

Case Study 3 – YARUQUÍ, ECUADOR

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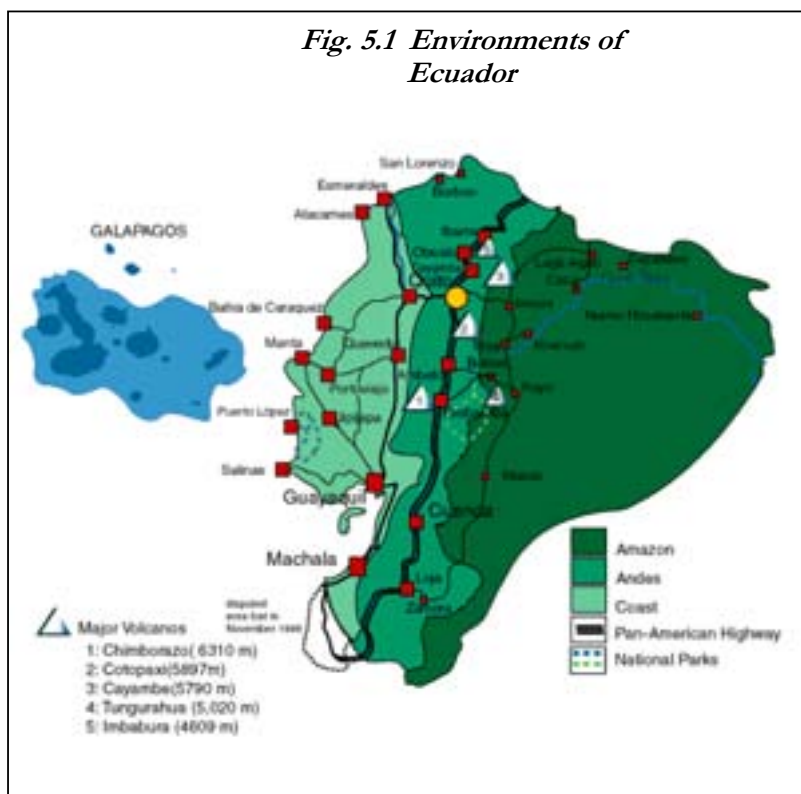
What can we learn from Yaruquí?

Advances in eye care in Latin America range widely in their progress and effectiveness. While it is possible to single out case studies from countries in the vanguard of PBL success in this continent, it is arguably more helpful to concentrate on a project in a nation where eye care services are less well evolved. This helps us to focus on the elements that clearly contribute to a programme of individual and at present comparatively isolated advantage. We can then look at those elements for their possible application in other situations, both elsewhere in Latin America and beyond that continent's margins.

Yaruquí is the location of a purpose built, modern clinic that provides the base for this eye care programme, north east of Quito in Ecuador. The programme was initially heavily supported by NGOs but its evolution has seen wise planning create a system of quality and broad social accessibility, which is a fine model for what can be achieved through VISION 2020 programmes at the district level elsewhere.

The structure of the programme, uniting the base clinic with an evolving outreach schedule, has taken shape through carefully planned and monitored measures, which have ensured that ambition was always ruled by a pragmatic approach to an availability of resources. There is no doubting the need for the programme but the heart of its success lies in wise leadership and an appreciation of the need to achieve dependable sustainability as growth continues – both in patient accessibility and eye diseases treated.

1. What is the national context for the eye care programme at Yaruquí?



Ecuador (Fig. 5.1), bordered by Colombia and Peru, is the smallest of the Andean countries. It covers 283,560 square kilometres with a population of over 13 million. Although Ecuador straddles the Equator from about 1° north to 5° south, it has great ecological variations that are heavily dependent on altitudinal changes from sea level to the summit of Chimborazo at 6,310 metres. The country extends East to West from the rain forests of the Amazon (the Oriente), through the volcanic lands of the Andes (the Sierra), on whose well populated lower levels Quito and Yaruquí are located at 2,800 metres, to the fringes of the Pacific Coast (the Costa).

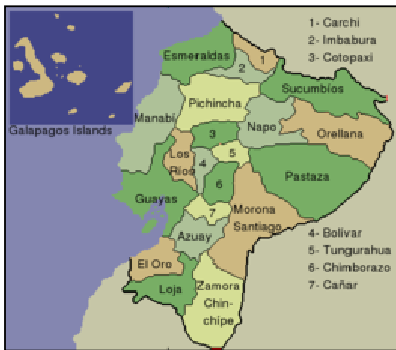


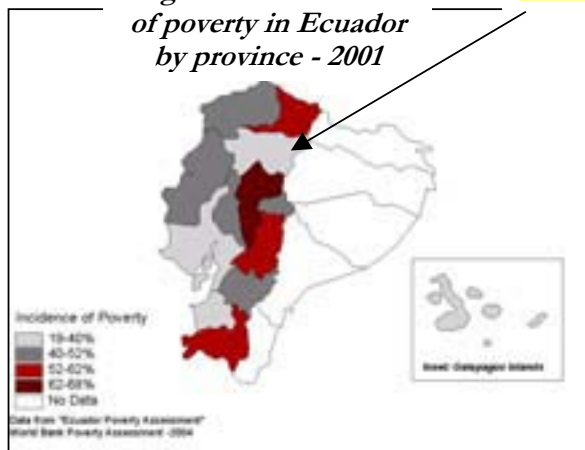
Fig. 5.2 The provinces of Ecuador



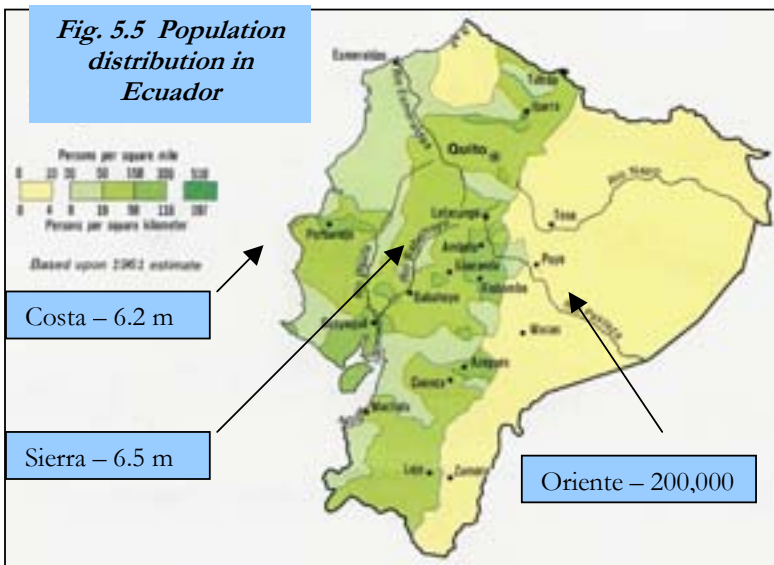
Fig. 5.3 Pichincha Province

Yaruquí is a small town. It lies in the east of Pichincha Province, one of twenty two provinces in Ecuador (Figs. 5.2, 5.3), about 40 kms. north east of Quito. This city, with a population of 1.9 m., is the capital of both Ecuador and Pichincha Province. Although Quito is overlooked to the west by the active Pichincha Volcano, it has good accessibility north to south, provided by the Pan-American Highway (Fig. 5.1) along The Avenue of the Volcanoes. Yaruquí is linked with the capital by public transport along reliable roads, a journey taking about 45 minutes.

Fig. 5.4 Distribution of poverty in Ecuador by province - 2001



Despite this proximity, Yaruquí is sufficiently distant to cause its low income community to be relatively isolated from the capital. Yaruquí lies in the Tumbaco Valley along with seven other small villages. The total population of the valley is about 150,000, who are mostly dependent on agriculture with average annual incomes of under US\$ 1,200. This is less than half the national average and also less than a third



of the average income level in its neighbour Quito. It is this cluster of settlements, together with some other low income communities north, east and south of Quito (Fig. 5.4), extending furthest to Esmeraldas on the Pacific coast (Fig. 5.5), that are served by outreach activities, which together compose the catchment area for the Yaruquí eye clinic programme.

2. Is there government support for community eye care in Ecuador?

The national government of Ecuador signed up to **VISION 2020** on 23rd June, 2003. Since that date however, little has been achieved at that level to support I/NGO driven initiatives for PBL. Political instability and governmental change has resulted in four Ministers of Health in three years. This has created planning problems and blocked the production of a National VISION 2020 Plan, a development requested by WHO to be in place by December 2005.

Problems also derive from Cuban/Venezuelan plans to poach eye patients - a trend that is both impeding the drive for sustainability in service delivery and therefore also reducing the visible impact of PBL successes being achieved at Yaruquí and elsewhere.

The health service in Ecuador is centralised with administration and funding passing through four regional offices to sub-regional offices. Little attention is given to blindness as there are other pressing priorities. The health care available is usually low cost with some specialisation (not eyes) in general hospitals, for example Yaruquí Secondary Hospital with 19 beds. Although a lack of delegation in the system is well marked, some municipalities are developing a system of National Insurance to broaden the coverage of public services in both health and education. This could lead to a greater exercise of control within the twenty two provinces. The fact that Yaruquí receives unofficial referrals from PHC centres is a sign of the potential for change.

A further problem in the development of community eye health in Ecuador has been the attitude of the National Ophthalmological Society that has seen community eye health programmes as a threat to private incomes, a problem not uncommon in Latin America. In reality the work at Yaruquí and similar eye clinics is to try to meet the needs of people who would never have access to private practice. At present only 15% of the population has access to a private doctor.

Under a recent initiative, dating from November 2005, **AEPREC** (Association Ecuatoriana for PBL) was established to focus on PBL and the target diseases of VISION 2020. This organisation has brought ophthalmologists from across the country under the presidency of the Medical Director of Yaruquí Eye Clinic. The expectation is that this group - a private association acting as a bridge between the authorities and the community - will be able to push PBL and VISION 2020 forwards and so

reduce the bureaucratic barriers towards an effective National Plan within two years. Its aim to make rules to guide public health involvement will, it is believed, be broadly acceptable. It is hoped that when this is successful, the MoH will come on side, giving recognition to PBL, so overturning the opposition of the private sector and urging private hospitals to accept a partnership position and a role in AEPREC and PBL promotion. Government funding can be expected to follow.

The membership of AEPREC is also voluntarily working on subcommittees to target individual VISION 2020 specialities. - notably cataract, refractive error in school children and HR training. An example of the present bureaucratic barriers they are trying to overcome is the three-month interval in obtaining permission from the Ministry of Education to run a school screening programme.

3. Needs Assessment 1 – What are the population characteristics of the Yaruquí catchment?

It is difficult to be precise about the significant demographic characteristics of the immediate area served by the PBL clinic at Yaruquí. Its proximity to the very large metropolitan centre of Quito and the fact that both Quito and Yaruquí lie within the administrative province of Pichincha means that any available statistics usually apply only to a much larger and very mixed population area.

Table 5.1 The population environment of Yaruquí – Ecuador, Quito and Pichincha Province

POPULATION PARAMETER	ECUADOR	QUITO	PICHINCHA PROVINCE (inc Quito & Yaruquí)
KEY STATISTICS – 2004 (unless otherwise stated)			
Number	12,157,000 (01) 13,500,000 (06)	1,399,000 (01) 1,870,000 (05)	2,390,000 (01)
Gender (f/1000m)	1,010 (00)		
Population density/sq.km.	46		
Annual growth rate (%)	1.5 (falling), 3-urban		
Average life expectancy	75		
Dependent population (%)	38 (06)		
Infant mortality / per 1000 live births	23		
Under 5 mortality / 1000 live births	26		
Urban/rural distribution (%)	62/38		
IMPORTANT DEMOGRAPHIC INDICATORS relevant to PBL programme planning			
Access to clean drinking water (%)	86 (02)		
Access to good sanitation (%)	72 (02)		
Public health expenditure (% of GDP)	11		
Child immunization against measles (%)	99		
Enrolment in secondary education (%)	50		
Enrolment in primary education (%)	100		
Literacy in one or more languages (%)	91 (92/90-m/f)	96.4	
Unemployment (%)	10.7	8.9	
Underemployment (%)	47	43.8	
Annual per capita income US\$	2,180	3,804 (01)	(1,200 Yaruquí)
Below the poverty line (%)	41 – increasing especially in towns		19 – 62
Living in hunger (% of children under weight)	23		

However it is important to try to place this eye project in its demographic context, as this has been instrumental in the choice of the clinic's location and its chosen PBL strategies. Table 5.1 above and the maps of population distribution (Fig. 5.5) and poverty (Fig. 5.4) enable some necessary points to be made:

- In a country of over 13 million people, just 18% are covered by National Security. Allowing for a further 15% who can afford private practice, this means that 67% of the population nationally, including the Tumbaco Valley and much of rural Pichincha, has to depend on the services offered in the public sector. This frequently does not include any specialist care in ophthalmology. The proportion of very poor people is large in this area – for example in Napo Province (Fig. 5.3), east of

Pichincha and within Yaruquí's catchment, there are 83.5% poor with 62% below the poverty line. The very poor and blind have no possibility of being covered by Ecuador's welfare system.

- When the present medical director at Yaruquí was searching for a clinic site ten years ago, the availability of land fitted well with a situation that was accessible to a well populated area. This guaranteed long term service sustainability and was far enough from Quito to enable the clinic to operate independently beyond the suspicions of private practices in the city.
- As stated earlier, the local hospital has no eye specialism and the local population reflects the poverty of Ecuador's rural population as a whole - with no independent means of paying for private treatment. The map, Fig. 5.4, brings out well the contrasts in the poverty situation between Pichincha and its neighbouring provinces, especially Cotopaxi to the south and Imbabura to the north. Both provinces unsurprisingly are served by outreach from Yaruquí. The presence of Quito in Pichincha, contributing about 60% of the province's total population, decreases the poverty indicator and so conceals the true situation of community need in small centres like Yaruquí.
- While Yaruquí's original catchment area included 150,000 people, the clinic now reaches 200,000 as a referral centre and over 500,000 with its outreach provision to surrounding provinces, including part of coastal Esmeraldas where surgical campaigns are organised 3 – 4 times a year. The population served therefore fits well the size needs for a model VISION 2020 district programme.
- The demographic indicators in Table 5.1 may be assumed to worsen in rural communities. However the national situation, regarding high literacy levels with no significant gender differentiation and health support in terms of good drinking water and hygiene, is encouraging. This suggests that the demographic environment is one where PBL can be promoted successfully with good opportunities for a reduction in blindness, given reasonable access to well-trained and caring eye health professionals and a payment system that reflects varying hardship. At Yaruquí, although no financial support is available for patient travel, passing buses are frequent (although journeys can take as long as eight hours) and there is comfortable, free, on-site patient accommodation with 6 beds in a special hostel. Subsidised accommodation is also available for accompanying carers at \$1/night. An on-site cafeteria provides affordable food – free if necessary.
- One hidden demographic problem comes from parental migration, mostly within Ecuador but partly beyond, to seek increased incomes. This leaves children in the care of grandparents, often illiterate and without any drive to educate themselves – a potentially handicapping influence on health promotion and young lives.

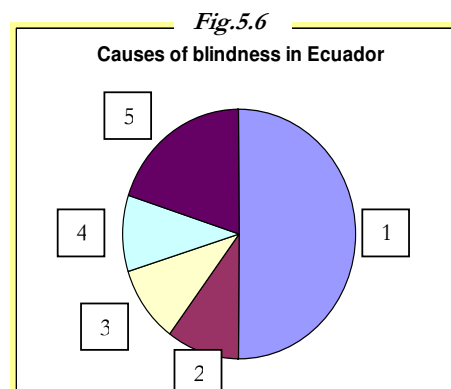
4. Needs Assessment 2 – What is known about eye diseases and blindness in Ecuador?

The Problem

The main data source is the Paraguay RACSS that was completed in 2001. This gave:

- a blindness prevalence of 0.46, producing a figure of 65,000 blind people in Ecuador (< 20/400 in the better eye);
- incidence measured at 20% of the prevalence, giving 13,000 additional blind people in Ecuador each year;
- estimated disease contributions (Fig. 5.6):

1. Cataract	50% (of 65,000 blind)
2. Diabetic retinopathy	10%
3. Childhood blindness (ROP, congenital cataract)	10%
4. Glaucoma	10%
5. Others	20%



Progress

In 2004, there were 10,200 cataract surgeries in **Ecuador** – giving a low **CSR** of 864.

The WHO target for all Latin America in 2000 was 2,000

The estimated CSR for Latin America in 2004 was 1,600

Ecuador therefore, with the national acceptance but not the implementation of VISION 2020, was achieving approximately 50% of the continental CSR rate in 2004.

Access to eye care is critical for the rural poor. Like most Latin American countries, most of the physicians work in private clinics in the larger cities. 120 out of 260 ophthalmologists in Ecuador practise in Quito. In the capital there is one ophthalmologist to 11,000 people, compared with 1:250,000 in the rest of the country. Additionally eye care is poorly established within primary health care.

Besides the shortage of adequate health services, the population lacks information regarding eye problems and their possible treatment. Blindness can occur without a realisation of what is possible or because of fears of treatment.

With the model of **Yaruquí** (see 5.7 below), which predated but nevertheless reflects the guiding principles of **VISION 2020**, far faster progress has been achieved.

In 2004 there were 351 cataract surgeries giving a CSR for the Yaruquí catchment of 2,350.

In 2005 there were 506 cataract surgeries (902 surgeries in total) giving a CSR of 2,530.

In 2006, realism (with elections and the Cuba factor taken into account) suggests possibly a CSR of 2,920.

At the present time in Ecuador's 22 provinces, only 5 have effective localised examples of PBL schemes with VISION 2020 characteristics – in Pichincha (Yaruquí), Manabi, Guayas, Azuay and Loja (Fig. 5.2). Many other clinics, such as the 20 in Quito, have very different working strategies with no structure in existence (until now) to pull things together. Hopefully the existence and growing influence of AEPREC, outlined previously on page 72, will be able to effect national change and progress.

5. Yaruquí Clinic

What are the resources for district eye care?

The present Medical Director of Yaruquí eye clinic opened the Valley Programme for Community Ocular Health with CBMI support in 1995 in Yaruquí town. Limitations of space and design, together



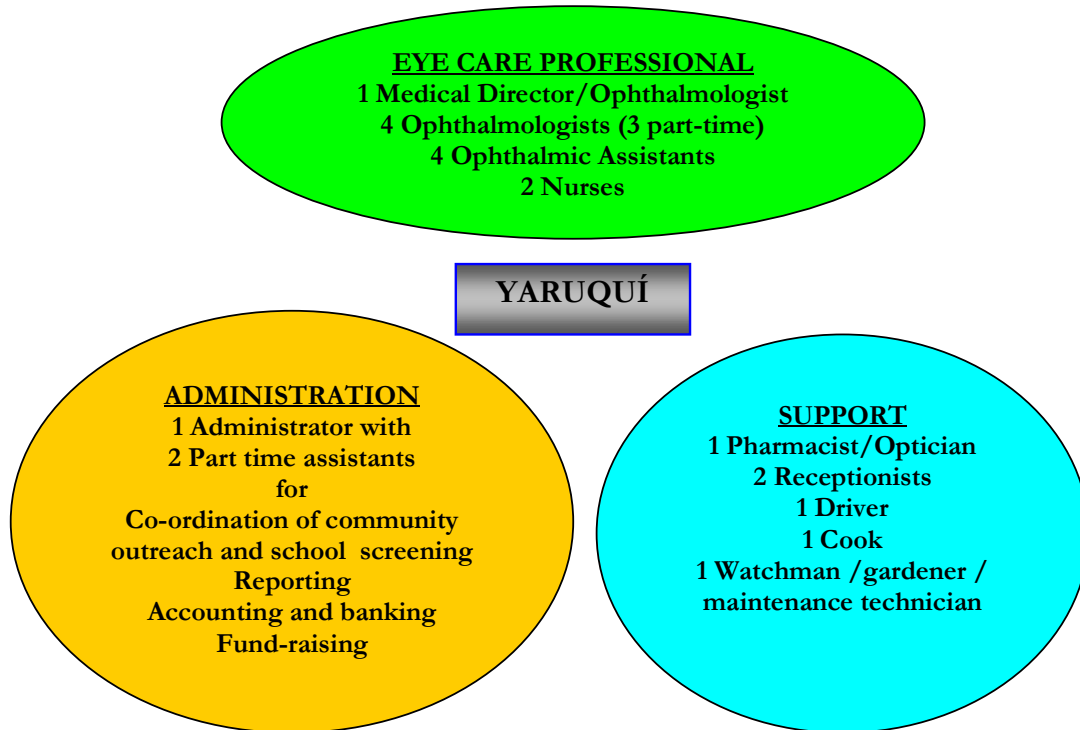
with growing patient numbers, made all stakeholders soon realise that a larger and purpose built clinic was needed. This was agreed with CBMI in 2001, completed with the assistance of the German Agency for Project Development and German Lions in October 2002 and opened in 2003. It lies out of town but on a major transport route and is managed by the local partner NGO, the Fundacion Oftalmologica del Valle (FOV). The photograph (Fig. 5.7) shows the cheerful and smart exterior which reflects well the welcoming and efficiently organised character of the project.

Fig. 5.7 Yaruquí Eye Clinic

5.1 Human resources

At the outset in 1995, there were one ophthalmologist, one nurse, one ophthalmic assistant and one administrator. By 2002, the same cadres in the HR team had grown to 2, 2, 6 and 1. The present situation with 15 full time and 4 part time staff is shown in Fig. 5.8.

Fig. 5.8 Human resources team at Yaruquí Eye Clinic



The success of Yaruquí eye clinic is evidently linked to the character and stability of the HR team. Under the Medical Director's lead, a distinctly non-hierarchical structure has evolved that promotes team work and a shared ownership of the project, with a group responsibility for forward planning and a pride in the value and successful reputation of the clinic's work in the community.

Professional roles

1. Medical Director

The experience gained by the MD with other projects has made it easier for the Yaruquí clinic to evolve and implement a programme that follows VISION 2020's principles regarding HR, infrastructure and disease control. His contribution to project management reflects the realisation of the importance of clinicians and administrators working together for programme effectiveness. His role involves:

- Planning ophthalmology targets with a team of five
- Working as a full time ophthalmologist
- Reviewing forward needs for equipment and supplies
- Leading to ensure team awareness
- Promoting and contributing to staff training

- Linking with IAPB, CBMI (as Latin America Medical Director) and various outside bodies (including as chair of AEPREC)
- Assuming overall responsibility for the public image of the clinic and its services

Fig. 5.9 Medical Director as ophthalmologist with patient after successful cataract surgery



Informality in dress, caring attitudes and quality of the working environment are a very evident feature of the clinic, its team and the relationships with patients – recognised to be important in attracting possibly nervous people with eye care needs to its successful services.

2. Ophthalmologists

- The team of ophthalmologists offers some but not exclusive specialisation in cataract from full time surgeons and in retina diseases by part time staff.
- Part time ophthalmologists are attracted from Quito, despite the 40 km. journey, by the number of operations, modern technology, social motivation and economic incentives. It is nevertheless difficult to satisfy the large pressure on surgical time that follows from community demand – 60 to 100 patients a day visit the clinic.
- Paediatric treatment sessions are organised 3 or 4 times a year with the support of an anaesthetist from Quito.
- Training in ophthalmology is available in Quito, although many go outside Ecuador to study. It takes 6 – 8 years to become a medical doctor, 1 year follows in rural practice then 3 years specialisation. Those trained in Ecuador must work in a public health hospital for the first three years of their ophthalmological practice.

3. Ophthalmic Assistants

- This cadre is trained in external consultancy, surgery support and community work.
- They have rotating roles covering a number of responsibilities, for example using specialist equipment, patient preparation, assisting in surgery, topical anaesthesia before surgery, school screening and outreach.
- With no national training available, OAs are largely trained in house with some external courses. Trainees come from the local area and are interviewed in part for attitude, as team integration is seen as vital, as well as patient care. There is initially one month's training on half salary in groups of two or three, beginning with theoretical and practical work, followed by a fortnight of supervised responsibility. A written evaluation is completed by a nurse and a group team meeting decides on the appointment. OAs are not externally certificated.



Fig. 5.10 Ophthalmic assistant in patient preparation.

4. Nurses

- They have flexible roles in: (1) theatre support and HR training; (2) external consultancy and training.
- Nurses come with general nursing degrees and are trained in house and are not externally certificated.

5. Administrator with part time support

The administrator (a voluntary position with the post holder coming from a responsible position in industry) has a very significant role complementing the clinical team.

- Coordinates community outreach
- Coordinates the school screening programme
- Ensures all departments of the organisation work well, stepping in if necessary
- Contributes to reporting – coordinating contributions from optics, reception, surgery, pharmacy and outreach
- Maintains a secure system for accounting and banking
- Organises fund raising

6. Ancillary staff

These include receptionists, (Fig. 5.12) who welcome patients, make appointments, organise the surgery schedule and collect fees, a driver; a cook and watchmen (Fig. 5.11).

Fig. 5.11 Patients meeting watchman on arriving at Yaruquí clinic



One of the watchmen has the duty of receiving patients on their scheduled appointment day. He gives them a time slot to ensure there is no congestion within the building. Patients sit outside, as the photograph shows, until the scheduled time arrives. This arrangement is organised in a friendly and relaxed way, easing the patients' nerves in a new and probably worrying situation.



Fig. 5.12 Reception desk at Yaruquí clinic

On entering the clinic, the patient is received at the very friendly and accessible reception desk, before waiting at an appointed place for treatment.

Visible behind the desk is the door to the operating area. When patients have had their cataract operations, they come and sit outside in the open plan reception area. Drinks can be obtained. Waiting patients can have their concerns reduced by the chance of seeing and talking to the recently operated patient.

Fig. 5.13 Patients wait to see ophthalmic assistant and then the doctor

This large reception area has good views of well kept gardens. Visible in the photograph is the cafeteria open to all on the left in the background. This open space with all functional areas leading from it is comfortably furnished, brightly decorated and well cleaned. Control of numbers prevents overcrowding and pressure and encourages a relaxed approach before treatment.



7. Volunteers

- Voluntary workers are hard to obtain on a long term basis. Opportunities are inhibited by a lack of good government health care at primary level.
- Health promotion courses target key salaried community workers. Training leads them into a referral role with some personal incentives such as prioritised eye care.
- Some volunteers support outreach by distributing fliers and providing accommodation.
- Some traditional healers, the first reference point for the uneducated poor, are slowly being brought as unofficial health workers into health promotion, 'breaking barrier' courses.

5.2 Infrastructure

The preceding photographs help to show the high quality of the eye care environment at Yaruquí clinic. In summary:

- The building comprises:
 - Ground Floor** – reception desk (Fig. 5.12); waiting area (Fig. 5.13) with two preparation areas; 2 fully equipped consultancy rooms (Fig. 5.9); 1 special examination room between the 2 consultancy rooms with shared equipment; an additional consultancy room (when needed); 2 operating theatres; follow up advice space; an optics room with glass frames; pharmacy; cafeteria; rest rooms; laundry; store room; guest accommodation; watchman's house with two guard rooms
 - Upper Floor** – Auditorium; administration area; residence
- **Appointments**, given in advance, are in half-hour blocks from 7.30 – 11.00. Only new or emergency patients can interrupt this schedule that avoids congestion. Appointment slots are simply arranged at the door on arrival (Fig. 5.11).
- A wait of up to a month may be necessary for the first appointment but surgery if needed follows between 2 days and 2 weeks thereafter.
- 99% of operations need no overnight accommodation, reducing costs and accelerating throughput.
- The normal **treatment** pattern is:
 1. Day 1 – Consultancy usually with a pre-booked appointment
 2. From 2 days to 2 weeks later – surgery
 3. Next day – check up
 4. After 8 days – final check for 50% of patients
 5. After further 3 weeks – final check for remaining patients
- The clinic purchases directly 70% of **consumables**. CBMI provides the remainder.
- There is a good range of largely modern **equipment** with servicing contracts. Replacement will be on a staggered basis with external funding sought.
- Internal repairs and maintenance are largely provided by the watchmen.
- Pride in the building and its facilities is very evident. Staff and patients care for the environment that provides a welcoming, relaxing and efficient working and treatment environment.
- The infrastructure also supports the **educational role** of Yaruquí. This is parallel with its clinical role and is CBMI supported to minimise costs. Provision includes:
 1. Workshops for health promoters to keep community representatives in touch with normal eyes, cataract signs and acuity – to act as referral agents. Two or three communities a year are represented, one repeating in the following year.
 2. Separate workshops for teachers, nurses and doctors with purposes as above in a school context.

3. International courses – CBMI, IAPB/ICEH
4. Development programmes for nurses
5. Training for ophthalmologists in surgery techniques
6. External educational lectures are also provided in schools on topics such as nutrition, hygiene and trauma

5.3 Financial resources

- As explained on page 75, the present clinic building was financed by a small group of I/NGOs (mainly CBMI) and private donors. It opened in 2003.
- The aim to be sustainable from patient fees in running costs and salaries has achieved 98% success. CBMI support for consumables and the problems of equipment replacement emphasise the need for some continued external funding.
- Salaries are paid above the basic national, professional, minimum level. A percentage of shared surgery income is an additional incentive for dedicated staff to extend outreach and encourage an increase in surgery numbers.
- Income from patients is scaled and paid after treatment:
 1. Consultancy – 50c to 7US\$ – amount decided by doctor or reception (5 layers)
 2. Surgery - \$0 (very occasional) - \$350 – again flexible with patient means (US\$90 is the average, \$67 is the real cost). Cost includes biometry and first post-operative consultation
 3. Stepped payments for eye drops through pharmacy
- Further income is derived from the educational role of the clinic, from government grants and from fund-raising efforts by the staff..

6. Yaruquí – The District VISION 2020 Programme

The present Medical Director was working on an onchocerciasis and PBL programme at Esmeraldas in 1989, when he was invited by CBMI to join a CEH course at Bucaramanga in Colombia. It was then suggested that he should establish a CEH programme in Ecuador, selecting Portoviejo in coastal Manabi Province for the site of the eye clinic. This continues to be a successful centre for PBL in Ecuador today.

In 1995 the decision followed to develop a leading eye clinic in Yaruquí, a process that led through the use of two separate buildings to the opening of the present clinic three years ago. The original plan to CBMI in 2001, requesting \$300,000, was drafted and submitted by the MD and administrator after discussion with the HR team. The programme opened at the Yaruquí public hospital in April 1995. From August 1995 it used the existing, modified buildings until the new clinic was available in 2003.

The work carried out at Yaruquí reflects the priorities of VISION 2020 that were acknowledged by the Quito government when it signed up to the programme in 2003, the same year as the opening of this clinic. Named the **Community Ocular Health and Valley Programme**, it provides an excellent model for the planning and implementation of **VISION 2020 at the district level**, in the heart of a poor rural area with no feasible access to public eye health services – clinical or educational.

6.1 How were the aim, objectives and activities defined?

The Yaruquí CEH programme has the principal **aim** of reducing preventable blindness by bringing high quality, equitable, affordable and comprehensive eye care to Yaruquí, the Tumbaco Valley and more distant populations in Pichincha, Cotopaxi, Imbabura and

Esmeraldas Provinces. It will reduce blindness in rural areas through a combination of education, screening and treatment. Attention is also to be given to the problems derived from non-treatable blindness.

The programme will give to affected people and their families the means to increase their financial independence, their quality of life and their dignity. This is critically important for women who are fundamental to family care and employment.

The emphasis is on serving a wide community cross section, so that the clinic's income from the better off can subsidise the costs of treatment for those unable to afford the full costs from their own resources. There is no difference in the standard of care between income levels. The welcoming atmosphere at the front door of the clinic ensures that this

The **objectives** of the programme sought to:

- (1) Progressively consolidate and extend **PBL activities** and successes at Yaruquí and in the neighbouring regions, especially for **low income people**;
- (2) Intensify both **professional training and community education** in CEH;
- (3) Plan and implement progress towards FOV's eventual **financial independence** – 20% paying fully for medical fees is regarded as the minimum threshold for the provision of good services for the poor.

Strategies to achieve these objectives have broadly been planned to:

- (1) Create a **building fit for need** – achieved by 2003, as shown in Fig. 5.7 and on page 79;
- (2) **Improve the services of the base clinic**, increasing throughput and extending disease coverage, initially concentrating on cataract and glaucoma, more recently adding refractive error and diabetic retinopathy and in the future extending to rehabilitation work through collaboration with Quito on Low Vision – calculations suggest that a catchment of 1 million will make this viable;
- (3) **Extend outreach activities** to rural areas of low income through regular programmes and one-off invitations – using mobile facilities and district hospitals.

Activities to realise strategies 2 – 3 are summarised in the following diagram, Fig. 5.14, and expanded in some detail later in Table 5.3. They are carefully budgeted, timetabled and monitored, with annual plans recording success and setting revised targets.

6.2 What strategies are used in the programme?

Improve the services of the base clinic at Yaruquí

At present 60 – 100 patients visit the clinic each day.

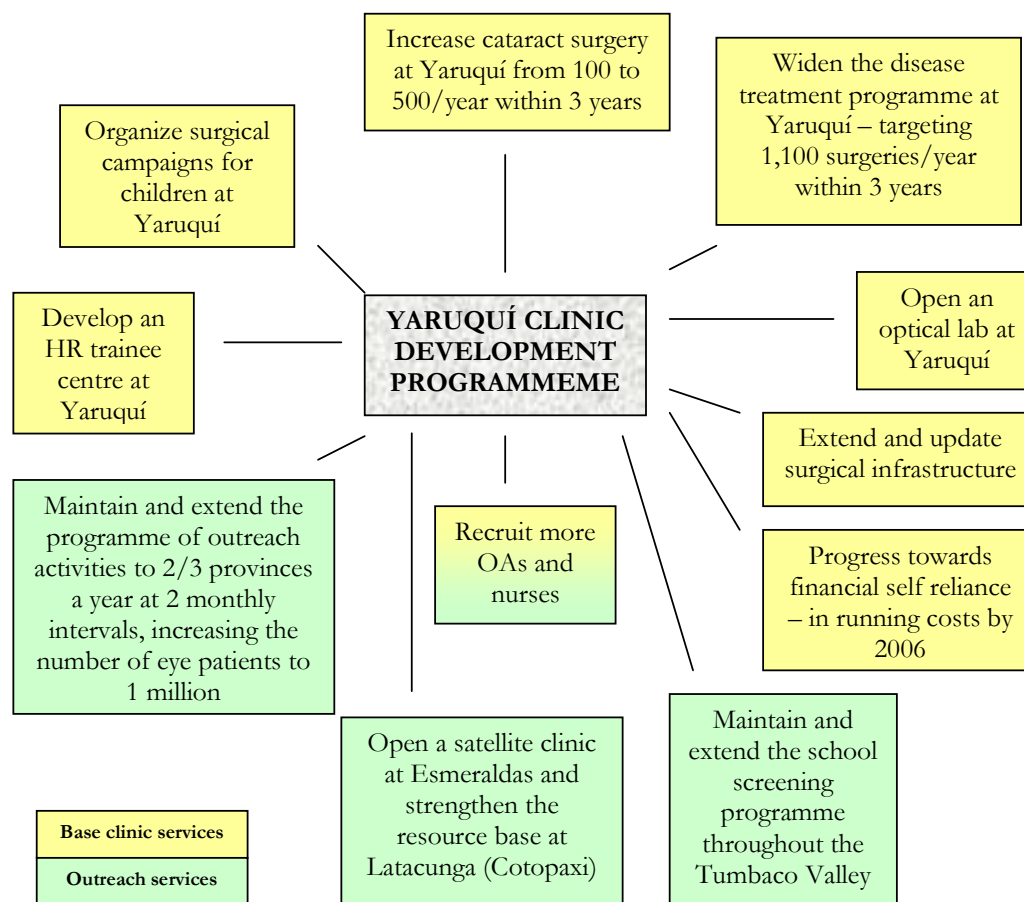
The first objective has been the strengthening of primary, preventive ophthalmic services, especially for the very poor population. The programme sets out to provide medical care to avoid blindness and give rehabilitation.

a. A central objective of the WHO VISION 2020 programme is the **elimination of cataract blindness**. To bring this about, it is calculated for Latin America that 3,000 cataract surgeries per million population will be needed. At the start of the Yaruquí programme, CBMI estimated a Cataract Surgical Rate of 700 for Ecuador and of 150 – 180 for the project area – providing clear justification for the programme and a central objective to be targeted.

parity of care is very evident from the outset of a patient's visit. The drive to achieve **sustainable** cross-subsidisation has caused the programme to shift its emphasis a little. At the start it targeted the poorer groups that the state was not reaching. More recently, the need has been realised to target also those in the catchment with average incomes – hence the wide cross section represented by the daily patient flow to the clinic, depicted in the earlier photographs. This is a difficult health care/financial balance, balancing moral and pragmatic priorities.

Almost all surgeries were to be with intraocular lenses. Ambitious targets (Fig. 5.14 and Table 5.2) were set to reduce the prevalence of cataract, focusing on the blind and the nearly blind.

Fig. 5.14 Activities and targets of the Yaruquí district programme for community eye care



b. **Glaucoma** was recognised as the second cause of blindness in the area, with about 120 new cases a year. In order to diagnose and treat at an early stage, the necessary infrastructure had to become available to prevent the untreatable development of glaucoma blindness. Specialised care is now available and patients no longer have to be referred to a clinic in Quito. A 3-fold surgery increase in the first three years was projected, but this proved to be unnecessary through improved drugs and reduced incidence.

c. **Surgery targets** were set annually for the initial years of the programme.

Table 5.2 Expected surgery numbers for the Yaruquí programme

Disease	2001	2002	2003	2004
Cataract	120	300	500	500
Glaucoma	50	100	150	150
Others	100	200	450	450
TOTAL	270	600	1,100	1,100

Table 5.2 sets out the aim to achieve 1,100 surgeries a year after three years of the programme, as the infrastructure and human resources improve and as patients are found who come forward with

confidence for surgery. This necessitates not just secure resources but very importantly a widely known record for successful and affordable treatment.

d. Specialised examinations and treatment facilities for patients presenting with **diabetic retinopathy** were to become available, indicating a successful expansion into a wider spread of eye disease treatment and again in most cases cancelling the need for patient referral to Quito, as proposed under the programme's strategy.

e. **Children** needing surgery are detected in part through the schools outreach programme (see following section). Others are referred through other patients directly to the clinic. An anaesthetist from Quito is brought in to support these operations, always needing general anaesthesia.

f. **Refraction** services also were to be introduced with the employment of a mid level professional with refraction skills. Stratified pricing at this facility ensures that the cost-recovery drive of the clinic's programme is reflected in each of its enterprises. No patient in need should go without spectacles.

g. Plans were drawn up to **increase the employment of eye care professionals** in all cadres – ophthalmologists, ophthalmic assistants and ophthalmic nurses. This would strengthen the service range and capacity of the base clinic at Yaruquí, as well as enabling the development of dedicated and well qualified staff provision for new clinics in Esmeraldas and at Latacunga (Fig. 5.5) in Cotopaxi province (see later section on outreach activities). The provision of OA and ON training would be organised at the base clinic and involve the recruitment of local people. Ophthalmologist recruitment would draw from the ample national training provision but would always have to seek individuals with a dedication to helping the poorer sectors of the population and working in more isolated locations.

h. Under the project's second objective, the importance was recognised of **providing PBL training** for ophthalmologists, as well as health workers from the same social background and locality as the patients. These would be mid level eye health professionals, workers in primary health care and also those voluntarily involved in health promotion especially in rural areas. Short courses and seminars at the Yaruquí training centre, provided with external assistance (financial and faculty), are designed to enable participants to:

(1) **increase the awareness of the population to eye health**, its related problems and the means of prevention;

(2) **overcome the barriers** that stand in the way of patients receiving treatment for unnecessary blindness and sustaining the personal and family financial loss that results.

i. Assistance would be sought to ensure both the regular and reliable supply of cheap treatment **consumables** and also both additions to and replacements when necessary of items of surgical **equipment** – both at Yaruquí and the satellite clinics. This infrastructure support will enable the sustainable expansion of eye care into a broader range of treatments, as summarised above. It was recognised that the evolving cost-recovery programme may support provision of consumables but the purchase of expensive equipment would necessitate ongoing approaches to external sources of finance.

j. The success of these programmed activities in improving eye health in the catchment communities is also to be reinforced through achieving the project's third objective – securing as far as possible the **financial independence** of FOV. However, plans recognised the primary need to extend service provision without overbearing financial pressures, while working towards this target of self-sustainability.

(1) In 1995, CBMI provided support for 80% of the annual salary costs at FOV. By 1999 this contribution had fallen to 30% and since 2002 it has been just 1-2%.

(2) From 2003, the planning targeted an increasing responsibility for consumable expenses and running costs. CBMI support for functioning expenses is expected to be phased out by 2006.

(3) As mentioned earlier, the expansion of the clinic and its services will attract patients with a fee-paying potential to exceed hospital costs, subsidising the treatment needs for the rural poor.

Extend outreach activities to rural areas of low income

Outreach from Yaruquí is directed at communities as a whole and at schools.

Community outreach is organised as follows:

- An area is identified for screening or screening with surgery based on earlier PBL experiences.
- Two staff from the clinic contact community organisations in the proposed location about two months before the visit.
- The date and place are agreed – ideally a small clinic.
- Fliers and brochures are distributed two weeks before the outreach takes place.
- One week ahead, community radio (and possibly TV) and mobile loudspeakers advise on time, location and the need to attend. This campaign is directed at the 50+ group and only at cataracts.
- Day 1 of outreach – 1 or 2 OAs and a nurse arrive to screen and pre-select for surgery if VA is <20/200. If surgery is to follow, an appointment is agreed for the surgery with the family, prices are determined and surgery explained. Only surgery, not consultation, is charged to outreach patients. As well as VA, screening includes biomicroscopy, intraocular pressure and ophthalmoscopy.



Fig. 5.15 Community outreach clinic for older patients (with their supporters)

- Day 2 (one week after screening) - Doctors give their diagnosis and either proceed with surgery or refer.
- Day 3 – Patients are checked in the morning and a social event is arranged for the team in the afternoon.
- The full screening and surgery team consists of 2 ophthalmologists, 2 nurses, 4 ophthalmic assistants, 2 drivers and 2 administrative staff. Two vehicles and a trailer are used. 90% of the team's subsistence is paid by Yaruquí (with CBMI help) and 10% may come from the local community. The surgery campaign may last 2-3 days, often over a weekend.
- One week later, a nurse and an OA return to check the patients – this may lead to a Yaruquí referral.
- The results of the outreach are shared with the community as a whole. The standard of outcome reflects that of the base clinic. As the majority of the patients are poor and illiterate, the ability to see is sufficient reward. Few seek spectacles as they have no need of 'perfect' vision. If spectacles are requested, an appointment is made at Yaruquí

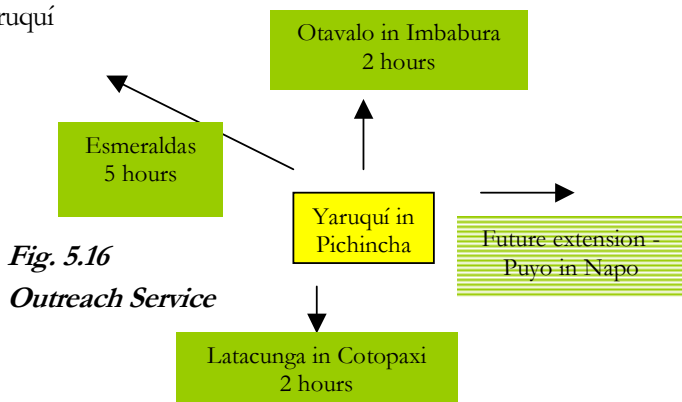


Fig. 5.16 Outreach Service

- This community outreach runs with a regular programme in the local Tumbaco Valley in Pichincha

Province, as well as increasingly in Imbabura, Cotopaxi and Esmeraldas Provinces (Fig. 5.16) - 3 or 4 visits/province/year. CBMI is projecting a future extension into the Oriente in Napo province. Additionally, outreach is at times organised as a result of direct invitations.

The desperate need for PBL in the more isolated Esmeraldas (Figs. 5.16, 5.21) has led to the FOV submitting a proposal to CBMI for a full, permanent satellite clinic there, notwithstanding the Cuban drain on patients and the problems of HR recruitment.

School outreach (Fig. 5.17) is scheduled on a programme agreed with the Minister for Public Education. It takes place in public elementary schools through the Tumbaco Valley (eight small towns) with children of 6 and 11 years.

Fig. 5.17 Screening of 6-year old children at a school in the Tumbaco Valley.

A timetable is planned with the school directors and visits are carried out with 1 ophthalmic nurse and 2 ophthalmic assistants, one day a week during the scheduled period. Visual acuity and refraction are measured. Children with <20/40 or significant refractive error are referred to the Yaruquí clinic for a free consultation with an ophthalmologist. If spectacles are needed, the clinic subsidises the costs in part, with parents paying the balance.



Patients in need of surgery are included in the general anaesthesia programme at the base clinic.

The programme is repeated annually with new students and a check made upon those treated in the previous year.

6.3 How is the programme managed?

- Despite the lead roles of the MD and the administrator, this is in very many ways a horizontal management structure with considerable job sharing and support. Indispensable people are largely absent. Developments and initiatives very much come from the team and the successes of the programme reflect that shared spirit and pride.
- As a CBMI partner, there has been a need since 1996 for a partner organisation to exist alongside CBMI. This gives the clinic a full legal status in the eyes of the MoH. This partner NGO, the Foundation (FOV), has a minimum of 9 members, selected for their experience and community responsibility. Currently there are 16 members. They hold an assembly once a year and a report on the Clinic's activities is sent to the MoH.
- Every two years the Foundation elects five members to form the executive or Board of Directors. These meet more often and have particular responsibilities, for example agreeing the clinic's budget and, through an appointed auditor, ensuring that Yaruquí's accounts are watertight in their management.
- The status of the clinic is acknowledged in the press. Influential people in the local community have commended the clinic as a valued neighbour and have offered their support as and when needed.

6.4 How is the programme monitored?

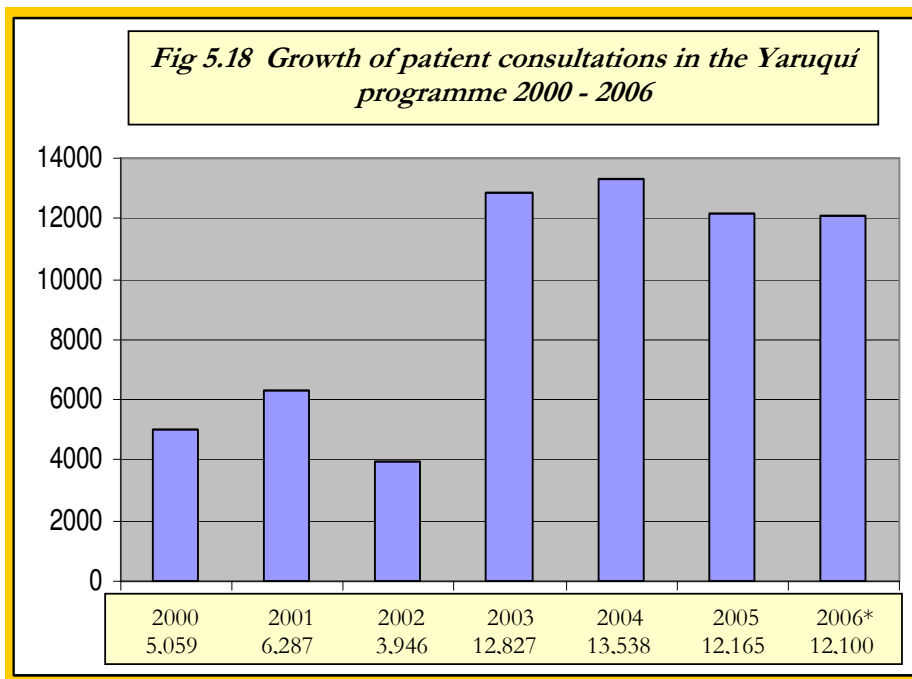
It is a two-way process.

- The Clinic sends detailed quarterly reports to CBMI, giving short term development goals, patient statistics, training activities, problems with the programme, and providing general narrative comments on specific activities and planned intentions for the following quarter.

- CBMI representatives from Quito visit Yaruquí annually. They present a report that reflects CBMI's responsibility for assuring that the agreed objectives of the project are being successfully targeted. The report provides updates on the services provided and the patients seen both at the Clinic itself and through outreach. Statistics set out screening figures and cataract surgeries (against targets), as well as financial information covering the patient paying scheme and the receipt of grants. Comments provide an evaluation of the Clinic's activities, referring also to recent and present problems as well as to future plans. Finally there are recommendations both to the partner NGO (FOV) and to CBMI for the coming year. These reports have been very positive and supportive of the progress achieved.

The progress shown in these monitoring reports and graphed below (Figs. 5.18 - 5.20) indicates well the effective momentum of the **Community Ocular Health and Valley Programme**, both in the base clinic and in outreach.

An attempt follows in Table 5.3 to outline and comment where helpful on the stages in the development of the total programme from its start to the present day.



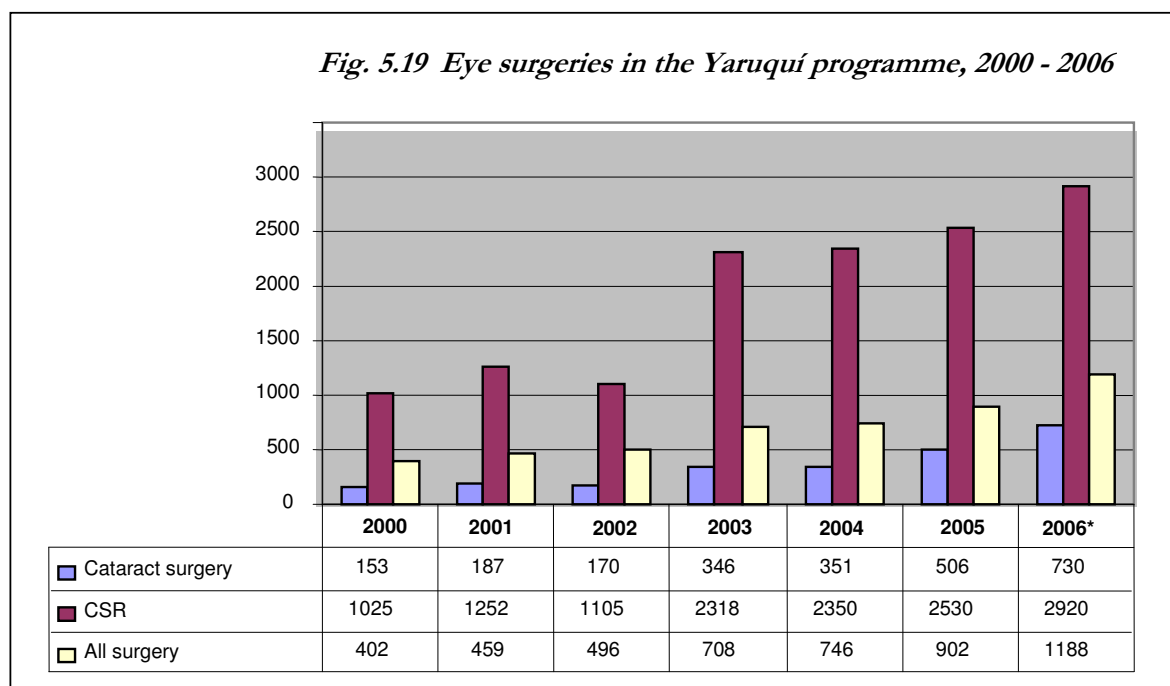
* Figure for 2006 is extrapolated from the returns for the first six months

This pattern of patient consultations at Yaruquí shows three phases:

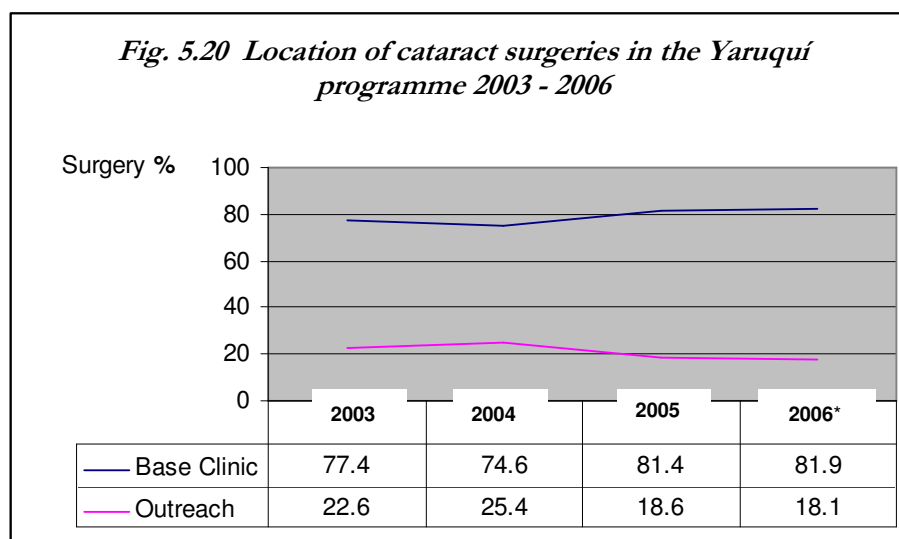
2000 – 2002:	Early years when clinic size and facilities restricted patient numbers. The programme began in three rooms of the local public hospital in 1995.
2003:	The opening of present clinic more than doubled the intake. Growth was supported by a reputation for an affordable and accessible service for the low income families in the Tumbaco Valley (Pichincha Province) along with excellent outcomes.
2004 – 2006:	Numbers have been retained with a widening sphere of influence through personal contact and through outreach in neighbouring provinces. Beyond 2006 growth at Yaruquí will be slow because of the physical area and HR limitations but will be greater for the two satellite clinics in the outreach programme.

From 2003, the contribution to the total consultation figure through outreach services was about 20%. With developments in Esmeraldas and Latacunga (Cotopaxi), reported on later pages, the outreach share

should increase. Following the growth in patient consultations, resulting eye surgery numbers are shown below in Fig. 5.19 and their respective base clinic/outreach locations in Fig. 5.20.



It can be seen that the original target of 500 cataract surgeries by 2004 was attained with just a year's delay and the target of 1,100 surgeries overall was achieved a year later in 2006. Initial shortages in qualified eye care professionals (ophthalmologists and ophthalmic assistants) have been a factor in this delayed growth. These shortages have now been reduced and increased surgery levels are expected to carry the CSR to its target of 3,000 well before the planned date of 2010.



* Figures for 2006 are extrapolated from the returns for the first six months in Figs, 5.19 and 5.20

Table 5.3 Developmental stages in the Yaruquí eye care programme (not to scale)

YEAR	DEVELOPMENTS AND SERVICE TARGETS	SERVICE ACHIEVEMENTS
1995	<ul style="list-style-type: none"> Valley Programme for Community Ocular Health starts in Yaruquí public Hospital Optical shop and pharmacy offer stratified pricing 	<ul style="list-style-type: none"> 1,000 patient consultations 65 cataract surgeries 50 other surgeries
1996	<ul style="list-style-type: none"> April 1st - Programme moves to three separate buildings on present site Need for new building agreed with CBMI and other German NGOs 	<ul style="list-style-type: none"> 6,287 patient consultations 187 cataract surgeries 272 other surgeries
2001	<ul style="list-style-type: none"> Construction of new clinic begins Equipment and vehicle obtained with NGO support 	
2002	<ul style="list-style-type: none"> Japanese embassy funds equipment for clinic Construction completed and building handed over in December 	<ul style="list-style-type: none"> 3,946 patient consultations 165 cataract surgeries / 331 other surgeries
2003	<p>BASE CLINIC</p> <ul style="list-style-type: none"> Present clinic opens under management of FOV Consultations planned 5 days/week and 8 hours/day at base Surgery, largely for cataract, 2 days/week at base 2 days of child surgery/year at base with general anaesthesia <p>OUTREACH -----</p> <ul style="list-style-type: none"> 4 visits of surgical outreach, largely cataract (2 in Esmeraldas) Community screening in Tumbaco Valley and Imbabura <p>TRAINING -----</p> <p>Courses for eye workers and health promoters begin</p>	<ul style="list-style-type: none"> 12,827 patient consultations (19% in outreach) 4,050 patients screened in the community (1,818 minors) 346 cataract surgeries (22.6% in outreach) 99% IOL 362 other surgeries 71.5% of paying patients for cataract surgery in the poor group – subsidy available as needed from CBMI and Quito Los Chillós Rotarians
2004	<p>BASE CLINIC</p> <ul style="list-style-type: none"> Stabilise the consulting and surgery schedule at base – not fully achieved in 2003 – need for fuller optimisation in resource use Equipment in place and screening/treatment started for D.R. and glaucoma <p>OUTREACH -----</p> <ul style="list-style-type: none"> 4 clinics and 4 surgical visits in Esmeraldas Agreement reached to open future permanent satellite clinic in Esmeraldas based on FOV's good reputation – CBMI agreement to fund construction and HR training costs; a Spanish INGO (Fundacion Mirada Solidaria) to fund equipment 2 surgical visits to Cotopaxi Build up HR for clinic in Latacunga public general hospital (Cotopaxi) Increase community radio publicity for outreach visits ----- <p>TRAINING for eye workers and volunteers continues, e.g. for volunteers to combat barriers to surgery acceptance in the community</p>	<ul style="list-style-type: none"> 13,308 patient consultations (18% through outreach) 351 cataract surgeries (25.4% through outreach) – target for 2004 was 360 100% IOL 398 other surgeries Problem with surgery visits to Imbabura (Otavalo town) with opposition of traditional healers 90% sustainability in operating costs achieved Only 57% of patients paying for cataract surgery classed as poor, with increased tariff levels – continuing CBMI subsidy giving support

YEAR	DEVELOPMENTS AND SERVICE TARGETS	SERVICE ACHIEVEMENTS
2005	<p>BASE CLINIC</p> <ul style="list-style-type: none"> Stabilise the consulting schedule at base, 5 days a week, 8.00 – 4.00 (still not achieved last year partly through human resource shortfalls), and extend the surgery schedule to 3 days/week helped by the employment of retina specialist – 2 OT's available (1 restricted to cataract) 2 additional OAs appointed this year – remainder of HR team stable Increase previous 2 days of child surgery/year at base with general anaesthesia to 4 days – 6/7 children/day Refraction clinic at base opens with an optometrist one day/week <p>-OUTREACH -</p> <ul style="list-style-type: none"> Maintain Esmeraldas programme for clinics and surgery - problem with patient finding in Esmeraldas through Cuban activity later in year 3 surgical visits to Cotopaxi Plans for outreach following invitation to Bolivar and Chimborazo Provinces, south of Pichincha Screening programme at 1st and 6th levels in public schools – an annual programme with MoE permission – caution needed to (1) ensure dependable co-ordination and (2) secure reliable follow-up as some schools are sceptical after poor service from other foundations in the past Accelerate patient finding for diabetic retinopathy Continuation of community screening at planned frequency of 1 visit/week – need to increase uptake for surgery of poorer patients – see 2004 problem ----- <p>TRAINING -----</p> <p>Continues (1) to increase professional skills and encourage motivation and (2) for volunteers particularly to support health promotion in the community</p>	<ul style="list-style-type: none"> 12,165 patient consultations – planned programme of extension not achieved 506 cataract surgeries, a 44% increase over 2004 (target for 2005 was 520) 99% IOL 18.6% of cataract surgery done on outreach 396 other surgeries Refractive error programme reaches 52 schools in the Tumbaco Valley – screening 2,979 children for acuity problems as well as detection of pathologies 1,504 spectacles supplied to all patients – clinic, outreach, school programme 75% paying for cataract surgery were in poor group – CBMI subsidy continues for poorer patients Increasing range of equipment and HR skills enables a growing number of pathologies to be treated at the base clinic, reducing referrals to Quito and so making treatment more affordable as well as accessible 93% sustainability in operating costs
2006	<ul style="list-style-type: none"> National cataract day planned in May – FOV to actively participate Develop good diabetic retinopathy programme – 2005 under achieved Increase R.E. programme in schools to 62 for 4,000 children Achieve up to 550 cataract surgeries, giving a CSR of 2,500 Achieve 5,000 patient consultations outside the base clinic Begin building and obtain equipment for Esmeraldas satellite (CSR now 165) Extend Latacunga clinic provision – 3 days/fortnight with OT to follow 	<p>By mid year:</p> <ul style="list-style-type: none"> 6,050 patient consultations 365 cataract surgeries (18.1% on outreach) 229 other surgeries 741 spectacles supplied 1,534 school children screened Health promoters trained for Esm. & Lat. clinics

The developments and achievements charted in Fig. 69 reflect the considerable success of the Yaruquí eye care programme. The underlying strategies are being realised through carefully targeted and monitored activities which are clearly now bringing blindness relief to the rural poor of Pichincha and its neighbouring provinces – as the graphs and tabled statistics demonstrate. In the conclusion that follows an attempt is made to draw out the key elements in the charted programme and place them in a framework that offers ideas to programme planners elsewhere.

7. What conclusions can be drawn?

An attempt to summarise and understand the strengths of the Yaruquí programme, as a model for planning and implementing VISION 2020 at the district level, has to begin by giving a reminder of the influences that have contributed to its origins (Table 5.4). Then it becomes possible to understand how and why the central elements of the programme (Fig. 5.22) have evolved.

Table 5.4 Assets and challenges for the Yaruquí eye care programme

Assets	Challenges
Clear understanding of PBL by the Medical Director, allowing the planning and implementation of well thought through goals and strategies	A national government that signed up to VISION 2020 in June 2003 but which has not promoted PBL initiatives since.
Firm support from the major I/NGO – CBMI – and its key personnel with no confusing cross-loyalties to other NGOs	Political instability that has seen frequent changes of Minister of Health – discouraging the need to draw up a national VISION 2020 plan
Location of the clinic – some 40 kms/up to 1 hour by bus from Quito – sufficiently distant, allowing the growth of a PBL centre with a catchment not offering apparent competition to the ophthalmologists in Quito	A poor country with many planning priorities that does not rate blindness prevention as a high priority
Bus services follow the highways north and south along the Avenue of the Volcanoes, enabling patients, for example from Latacunga and Imbabura to reach Yaruquí for consultations and treatment – although East to West journeys from Esmeraldas and Puyo are not similarly favoured as Fig. 5.21 suggests	A style of government that is traditionally centralised (although there are now slight prospects of change) – a situation at odds with the promotion of district level health initiatives
Development of AEPREC, chaired by Yaruquí's MD, a bridging organisation which aims to reduce bureaucratic barriers, encourage public health involvement by presently private ophthalmologists, and target VISION 2020's priority diseases	A National Ophthalmological Society that strongly represents the private clinicians in eye health who see community eye health initiatives as a threat to their income and standard of living
A local, largely urban population, with a strong community outlook, good literacy levels and public health conditions, supportive to the promotion and sharing of eye health initiatives. Sufficiently numerous to guarantee long term sustainability.	Family structures, weakened by economic pressures, have parents migrating for work, often over long distances, leaving children in the care of traditionally minded grandparents who do not favour educational and health initiatives and therefore may withstand PBL measures.
No alternative public eye care services.	Lack of good public PHC network, providing a barrier to eye health promotion

Fig. 5.21 – The map of Ecuador’s relief divisions, shows Quito and Latacunga in the accessible Avenue of the Volcanoes. Esmeraldas however lies across the mountains on the Pacific Coast to the North West and Puyo over the ranges in the Oriente to the South East – both involving longer and more difficult journeys.



The success of the Yaruquí programme, highlighted through the elements shown later in Fig. 5.22, has many contributory causes. A summary investigation of four key questions, involved in district planning for VISION 2020 in any location, helps us to understand what has to be considered.

1. How are cataract patients encouraged to attend for surgery?

A number of factors are working to increase the uptake of cataract patients, particularly those of negligible income, both at the base clinic and through the expanding outreach services. The need is to overcome a number of barriers – they can be many.

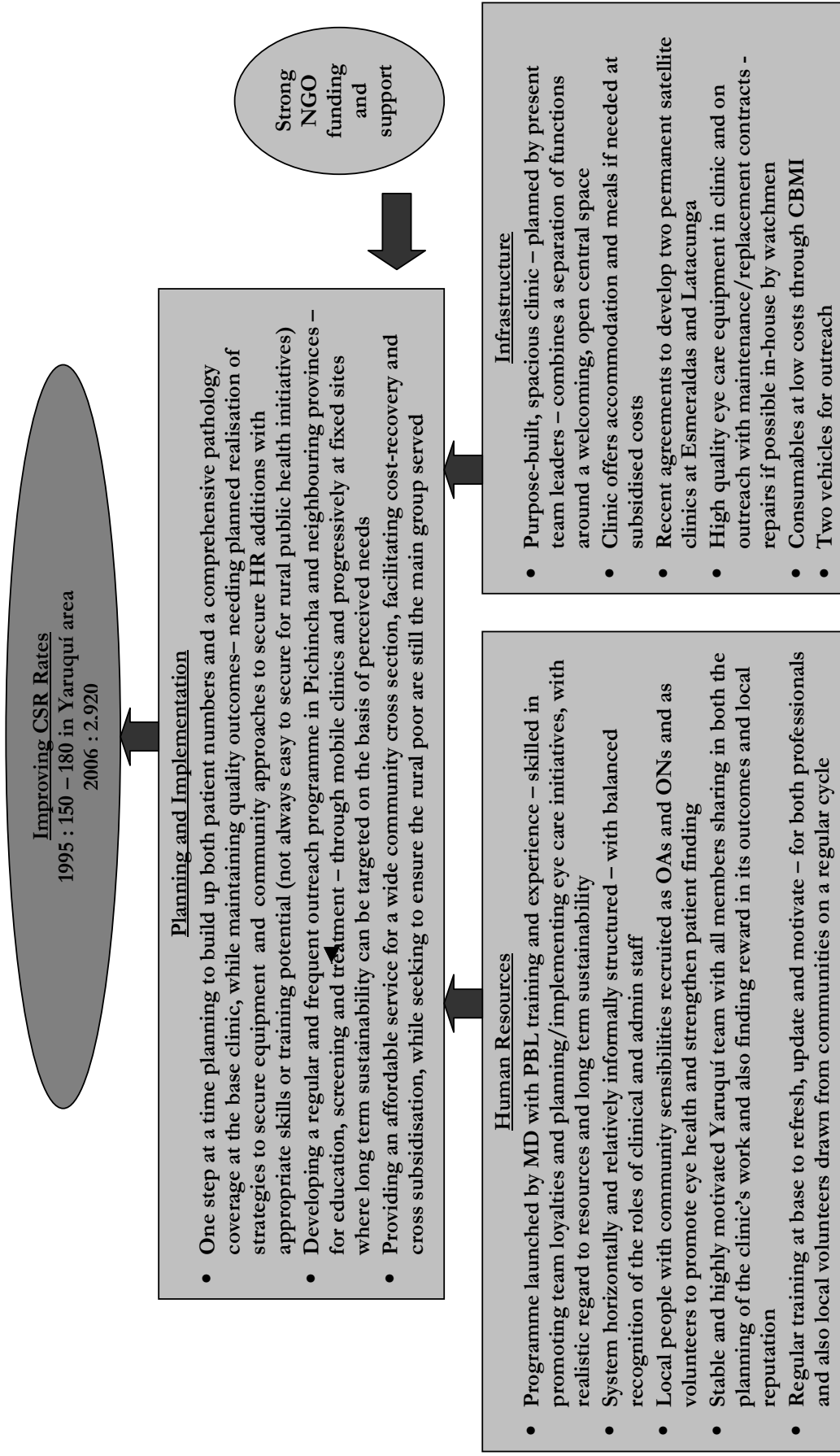
a. Ignorance – Volunteer health promoters, trained at Yaruquí, have worked to encourage an **understanding and acceptance of PBL** in the communities, sometimes with but often without the help of traditional healers. This group too is now beginning to receive guidance and persuasion through the programme’s initiatives.

Ignorance is also overcome by the ‘sight’ of friends and the word of community contacts passing on the good news about how vision improvement can be achieved. Fine surgery outcomes are an excellent spur to finding new patients.

b. Cost – A system of **cross-subsidisation** needs to ensure that those who have above average incomes can support the needs of the less advantaged. All therefore can have access to treatment without financial worries. Yaruquí’s system for this employs a scaled approach that covers purchases as well as treatment. It only comes into effect after treatment has taken place. It attempts to give dignity to all by avoiding totally free surgery if possible and easing repayment through a staggered system. Word of mouth and promotional activities ensure the system is progressively understood by communities and a growth in patient numbers results.

c. Fear – Health promotion and screening are the responsibility wherever possible of individuals drawn from the target community with **shared values and cultures**. Presentations to community groups or one to one conversations can develop an understanding of blindness prevention. It is also possible to communicate the ease and reliability of possible surgery, as well as the beneficial consequences of improved visual acuity for individuals and families in terms of quality of life and financial independence. Promotion precedes screening and surgical

Fig. 5.22 Main elements of the Yaruquí eye care programme as a VISION 2020 model



outreach. All avenues of communication available have to be used but the personal touch of a knowledgeable individual with local empathy is the key in winning over reluctant individuals and groups.

Fears are also reduced at the base clinic by enabling patients awaiting surgery to socialise in the central open space with those who have just undergone the operation. The pervading atmosphere of friendliness and relaxation in the clinic's waiting area is also a great asset in allaying worry.

Fears are reduced too by ensuring that surgery follows soon after screening and consultation to give less time for worries to play on the mind. Surgery uptake by patients is 70 %

d. Accessibility – Clinic locations for screening and/or surgery have to enable ease of access for potential patients, in terms of distance and time – overcoming worries of long and costly travel to strange locations, as well as interrupted domestic/farming responsibilities. The Yaruquí programme employs some simple measures to reduce these effects: (1) An increasing outreach programme, based in well populated communities and well advertised in advance, brings services nearer to communities – reducing journeys for screening and treatment, making it easier for friends to support, ensuring treatment proceeds alongside others from the same locality, as well as securing a greater likelihood of post surgery checks taking place. (2) Cataract surgery now very largely needs no potentially upsetting overnight stay. For the small number that must stay for a night at the clinic, pleasant free accommodation and good subsidised meals are provided and a friend can stay as well. (3) The use of an appointment system minimises wasted time and ensures the waiting space is well controlled – no crowds, good humour and a seat for everybody.

2. How is staff motivation kept at a high level?

There are two primary forces in ensuring the human resources deliver a successful service:

Leadership

As indicated previously and emphasized again in Fig. 5.22, the present medical director has been instrumental in guiding the programme's progress since its early days in 1995, through its building and service expansion from 2001 and again from 2003.

The right person at the right time is so important. CBMI, the instrumental INGO, recognised his drive and abilities and eventually secured his position in the new Yaruquí programme in 1995. His qualities and international stature have subsequently been vital in securing the loyalty, industry and stability of the clinic team. Mutual support and respect are very evident and the consequent team work has ensured that expanding initiatives and patient throughput have always been based on the primary concern for patient care and a drive for the best possible outcomes.

Abilities in surgery, teaching, administration and external relations have been proven against a background of carefully planned and implemented changes to ensure that the Yaruquí programme offers a sound model among the otherwise fragmented and sometimes poorly targeted schemes elsewhere in Ecuador.

Reward

All staff are encouraged to participate in the planning and advance of FOV's activities. They take evident reward from all aspects of the programme – from securing the clean and well organised appearance of the clinic, through the warmth displayed to patients, to the pride shared in jointly secured outcomes that bring justified community and national esteem.

Financial rewards, through receiving a % share of surgery income and salaries above national rates, help to ensure that this team will continue to demonstrate the loyalty and stability that FOV needs.

3. How is the project financed?

Poverty levels in Ecuador are high, as shown in Table 5.1. The discussion following that table pointed out that the Yaruquí catchment has considerably worse than average levels with 67% of the population below the poverty line at the last census.

Once the project was launched and then considerably expanded in 2003, with the substantial assistance of CBMI and some other NGOs, it has been the continuous focus of FOV to achieve self sustainability in operating costs, including salaries. The figure has now reached 98%, an indication in itself of the fine management of the programme after a relatively short time of activity.

The fact that the population is dominated by poverty has necessitated the creation of a payment system that carefully ensures that (1) the charges to the higher income groups guarantee an equal service for the poor and (2) this system can be sustained not just at the base clinic but in outreach as well. In ensuring that the poor are well served, it is clearly necessary to serve a wide cross section of income groups. These people, who might afford a Quito clinic, have to be persuaded that both the proximity of Yaruquí and the quality of its service at a very competitive cost ensure that paying patients continue to visit this clinic and so underwrite its present programme and future ambitions. It is a difficult matter to get the balance right, morality versus pragmatism – ensuring that the poor are targeted in good numbers as the programme aims, while accepting that better off patients have to be given sufficient treatment slots to make the programme sustainable. The figures given in Table 5.3 for the years 2003 - 2005 show that the balance is hard to achieve and to maintain.

Beyond running costs, there are other major and occasional expenses that have to be outsourced. The purchase, upgrading and replacement of surgical equipment for the base clinic and the new satellites can only at present be funded through NGOs. In time hopefully the MoH will assume growing responsibility for these needs.

4. How is the project managed?

There are three complementary levels of management:

- (1) The MD works with a team of five, representing the administration and the key clinical cadres, in reality the executive committee, to manage the available resources, implement the programme's strategies and report to CBMI. While the team has this official responsibility, there remains the ever-present larger and supportive Yaruquí team readiness to suggest ideas and take initiatives.
- (2) Two NGOs, CBMI and FOV (the latter representing the local professional community), share external responsibility for the whole Yaruquí programme. It is a government requirement that an external NGO is balanced by a local grass roots organisation to give the organisation legal status. FOV has a minimum membership of 9, currently standing at 16. Annually FOV reports to the MoH. This is to chart objectives and demonstrate achievements. There is no external interference as a consequence.
- (3) A Board of Directors, consisting of elected representatives from FOV, have specific responsibilities in the oversight of the programme's activities and management, for example in ensuring that the accounting procedures are well maintained.

The Yaruquí eye care programme is set in a health care environment which echoes many of the problem issues found in many other of the world's developing economies – shortages of funds, human resources deficient in numbers and/or skills, a struggling CSR, unhelpful national and district health care systems and professional unease over public health care initiatives – to name a few. This case study demonstrates that, given a physical base from which to work, carefully structured programmes, pursued by professionals and volunteers committed to CEH, can be developed to achieve a sustainable eye care service. This in time will enable a full cross section of local society to share equitably a comprehensive and affordable system to prevent and cure blindness – the very heart of the VISION 2020 programme. For Yaruquí the target CSR of 3,000 is not far off – a sign that in this catchment cataract prevalence and therefore blindness will begin a steady decline.