efficient and high-quality service delivery. This is accomplished by increasing capacity and efficiency through appropriate systems.

The Aravind systems are designed to optimize the balance between resources and patient load. Systems and practices that increase efficiency are introduced. Conversely, systems or procedures that do not contribute to clinical outcome, patient satisfaction, or efficiency are considered wasteful and are modified or dropped. The staffs are involved in decision making, thus enhancing their motivation and encouraging good team practice. The systems that have helped Aravind to maximize the process are as follows:

- **Standardization**
- **Division of labor**
- **Quality assurance**
- **Financial viability**
- **Balance of resources**
- **Architectural layout and work flow**
- **Adoption of newer technologies**
- **Information and review system**
- **Attitude and patient care**

Standardization

Aravind follows a standard operating procedure for all clinical activities. Focus is given to better instrumentation, training of paramedical staff, and patient flow because all of these contribute to increasing efficiency and quality of care. The standard operating procedures are periodically reviewed against outcomes, new technologies, new instrumentation, and patient expectations.

Division of labor

Appropriate utilization of staff is of paramount importance. Clinical ophthalmic tasks include diagnosis and treatment. In many settings, an ophthalmologist does the entire range of clinical tasks including routine ones because of the limited number of staff. If physicians focus on what they do best—decision making and surgery—they can be more efficient and have greater job satisfaction. At Aravind, ophthalmologists are not required to do tasks such as refraction or routine administrative work. Paramedical staff are trained to perform many routine and specialized tasks, from assessing visual acuity to A-scan biometry and computerized visual field analysis.

Similarly in surgery, many of the preparatory steps are allocated to a trained nurse. By the time a surgeon sees a patient on the table for cataract surgery:

• The patient has been screened and found to have cataract

• No other ophthalmic diseases that could interfere with cataract have been identified

• Other medical problems have been evaluated

• Preoperative medical testing has been completed

• An appropriate IOL has been chosen

• The eye has been adequately dilated

• An appropriate block has been performed

• The patient is on the table and draped

• A surgical prep has been performed

• Surgical instruments are sterile and ready for use

Such preparation significantly increases the volume of surgery an ophthalmologist can perform. Systems are designed and continually reevaluated to ensure an efficient flow of patients either in the field or in the hospital. For example, in the operating room, the surgeon is provided with two surgical setups. This practically eliminates the waiting time between surgeries. Table 27-1 illustrates the surgical (extracapsular cataract extraction [ECCE]/phacoemulsification with PC-IOL) output per hour under different scenarios for a single well-trained surgeon using one microscope and one phacoemulsification machine. The same types of principles are applied across all activities at the Aravind system to maximize resource utilization.

As a result of these systems, Aravind has developed efficient systems of patient care. An Aravind doctor can perform 20–30 cataract surgeries within 3 to 4 hours. An average ophthalmologist in India performs about 350 cataract surgeries per year, whereas an Aravind surgeon performs about 2000 such surgeries—with no apparent compromise in quality. In fact, quality might be increased because repetition appears to improve technical skills.

Financial viability

Aravind has paid close attention to developing administrative expertise for long-term viability. Medical and other staff receive a fixed salary linked to their overall performance—not to patient load. Paying patients pay close to market rates, and the inpatient facility offers a variety of comfort levels for varying fees. For instance, in the paying sector, the patient pays an equivalent of about US$1 for a comprehensive eye examination. The cost of a cataract operation including an IOL varies from US$60 to US$275, depending on the choice of rooms, procedure (ECCE or phacoemulsification), and the IOL (rigid or foldable). In the free hospital, patients receive free services but are required to pay US$11 for the same surgery to cover the cost of supplies such as the IOL and the discharge medication. Thus the core activity of patient care, cataract surgery, is entirely self-sufficient both for operating and capital costs.

Lions Aravind Institute of Community Ophthalmology (LAICO): Expanding Infrastructure

Today, the Aravind staff faces the daunting challenge of spreading the equitable development model of sustainable eye care throughout India and the rest of the world. As Dr Venkataswamy, Aravind's founder, noted in a Harvard Business School case study in 1993:

My goal is to spread the Aravind model to every nook and corner of India, Asia, Africa; wherever there is blindness, we want to offer hope. Tell me, what is this concept of franchising? Can't we do what McDonald's and Burger King have done in the United States? (Rangan VK. The Aravind Eye Hospital, Madurai, India: In Service for Sight. Harvard Business School Case 593-098. Harvard Business School, Cambridge, MA; 1993.)

To help achieve this lofty goal, the Lions Aravind Institute of Community Ophthalmology (LAICO) was founded in the early 1990s "to help eye hospitals strengthen their capacity to offer effective and sustainable eye-care programs." LAICO provides a wide variety of services, including educational and training courses and clinical education programs, and conducts research projects in both systems management and clinical ophthalmology. The most significant service activity of LAICO involves the hospital development programs in Asia and Africa. These outreach programs involve a collaboration between participating hospitals and LAICO staff (both natives of the area and other Indians who have moved into the area) to create comprehensive eye hospital development strategies. The initial focus is on eye hospital infrastructure using the equitable development model used at Aravind. LAICO hopes to build successful management systems in eye hospitals in developing countries that provide the volume and quality of care found at Aravind.

In-House Technology

One of the most unique and innovative aspects of the Aravind Eye Hospital system is its focus on appropriate technology through the development of local capacity. In June 1992, Aravind established

Aurolab, its own IOL factory. By manufacturing IOLs of Western quality and specifications at reduced cost, Aurolab has allowed further reductions in the unit cost of cataract surgery. In 1998, Aurolab expanded its production capacity by manufacturing and supplying suture needles and offers these at affordable prices. Today, Aurolab manufactures IOLs, suture needles, spectacle lenses, and pharmaceuticals, and it has plans to begin producing low vision aids. All of the surgical supplies meet European quality standards and Aurolab IOLs also have attained United States FDA approval.

By manufacturing quality consumables in-house, Aravind has minimized its reliance on Western imports and greatly reduced the unit cost of surgery. The Fred Hollows Foundation has established comparable IOL manufacturing capabilities in Eritrea and Nepal with considerable success. Previously, the high cost of ophthalmic consumables represented a major barrier to the delivery of quality eye care to the poor. This development of local manufacturing capacity represents a practical solution to the problem and identifies a major area of productive activity that has been relatively ignored to date. Efforts are now under way to establish group purchasing organizations (GPOs) to extend consumable price reductions to other eye hospitals in low- and middle-income countries. Using economy of scale, GPOs provide a mechanism by which groups of hospitals can purchase supplies in bulk at reduced cost. With expanded and sustained efforts to minimize the cost of ophthalmic equipment and consumables, eye-care professionals can dramatically reduce the cost of eye care, making access more equitable and quality vision restoration services possible for the poor.

Challenges in the Scaling-up Process

The equitable development model of sustainable eye-care services has been successfully demonstrated by the Aravind Eye Care System, but it remains to be seen if the strategy can achieve comparable results given dissimilar circumstances in other areas of the world. One of the principal assumptions underlying the paradigm is that ophthalmologists, regardless of their qualifications and the setting in which they operate, will be able to consistently provide high-volume, high-quality eye surgery. Regardless of innovations in management, sustainable services will not be possible until a cadre of properly trained

ophthalmologists and paramedical staff are available. Surgical personnel not only must be taught the skills to perform operations efficiently and effectively, they must believe that making changes in the way they practice is beneficial to them and the communities they serve. A lack of human infrastructure may prove to be the biggest difficulty in spreading the equitable development model.

A second big challenge facing equitable development in eye-care programs concerns the ability of communities to successfully finance eye-care services. The translation of population-based economic data into pricing strategies for cataract surgery is a pillar of cost-recovery theory in ophthalmology. It is the basis for pricing structures in the Aravind Eye Hospital system in India and the Lumbini Eye Hospital in Nepal and has been successful in predicting the population's willingness to pay in both cases. Nevertheless, the model has not been successfully transcribed outside of Southeast Asia, and it is debatable that populations will have the economic resources to finance their own care. Moreover, it is not certain that populations will be willing to pay as much for eye care (namely, 1 month's income according to the paradigm) in Africa as they do in Southeast Asia, regardless of the availability of resources. The willingness of a community to change the way it gets medical care must be viewed in terms of knowledge, cultures, and individual perceptions. No one can predict how new intervention programs will be accepted in different regions and cultures.

Despite lingering questions, the equitable development model of sustainable eye care, which has the potential to greatly diminish the burden of blindness in India, may be viable in similar developing countries. Universally, the public sector is faced with limited resources, and cost-recovery schemes for services rendered seem necessary. By continuing to implement and evaluate pilot projects in cataract-endemic areas of the world, the potential impact of the equitable development model of sustainable eye care can be assessed and documented. As ophthalmologists and other eye-care professionals gain a better understanding of the strengths and weaknesses of the current model, the provision of equitable and sustainable eyecare services will continue to improve. Even if full financial sustainability is not possible in all programs oriented toward serving the poor, sustainability planning will encourage improvements in quality and efficiency beneficial to any hospital.

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