INTERNATIONAL CENTRE FOR EYE HEALTH

Planning for VISION 2020 at the District Level

A Manual

CBM International

VISION 2020 THE RIGHT TO SIGHT

sightsavers INTERNATIONAL

ORBIS saving sight worldwide

Acknowledgements

The preparation of this manual has depended heavily on the advice and support of the key personnel responsible for leading the selected eye care programmes so successfully over recent years.

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My gratitude respects the time devoted to my enquiries, both while visiting their eye care centres and also their patience and care in meeting my many subsequent e-mail requests. I hope that what I have written represents clearly and accurately the wise and whole-hearted commitment of these project leaders and their teams to the development of community eye health for their local communities.

I also wish to acknowledge the support of Allen Foster and many colleagues at ICEH who have made very helpful suggestions as the work has progressed.

Graham Dyer
December 2006

ISBN 1 - 90 - 2541 - 20 - 0

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ICEH

Preface

VISION 2020: The Right to Sight was launched by WHO in February 1999. In the intervening seven years national governments and non-governmental organisations have progressively accepted this initiative as the best approach for improving eye health and preventing blindness.

The realisation of VISION 2020 requires a commitment to develop programmes serving populations at the district level, where needs can be assessed, resources identified and community support motivated. While the need for district planning is clear, the means of bringing this about is more difficult to define. This manual is an attempt to document some lessons being learnt from three successful but different district models that have been developed in response to local conditions.

The manual starts with two chapters introducing VISION 2020 and setting out a generic model for planning and implementing VISION 2020 at the district level. This is followed by three case studies that have been selected to represent the needs and programmes in three different continental locations. The manual concludes with a chapter of exercises to help apply the principles of district level planning to individual situations. The reader is encouraged to consider with each case study:

1. The key factors in designing the programme.
2. The major activities to implement the programme.
3. The effectiveness of the programme.

It is hoped that this practical manual will assist eye health providers and programme managers to plan and implement VISION 2020 activities at the district level so reducing the prevalence of eye diseases and improving the vision of the population.

My sincere thanks to Graham Dyer and all those who have contributed to this work.

Professor Allen Foster
Director of ICEH

December 2006

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Abbreviations

AD	Adilabad District	**LV**	Low vision
AEPREC	Association Ecuatoriana for PBL	**LVPEI**	LV Prasad Eye Institute
AP	Andhra Pradesh	**MD**	Medical director
CB	Childhood blindness	**MIS**	Management information system
CBMI	Christian Blind Mission International	**MLOP**	Mid-level ophthalmic personnel
CBoH	Central Board of Health	**MMED**	Master of Medicine
CBP	Copperbelt Province	**MoE**	Ministry of Education
CBR	Community-based rehabilitation	**MoH**	Ministry of Health
CEC	Community eye care co-ordinator	**O**	Ophthalmologist
CEH	Community eye health	**OA**	Ophthalmic assistant
CO	Clinical officer	**OCO**	Ophthalmic clinical officer
CSR	Cataract surgical rate	**ON**	Ophthalmic nurse
(D)BCS	(District) Blindness control society	**OP**	Out-patient
DHMT	District health management team	**OPD**	Out-patients department
DR	Diabetic retinopathy	**OT**	Operating theatre
ECCE	Extra-capsular cataract extraction	**PBL**	Prevention of blindness
EN	Enrolled nurse	**PEC**	Primary eye care
FOV	Fundacion Oftalmologica del Valle	**PEEP**	Providing Eye Care through Empowered People
GDP	Gross Domestic Product	**PHC**	Primary health care
HKI	Helen Keller International	**PHO**	Provincial health office
HR	Human resources	**RACSS**	Rapid assessment of cataract surgical services
IAPB	International Agency for the Prevention of Blindness	**RN**	Registered nurse
ICARE	International Centre for the Advancement of Rural Eye Care	**ROP**	Retinopathy of prematurity
ICEH	International Centre for Eye Health	**RSS**	Right to Sight Society
IDA	International Development Agency	**SSI**	Sightsavers International
IMF	International Monetary Fund	**UN**	United Nations Organisation
I/NGO	International non-governmental organisation	**UTL**	University Teaching Hospital, Lusaka
INR	Indian rupees	**VC**	Vision centre
IOL	Intra-ocular lens	**WHO**	World Health Organisation
KCH	Kitwe Central Hospital		

Chapter

1

Introduction

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1. VISION 2020 – The Rationale

'VISION 2020: The Right to Sight' is a global initiative with the objective of eliminating avoidable blindness by the year 2020. The World Health Organisation (WHO), in collaboration with various international, non-governmental and private organisations under the umbrella of the International Agency for Prevention of Blindness (IAPB), launched 'VISION 2020: The Right to Sight' worldwide on February 18th, 1999. Throughout this document the shortened term **'VISION 2020'** will be used for this initiative.

According to WHO (2005), about **75% of blindness is avoidable**, either since it results from conditions that could have been prevented or controlled by applying available knowledge and interventions, or because that blindness can be treated successfully and sight restored. With increasing life expectancy, the global increase in the elderly population is worsening the backlog for the treatment of blindness in many countries, while existing human resources and infrastructure, both in quantity and distribution, are insufficient to meet this need.

Recent data suggest that there are globally about **37 million blind people and 124 million with low vision**, excluding those with uncorrected refractive errors. The severity of the problem varies dramatically from place to place with the prevalence of blindness varying for example from 0.2% in Europe to 1.0% in Africa.

The launch of **VISION 2020 has brought successes**, for example in the prevention and management of avoidable blindness caused by ocular infection. The initiative has increased public awareness and brought greater professional and political commitment to blindness prevention. Co-ordination between NGOs and partnerships linking UN agencies, governments, NGOs and the corporate sector has increased to meet the challenge. However despite these achievements and the probability that VISION 2020 has made a considerable contribution, there is much to do. For example 17 million people remain blind from treatable cataract, for which one of the most cost-effective healthcare treatments is available. The goal of the programme is to save 100 million people from becoming blind from avoidable causes over the 20-year period to 2020.

The aim and strategy of VISION 2020 are relevant to all countries. **Blindness has severe human and socio-economic consequences** for all societies, but the costs are greatest in low-income countries. In May 2003 the World Health Assembly unanimously passed a resolution urging member states to support the global initiative for the elimination of avoidable blindness, to set up national VISION 2020 plans by the end of 2005, and to start implementation of an action plan by 2007. There is an ongoing need, country by country, to identify the priorities to reduce blindness and visual impairment and to mobilize the resources to implement the programme – sustainable, comprehensive eye care appropriate to needs and resources.

2. VISION 2020 – The Strategy

The strategy underlying the planning and implementation of VISION 2020 programmes is built upon the foundation of community participation and has three essential components:

1. Training sufficient **human resources** and securing their availability at the point of need.

2. Strengthening and optimal use of the **infrastructure**, both with relation to service units and to the use of appropriate and affordable technology.

3. Cost-effective control and prevention of **major blinding diseases** and disorders, with priority attention to cataract, trachoma, onchocerciasis, childhood blindness, refractive errors and low vision in the first instance. For each disease condition, effective and cost-efficient interventions exist, provided human resources and infrastructure are available.

Fig.1.1 The VISION 2020 concept - services to prevent and treat eye diseases which cause visual loss

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The work of bringing about the implementation of a VISION 2020 programme includes the following stages:

- **Advocacy** to bring an awareness to eye health professionals and service planners that much blindness is avoidable and that VISION 2020 offers a sound strategy to achieve this
- **National planning** to review current eye care activities and resources, identify constraints and gaps, and plan future priority actions
- Establishment of a **National VISION 2020 Committee** and preparation of a **National Plan** with clearly phased goals
- **District involvement** to plan and implement VISION 2020 at the community level (see Table 1.1). At this level, emphasis is put on the tasks to be carried out, by whom, where and when, with consideration for resource and organisational difficulties.

Table 1.1 Planning at national and district levels

Planning level	Focus	Example
National Level: *Strategic Planning*	Overall objectives; national inputs to achieve objectives; procedures	Make school eye screening part of the national programme; subsidise standard spectacles for children
District level *Operational Planning*	Activities based on local needs; optimum utilisation of available resources	Train teachers to screen school-aged 10-15 children for refractive errors

3. VISION 2020 – The District

The implementation of VISION 2020 should be planned at district level in manageable, optimal service units of between about **0.5 and 2 million population**, where necessary achieved through the division of larger districts. Such units may have a variety of names in different countries – regions, provinces, sub-districts or districts. A country of 100 million population may need about 100 different **district programmes**, **adjusted to local circumstances**, to effectively plan blinding disease interventions and their associated resource support. These will be phased over a period of years, in accordance with recognised priorities and resource availability. Together, these district programmes comprise the national programme.

District level VISION 2020 programmes are developed as **one year operational plans**, open to review and adjustment for each succeeding year and guided by the 5-year national plan. Each district programme should:

- **be integrated into the existing primary health care structure**
- **be equitable in terms of the population served**
- **be accessible, affordable, available and accountable**
- **demonstrate community involvement**
- **provide comprehensive eye care, including eye health promotion, eye disease prevention, curative intervention (through referral as necessary) and rehabilitation**
- **have both a community eye care component and a surgical centre based on a district hospital**
- **have the essential human resources (eye care team and administration)**
- **have an adequate infrastructure**
- **be well managed**
- **strive to be sustainable in the longer term.**

The **purpose of this manual** is to demonstrate an approach to planning and implementing a VISION 2020 programme at the district level. This generic model will be followed by three case studies in Zambia, India and Ecuador, each demonstrating different patterns of organisation, brought about through local circumstances that will suggest approaches that can be tried in other settings. The final chapter will present exercises to develop skills in designing a district programme.

Chapter

2

Principles of District Planning

Illustrations

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1. The planning model

The generic planning model that follows has eight stages:

1 – 2 Where are you now - **Here**? – Use a **situational analysis** of needs and resources to describe your present situation as it relates to eye health.

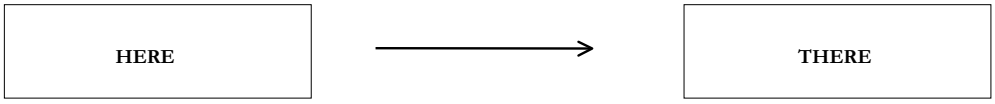
3 – 4 Where do you want to get to - **There**? – Set **aims and objectives** to help you fix targets.

5 – 6 How will you get there? – Decide on the route you will take with a clear **plan, timetable and budget**.

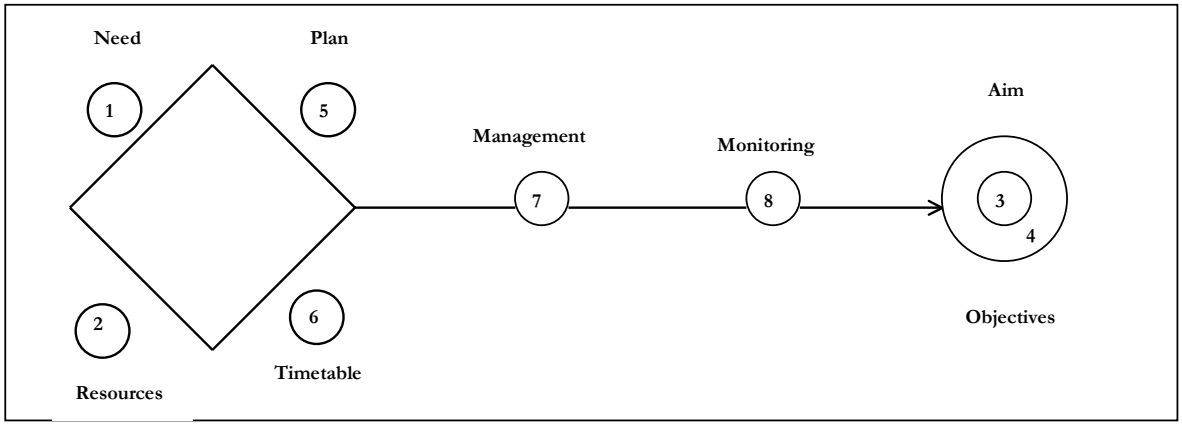
7 Start on the implementation of your plan, carefully **managing resources** – human and financial – to help you reach your targets.

8 How will you know when you arrive? – **Monitor your progress** to ensure the efficient and effective implementation of your district plan. Feedback may influence your targets and resource management. New problems will cause you to adjust your plan in the second year.

Fig. 2.1 The planning model



1 – 2 DECIDING WHERE YOU ARE	=	SITUATIONAL ANALYSIS OF NEEDS AND RESOURCES
3 – 4 DECIDING WHERE YOU WANT TO BE	=	AIM, PRIORITIES, OBJECTIVES
5 – 6 DECIDING HOW TO GET THERE	=	PLAN, TIMETABLE AND BUDGET
7 – 8 GETTING THERE	=	MANAGEMENT OF RESOURCES AND MONITORING



2. Assessing needs

The **NEED** is the gap between the present situation and where you want to reach.

A **NEEDS ASSESSMENT** will help you to define that need.

To define NEED, you should collect information on:

- **Population** – number, density, growth rate, gender, age structure, and distribution in relation to the local geography, cultural and religious norms
- **Population indices** – economic groups, socio-cultural variations, levels of literacy and health problems such as under-5 mortality rates, and measles coverage

This data may be obtained from a local or national census office, the planning unit of the ministries of health or education, or from internet sites giving national population data.

- **Eye diseases and blindness** – estimates of (1) the prevalence and incidence of blindness and low vision in the district based on appropriate levels of visual acuity; (2) the main causes of preventable/treatable blindness and their magnitude.

This data may be available through (1) population-based blindness surveys (best option); (2) rapid assessment techniques used for example in cataract, trachoma and onchocerciasis programmes; (3) extrapolation from disease patterns measured elsewhere but in a similar environment; (4) estimation of magnitude from a reference table or a world blindness prevalence map (the least desirable option).

Detailed maps of the area will be needed.

It is important that all the data collected and generated to help define the need is taken into account.

In brief - it is necessary to identify **the size of the problem, the people most affected and their location.**

3. Assessing resources

RESOURCES are the **personnel, infrastructure and funds** available to tackle the need that has been identified. Questions that should be answered in your assessment include:

- What are the past and present **eye care services** and their **outputs** in the district?
  Collect data related to activities for the prevention and control of blindness over the last five years. Examples will include annual unit totals for: admissions, outpatients, cataract operations, cataract surgeons, IOL implants, surgical outcomes, spectacle provision, and low-vision care. Further data will relate to other key diseases such as trachoma or onchocerciasis. Indicators such as cataract surgical rate (showing output) and cataract surgical coverage (indicating effectiveness) should be calculated. Operations per surgeon, per eye unit and per bed will help to measure the efficiency of the eye care service in the district.
- How developed and functional are the **outreach services**? What are the barriers to access? Do screening and referral outputs meet intended targets?
- What **human** resources in different service categories are available at primary, secondary and tertiary levels of care? How does this compare with WHO recommendations? Are there problems of distribution, recruitment, career structure and retention? What training facilities exist for each category of worker?
- What is the involvement of the **community** in district health care – with regard to planning and implementation? How is this encouraged? What training and support are available? What constraints hinder social mobilisation?

- What **infrastructure** – buildings, equipment and consumables – serves this district? How dependable is it in terms of availability and condition? What is the shortfall in relation to recommendations? Is there wastage with regard to the recommended norms for usage? Are there seasonal variations? What provision exists for standardisation, bulk purchasing, the use of appropriate technology and for repair and maintenance?
- What are the responsibilities of each group in the existing **management system?** How does this system determine and implement policy, particularly with regard to resource utilisation? What data is collected and how is it communicated? What emphasis is placed on increasing output while ensuring quality of outcome?
- What **constraints** are there on optimum resource use and service delivery? Consider human resources, infrastructure and management in your assessment of constraints. How can they be overcome?
- What provision is made in the district **budget** for eye care and blindness prevention? Is the eye care programme integrated horizontally into district health services? What other sources of funding are available?

A review by the **district planning committee** of the surveyed 'Needs and Resources' completes the **SITUATION ANALYSIS** for your district. Constraints and possible solutions should be considered at the review meeting in preparation for agreeing **aims, objectives and strategies** for the **DISTRICT VISION 2020 PLAN**. The underlying purpose of the review is to optimize the use of existing resources and to plan for their development through cost-effective procedures.

District involvement in this discussion should bring **local ownership** to the outcomes and also ensure that the eventual plan is tailored to the district's specific needs.

The review meeting will:

1. agree a **norm for the average workload** for each category of worker for each disease intervention, dividing the available human resources by the estimated magnitude of blindness;
2. estimate the **average output per eye care staff member** per disease intervention, noting underachievement levels, contributory constraints, and proposing remedies;
3. analyse variations, both across the district and month by month, to establish **patterns of resource use** and suggest ways of promoting greater efficiency;
4. calculate and evaluate the present and required **output for facilities and equipment** against present workload, indicating shortfalls, noting constraints and proposing remedies.

Annual questionnaires should be administered to update the assessment of human resources, infrastructure and equipment, and to update the indicators of service productivity and resource usage, noting changes in constraints.

For both human resources and infrastructure, this review will highlight the objectives needed in the **District Plan** - to increase output while securing quality of outcomes, giving priority as necessary to resource expansion and improved efficiency in usage. Seasonal variation as well as inconsistencies across the district will also guide the findings and decisions of this review.

4. Defining the aim

The **AIM** for the district programme will help you to define where you want to be. The aim and objectives should be agreed by all parties on the planning committee at the start. It should be expected that this process will evolve. Wider experience and contact with the problems in the field will bring changing insights and require planning revision during the implementation of the programme.

All parties involved in health care should contribute to the design of the district VISION 2020 programme. These will include: - Health care workers – government, private and NGO
Local administrators
School teachers
Local volunteers

As well as securing an agreed programme, this team concept will help to give ownership, avoid duplication, increase efficiency, and therefore optimise the use of scarce resources.

The **Planning** process should recognise the need to:

- work to **national guidelines** as set out in the **National VISION 2020 5-Year Plan**
- appreciate the **resource limitations** shown by your situation analysis and be realistic in ambition, prioritizing one need at a time and the easiest first
- select disease and location **priorities** carefully, heeding the distribution of need, the availability of resources, and the advantage of securing early positive community reactions to the benefit of the ongoing programme. The key component here is the **bridging strategy** linking the communities in need to the hospital clinical services – concentrating on what can be achieved with a particular disease intervention in an accessible part of the district, rather than setting objectives that will require substantial additional resources. Later amendments can spread the programme to include other areas and diseases.

In addition to the VISION 2020 components necessary to achieve cost-effective disease interventions (as shown in Fig. 1.1), there are four broad themes that should be central to the design of your district programme. These can be summarized as **I SEE – Integrated, Sustainable, Equitable and Excellent.**

- The VISION 2020 approach to community eye care should be **integrated** into district health care services – characterised by wide access, community participation and health promotion.
- Eye care services should be long term and **sustainable** with regard both to financial and personnel resources and to the assurance of continuing demand. External help may be needed to secure this goal in poorer areas.
- Services should be **equitable** – available to both genders and across all of society – not just the better off or those in urban areas - but difficult to achieve with an uneven distribution of resources.
- Care, clinical and non-clinical, should be **excellent** for all to ensure that trust is created, community support is fostered and patients use the services.

The district programme, working to the above guidelines, should combine strategies to achieve **comprehensive eye care**, demonstrating the four components, given on page 3:

- **Promotion of eye health**
- **Prevention of eye disease**
- **Curative intervention**
- **Rehabilitation**

The process of constructing the **district programme** at the planning meeting is summarised in Fig. 2.2. The steps are to:

1. Decide the **objectives** – that should be specific, measurable, achievable, realistic, and time-bound.
2. Define the **priorities** in the context of need and present resources.
3. Agree prioritised **strategies** with set targets that can be monitored to show progress with the objectives.
4. Define the action plan of **activities** and linked sub-activities.

Fig. 2.2 Building the district action plan from the situation analysis (pages 8-11)

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A Gantt Chart is a table of project tasks with a bar chart graphically showing the project schedule, depicting progress through time and enabling both tracking and planning to be maintained (see Appendix AP8.)

5. Specifying objectives

OBJECTIVES for the district VISION 2020 programme are designed to overcome constraints that have been identified in the situation analysis. These **objectives**:

- may relate to **human resource development, infrastructure development and disease control interventions** selected from the five VISION 2020 targeted causes of blindness
- will be achieved through broad activities and narrower sub-activities forming a **strategy** to implement the change
- will be directed at precise **targets**, that have a given completion date and that are measurable as monitoring indicators
- are **realistic** in the time frame and in the wider resource environment.

6. Defining priorities and strategies

Selection of **objectives** and **strategies** may have to be selective in identifying the constraints to be tackled in the early stages of the programme. **PRIORITIES** will have to be agreed by the planning committee and will be guided by such variables as:

- size of health impact in relation to resource demand
- visibility of improved service to enhance public support and patient uptake
- long term service sustainability with regard to people and funds, involving inbuilt planning for cost-saving, income generation and optimisation of resource usage
- degree of community participation
- clear integration of manageable monitoring and evaluation procedures
- emphasis on the improvement of management skills
- ease of integration with the primary health care system (see Table 2.1).

Primary health care (PHC), as formulated by the Alma-Ata Declaration (Sept. 1978) and endorsed by WHO, is a multi-sectored approach to improving health. The close links between primary eye care and PHC can be seen from the list of the main PHC activities shown in the Table 2.1.

Table 2.1 Integration of primary eye care into primary health care

Primary health care	Primary eye care
1. Immunisation	Measles vaccination prevents blindness from measles; rubella vaccination prevents congenital rubella syndrome
2. Better nutrition	Prevents vitamin A deficiency
3. Water and sanitation programmes	Relevant in trachoma control
4. Control of common diseases	Trachoma and onchocerciasis control
5. Delivery of maternal and child health care	Reduce retinopathy of prematurity
6. Health education	Prevention of eye trauma
7. Simple treatment	Treatment of simple eye diseases
8. Essential drugs supply	Availability of tetracycline eye ointment for trachoma and common eye infections; vitamin A capsules for xerophthalmia, ivermectin for onchocerciasis

Primary health care workers are ideally placed to identify blind and visually impaired people in the community. With additional training they can diagnose and refer patients to the appropriate eye care workers and provide basic treatment for simple eye diseases.

A STRATEGY is the total of all the clearly defined **activities** (and sub-activities) needed to achieve an objective. Activities will have clearly defined individual **targets** that indicate progress under the action plan. Strategies too may have to be prioritised. The activities in each strategy will have:

- a sharply defined time schedule
- responsibilities clearly and considerately assigned to identified individuals or post holders
- an even distribution of tasks in the set time, frequently consecutive, rather than overlapping
- training programmes included
- a realistic and pragmatic expectation of resource consumption – a costing
- reliable indicators to monitor achievement and enable an evaluation of the programme

7. Preparing a timetable

The agreed programme to implement the district plan will bring together activities, responsibilities, time schedules, and budget. The timetable can be set out in a Gantt chart (see Appendix Ap8), or, more comprehensively, in detailed action plans (as exemplified in Table 2.2). Experience during implementation will lead this programme to be reviewed and updated on a regular basis. Regular team meetings will lead to better planning.

Table 2.2 Action planning for VISION 2020 at the district level – an example

VISION 2020 ITEM (EXAMPLES)	PRESENT SITUATION TO BE CHANGED	OBJECTIVES TO REACH DESIRED TARGETS	ACTIONS + PERSONS + TARGET DATES	INPUTS – BUDGET NEED + SOURCE	OUTPUT INDICATORS TO MONITOR
Cataract Case Finding					
Cataract Surgery Output					
Cataract Surgery Outcome					
Cataract Surgery Cost					

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8. Preparing a budget

The district programme, integrated within the district PHC service, needs to be accompanied by a carefully planned budget.

EXPENDITURE

1. **Capital** (one off)

   Buildings

   Vehicles

   Equipment (may be externally sourced and therefore not within the local accounting system)

2. **Running** (repeating)

   Salaries (incentives may be difficult to assess)

   Consumables (difficult to assess as most are donations)

   Overheads (including maintenance and repair)

Note

- Consider **all** costs – information on uses of locally generated income can be difficult to research.
- Estimate the amount if an exact figure is not available.
- Running costs should be calculated for a year.
- A 5-10% contingency can be added.

SOURCES OF INCOME – some are not always applicable

- **Service fees**
- **Sales, for example from the optical workshop and the pharmacy**
- **Government, including salaries**
- **Local support**
- **International donors, including donations**

Note

- The goal of financial sustainability requires income to balance or exceed expenditure (see SUSTAINABILITY below).
- Fees should be set at a level that encourages uptake and does not impact negatively on equity.
- Salaries are normally the major expenditure.
- Attempts at cost reduction should always accompany the search for new income generation.
- Government support may be more sustainable than NGO finance.

SUSTAINABILITY

Sustainability can be achieved in a number of ways:

1. **Cost-recovery**, including improved management training and accountability – this may be difficult where the service has been historically free.
2. **Improved service marketing and quality of outcomes**, producing increased awareness and demand.
3. **Team ethos** acquired through a shared acceptance of the need for financial sustainability.

9. Establishing a management structure

This is the first stage in the **IMPLEMENTATION** of the VISION 2020 district programme. The key role of an adopted management structure is to bring together in one place the professional eye care workers, the resources and the community in order to implement the agreed programme.

There are two main questions:

(1). Who will manage the programme?

(2). How will this be done?

(1) **Management personnel**

- A **Management Committee** (the District VISION 2020 Committee) representing the district and the eye health team
- A **Medical Director** and an **Administrator** in the focal hospital with clear job descriptions and appropriate skills - forming an **Executive Committee** that may co-opt other senior staff, for example an experienced MLOP and/or ON.

(2) **Management activities**

- The **Management Committee**, a group of voluntary, community representatives sitting with service professionals in regular meetings, will have agreed responsibilities: making hospital appointments, agreeing budgets, agreeing systems of incentives, receiving reports, and supporting the executive committee.
- The **Executive Committee**, meeting weekly**,** comprising senior hospital employees, will have day to day responsibility for implementing the programme. Its roles will include:
  - **Initiation and realisation of planned programme activities** in accordance with the agreed timetable, supported by resource allocation, the monitoring of progress and the taking of remedial action where targets are being missed. An estimate of realistic individual workloads, knowledge of patterns of present resource use, availability and potential capacity, and a clear appreciation of optimal service standards and targets will be necessary at the start to make this successful.
  - **Regular workshops/meetings** with the whole medical team to discuss tasks and responsibilities and to develop effective lines of communication. Focussed discussion will promote team support for the optimal use of resources, cost containment measures and the creation of community demand through quality of care.
  - **Managing people** – through (1) **encouraging job satisfaction** (clear job descriptions, appropriate skills for the job); (2) **promoting motivation** (consulting staff, shared planning, giving feedback and providing incentives); (3) **enabling participation** on small action-oriented committees, for example to focus on staff concerns, analysis of statistics or patient satisfaction.
  - **Training activities** – on site or through external courses – to fill skill gaps, update existing skills and share experiences with district programme staff elsewhere. Activities will focus in part on community-oriented activities to foster the participation and support of the whole community.
  - **Managing money** – by monthly recording of income against expenditure.
  - **Reporting progress** to District and National VISION 2020 Committees and to funding bodies. An annual report (showing output against targets, human resources, infrastructure and expenditure) will be prepared. It will include targets planned for the next year and the resource implications.
  - **Developing a management information system (MIS)** to facilitate monitoring and evaluation.

- **Securing timely access to consumable supplies.**
- **Promoting demand** through social marketing by ensuring that eye care services are (1) **available** to patients, with respect to distance; (2) **accessible**, regarding transport and opening times; (3) **affordable**; (4) **acceptable** in terms of quality of care and outcomes. It is also necessary to support health promotion campaigns to encourage positive perceptions regarding eye disease treatment and the services available. The strategies adopted will form part of the VISION 2020 district programme and be set out in the plan.

10. Monitoring progress – 'to measure is to know'

The main purposes of **MONITORING AND EVALUATION** of the VISION 2020 district action plan:-

1. To help all stakeholders **track progress** towards the agreed objectives and enable adjustments to be made in the implementation of the programme
2. To motivate staff with **performance feedback**
3. To provide evidence of need for **fund raising**
4. To **raise awareness** in other districts (and other countries) of the successes achieved and problems experienced in a specific district plan.

For the effective monitoring of trends and progress towards the achievement of the agreed objectives, it is necessary to have a set of clear **indicators** – these may need to be monthly, quarterly or annually – whatever is advisable and practical. The setting up of a reliable MIS from the outset will enable a base line to be established and the impact of later interventions to be measured. It is therefore essential that a Monitoring and Evaluation system is agreed and operational from the start of the district programme implementation. Great care should be taken that selected indicators are:

- **valid** – measuring what is intended to be measured;
- **reliable** – even when used by different people at different times;
- **sensitive** – react to changes in the situation or target being measured;
- **specific** – reflect the changes only in the situation or target concerned.

As VISION 2020 targets the reduction and eventual elimination of avoidable blindness, monitoring indicators should focus on:

- the impact on the **burden of blindness** (overall and disease specific) and visual impairment
- performance in prevention and treatment with respect to individual **disease control**
- **human resource development** with respect to the availability of technical skills
- development of the **eye health system** with respect to provision, resources and management.

All records made should be used.

Monitoring will enable the management team to decide whether:

- **objectives and targets are realistic**
- **strategies are effective and efficient**
- **the programme is well managed**

The role of monitoring and evaluation is exemplified in Fig. 2.3.

Fig. 2.3 Example of the planning cycle – school eye screening

WHO/IAPB Tool Kit – Developing an Action Plan for VISION 2020

As you begin to plan, there will be a number of assumptions. Planning is a continuously evolving process – as implementation takes place, you learn more about the situation, gain a fuller insight and therefore through evaluating past practices you are able to adjust and improve your planning, strategies and targets.

In any school, the number of spectacles provided for a screening programme may be initially small. As refraction tests proceed, the number of spectacles needed increases and with it the cost of the intervention. This may be resolved through increasing the number of donors of spectacles or by requesting parents to pay (part of) the cost. Subsequent procedures with later peer groups or with children in other schools will be better prepared to expect this resource need to achieve the desired outcomes.

In this example, teachers maintain records of children referred for refraction, those who are wearing spectacles and children's school performance before and after referral. These indicators enable (1) progress to be tracked in reducing one cause of blindness which affects learning and (2) the assessment of procedures for controlling and reversing sight impairment caused by refractive error. Regular monitoring may reveal inconsistent results against an expected norm. Questions can then be asked and procedures can be improved.

Routine internal/external **monitoring of outcomes enables an evaluation of objectives and strategy.** This supports the underlying purpose of approaching the targets of your planning process, maximising the patient number while securing optimal resource usage and outcomes.

The three **case studies** that follow highlight the strategies adopted to optimise VISION 2020 district level eye care in very different regions.

Chapter

3

Case Study 1 – KITWE, ZAMBIA

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What can we learn from Kitwe?

I was looking for a good case study in sub-Saharan Africa. Kitwe Central Hospital (KCH) in central Zambia was recommended. This was good advice. It is a fine example of what can be achieved for community eye health with slender resources. The eye unit at KCH demonstrates well how VISION 2020 works, both in the way the service is structured and in its achievements. This is true for the eye care it provides within its own Copperbelt Province and beyond in its broader area of outreach. In the next couple of years Kitwe expects to achieve the targets set for patients seen and cataract surgeries completed – a fine model for eye care in this continent. Much of Africa still lags far behind.

How has this happened? What lessons can we learn and what practices might be repeated elsewhere? The description that follows gives attention to the important role that NGOs can adopt. But the input from NGOs would be far less likely if there were not so many positives in the existing local situation. Much can be done in a government hospital with a well led, locally resourced eye care team that welcomes challenges, shares ownership and works hard at being successful. All this has given Kitwe the good reputation necessary to ensure that willing patients want to use a well managed service. Thus Kitwe is able to achieve success after success and, by extension, other units can do the same.

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

Kitwe is situated in the Copperbelt province of Zambia, a land-locked country covering 752,614 square kilometres, lying between 8° and 18° south of the Equator. Its climate has three seasons: cool and dry May - August, hot and dry September - October, and warm and wet November - April. The northern part of the country has rainfall ranging from 1,100 mm to over 1,400 mm, while the south which often suffers droughts ranges from 600mm to 1,100 mm. The country is largely elevated plateau with higher relief mostly in the north and east (Fig. 3.1), rising to a maximum of 2,301 m.

The country has been independent since 24th October 1964 and is divided for administration into nine provinces (Fig. 3.3). Two of these, Lusaka and Copperbelt (CBP in the text), are largely urban while the remainder are predominantly rural. Zambia is further divided into 72 districts. The capital is Lusaka, lying at 1,277 meters above sea level (Fig. 3.1). There are seven official languages.

Fig. 3.1 Zambia's neighbours and physical features

Zambia has a mixed economy. A modern urban sector with associated business and industrial employment follows the old line of rail (Fig. 3.2), while the rural sector dominates the rest of the country. Copper mining is the country's main economic activity, although problems with world copper prices

mean that this narrow dependency creates major problems for the national economy. About 50% of the working age population is unemployed. This leads to **high poverty** levels, especially in rural areas. In total about 85% of the population live below the poverty line, with 46% classed as extremely poor – statistics that are beginning to improve. In 2003 the country was ranked at 163 out of the 177 countries listed in the Human Development Index (measuring longevity, knowledge and standard of living).

In recent years there has been some improvement with higher copper prices and improved maize harvests. A strong drive by the government to fight corruption has ensured that support will now come from international organisations, such as the International Monetary Fund and the International Development Agency, to bring enhanced debt relief. Repayment of interest on loans has been a major crippling economic factor in past years, inhibiting state investment in public services, including health care in general and the prevention of blindness in particular. The claims of HIV/Aids, TB and malaria for service investment have further diminished the resources available to combat blindness, both for treatment and prevention.

Fig. 3.2 Zambia - Main towns and communications

2. Is there government support for community eye care?

The first **National Five Year Strategic Plan for the Prevention of Blindness**[1] in Zambia was presented in October 2003 by the National Prevention of Blindness Committee with the support of the Central Board of Health, and launched at a National Planning workshop in 2004. This document acknowledged the need to focus attention on VISION 2020 as the means of eliminating avoidable blindness. It also recognised that '*eye health is an integral part of other health care services and therefore needs to be implemented…with other primary health care activities'* and that '*districts…. are now the focal points in the delivery of health care services'* (page iv). The Plan argued that the logical outcome of resource competition lies in the horizontal integration of primary health care activities. The CBoH Director General in his foreword stated that this '*document* (will focus) *government direction in terms of planning and delivery of eye health services'.*

The Plan underlined five needs:

- a **strong community approach** to eye care to parallel national and individual endeavours
- a greatly **improved distribution of specialized ophthalmic human resources** (targets were set)
- a greatly **enhanced availability of physical facilities for both services and training** with supporting equipment and transport (targets were set)
- a greater **availability of referral centres** and centres to develop the PBL programme.
- the need for a **National Co-ordinator for the Prevention of Blindness**

The government has therefore supported the aim to improve community eye care in Zambia but resource limitations have made active participation difficult. A further problem rests in the failure of the National Plan to lay down a 5-year implementation programme with a district planning framework, a failure common across Sub-Saharan Africa. Recently central government has shown a stronger commitment, for example in supporting primary eye care workshops and in organising screening and surgical camps to celebrate World Sight Day in 2005. Further, in November 2005, the Ministry of Health together with the National PBL Committee met the main NGOs to coordinate more fully their eye care programmes in Zambia. It is now recognised that the Central Board of Health, previously set up in 1996 to implement government policy, needs to be dissolved to avoid duplication and save money. This has been balanced in 2006 with the employment by the Ministry of Health of a National VISION 2020 Manager, with NGO support, to coordinate eye care activities across the country.

The Ministry of Health remains the strategic group, setting and controlling budgets and paying salaries. Powers are delegated to Provincial Offices of Health (PHOs) whose management capacity is well regarded. The PHO role is to monitor health expenditure, authorize appointments, pay salaries, and check on MoH policy implementation. So long as individual service units, such as KCH, inform the PHO and therefore the MoH of their plans and activities, there is little worry about external interference in health programmes.

The structure of hospital provision in Zambia is outlined in Table 3.1, the provinces are mapped in Fig. 3.3 and the towns/hospitals with their main communication links are shown in Fig. 3.2. The only dedicated eye hospital in Zambia is privately owned in Lusaka. Full eye units are found in tertiary and some secondary hospitals, for example at KCH, unusually opened as long ago as 1958. All primary and many secondary hospitals treat only minor traumas and otherwise refer – involving lengthy patient journeys. Some secondary hospitals provide a base for outreach activities.

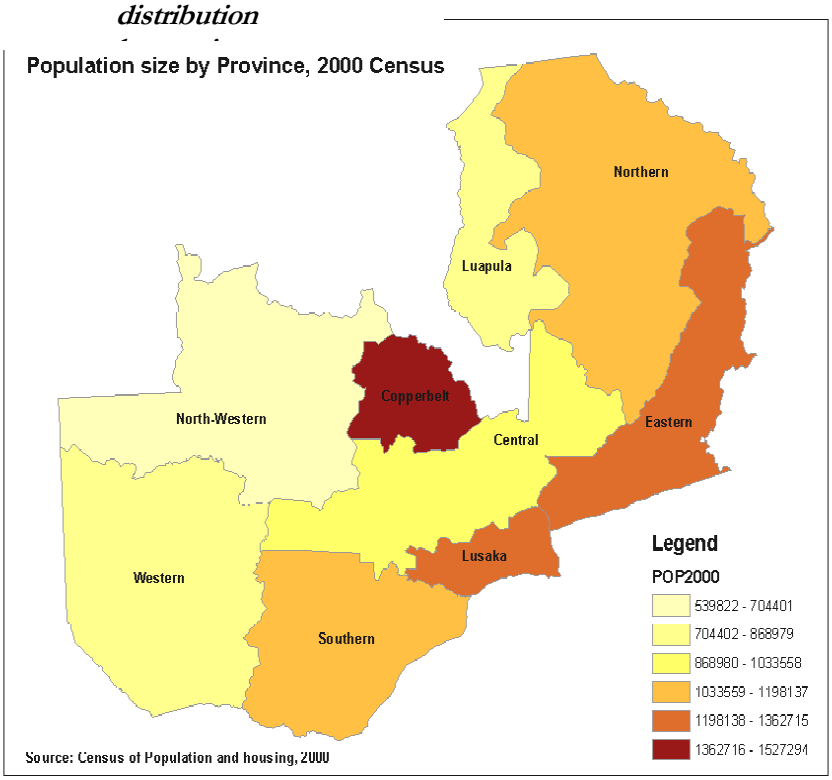
Kitwe Central Hospital (KCH), the subject of this case study, is a tertiary level hospital and lies in the Copperbelt Province**.** There are 10 districts in CBP (8 of which – see Fig. 19 – form part of the KCH catchment). The remainder of the area served lies in two neighbouring provinces, bringing the dependent population in total to approximately 1.6m.

Table 3.1 Hospital provision in Zambia

Tertiary	Secondary (referral)		Primary
University Teaching Hospital (UTL) - Lusaka	***Province***	**Town**	73 District and Mission Hospitals
Central Hospitals Kitwe (CBP), Ndola (CBP)	*Central*	Kabwe	
	Copperbelt	Chingola, Mufulira	
	Eastern	Chipata	
	Luapula	Mansa	
	Northern	Kasama, Mbala	
	North Western	Solwezi	
	Southern	Choma, Monze, Livingstone, Mazabuka	
	Western	Mongu	

3. Needs Assessment 1 – What are the population characteristics of Zambia and Copperbelt Province?

Fig. 3.3 Zambia - Population distribution



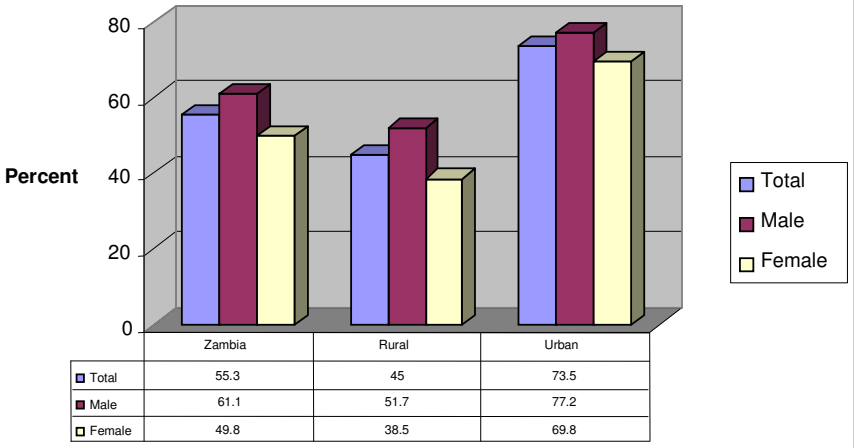
The population distribution map (Fig. 3.3) and the statistical table (Table 3.2) help to show the key features of the population environment in which the eye unit of Kitwe Central Hospital (KCH) has planned and is implementing an increasingly successful VISION 2020 district programme.

- CBP in 2006 has a population of 1.6 million. The catchment area for KCH covers most of CBP and also areas of Northern and Luapula provinces, although at present only 40% there access eye care services. This gives a total served population of about 1.6m, within the model limits for a district VISION 2020 programme.
- The higher than average population density in CBP facilitates the movement of patients to the hospital. This is further helped by the province's relatively good transport network.
- The central position of CBP in Zambia, with regard to north-south distance, has helped the hospital's organisation of outreach to other more rural and underserved provinces.
- Many education, wealth and health indicators for CBP suggest a supportive environment for the promotion, acceptance, affordability and potential success of a VISION 2020 programme. Figs. 3.4 and 3.5 show better than average literacy rates for urban areas and in CBP in particular. Fig. 3.6 shows a lower than average incidence of poverty; with consequences for affording treatment and accessing surgical centres. However Fig. 3.7 highlights poor health aspects in the proportion of underweight children and Table 3.2 shows the relatively high HIV/AIDS incidence in Zambia's urban areas which is reflected in CBP towns. Better access to fresh drinking water and sanitation (Table 3.2) do however offer good support for prevention of corneal scar due to trachoma.

Table 3.2 The population environment of Kitwe – Zambia and Copperbelt Province

POPULATION PARAMETER	ZAMBIA	CBP (if known)
KEY STATISTICS – based on 2000 census or later estimates		
Number	11.5 m (1980 – 5.7m; 2000 – 9.9m)	1.6 m. (467,084 in Kitwe)
Gender	49.2% male; 50.8% female	50.6% male; 49.4% female
Population density	14/sq.km. (Fig.7 shows variations)	52.9/sq.km, but much lower in Luapula and Northern provinces
Annual growth rate	2.1 % (70's – 3.1%; 80's – 2.7%; 90's – 2.4%)	0.8%
Median age	16.5 (46% under 15 years)	? (43.6% under 15 years)
Average life expectancy	40 years	50
Overall dependency ratio	96.2%	85.1
Infant mortality	120/1000 (182 / 1000 > 5s)	92/100
HIV/AIDS prevalence	16.5% (higher for women and in towns)	19.9%
Urban/rural distribution (%)	40/60	18.2/78.2 Urban to rural migration
IMPORTANT DEMOGRAPHIC INDICATORS when considering PBL programme planning (largely 2003)		
Access to clean drinking water	53% (increasing)	78%
Access to good sanitation	45% (increasing)	89%
Public health expenditure (GDP share)	3.5%	-
Child immunization against measles	84%	-
Education expenditure (GDP share)	2.3%	-
Enrolment in primary education	68% (23% secondary)	72%
Literacy in one or more languages	67.9% - rising (see Fig.8 for rural/urban contrasts)	70.5% (see fig.9)
Unemployment	50%	24%
Below the poverty line	85% - falling. Worse in rural areas	58% (see Fig.10)
Living in hunger	28% 2003 – falling	See Fig.11
GDP p.c.	417	-

Fig. 3.4 Zambia - % Literacy Rates (5 years +) by residence and gender, 2000



	Zambia	Rural	Urban
Total	55.3	45	73.5
Male	61.1	51.7	77.2
Female	49.8	38.5	69.8

Fig. 3.5 Zambia - % Literacy Rates (5 years +) by province, 2000

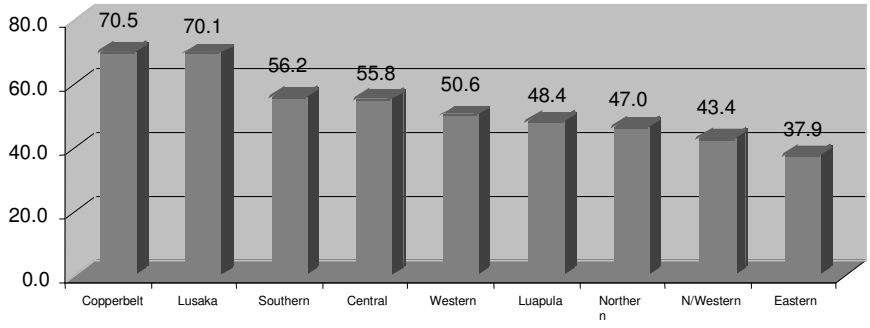


Fig. 3.6 Zambia – Poverty distribution

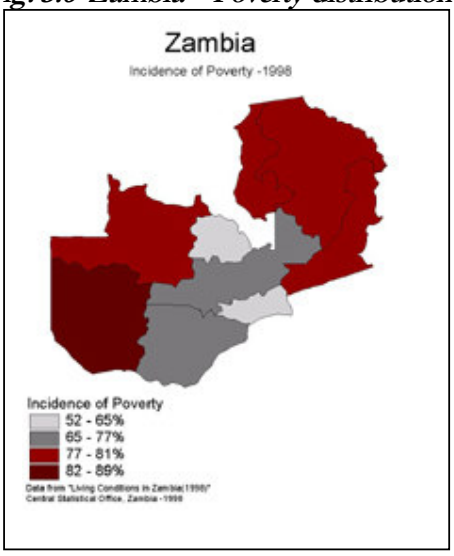
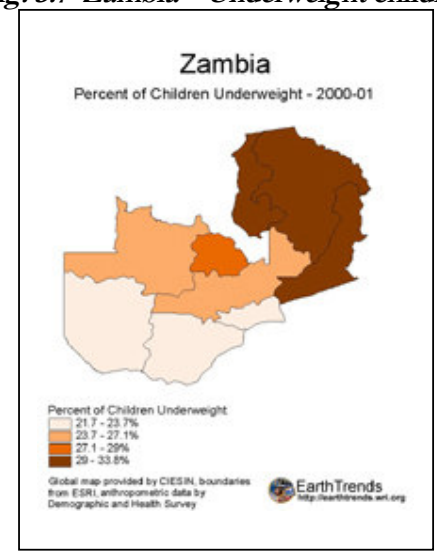


Fig. 3.7 Zambia – Underweight children



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

Zambia has not had a national needs analysis of eye diseases and blindness, although plans are underway to carry out a Copperbelt survey. An earlier survey in The Gambia is the basis for assumptions regarding prevalence and causes of blindness at present (as for most of Sub-Saharan Africa). Survey data from Malawi and Kenya, together with professional expertise, has been used to modify the survey figures for a local context.

Table 3.3 shows the blindness situation for Zambia and CBP, based on that extrapolation from The Gambia. Fig. 3.8 shows the disease break down for the active catchment of Kitwe Central Hospital, calculated in 2003 at 1.3 million, giving blindness prevalence at 1% of 13,000. This catchment included a large part of CBP together with districts of other less well served provinces to the north and east.

Cataract (50%), Corneal Scar (25%) and Glaucoma (15%) are the major blinding diseases, which in the first two cases can be inexpensively prevented or treated, while visual loss from glaucoma can be halted or reduced – all if caught through early case detection and with accessible, sufficient and sustainable resources for treatment.

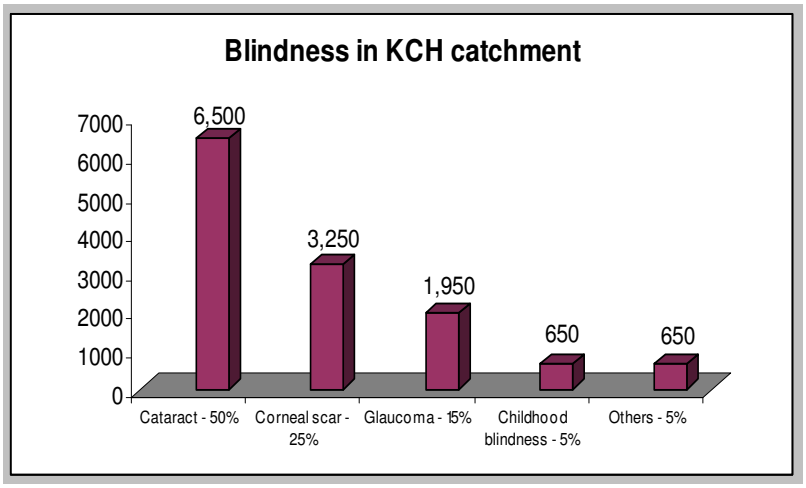
Table 3.3 Blindness estimates in Zambia and Copperbelt Province (based on 2000 population)

	Zambia	CBP
Total Population	**10,000,000**	**1,600,000**
Prevalence of blindness – 1%	**100,000**	**16,000**
Prevalence of main causes of blindness		
• Cataract – 50%	50,000	8,000
• Corneal scarring – 25%	25,000	4,000
• Glaucoma – 15%	15,000	2,400
• Childhood Blindness – 5%	5,000	800
• Others – 5%	5,000	800

Fig. 3.8 Prevalence of blindness in the catchment for Kitwe Central Hospital (2003 estimate)

Although it is estimated that there are 6,500 blind people with cataract in the KCH catchment, the number of eyes with a cataract causing < 6/60 vision (operable) is likely to be 4 times this figure, giving approximately 26,000 operable cataract eyes.

Increasing blindness due to cataract has potentially very negative social and economic effects.



5. KCH – What are the resources for district eye care

Fig. 3.9 KCH Eye Ward

5.1 Human resources

The success of KCH eye unit is heavily reliant on its HR team (Fig. 3.12). The reasons include –

- leadership by the head of the eye unit – see below
- the support of the executive director and the management team of the parent government hospital
- the support from NGOs (see pg. 28), the provincial health office and the Ministry of Health (the state contributes about 30% of the costs – 6% excluding salaries)
- efficient management by the eye unit administrator – see below
- a nurse/patient ratio higher than the hospital average
- incentive schemes for some staff, including salary top ups for outreach working time
- training provision for different cadres in the team
- non-hierarchical structure, promoting teamwork, ownership and an excellent working atmosphere
- reputation in the catchment community.

Ophthalmologists

- The present eye unit head, a Ghanaian ophthalmologist appointed to KCH in 2000, has been able through careful planning and team management to implement an increasingly successful community eye health programme. This case study exemplifies the advantage of initially planning and implementing VISION 2020 at district level in situations that have advantageous conditions – the **right person, in the right location** (see page 20) and **at the right time**, within **a supportive external framework (hospital, provincial office and NGOs on stream)** - see 'Planning Priorities' on page 9.
- The unit head's role is to coordinate, control and monitor the administrative and professional specialist services in order to provide effective and efficient medical and health care services to patients. The job description has four components:-

  (1) Administration - targeting efficient service delivery by formulating, implementing and reviewing the unit's broad policies and procedures, and by monitoring and regulating the use of the unit's resources, including staff through supportive appraisal.

Fig. 3.10 KCH Eye Unit – Ophthalmologist and theatre nurse

  (2) Clinical care - performing specialist surgical treatment, conducting outpatient clinics to review referred case, and leading outreach surgical teams.
  (3) Teaching - providing a surgical attachment for MMED registrars from, for example, Nairobi, advancing the academic excellence and practical competence of the medical team, and undertaking research and publishing findings.
  (4) Liaison - providing consultancy support to medical professionals within and beyond KCH.

- A second ophthalmologist joined the Kitwe team in late 2005.
- Nationally, ophthalmologists are a limited resource of about 15 at present (5 in CBP, 8 in Lusaka, 1 each in Southern and Eastern Provinces) not all practising, giving a ratio of little better than 1 Ophthalmologist to 1 million population (WHO target – 1:500,000 in 2000, 1:250,000 in 2020). Training in the sub-specialty is not available in Zambia – accessible courses exist in Nairobi, Moshi, Kampala, Harare and Cape Town or outside Africa. Participation must be secured through private finances, at times with NGO bursary support – currently five are training in Nairobi and will be distributed to centres throughout Zambia. Attrition is not a problem.

Ophthalmic Clinical Officers (OCOs)

- They act as team leaders with specific medical roles in the eye unit. Their job description in the eye unit team has four target areas:

  (1) Clinical Service – screening – taking history, examining, investigating and treating as appropriate, assisting the ophthalmologist in theatre, carrying out minor operations, carrying out refraction, and sharing an on-call stand in for the ophthalmologist

  (2) Administration Service – planning outreach activities

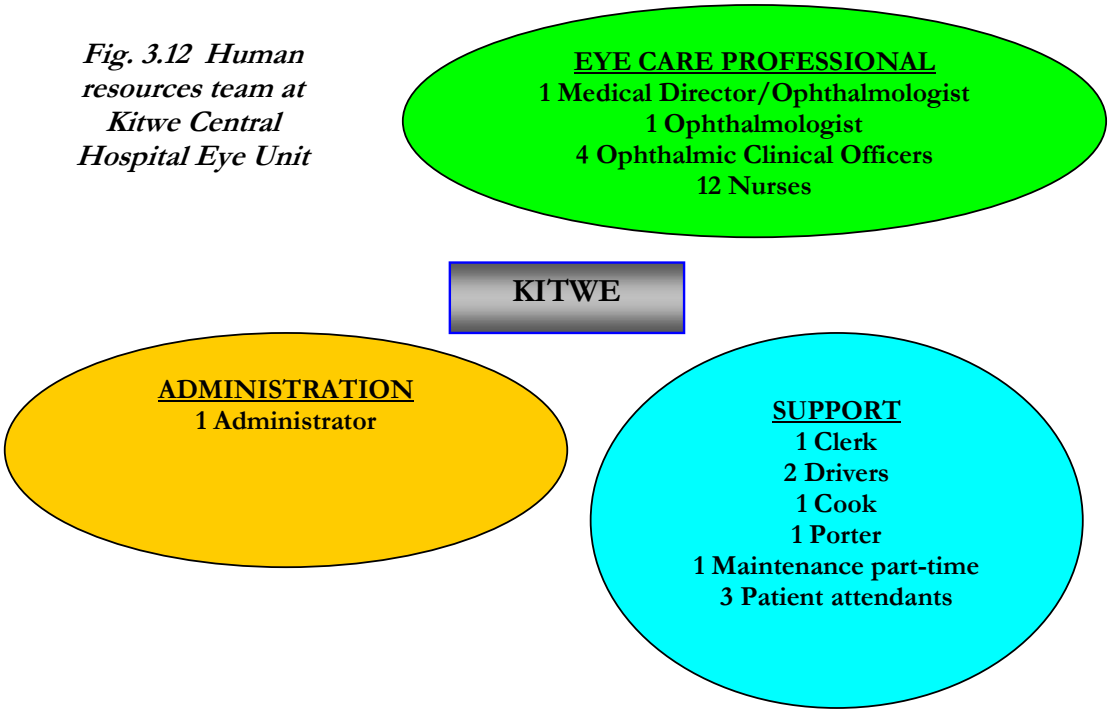
  (3) Health Education – nurse training during attachment

  (4) Community Activities – PBL through community health education and periodic mass screening.

- Screening outreach takes place three times a week in CBP districts. Patients are then taken if necessary either to KCH or to St. Theresa's Mission Hospital, which acts as a second referral surgical centre for three CBP districts to minimise the distance patients must travel.
- Every three months, surgical outreach extends to Mansa in Luapula Province and to Kasama in Northern Province – again to provide easier access for patients who would otherwise have to make their own way to a referral hospital, probably Kitwe.
- Nationally, OCOs are in short supply, in part through attrition to better paid jobs within the medical service or outside Zambia, and also through the continuing growth of the number of district hospitals. A four-year training course has an initial CO training element in Lusaka, followed by a one-year OCO diploma in Malawi.

Fig. 3.11 Outreach surgical team – Ophthalmologist, ophthalmic clinical officer, theatre nurse, eye nurse and driver en route to Mansa, Luapula Province

Fig. 3.12 Human resources team at Kitwe Central Hospital Eye Unit



Nurses

- Either EN – 2-year Certificate trained in Zambia or RN – 3-year Diploma trained also in Zambia (some attrition through emigration of RN nurses). KCH contributes to the national programme for training primary clinic nurses in eye care. EN nurses can progress to an RN Diploma with two additional years of training. KCH has two ONs (Diploma trained in The Gambia), responsible for the nursing body, the leadership of outreach teams in the absence of an OCO, the treatment of minor eye diseases, and taking a lead role in patient screening and nurse training.

Fig. 3.13 Nurse Training at KCH Eye Unit

- The EN role combines basic nursing care (promotion of patient health through on ward care and communication, for example in nutrition and hygiene) with careful observation and recording procedures.
- The RN role is divided between the supervision and training of enrolled nurses, the assessment of student nurses, and the organising of patient reception and the provision of nursing care.
- The Theatre Nurse is responsible for the standard of theatre nursing care, including procedures during surgery and the provision of appropriate drugs.

Patient Attendants

These are directly employed by the unit, rather than seconded from the hospital. Their role is to:

- accompany outreach teams and give assistance in screening patients
- assist in taking visual acuity, intra-ocular pressure and in screening in OPD
- assist nurses in ward tasks
- assist in counselling services.

The Eye Unit Administrator/Project Manager (a qualified accountant and Aravind-trained in hospital administration)

This role holder is the financial manager – receiving and allocating funds, purchasing consumables, writing reports to donors, working with the head of unit and the management team on financial planning and budgetary management, and reporting daily to the KCH Executive Director. This was introduced as a part time post in 2003 but has been full time from January 2005. The administrator has been very successful in ensuring efficient and effective financial back up for the expansion of the eye unit's activities. Previously this central role was a part of the head of unit's job description, so this appointment has freed the head of unit to focus more on the medical priorities in developing eye care services at and from KCH.

The HR Working Environment

As summarised in the introduction on page 23, it is important to recognise not just the effective structure and responsibilities of the unit HR team (Fig. 3.12) but also the broader human context in which the team is encouraged to give excellent service. A number of key points characterise this productive context.

- There is a strong degree of **unit independence from the hospital** – management meetings comprising the six line managers in the unit are empowered to take and act on decisions without representation from the hospital board. This includes setting the budget for the coming year, a portion of which is dependent on government funding. It is only subsequently necessary to report externally on decisions taken. This reflects well on the very supportive hospital framework in which the eye unit works and thrives. The same degree of trust is shown by the **Provincial Health Office** that implements government health policy but which is unobtrusive in its relationship with the operation of this unit. The PHO also contributes to publicity and patient mobilisation.
- Staff meetings within the unit are held monthly and incorporate agenda items suggested by team members, encouraging a sense of **team ownership** in the management of the unit as well as a corporate sharing of both its successes and its problems. Future developments of both Low Vision and Paediatric orientated teams will bolster the positive momentum of the unit. Thus the ethos is horizontal and consultative rather than hierarchical.

- Salaries are funded by the government as the majority are seconded from the parent hospital. Top-ups are available to seconded staff (this excludes the administrator and the patient counsellors), and are NGO funded, to recognise extended hours of work involved in outreach. Other **motivating incentives** include training workshops for all cadres, weekly clinical presentations, a positive appraisal system, the caring quality of the working environment as far as funds permit and social team-building functions.
- The human context includes also the **wider community's respect** for the service of the unit. This is derived both from the successful surgical outcomes of the unit and also the system of patient counselling that attempts to ensure that expectations are realistic. Patients are seen promptly and never turned away. Care and time are devoted to all and knowledge of this respect soon spreads through the community. The shared role of all medical, ancillary and volunteer staff is vitally important in this supportive team communication.

5.2 Infrastructure

- Government support (funded through Highly Indebted Poor Countries initiative) and INGO assistance enabled building repairs to be carried out to original buildings, 2004-5.
- Supplies of consumables from the Standard List of Ophthalmic Equipment are available through government and INGO funds and are accessible with forward planning – a part of the Administrator's responsibility.
- Furniture is mostly inherited from the hospital.
- Equipment needs are largely met through INGO support but some replacement is due.
- The 27 beds are insufficient but space restricts further provision. Patients normally stay two nights. The success of the unit has caused it to outgrow its original buildings. Plans to build a new eye unit to overcome this problem were INGO initiated but have become stalled.
- Two vehicles – a 4-wheel drive and a small bus, INGO funded, have been provided for outreach. Bicycles are provided to case finders.
- A Low Vision unit on site in a renovated building, INGO funded, is due to open in 2006 (initially with two additional staff, trained in Malawi and India at LV Prasad Eye Institute) to assess sight impaired children, assist with LV devices, provide rehabilitation and select appropriate schools for sight impaired children.

5.3 Financial resources

As already stated, the eye unit at KCH is dependent on state and INGO funding to an approximate 30/70 ratio. Most of the government's contribution is for salaries. This central funding, processed through the Provincial Health Office, is provided with the minimum of external intervention in the running of the service. KCH base hospital (government funded) is also responsible for day to day management, services, land and buildings, staff recruitment, and some supplies.

The INGO funding has allowed this unit, unusually in Zambia, to plan and implement a programme that provides a strong model for district level VISION 2020 implementation in Sub-Saharan Africa, both in the structure of the programme and in its function. Its activities and successes are described from pg. 29.

The INGOs most active at KCH eye unit are Christian Blind Mission International (CBMI) from 2003 and Sightsavers International (SSI) from 2004. Funding is received quarterly and like other income sources, including patient payments, it is channelled through the Central Hospital. NGO budgets are prepared separately but endorsed by the hospital's executive director. Their emphasis is on funding separate items with CBMI concentrating on top-up allowances, administration, equipment, consumables, and medicines, while SSI sponsors training and patient mobilisation. Their objectives, though

overlapping, are expressed briefly and individually as follows.

(1) CBMI targets the elimination of avoidable blindness in CBP and the outlying areas by increasing the number of cataract operations (ensuring quality of outcomes) and refractive error corrections.

(2) SSI targets the reduction of preventable blindness in CBP and the outlying areas through the provision of sustainable outreach to screen, a secondary referral service to increase cataract operations, and the training of mid-level eye care workers to staff the primary health care centres. SSI is also involved nationally in Zambia in a project to establish an effective and efficient national eye care co-ordination system in the MoH to improve eye care services across the country.

Other contributors to KCH eye unit are Lions Club of Kitwe, Standard Chartered Bank (Kitwe Branch), Satya Sai Organisation (an Indian NGO), churches (St Theresa Mission Hospital) and traditional healers/leaders. Their support covers such areas as screening camps, patient mobilisation, patient subsidies and World Sight Day.

6. KCH – The District VISION 2020 Programme

6.1 How were the aim, objective and activities defined?

The programme was initiated in 2001 and named the **COMMUNITY EYE SERVICE PROJECT.** Its **aim** was to establish equitable, quality, comprehensive eye care, especially for cataract and refractive error, within and beyond Copper Belt Province. The programme is designed to bridge the gap between tertiary and primary levels of eye care with the latter frequently poorly integrated with PHC in Zambia.

The focus for the funding NGOs is outlined above. Pulling their concerns together, the **objective** for the Project is to reduce the burden of blindness and low vision through increasing the number of cataract operations and refractive error corrections in CBP and outlying areas**.** The emphasis initially was on the catchment districts of CBP; extensions to Luapula and Northern Provinces came more recently.

To achieve this disease control objective, **strategies** to (1) improve human resources and (2) develop the primary eye care infrastructure, in order to achieve enhanced provision for screening and surgery are being realised through a number of **activities**, set out in Fig. 3.14. Activities are budgeted, timetabled and responsibilities allocated to team members. Successive annual plans set and revise targets for each activity.

6.2 What strategies are used in the programme?

Improving human resources

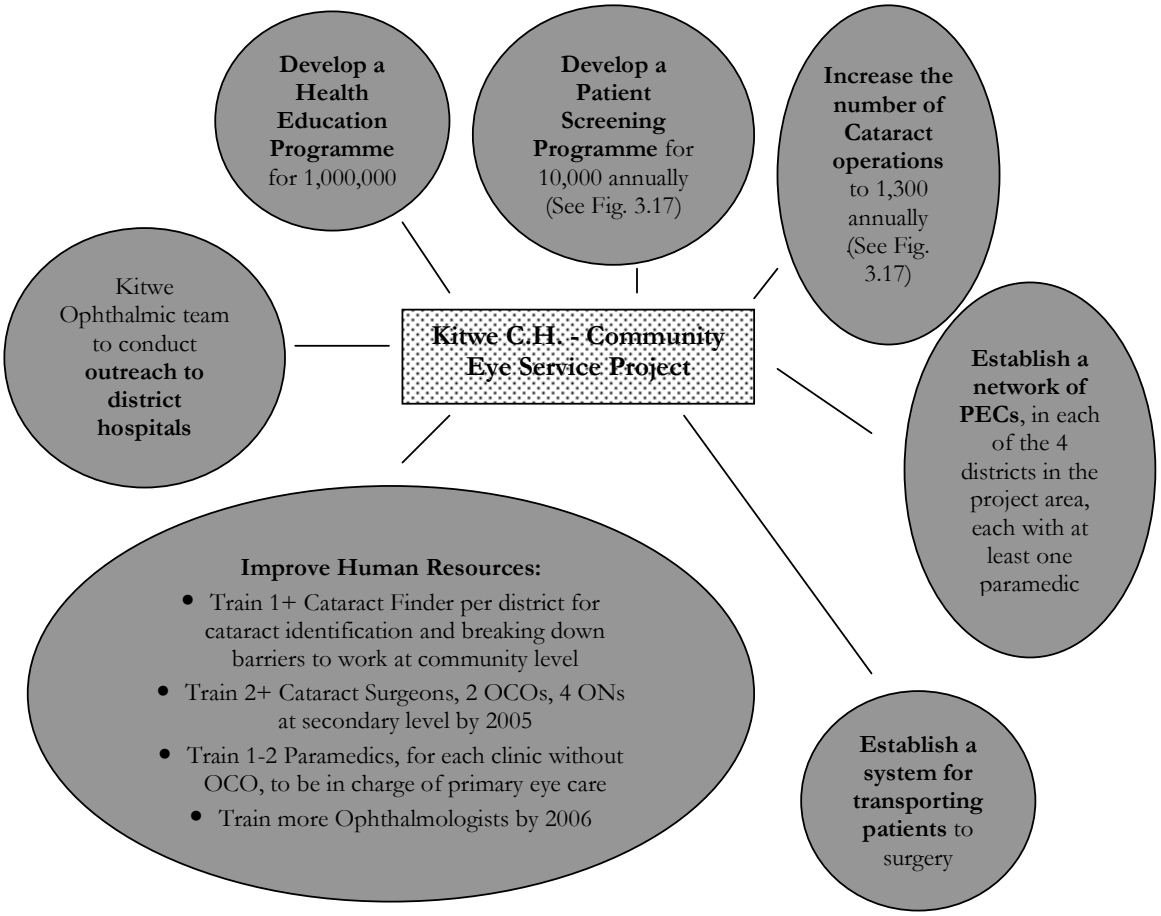
By the close of 2005, there were 29 people (20 in 2003) seconded from KCH to its eye department. Further recruitment as well as the on-going training of existing staff (both to upgrade and refresh) is essential to secure the skills to achieve the growth in screening and surgery targeted by the project. During 2004/5, the following training activities took place:

1. **Ophthalmologists** – The Project took a lead in securing training places for five Zambian doctors on the MMED Ophthalmology programme at the University of Nairobi. One of this group has now joined the Kitwe team to become the second ophthalmologist.
2. **Ophthalmic Clinical Officers** – OCOs, trained in Malawi, have joined the Kitwe team. There is an intention to train more Clinical Officers from the Districts. Patient screening in district clinics requires trained OCOs to reach the necessary targets. One co-ordinator at St Theresa Mission Hospital attended a 2-month certificate course in Community Eye Health.
3. **Nurses** – One nurse was sent to The Gambia to study for a Diploma in Ophthalmic Nursing and is now a second ON in the Kitwe team. A Theatre Nurse from St Theresa attended a course in Uganda. ENs from CBP districts, as well as from Kasama and Mansa in the outreach provinces,

have been given basic ophthalmic training in Kitwe to give them the skills to conduct proficient patient screening, especially in those clinics where OCOs are not yet present.

Fig. 3.14 Activities and targets of the KCH community eye service project planned at the outset of NGO funding – to achieve a reduction in blindness and low vision in CBP and outlying areas

(A VISION 2020 District Programme)



4. **Community Workers** – A workshop was held for the Chief and community health workers in Lufwanyama District, within CBP's catchment area. The purpose was to share information about the objectives and activities of the community eye service. In a culture where there is a limited tradition of volunteer support, it is hoped that such communication will spread awareness and encourage appreciation for the services being organised and so encourage the community to give support, for example in spreading publicity. Neighbourhood Health Committees will be asked to help.

Traditional healers have also been approached in three districts to attend meetings to consider their responsibilities towards health issues and to receive advice regarding safe treatment and the advisability of referral.

Week-long childhood blindness workshops have been held – one for the north and one for the south of Zambia – involving teachers, midwives, nurses and OCOs – to

raise awareness and promote treatment. KCH was represented by a nurse.

5. **Patient Counsellors** – Counsellors are being trained for both the base hospital and outreach centres to provide patients with the right information to overcome superstition and fear and to help them make the best decisions for their eye health.
6. **Low Vision** – Two staff members initially are being trained to staff this new base hospital facility.
7. **Cataract Finders** – Four have been trained and provided with bicycles to assist outreach services at the community level in Kawama, Ipusukulo and Luangwa townships in CBP. They have a role in identifying cataracts and in 'breaking down barriers', by providing positive information about treatment opportunities and facilitating movement to a treatment centre. Their involvement is currently under review.

Developing primary eye care infrastructure

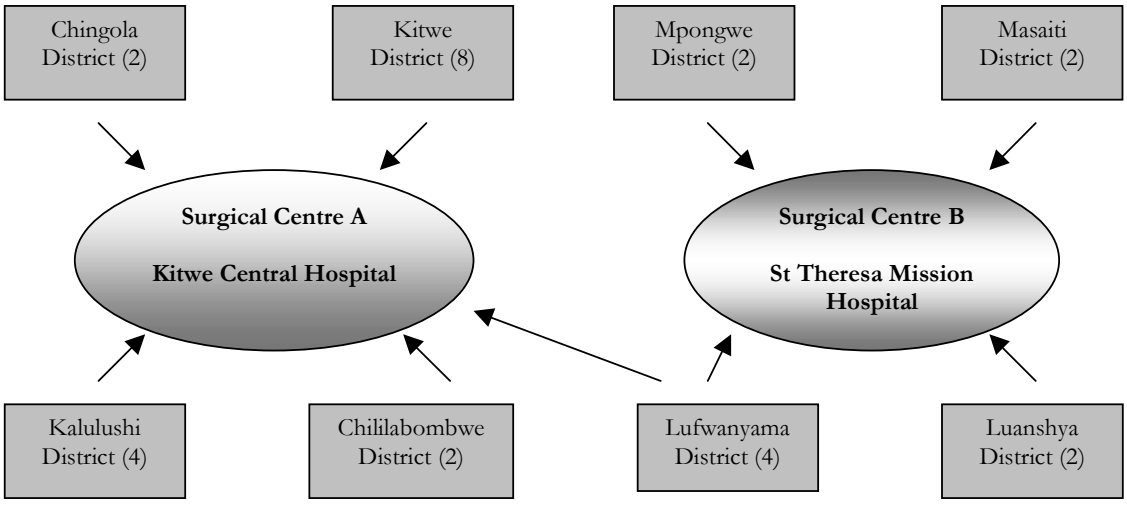
The project activities are planned to cover at least three quarters of **Copperbelt Province** – an estimated population of 1.3 million, with an additional 0.3 million from two other provinces – **Luapula and Northern**. All the project's networked activities are carried out in the district clinics, see Fig. 3.15 for CBP. Good co-ordination between district screening centres, VISION 2020 community eye care centres and surgical centres seeks to ensure good patient awareness, mobilisation and prompt screening/treatment/surgery with good outcomes.

The project is mostly designed to serve people in the low income bracket who cannot afford to pay for health care. As a result the majority are treated free (67%). Additionally, over 65s are also given free treatment by government regulation (21%). This leaves 12% making a direct contribution. Some districts do make contributions on behalf of patients to cover some treatment expenses. Payment rates are: Consultation - £1.30; Treatment for all major eye conditions - £3.00; Post operative review - £1.30. Drugs are additional to these charges. Average weekly incomes in Zambia are under £10 per capita.

Radio and TV are regularly used to raise awareness of the need for eye care and of treatment opportunities, with greater local media emphasis in advance of screening outreach programmes.

(1) Copperbelt Province

Fig. 3.15 Copperbelt Province - District eye care clinics (with screening frequency/month)



Outreach patients are brought in on Monday, surgery follows on Tuesday and discharge with transport is provided the following day. On Friday, patients are received from St Theresa or the surgery team visits that hospital. In all cases patients are screened and mobilised by district clinic staff. This pattern is for approximately nine months. During the other quarter, farming activity is more intense and outreach is cut back to conserve resources.

1. **Kitwe** is the third largest city in Zambia and KCH is the third largest referral hospital. Community PEC clinics are based in PHC centres in selected townships of Kitwe District – Kawama, Luangwa, Chimwemwe, Ipusukilo, Kamfinsa and Ndeke. The number of these clinics is growing each year. They are used as weekly screening centres with an outreach team consisting of an OCO and a nurse, supported by local nurses and community health workers. Churches and community workers contribute to publicity and social mobilisation. Patients can be transported to KCH for surgery, although in 2005 38% of the patients made their own way to the hospital.
2. **Masaiti, Mpongwe and Luanshya Districts** access St. Theresa Mission Hospital, at Ibenga, at which an OCO with two nurses runs the hospital clinics together with village outreach. Transport is provided for outreach patients. This also serves as a second surgical referral hospital for these three districts, removing the transport problems in reaching Kitwe. The KCH surgical team visits fortnightly.
3. **Lufwanyama** (St. Joseph Mission Hospital) is a much smaller rural district; about one hour's drive from Kitwe, with eye clinics based weekly in various health centres and health posts and run by a KCH OCO since 2002. Cataract case finders assist in identifying potential patients. The District Health Management Team (DHMT) provides publicity and transport for cataract patients to KCH or St Theresa.
4. **Chingola District**, the furthest from Kitwe city, has had an OCO and nurse to conduct daily clinic and outreach for the remotest rural parts of the district since 2003. Transport problems necessitate either the DHMT or KCH providing cataract surgery patients with transport to Kitwe. A future surgical centre may be established here (or at Mufulira) – the fifth in the project.

(2) Luapula and Northern Provinces

Since 2004, the KCH surgical outreach team has made quarterly visits to Mansa in Luapula Province and Kasama in Northern Province. In both cases there is no ophthalmologist, so the alternative would be a long journey to Lusaka or Kitwe. The secondary hospitals are used for this.

KCH established the partnership through the PHOs. The hospitals provide food and accommodation for the visiting team of 5, together with 7 additional staff. The hospitals also provide publicity and passenger transport. The Lions club helps in all these matters. The KCH team brings the surgery materials.

Fig. 3.16 Patients awaiting surgery at outreach clinic

Before each surgical outreach, local staff screen at publicised clinics and health posts. Dates are given to patients in need of

surgery (mainly cataract and glaucoma) to ensure they are present at collection points (7 for Mansa and 11 for Kasama) for onward transport to the hospital. After surgery, the local team follows up on the patients.

6.3 How is the programme managed?

The management structure for KCH eye unit closely resembles the recommended model set out on page 12.

The **Management Committee** comprises the Executive Director and line managers of KCH (nursing, medical, outreach, financial), PHO representatives, PHC clinic representatives and community leaders. Its role is to make appointments, pay salaries, agree incentives, receive reports and support the executive committee. The Committee, though watchful with its responsibilities, is easy to work with and a source of strong support.

The **Executive Committee** meets weekly and represents the line managers of the eye unit for patient care, outreach, personnel establishment, finance and consumables. As outlined previously, this group has the day to day responsibilities for implementing and monitoring the Community Eye Service Project (District VISION 2020 Programme). Its role reflects closely the nine points set out on pages 12-13. Within this management structure, this Committee has considerable devolved powers to achieve its objectives. Ideas from this committee are communicated to the Executive Director for approval, who later will receive reports on outcomes. An environment characterised by success, teamwork and trust is important in ensuring that people and funds are managed efficiently and effectively to the community's benefit.

6.4 How is the programme monitored?

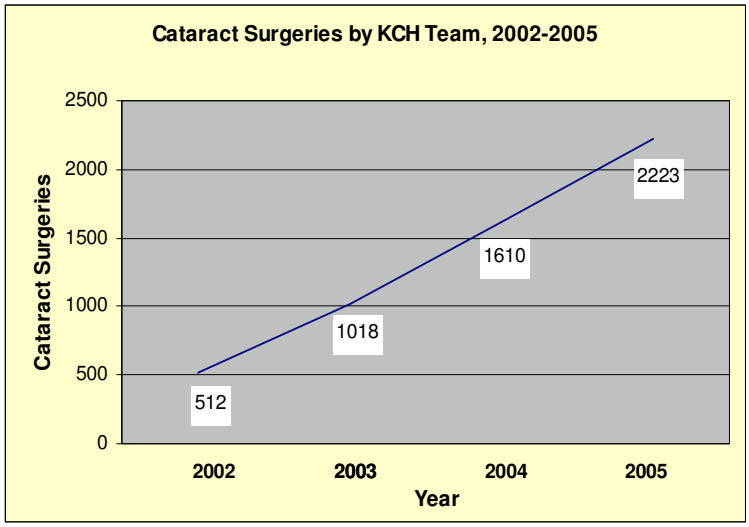
Internally the KCH eye unit reports at intervals determined by the NGO funders – as below. The narrative report, setting out activities and achievements against targets, is prepared by the Medical Director. The financial and statistical reports are collated and presented by the project administrator, who is the principle communication link with the external bodies.

Four organisations are involved in the external monitoring of the programme.

- **CBMI** monitors annually on the basis of three annual reports – narrative, financial and statistical. Advisors also visit to evaluate and make recommendations. No problems have been experienced as the cataract surgery rate is showing great improvements. The idea for the LV unit also came from CBMI, which has helped to gain the agreement of the Central Hospital. Success is measured by: (1) number of patients pre-screened by detectors; (2) number of patients confirmed by permanent screening centre; (3) number of surgeries undertaken in each centre; (4) post operative visual acuity reports after refraction.
- **SSI** requires quarterly reports, also in three forms. Their regional representative visits and evaluates also quarterly – again with no consequent difficulties. Data reported is as above plus the number of paramedical staff trained. At the close of the project, SSI will additionally be concerned about access to treatment with regard to patient gender and economic status.
- Ndola **PHO**, in overseeing salary and other state income payments, requires no separate report except for that received from the Central Hospital – including an eye unit section. The Unit's annual report is also received by the PHO.
- At **central government** level, the National VISION 2020 Committee of the Central Board of Health also receives this narrative report but has so far made no comment. The new appointment of a National VISION 2020 Co-ordinator should bring a stronger central interest and response.

With regard to the key objective of increasing **the number of cataract operations**, monitoring shows the success of the programme (as graphed in Fig. 3.17).

Fig. 3.17 Increasing cataract operations at KCH, 2002 - 2005



Before 2002, the figure was under 100.
The growth shown has come in part from increasing outreach activity in Luapula and Northern provinces.
The 2004 total of 1,610 (29,330 patients seen) was greater than the target of 1,500.
The 2005 figure of 2,223 was against an estimate of 2,000 with 28,886 patients seen.
Of the surgeries, 1003 were at KCH, 442 at St. Theresa, 506 at Mansa and 272 at Kasama
The KCH target for cataract surgeries is 3,000.

A number of procedures contribute to this increase.

- Surgery throughput is maximised with a team of 6 – 1 blocking, 1 setting tables, 1 bringing patients, 1 runner (IOLs, drugs, forms, etc), 1 theatre nurse and 1 surgeon.
- Quality of outcome is promoted by patient screening at three stages – initial, on arrival at hospital and at blocking. A major concern to parallel increased output is improving the quality of outcome. Evidence of other eye diseases on screening that may act against improving acuity with cataract surgery can be a factor in reasoning against surgery. Patient counsellors are trained to give individual support before a decision is taken.
- About 10% of identified cataract patients have not gone to surgery because of other conditions or patient mental/social barriers (in 2004, 1,610 cataract surgeries on 1,781 identified patients).
- Treatment is normally ECCE + IOL, taking 10 -15 minutes.
- Day 1 – patient arrives, is examined and given a health talk and operation preparation; day 2 – operation; day 3 – removal of bandages, acuity test and home. Follow up after one month – sometimes does not happen for in house patients because of travel costs.
- Maximum daily throughput capacity at KCH base hospital is for 50 cataracts. This may not be reached because of other surgeries or a lack of patients possibly due to farming season or to inefficiency of cataract case finders with competing jobs who find the incentive structure not sufficiently rewarding.

Capacity needs to be increased – handicaps include limited bed spaces, a small operating theatre, aging equipment and an unreliable water supply.

The intention to raise the number of cataract operations in 2005 was achieved by:

- increasing publicity – lobbying support from Neighbourhood Health Committees; printing brochures and posters; making greater use of the print and electronic media
- increasing the number of outreach activities within and beyond CBP
- increasing use of patient counsellors to overcome the barriers imposed through fear and belief
- improving administrative strength to increase the potential for working towards full capacity.

7. What have been the key milestones in this programme?

Table 3.4 Development Time Lines of PBL for Zambia and Kitwe C.H. (not to scale)

ZAMBIA		KITWE
	1958	KCH opens
	1974	Eye department established
Health service reforms are initiated with emphasis on	1991	
decentralisation and district empowerment		
CBoH is established to implement MoH policies	1996	
	2000	Present unit head is appointed
Government signs up to VISION 2020	2001	Community Eye Service project is initiated
		Outreach programme to CBP begins
National 5-Year Strategic Plan is drawn up for	2003	Administrator appointed part time
the Prevention of Blindness		Partnership with CBMI begins
National Planning workshop to launch Strategic Plan	2004	Partnership with SSI begins
		Outreach to Luapula and Northern Provinces begins
National Eye Care Co-ordination Project begins	2005	Administrator becomes a full time appointment
National Committee for the Prevention of Blindness starts		Second ophthalmologist is appointed
National VISION 2020 Manager is appointed	2006	Low Vision Unit opens

8. What conclusions can be drawn?

The Kitwe project is now in its sixth year. Its strengths as a successful model for the care of community eye health through district level VISION 2020 can be summarised by:

- highlighting the influential aspects (positive and negative) of its broader **environment** (Table 3.5)
- drawing out the key elements in the **programme** (Fig. 3.18).

Table 3.5 Assets and challenges for the KCH Project – national and provincial

Assets	Challenges
Verbal support from the government – for decentralisation and horizontal integration of health care at the district level. Support also through financial flows, especially for salaries	Low national income, adversely affected by: (1) an economy reliant largely on the export of a primary product, subject to world price fluctuations, and (2) high levels of international debt
Appointment of a National VISION 2020 Manager with powers to co-ordinate eye care nationally	Prevalence of other major disease problems – HIV/AIDS, TB and Malaria – competing for scarce central government health resources
Political stability with less factional disruption than in some other parts of Africa	High national levels of unemployment and individual poverty
VISION 2020 advocacy at national level leading to a National Plan in 2003	A National Plan for VISION 2020 that does not incorporate a clear plan for district level implementation
Support both from central government and provincial health offices	Very inadequate and poorly distributed national human resources for eye care
CBP factors include the number and density of population, accessibility, relatively favourable attributes of lower poverty and unemployment, higher literacy, better water supply and hygiene	A lack of training resources within Zambia for the higher levels of qualification for eye care professionals
The existence of an eye department at KCH since 1974	A national eye care infrastructure that means that many populations in need remain largely unreached

The reasons for the growing success of this model programme, with its important features shown in Fig. 3.18, can be set out by analysing how four central issues, common globally, are resolved at Kitwe.

1. **How are cataract patients encouraged to attend for surgery? – The three C's provide the answer:**
   - **Care** – The KCH team has a wide reputation for its pronounced patient care ethos, demonstrated by a number of features, including – minimal waiting times; unhurried consultations; skilled patient counsellors reducing concerns and ensuring realistic expectations; a focus on an open and welcoming respect for patients by the whole KCH team – medical, ancillary and volunteer; and not least its successful surgery outcomes. The caring approach helps to overcome real or mental barriers of distance, costs of travel, poor escort availability, fear of surgery and beliefs.
   - **Co-ordination** – Two communication links are particularly important:- (1) Good patient access to convenient and free transport from collection points and a secure awareness of set dates and times for pick up ensure that screening centres are well used on the set days, that consequent surgery appointments are reliably kept and that patients return for follow up appointments. This last point is actually much easier to ensure for outreach patients than for the walk in-patients at Kitwe. (2) PHC staff in clinics and hospitals, trained in eye care, provide secure information links between locally based screening activity at outreach centres and visiting surgical teams.

- **Community** – The whole community, represented through neighbourhood health committees, supports this drive for improved community eye health and is involved in local meetings and through the media in health promotion to urge forward those in possible need of treatment.

2. **How is staff motivation kept at a high level** to achieve this successful service? It is the result of a complementary balance between a caring, yet highly professional style of leadership and team reward.

   - **Leadership** – As stated earlier – the right person appointed at the right place and at the right time has been all important. The management style of the unit head has successfully moulded a highly motivated, industrious and caring team that not only brings the patient care above but also characterises a working environment founded on mutual support and respect. At the same time the skills demonstrated by the unit head in surgery, teaching, administration and external relations have provided a strong foundation on which to establish a leading centre of eye health in Southern Africa.

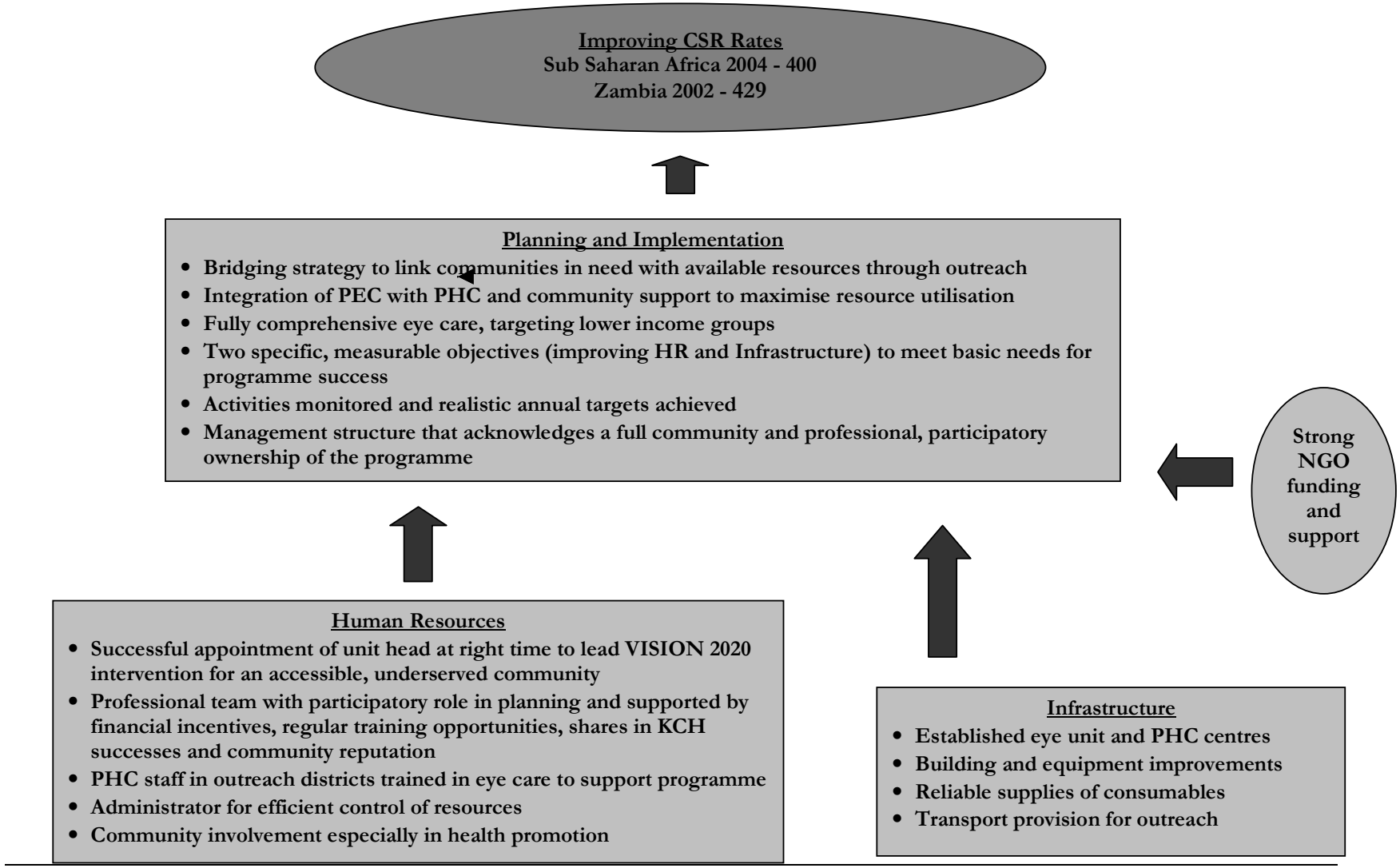
   - **Reward** – Staff at all levels are encouraged in this participatory, non-hierarchical structure to share in the drive to make the KCH community eye project successful. A number of examples can be given: - monthly staff meetings with agendas drawn in part from staff concerns; group clinical presentations; financial incentives in recognition for time given to long days of outreach; good access to training opportunities; positive procedures for appraisal; bonding activities through social events organised for all staff members; and, not least, a shared ownership of the unit's evident success and growing reputation.

3. **How is the project financed?** It is accepted at Kitwe, as through most of Sub-Saharan Africa, that the goal of sustainability for the eye care programme has to be seen for some indeterminate time in terms of guaranteed external support – whether through I/NGOs or the state or a combination of the two. At present Kitwe eye unit is dependent on both to the ratio of approximately 30 % state support (largely salaries) and 70% I/NGOs. The role of CBMI and SSI in particular has been crucial in two ways. The generosity of their support has been described on pages. 28-29. Additionally, their experience of project management has helped to ensure proactively that realistic targets, carefully monitored, have kept the project well on track with respect to the key objectives of promoting both HRD and the primary eye care infrastructure for outreach support.

   While the success of the project has undoubtedly encouraged I/NGO investment, in the longer term the balance between state and I/NGO input must change. This will enable I/NGO support to be redirected to currently under-funded districts. A slow growth in cost-recovery on site (at present minimal), enabled in part by a growing demand for an expanding service, together with an appreciation by the state of the need for increased funding for a successful programme has to eventually secure those necessary future financial adjustments. The time factor for this transition remains an unknown.

4. **How is the project managed?** Three strands work well together to compose a good complementary model. (1) The hospital's management committee, with government, professional and community representation, provides strong support and co-ordination with minimal pressures. This is also the experience at Mansa and Kasama General Hospitals. (2) The eye unit's executive committee, involving the unit managers, has the day to day responsibility for implementing the programme. (3) The unit head and the unit administrator are the key personnel within the unit's administration and in its external dealings with all stakeholders.

Fig. 3.18 Elements of the KCH VISION 2020 model programme



The growth plan for 2007, building on these successes, includes the following objectives:

- increase surgery, including glaucoma and trachoma as well as cataract
- increase the number of refractions and open an optical shop
- introduce a high cost clinic to enhance income to complement partner support
- employ an additional doctor for specialist clinics, for example paediatrics and training programmes
- recruit and train three further OCOs
- employ a cashier for the paying clinic and the optical shop
- increase ONs to three
- increase training workshops for local and district staff
- train in refraction and LV services
- move to the development of a full and permanent eye care programme based on Mansa, supervised by KCH with the support of Mansa General Hospital, the District Health Team and the PHO.

It has to be acknowledged that Kitwe Central Hospital and Copperbelt Province are not typical of Zambia. As outlined in this case study, the relatively helpful demographic characteristics and health care resources found there have contributed to the successes achieved in the early years of the community eye health project. With the key elements of this model, summarized on page 38, including a continuing access to external financial support, it should be a realistic goal to achieve a CSR of 2000+ by 2010, beyond which reduced incidence will lead to a falling population of avoidably blind people. It is accepted that this external funding has to be a long term certainty in low income economies that cannot plan for locally based sustainability. It is however also realistic and very relevant to suggest that, with the adoption of some elements of the careful planning and management strategies in the model adopted at Kitwe, cataract blindness in particular can be successfully reduced in other districts, both within Zambia and beyond.

Chapter

4

Case Study 2 – MUDHOLE, ANDHRA PRADESH, INDIA

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What can we learn from Mudhole?

Choosing a case study from Asia was not easy. The variety of contexts, that stretch from the lands of the Middle East, through the nations of the sub-continent, to China and the peninsula and island states of the continent's Pacific shore, present little common ground, politically, socially or environmentally – just a unifying need to remove the scourge of preventable blindness.

The progress of VISION 2020 in these lands is also extremely variable. The suggestion was made to take a district programme from India, where VISION 2020 has been adopted as a guiding blueprint since 2001. This is true both at national and at state level, where local autonomy has enabled schemes to evolve in tune with local conditions.

Mudhole, a secondary satellite hospital in a large national NGO programme in India's South East state of Andhra Pradesh, was eventually chosen. Why? A first look may be disappointing as the focus of the organisation for Mudhole secondary eye hospital is the influential NGO of LV Prasad Eye Institute in Hyderabad. The role and importance of that very successful tertiary centre cannot be denied. However, the ideas that have germinated from there to be employed at Mudhole have enabled many people in need to be reached with quality, comprehensive eye care through low cost procedures. This district model therefore should be seriously considered by programme planners whatever the context.

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

Mudhole is a small town in the south west of Adilabad District (AD in this study). This district is situated in southern India, in the far north of Andhra Pradesh (AP) state, next to Maharashtra state (Fig. 4.2).

AP, bordering the Bay of Bengal and lying between 12º and 22º north of the Equator, is the fifth largest (by population) of the 28 states in the country. Its capital is Hyderabad. The state comprises three regions (Fig. 4.1). The fertile Coastal Andhra (Kosta), including the deltaic, perennially irrigated lowlands of the lower Godavari and Krishna rivers, is often termed India's rice bowl. To the west, behind the low hills of the Eastern Ghats and on the

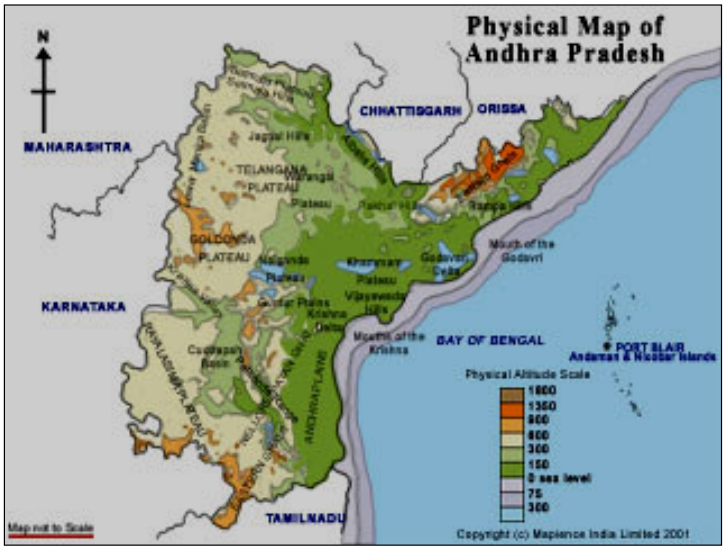


Fig. 4.1 Physical features of Andhra Pradesh with Adilabad District and Mudhole lying on the Telangana Plateau in the climatically unreliable low plateau lands in the north

edge of the Deccan Plateau, lie the other two regions, Rayalaseema to the south and Telangana in the north west. AD (Fig. 4.3), one of 22 districts in AP, is typical of Telangana region. This less favoured part of the state is subject to extremes of heat in the early summer and also to an unreliable monsoon with consequent risks of severe drought. As a result, Telangana, a largely agricultural and less populated area, is a region of low economic development and above average poverty, as shown in Figs. 4.3 and 4.4 and later in Table 4.3.

Fig. 4.2 Position of Andhra Pradesh in Southern India

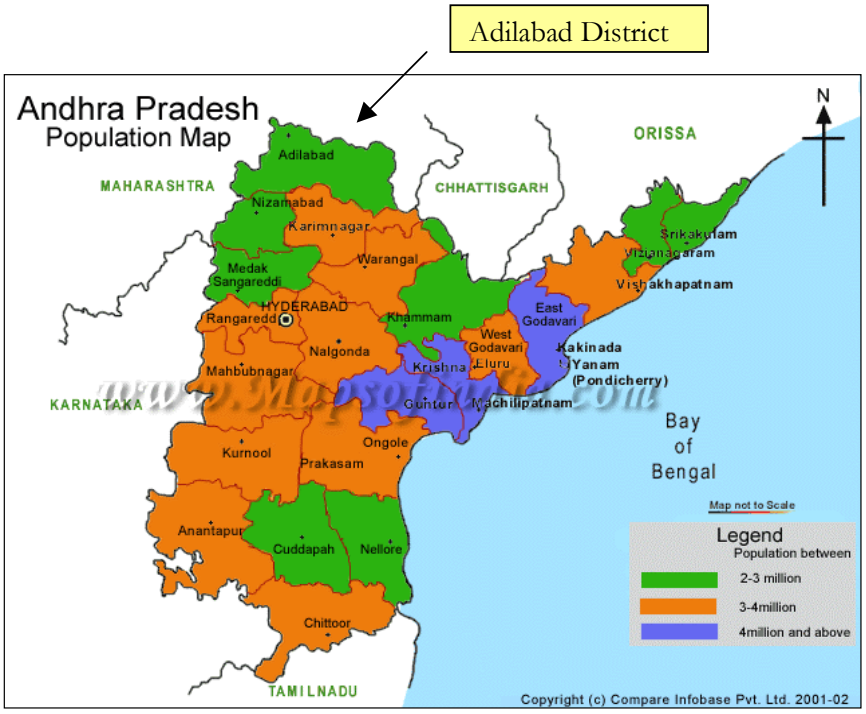


Fig. 4.3 Location of Adilabad District in the far north of Andhra Pradesh state, showing the distribution of the population by district at the time of the 2001 census

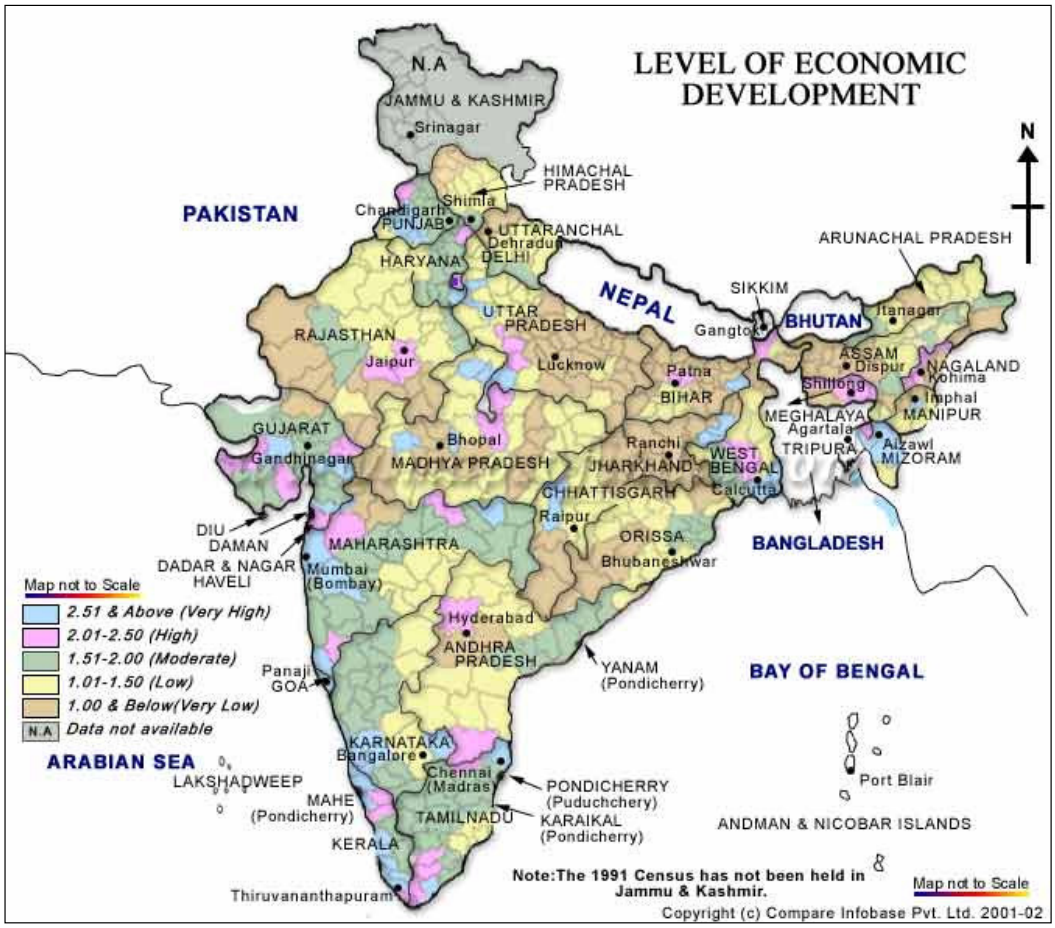


Fig. 4.4 Levels of economic development in India as an indicator of wealth distribution (2001) and of relative poverty in northern Andhra Pradesh (Adilabad District in Telangana region)

- Andhra Pradesh is 73% rural.
- 85% of the poor are rural, especially in AD in Telangana region.
- 70% of the rich are urban, largely in and around Hyderabad.
- 6.67% in AP are unemployed.

2. Is there government support for community eye care at national and state levels?

A nationwide sample in a survey carried out by the Indian Council for Medical Research, 1974-6, showed a blindness prevalence of 1.34% (and a cataract contribution of 55%). As a result, the Indian government in 1976 took a global lead in recognising prevention of blindness as one of the government's 20 priorities – encouraging health education, planning an appropriate infrastructure and organising eye camps. Developments in succeeding years are headlined in the following chart and considered on the next page. Despite these activities, blindness prevalence continued to increase through to the turn of the century, eventually leading to the more radical approach offered by VISION 2020.

Table 4.1 Development time line for PBL in India and Andhra Pradesh (not to scale)

showing key dates in the growth and means of government support for community eye health at national and state levels

INDIA		ANDHRA PRADESH and MUDHOLE
Government adopts PBL as a priority following national survey Danish assistance prog. Increases infrastructure at all levels	**1976**	
Government accepts WHO Almata Declaration of PHC for all	**1978**	
National health policy includes control of blindness	**1983**	
Increased prevalence shown by PBL national survey Other INGOs follow HKI lead and become involved in Indian PBL, especially with cataract	**1986**	
	1987	LV Prasad Eye Institute (LVPEI) established
Decentralisation of PBL proposed – 5 district pilots across India District Blindness Control Societies to plan and implement PBL	**1991**	
Review leads to recommendation to decentralise to **all** districts	**1993**	
7-year World Bank investment programme in 7 states with highest prevalence of blindness	**1994**	Andhra Pradesh becomes one of the seven states in the World Bank programme
	1996	Mudhole Rural Eye Centre (1st LVPEI satellite) in December.
National adoption of VISION 2020 in late October National survey shows decrease in prevalence of blindness	**2001**	AP adopts VISION 2020 on October 4th
	2002	AP Right to Sight Society is founded
	2003	First Vision Centre in Mudhole catchment opens at Bhainsa
400 District Blindness Control Societies (DBCSs) active in 600 districts under state government control	**2006**	23 DBCSs are active in AP

Some key events in the growth of PBL support over the past fifteen years:-

1991 – **Nationally** the 5 pilot districts for PBL decentralisation were carefully selected and widely distributed. They each had populations of about 2 million.

The District Blindness Control Societies (DBCSs) were to be autonomous groups of locally assembled experts, providing local planning expertise, with stakeholders from public and private sectors and from voluntary associations. A district programme manager (usually an individual retired from public service) was selected and given an honorarium and a vehicle. Each DBCS was to be chaired by the District Magistrate or Deputy District Commissioner.

Funding came directly from the national government channelled through the districts. The amount was related to need and track record for efficiency. 1991-92 brought a 150% improvement in cataract surgeries by the worst performers and 300% by the best. 60-70% of the improvement came through NGO involvement - they were given subsidies and reimbursed costs for holding screening camps and transporting patients to hospital. Part of the DBCS funding (25-30%) was based on subsidy per case.

The success of this policy was acknowledged in a **1993** review and a national recommendation followed to decentralise and extend the DBCS approach nationwide.

1994-2001 – The World Bank invested USD 118 million in PBL programmes in 7 states with highest prevalence (>1.5) in the earlier (1986) survey. The programme supported more than 12m surgeries (40% sight restoring) in the public sector (with some cost-recovery) to those presenting <6/60. In the first three years, 1994-1996, 200 DBCSs were set up in the 7 states, including Andhra Pradesh.

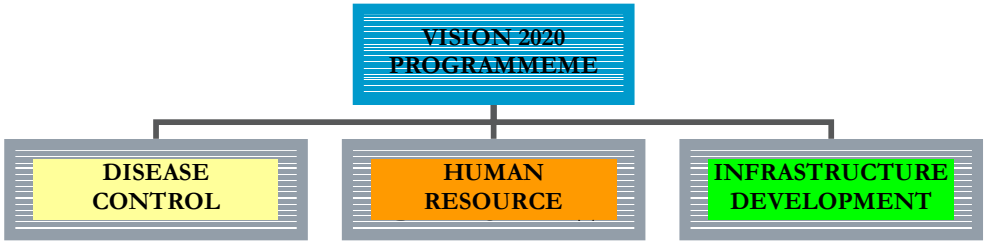
Eye care is **now** about 30-40% public, 30-40% highly subsidised through I/NGOs and 30% in private hospitals. DBCSs persuade private hospitals to join the scheme through a wide application of surgery subsidies.

2002 – Following the decision of **AP** to adopt VISION 2020 in 2001, the state formed the **Right to Sight Society (AP RSS)** chaired by the Chief Minister. This has two bodies. (1) The governing body, with the Health Minister as vice chair, has a membership that equates government representation with that from NGOs and private bodies. It determines broad policy and the allocation of funds (presently 60% state but with reduction to 40% planned by 2020 through NGO subsidy and cost-recovery). (2) The executive has an eminent ophthalmologist as vice chair and the same balanced representation in its membership and on sub-committees. This body devises improvements to eye care services to implement VISION 2020 strategies and to improve the residency programme. Although this two-layered model is still evolving, it is being adopted by other state societies and as a model for national PBL organisation.

The AP RSS receives an annual budget (INR160m/year) to invest in the three pillars of the VISION 2020 programme - disease control, human resource development and the strengthening of infrastructure. Additional funds are available through an IOL subsidy (INR750), which increases to INR1000 for screening and surgery transport in difficult to reach areas. Graded incentives also encourage higher performance levels. The success of the rural eye centre at Mudhole, featured in this second case study, is due in part to the support of the AP RSS, whose wide ranging activities are summarised in Table 4.2, on the following page.

2006 - Each Indian state has the autonomy to select the cost-recovery measures they think appropriate. In **AP,** state hospitals have not practised cost-recovery for the last 18 months, just charging a registration fee and a charge per item. As will be seen later, **Mudhole** and its linked centres do not reflect the state's practice of long term dependence on subsidy. A strong feature of this successful project is the **drive for cost-recovery and targeted sustainability at each individual rural eye centre.**

Table 4.2 Activities of the Andhra Pradesh Right to Sight Society (from 2002)



DISEASE CONTROL STRATEGY	ACTIVITY
Cataract	Prompt grants for free cataract surgeries with enhanced support in remote areas – over 26% increase in surgeries in AP state 2002-2005
Refractive Error	Screening in all government and aided schools with free spectacles to all children with significant refractive error and to elderly people below poverty line – giving a state increase of 3,659% in free distribution 2002-2005
Corneal Blindness	Distribution of Vitamin A capsules
Primary Eye Care	Planned establishment by Dec. 2006 of vision centres in government primary health units
Childhood Blindness	Development of 4 government CB units
Diabetic Retinopathy	Planning for a workshop to identify strategies to manage DR in AP to be implemented in government medical college hospitals
Low Vision Care	Planning for a workshop to identify strategies to develop LV care centres in government teaching institutions and to make LV care part of ophthalmic residency curriculum
Eye Banking	One eye bank to be established per 20m people

HRD ACTIVITIES

1. **Training of ophthalmologists, e.g. specific disease fellowships, IOL treatment, training trainers, district programme managers – 850 Os for a population of 76m**
2. **Funding residency programmes to promote O specialisation**
3. **Funding fellowship programmes to promote sub-specialties**
4. **Providing grants for Os to attend academic conferences**
5. **Training MLOPs – e.g. refresher, CEH and technician courses – 650 MLOPs**
6. **Training ophthalmic nurses – refresher courses and phaco assistance**
7. **Upgrading libraries for residency programmemes in eye departments**
8. **Upgrading teaching/learning aids**
9. **In state training facilities are provided for all eye care cadres**

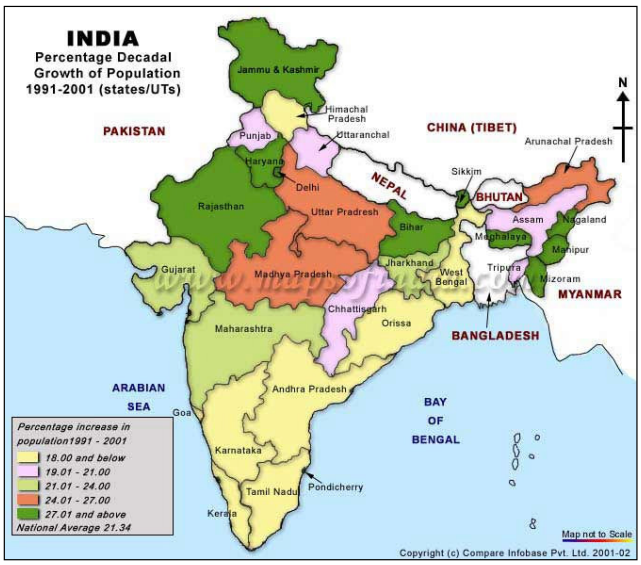
IS ACTIVITIES

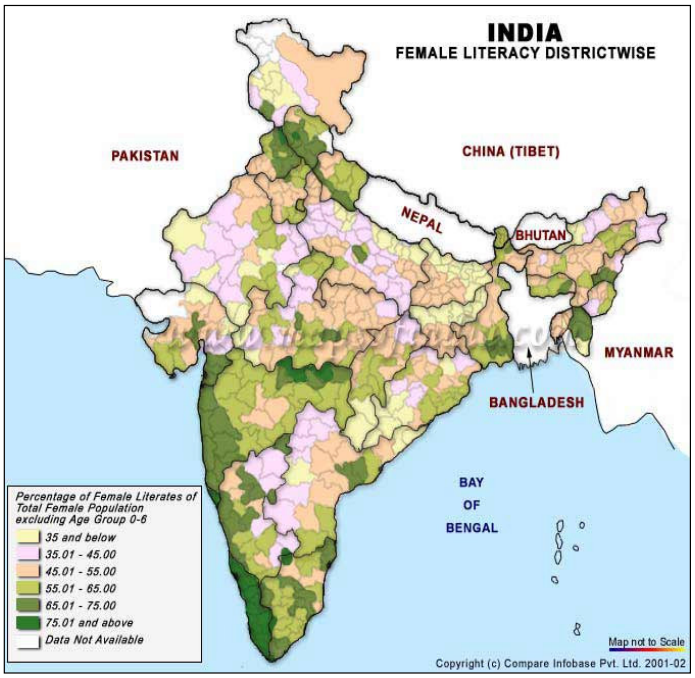
1. **Strengthening equipment base in government and NGO sector eye hospitals**
2. **Supplying of eye screening kits to all DBCSs**

3. Needs Assessment 1 – What are the population characteristics of Adilabad District in Andhra Pradesh?

Some maps and statistics are included to show a number of important demographic characteristics of the case study area – for Adilabad District (AD) if available and for Andhra Pradesh state at large. The problems outlined have been a key factor in selecting the Mudhole site for a rural eye centre as a pioneering satellite project.

Fig. 4.5 Population growth by state in India for the decade 1991 – 2001





- The map (Fig. 4.3) and Table 4.3 show the lower than average population numbers and lower density in AD, despite a higher growth rate, than for AP as a whole. While Mudhole, serving a population of 0.5m, complies with the model size for a VISION 2020 district programme, the relatively small and scattered farming population clusters in its catchment area have had to be carefully considered in the integrated PBL plan to serve these rather isolated communities.
- The maps (Figs. 4.4, 4.5 and 4.6) and Table 4.3 show further problems for AD. Despite the industrial growth of the state capital Hyderabad, the population growth of AP remains lower than average for India. The relative poverty of rural AP and especially AD, with larger family size associated with the higher than average population growth, is accompanied by lower literacy levels especially for women. These factors have presented challenges, for example (1) to educate mothers in particular and the community in general to accept and follow advice and (2) to provide treatments at Mudhole eye centre that can meet long term needs with sustainable resources. Such resources cannot be dependent on either cost-recovery from the majority of patients who are poor or on unreliable long term state support.

Fig. 4.6 Female literacy in India emphasizing the relative disadvantage of Andhra Pradesh and Adilabad District

Table 4.3 The population environment of Mudhole – India, AP and AD

POPULATION PARAMETER	INDIA	ANDHRA PRADESH	ADILABAD DISTRICT (if known)
KEY STATISTICS – based on 2001 census or as given			
Number	1,027 m	76.2m	2.5 m (Mudhole 0.5m)
Gender (f/1000m)	933	978	980
Population density/sq.km.	307	275	154
Annual growth rate (%)	1.4	1.8	1.91
Average life expectancy	63	62	
Dependent population (%)	38.0	42.7	
Infant mortality / per 1000 live births	61	53	
Under 5 mortality / 1000 live births	96	67	
Urban/rural distribution (%)	28/72	27/73	26/74
IMPORTANT DEMOGRAPHIC INDICATORS relevant to PBL programme planning			
Access to clean drinking water (%)	62	67.8	
Access to good sanitation (%)	49	42.4	
Public health expenditure (% of GDP)	5.6 (1997)		
Child immunization against measles (%)	81 (1996)	69.4	
Enrolment in secondary education (%)	42 (47m,37f)		
Enrolment in primary education (%)	77	57.6	
Literacy in one or more languages (%)	65 (76m, 54f)	64 (71m, 51f) *	53.5 (65m, 41.4f)
Unemployment (%)	6.03	6.67	
Annual per capita income		US$ 400	
Below the poverty line (%)	25	22	
Living in hunger (% of children under weight)	47	38	

***** Andhra Pradesh literacy rate is 26/28 of Indian states; Rural/urban literacy ratio 57/77

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

A report by Dr GN Rao[2], prepared from a population based survey and published in 2001, emphasised the main blindness concerns for India and **Andhra Pradesh** – providing the evidence that came to launch and sustain a drive to develop a PBL programme along VISION 2020 principles in that state. The report acknowledged not just the human cost but also the economic cost in lost productivity, a serious handicap for an emerging but fragile economy. In brief AP showed:

- A blindness prevalence of 1.84% (about 1.5 m blind) – based on visual acuity of <6/60
- An additional 8.09% (6.5m) with significant visual impairment
- A situation with over 70% of this problem needlessly caused by diseases that could be prevented or treated with cost effective interventions
- A situation that could be more than twice as bad by 2020

Additionally, the distribution of blindness prevalence was 1.36% in urban areas and 2.03% in rural areas – stressing the area of greatest need for PBL activity.

The main causes of blindness are set out below in Table 4.4. The possibility of good strategies eliminating 70 – 75 % of all blindness in AP is complemented by the statistics for severe visual

impairment that showed a further 45% caused by refractive errors and 40% due to cataract. Those diseases, which can be cured, or prevented, or the progress of blindness arrested, are marked * below – and the number of blind-person-years potentially to be saved are indicated.

***Table 4.4 Causes of blindness (visual acuity <6/60) in Andhra Pradesh in 2001,* extrapolated from a population based survey**

Causes of Blindness	Prevalence (%)	% of total	No. Blind	Blind-Person-Years (m) if successfully treated	No. Blind in Mudhole catchment
Cataract*	0.81	44.0	660,000	3.58	4,356
Refractive Error*	0.30	16.3	240,000	7.84	1,584
Retinal Disease	0.20	10.9	165,000	-	1,089
Glaucoma*	0.15	8.2	125,000	0.38	825
Corneal Disease*	0.13	7.1	100,000	2.67	660
Optic Atrophy	0.11	6.0	90,000	-	594
Amblyopia	0.08	4.3	65,000	-	429
Microphthalmos	0.02	1.1	16,000	-	105
Other	0.04	2.2	32,000	-	211

Despite these statistics and the intention of reducing blindness prevalence considerably with a concentration on the diseases marked*, data on surgical outcomes, notably for cataract, has indicated high failure rates in rural areas. Reasons given have referred to the methods and quality of cataract treatment, inadequate post-operative care and insufficient refractive correction. The task of developing an improved eye care model has had to confront these problems and also secure sustainable improvement in a society with scarce financial resources. The approach adopted at Mudhole, described in the pages that follow, has achieved accelerating progress following VISION 2020 principles.

5. Mudhole – Bhosle Gopal Rao Patel Rural Eye Centre (Secondary Level) - Fig. 4.7

What are the resources for district eye care?

5.1 Human resources

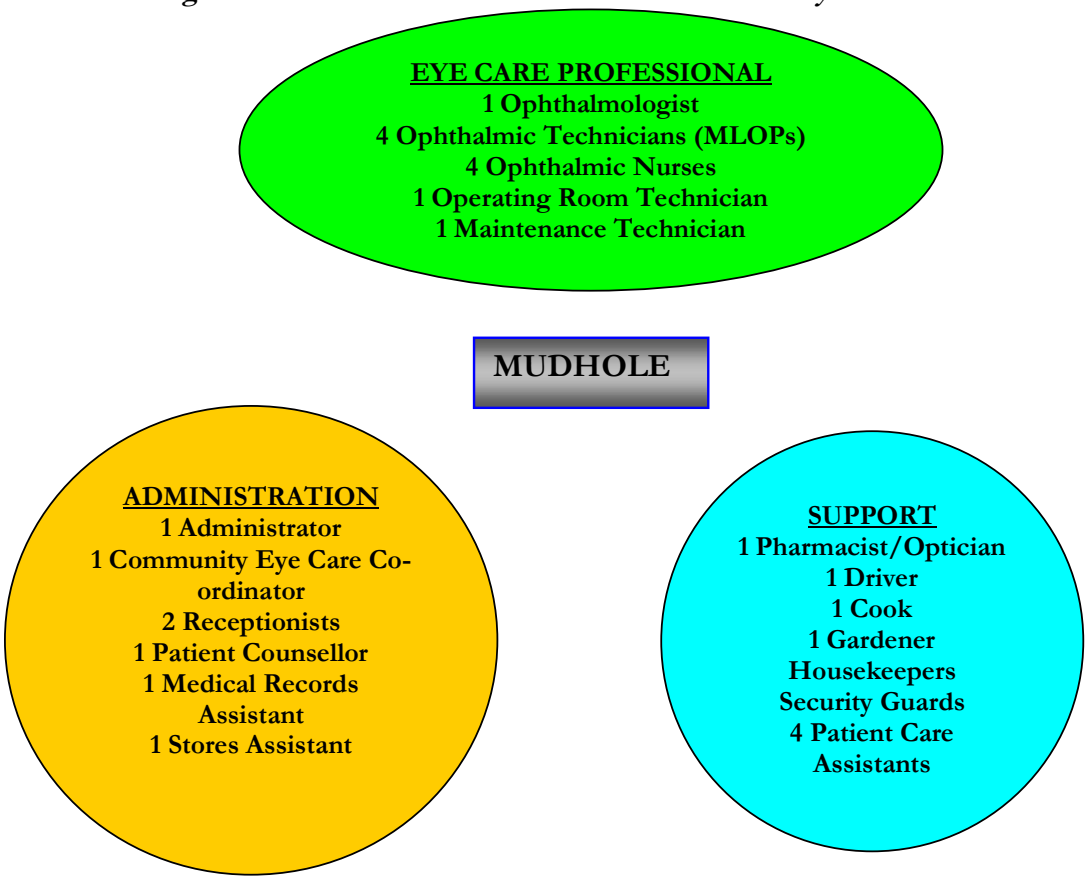
Table 4.2 highlights the support offered through the AP Right to Sight Society, in increasing the human resource pool for Mudhole and elsewhere in the state. This support has been considerable. The availability of professional staff in all cadres is good with full in-state facilities to train, upgrade and refresh as necessary. The problem lies at times in the unequal HR distribution between hospitals and PEC centres in remote and central areas - there is no HR mobilisation policy.

The International Centre for the Advancement of Rural Eye Care (ICARE), a leadership and training centre and part of the tertiary L.V. Prasad Eye Institute (LVPEI) in Hyderabad, has evolved a model eye care team to provide secondary level services to a population of 0.5 to 1 million in areas poorly reached by the state system. This model arose from an expression of need from the local community to have a facility providing high quality affordable eye care as close to them as possible. It was first employed at Mudhole (opened in 1996) and subsequently introduced at a number of other secondary eye hospitals, tributary to LVPEI. It recognises the equal importance of all cadres of workers in providing truly comprehensive eye care. The resulting HR team at Mudhole is partly cross-functional, especially for non-

clinical staff. Neither absence nor extremes of work load create problems of service breakdown, as staff are trained to move sideways to undertake roles outside their normal work. The well integrated team is shown in the following chart (Fig.4.8) and many roles are then summarised.

Fig.4.7
Mudhole Rural Eye Centre, Adilabad District
The first of 6 (by June 2005) secondary eye hospitals, satellite to LVPEI – built on land gifted by the community (partly as a response to the reputation of LVP) and serving a population of 500,000 over an area with a radius of 50-60 km.

Fig. 4.8 Human Resources Team at Mudhole Rural Eye Centre



Team cohesion, commitment and ownership are fostered by local recruitment and the chance to live at home. There is good hospital/community rapport providing a sustainable programme for HR provision. Vacancies are quickly filled by word of mouth or the local district paper. Training is largely undertaken at ICARE-LVPEI, combining theory with hands-on experiences. Completion of this training is followed by appointment to the rural eye centre and access to performance related salary increases and promotion. Only the ophthalmologist has been externally recruited and therefore lives on site.

Professional roles

1. Ophthalmologist

The comprehensive role covers:

- High quality extracapsular surgery with posterior chamber IOL implants, sustained by regular educational updates and good quality equipment
- Clinical quality assurance for the eye care team
- Planning, implementation, management and evaluation of eye care programmes and services – skills derived through a six month diploma in CEH at ICARE
- Training clinical staff

2. Ophthalmic Technician (MLOP)

Either a three-year trained ophthalmic technician **or** a one-year trained vision technician

- **Service centre role for ophthalmic technician** covers:

(1) Taking patient history, assessing visual acuity, refraction, external eye examination, slit lamp biomicroscopy, applanation tonometry, keratometry, A-scan for IOL calculation and perimetry for visual fields
(2) Training clinical and non-clinical staff
(3) Delivering low vision services (after training at LVPEI)

- **Community role for ophthalmic technician** involves:

(1) Screening and refraction services in PEC centres
(2) Screening in the community, including schools

- **The vision technician** provides

Management of Vision Centres in the community for screening, refraction and referral of cases to the secondary service hospital

3. Ophthalmic Nurse

Mostly recruited for training from the community without previous nursing experience (although a trained general nurse is preferred if available) to:

- Assist in all surgery
- Provide ward care for in-patients

4. Operating Room Technician (Nurse)

This technician, together with a cross-skilled ophthalmic nurse, provides theatre support through:

- Preparing the patient and operating room for surgery
- Sterilising equipment
- Giving supervised local anaesthesia

5. Maintenance Technician

This role at Mudhole is unique in AP. The holder provides vital equipment maintenance support (largely preventive) within the secondary hospital so ensuring that most equipment remains in use. S/he also looks after the facility's electricity and plumbing systems and provides training for individuals from other centres.

Administrative roles

1. Administrator (Eye Care Manager)

This is a vital role in the co-ordination and supervision of all non-clinical services. One year training is provided at ICARE to develop necessary skills in HR, finance and material management. Responsibilities include:

- All aspects of patient administration – finding, assessing for free/paid care, organising services, counselling, record keeping
- Overseeing the CEC programme (see '2' below)
- Liaising with agencies
- Managing finances
- Infrastructure management – site, buildings, equipment and medical resources
- Ensuring quality of non-clinical care
- Working if necessary cross-functionally with other administration team members
- Building and maintaining good morale and a teamwork ethos

2. Community Eye Care (CEC) Co-ordinator

The role serves the community in two significant ways – (1) linking those in the community in need with the eye care centre; (2) providing preventive care at the community level. Community and school outreach programmes are integral to service delivery and a primary way of generating service demand.
The post involves:

- A responsibility for both community screening and community-based rehabilitation programmes
- Logistics of referral to eye centre
- Promotion of eye health awareness programmes
- Supervision of a small team of field workers drawn from the local community who deliver PEC services
- Training the nearest of kin of the incurably visually impaired in the personal and social skills needed to encourage self reliance and self worth

3. Receptionist

This person is the first contact for the patient at the eye care centre. The respect shown to the patient contributes highly to community appreciation, reputation and uptake of services – and therefore also to income in a system targeting financial sustainability for its eye care programme.

4. Patient Counsellor

The role is to enhance patient satisfaction by:

- Explaining surgical procedures to patients
- Assessing the paying ability of each patient
- Advising the appropriate fee-tier for the surgical package in the ICARE scheme

5. Medical Records Assistant

Responsibility includes the accurate filing and retrieval of records, and the maintaining of accurate patient statistics with regard to diagnosis and treatment.

6. Stores Assistant

Responsibility involves maintaining an inventory of supplies and the anticipation of future need – based on an ICARE model.

Support roles

1. Pharmacist/Optician

Both roles involve achieving a balance between good quality of services and free services for those who cannot pay. Well-trained professionals can help the drive towards the centre's financial self-sufficiency as well as achieving greater patient satisfaction by ensuring all services are available under one roof.

2. Other support staff – driver, cook, gardener, housekeepers, security guards and voluntary patient care attendants maintain an efficiently functioning and user-friendly centre.

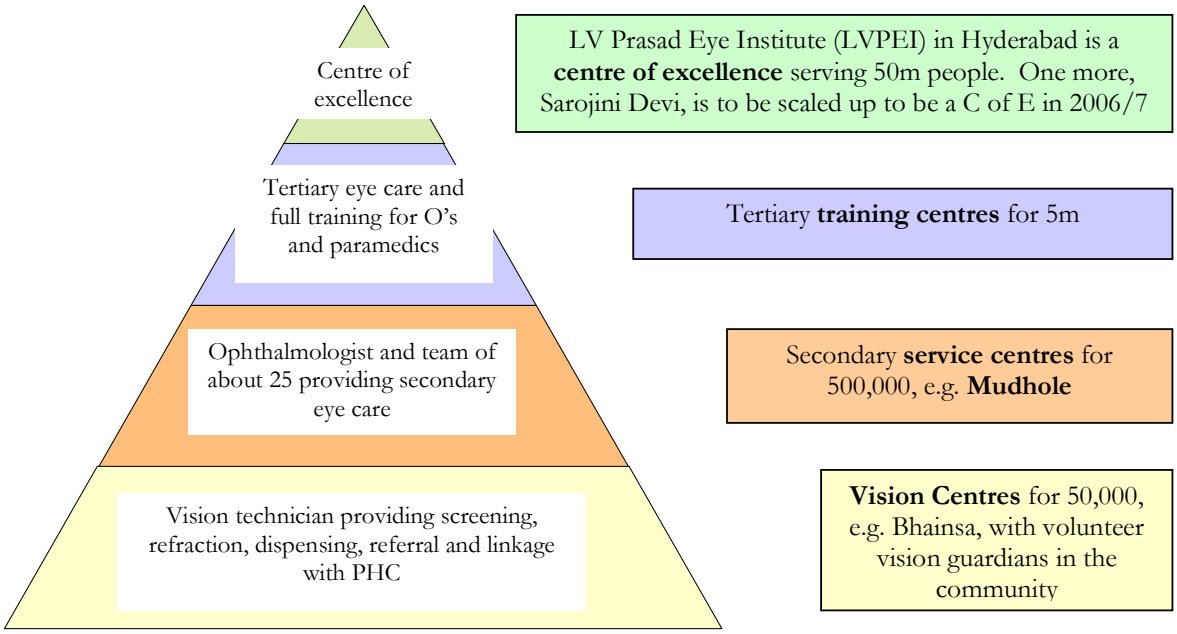
ICARE has established **partnerships** enabling it to monitor the programmes of other local or international organisations involved in delivering community eye care – in terms of quality of service, self-sustainability and the extent to which the population's needs are being met. Sharing and then learning from periods of both good and disappointing performance enhances the opportunities for all to improve their programmes for reaching the VISION 2020 targets.

5.2 Infrastructure

AP with a population of about 76m has 23 district hospitals (50/50 public/private), 15 of which are training centres, 70 secondary hospitals, e.g. Mudhole, together with a developing network of community health centres, primary health centres and vision centres. Equipment (much of it provided through the World Bank Programme) is the responsibility of the RSS/DBCS or NGO. Table 4.2 summarises the equipment contributions from the AP RSS. However at Mudhole, as with all LVPEI satellites, funding for these needs comes from the local NGO – **LVPEI.** This organisation has the capacity itself to attract competitive funding. As a result, the equipment at Mudhole is broadly satisfactory and supplies are secure.

The eye care services in and around Hyderabad, Adilabad District and Mudhole fit within a 4-tier pyramidal structure, as in Fig. 4.9 – of which levels 3 and 4 conform to the VISION 2020 model. The foundation is this model's strong community base.

Fig. 4.9 LVPEI/ICARE model for the provision of community eye health – in the process now of being implemented in other parts of India and the developing world



LV Prasad Eye Institute – provides advanced and tertiary eye care, training of trainers, other training programmes, research, low vision and community eye health training, planning and policy formulation. This centre is responsible for the functioning of the whole pyramid.

There is a careful separation of responsibilities between the four tiers – avoiding duplication and enhancing the efficiency and effectiveness of allocated responsibilities for each tier. Nevertheless

good interaction between the tiers is critical to the success of the model - including the studied example of Mudhole, one of presently six LVPEI satellite hospitals.

The infrastructure provision, as with the human resources, is designed to an LVPEI model. Mudhole, has 13,000 square feet of floor space designed to provide:

1. Outpatient area, including:
   - Reception area for patient registration
   - Waiting areas for paying and free (see Fig.4.10)

Fig. 4.10 Waiting room for free patients at Mudhole rural eye centre

   - Screening rooms for taking history and initial examination by ophthalmic technician (see Figs. 4.11, 4.12)

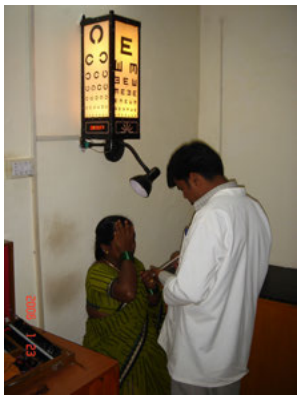


Fig. 4.11 Screening room 1 at Mudhole rural eye centre

   - Examination room for ophthalmologist to complete examination and advise patient on problem management
   - Counselling room for explaining surgery and assessing socio-economic status
   - Investigations room for calculations of intraocular lens power
   - Biochemistry lab for blood and urine testing
   - Eye donation centre
   - Toilets
2. Operation Theatre, including:
   - Pre-operative room
   - Staff changing rooms
   - Scrub area
   - Air conditioned operating room
   - Sterilization room
3. Inpatient area, including:
   - Six rooms of three types for the three-tier fee structure for paying patients – 10 beds

Fig. 4.12 Screening room 2 at Mudhole rural eye centre

Fig. 4.13 A ward for non-paying patients at Mudhole rural eye centre

   - Two wards for non-paying patients, 1 male, 1 female – total 10 beds (Fig. 4.13)
   - Nursing station
   - Two patient dining rooms

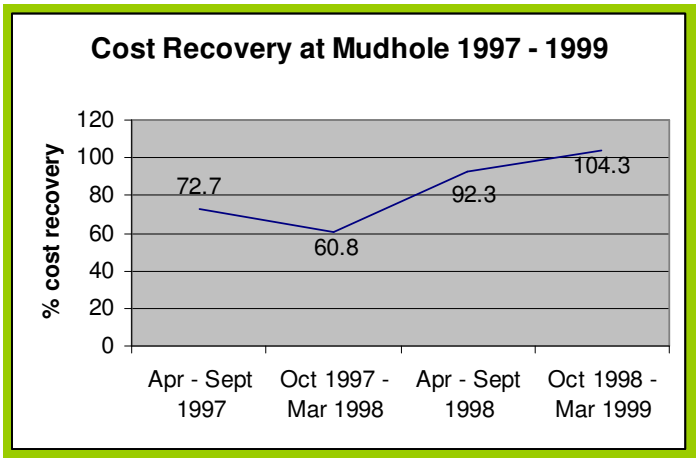
4. Medical Records room
5. Stores room
6. Optical shop and pharmacy for sale of spectacles and medicines
7. Room for coordinating community eye care programme
8. Administration office for coordinating daily activities at the eye centre
9. Maintenance block – generator room (with back up solar power installation), maintenance room, cafeteria, toilets, changing rooms
10. Accommodation rooms for ophthalmologist and administrator

Additional storage areas exist for medical equipment and supplies, general equipment, furniture and surgical instruments.

5.3 Financial resources

A review of financial support for eye care is included on pages 44-46. In brief, LVPEI and its satellites have targeted **financial sustainability** through their **cost-recovery** model. Elsewhere in the state there has been a possibly unsafe reliance on state subsidies. That less favoured option broadly allocates payment 50/50 between surgery and outcome. This can contribute to an under use of resources and reduced success in overcoming surgery backlogs. The LVPEI scheme that applies to Mudhole rural eye centre and is working well is set out more fully on page 57. Although the programme of cost-recovery predates VISION 2020, its structure and major achievements need to be set in the context of Mudhole as a flourishing district model programme at the present time. Figure 4.14 shows the successful progress of cost-recovery in the early years of Mudhole from 1997 to 1999.

Mudhole together with Thoodulurthy rural eye centre in Mahabubnagar District, south of Hyderabad (1998), existed before VISION 2020 was launched globally in 1999 and then adopted in India and AP in 2001. They were founded and are owned and run by LVPEI as satellite hospitals. This NGO has carried the financial responsibility as policies working for self sustainability have evolved. The initial capital costs of Mudhole, amounting to US$188,600, were underwritten by SSI and CBMI. CBMI continues to offer targeted assistance for specific projects, for example the recent biochemical lab at the hospital. Other smaller NGOs, including the Combat Blindness Foundation and philanthropists also finance specific projects.



The achievement of self-sustainability by mid 1999 in running costs reflects a surplus of income (services, sales and bank interest) over expenditure (salaries, consumables, optical/pharmacy shop requirements, utilities and other sundry costs). Recurrent grants and depreciation were not included.

Fig. 4.14 The success of cost-recovery strategies in the early years of Mudhole

6. Mudhole – The District VISION 2020 Programme

6.1 How were the aims, objectives and activities defined?

The **aim** or overall direction for the VISION 2020 programme that is centred on the eye hospital in the village of Mudhole, a previously under-served area in AP, and repeated for other LVPEI satellites, is to achieve **'Excellence and equity through efficiency in eye care service provision'**. The intention is to secure high quality, comprehensive and sustainable eye care services as closely as possible to the people who need them through their active participation.

This broad remit is being targeted through specific **objectives**:

1. To achieve a sustainable service that:
   (a) provides at least 50% of patients with a free eye care service of uncompromised quality
   (b) fast tracks paying patients with a supporter service to double eye care centre capacity.
2. To ensure a comprehensive coverage of eye care services by:
   (a) increasing throughput of cataract and refractive error patients to set targets
   (b) extending services to include glaucoma, diabetic retinopathy, low vision, community rehabilitation, and the promotion of eye donation activities.

6.2 What strategies are used in the programme?

Strategies to achieve these objectives can be summarized as (**1) promoting the service efficiency of the eye hospital at Mudhole** and **(2) securing the maximum effective coverage in the community.** These needs are being addressed through a number of **activities** that are set out in Figure 4.15.

These two broad and complementary strategies and the supporting activities must be considered in the context of the total LVPEI ICARE programme through reference to a report that was issued in 2001 (see page 48) at the outset of VISION 2020 involvement in AP. The programme, to be implemented in four 5-year phases from 2002, contained the following **target-led activities** across the tiered service structure set out previously on page 53, within which Mudhole as a secondary level hospital is a major contributor and a successful model.

Promoting service efficiency at the base hospital and in the community in AP

There is a need to control the prevalence of blindness in the population; 1.84% with 1.5 m. blind in 2001, at risk of doubling by 2020.

- Despite a CSR in AP of 4,400, an increase in the number of and provision for **cataract** surgeries from 350,000 in 2001 to 500,000 by 2005 and 600,000 by 2010 is essential to remove the backlog, with high quality surgery and mandatory use of IOLs, unless medically ill-advised – all surgery to be in base hospitals. A greater surgical emphasis on patients with blinding cataract is urged (rising from 25 to 50% of treated patients). The coming change to day care at Mudhole will remove dependence on bed capacity and promote moves to increase surgery throughput.
- Spectacles would be provided to all children below 15 years with **refractive errors** and adults above 40 years with near vision problems by 2005 and the elimination of all refractive blindness for all age groups will be achieved by 2010.
- Prevention of any needless **child blindness** after 2010 through (1) full access to vitamin A capsules and immunisation against measles and rubella, (2) a full development of accessible primary eye care centres, (3) an adequate number of high quality tertiary children's eye care centres to which secondary hospitals like Mudhole can refer.
- An effective **eye banking** system and trained corneal surgeons will be developed in all districts, e.g. Adilabad, by 2010.

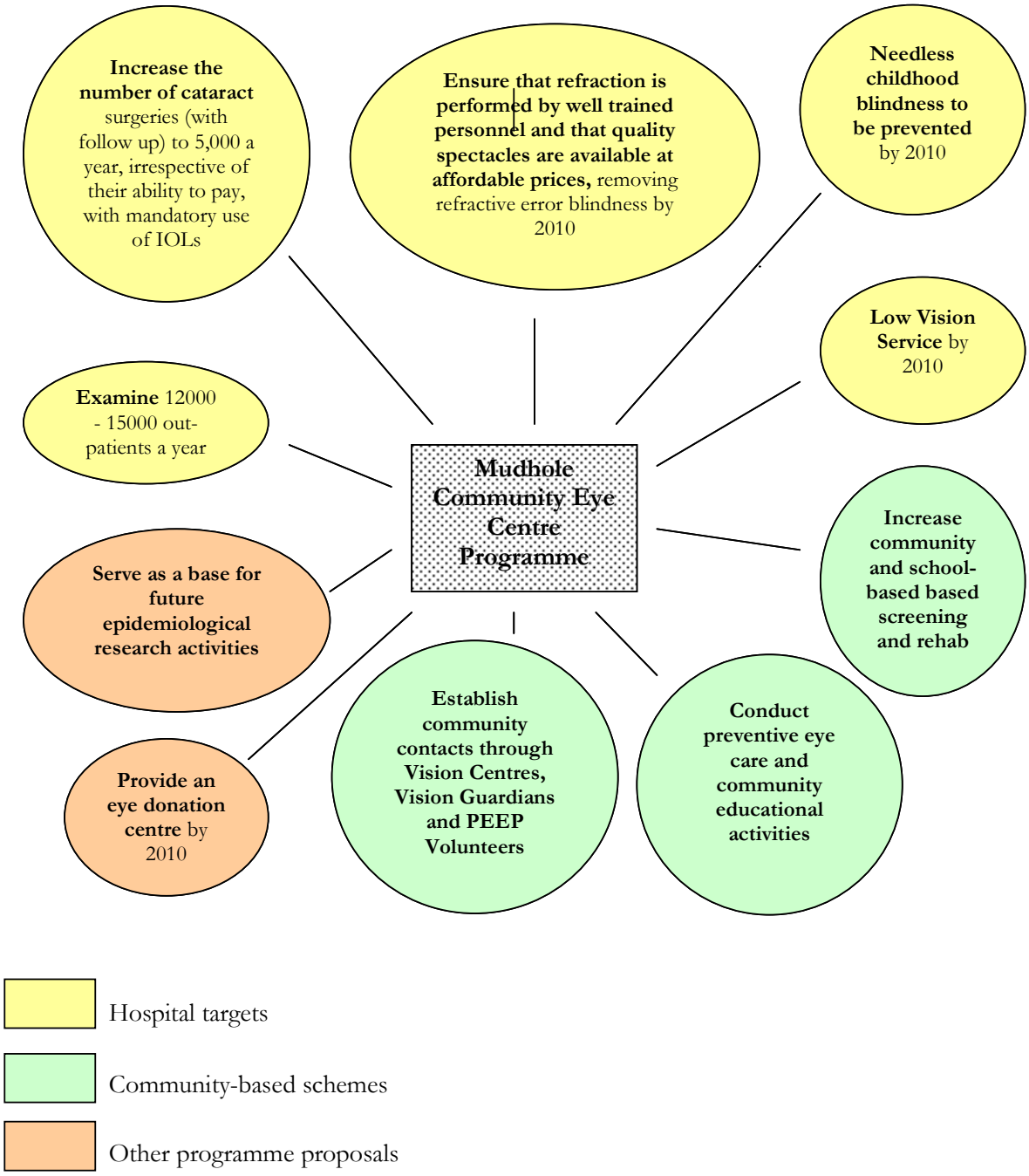
- **Low Vision Services** would be initiated in all tertiary centres by 2005 and secondary centres like Mudhole by 2010.
- **Cost-recovery** measures are designed to ensure the long term sustainability of efficient eye care service at Mudhole in particular and across the LVPEI service structure in general. Mudhole should be covering completely its own running costs by 2008, if present progress continues. Broadly Mudhole did 2,600 surgeries April '04 – March '05 (90% for cataract) – capacity exists for 4,000 – of which 30% are charged for accommodation packages at one of three levels (outlined in the note below). Contributory factors to long term sustainability at Mudhole include the fact that the hospital is within three hours travel for most patients and that most eye problems can be tackled at the hospital. Children and patients with retina and advanced cornea problems are referred to LVPEI. There is no significant trainee accommodation at Mudhole so LVPEI takes trainee income at present.
- **Human resource development** to include: (1) training all ophthalmologists in micro-surgery and modern cataract surgery by 2005 and in comprehensive eye care by 2010; (2) developing a uniform basic curriculum for post graduate ophthalmology residency programmes; (3) developing an adequate number of paramedic personnel training programmes, including refraction, by 2005, meeting all needs by 2010; (4) training eye care management teams and technical teams to cover all tertiary care centres and district programmes by 2005 and all secondary centres by 2010; (5) training Low Vision professionals for all tertiary centres by 2005 and all secondary centres by 2010.
- Easing access to screening and refraction by the introduction of village-based **Vision Centres** and by voluntary empowerment **initiatives in the community,** e.g. vision guardians (junior and adult) and the PEEP scheme (Providing Eye care through Empowered People) – see the following section.

Cost Packages at Mudhole (in the context of self-sustainability for the eye care programme)

- Beds are provided for 28 patients at present – for paying (3 classes) and free.
- The cost packages for paying patients are (1) economy – 5/room at 2 prices (INR 1,560 sutureless; INR 1,250 with sutures); (2) semi-private – 2/room at INR 3,000 or INR 2,350; (3) de-luxe in private room at INR 6,250 or INR 5,000.
- Paying patients additionally are charged INR 60 up front for comprehensive eye care. No charge is made for follow up provided the patient returns within six weeks.
- Patients in a hurry, in the semi-private and de-luxe categories, can be fast-tracked, avoiding the appointment system and having priority treatment in OP clinic and surgery – so increasing flow.
- There is in patient accommodation provision at present for 12 paying and 12 non-paying patients (50/50 male/female).
- Ratio between paying and non-paying patients varies across the 6 LVPEI satellite hospitals but experience suggests that a 65/35 ratio should enable cross-subsidisation to bring sustainability with regard to running expenses within three years of initial service delivery.
- Achievement of this self-sustainability can be attributed to (1) good patient care with equal emphasis given to medical and management systems; (2) well trained clinical and non-clinical staff working as a team; (3) the support of the local community; (4) addressing the barriers to eye care services with regard to accessibility, availability and accountability; (5) no difference in treatment arising from patient paying status; (5) optimum utilisation of staff; (6) bulk central purchasing of consumables with minimum wastage; (7) strong links with social development organisations for community relations and mobilisation.

Fig. 4.15 Planned activities and targets of the <u>original</u> Mudhole programme for 500,000 people, initiated and partly sustained by NGO (LVPEI) funding – to achieve the above objectives

A VISION 2020 District Model



Securing the maximum effective coverage of eye care services in the community

Studies have repeatedly emphasised that primary eye care systems are the least developed of all levels of eye care in the developing world. Yet analyses of the causes of avoidable blindness make it clear that a well planned and developed system of PEC can bring great improvements through increasing accessibility, availability and affordability of eye care to many currently poorly served populations. Such approaches should be low cost, sustainable and closely integrated, both with the PHC system and with secondary levels of eye care. It is also vital that the community itself is as involved as possible in planning, launching and working for the continuing effectiveness of such developments.

The aim to bring quality eye care services as near as possible to the people who need them is being realised in several ways in the rural Mudhole, low income catchment.

1. Vision Centres

LVPEI has developed a 'Vision Centre' model at PHC level to realise the above principles for the more remote areas of AP, such as Adilabad District, as mapped in Fig. 4.16. Each centre serves a population of about 50,000 people in areas without PHC/MLOP access. They occupy converted buildings with a leased space of about 500 sq. ft., providing rooms for waiting and consulting. Each centre is staffed by one vision technician – selected from high school graduates in the local community, trained for one year at ICARE (5 months theory, 7 months practical) and then appointed to serve his/her own people. The training enables the vision technician **to undertake refraction and dispensing, detect potentially blinding diseases, communicate with patients and develop linkages with both PHCs and the nearest secondary hospital**. The equipment to make the technician effective is provided at the Vision Centre. This includes low cost ready-made spectacles – the small profit made from these covers the operating cost of the centre, including the salary, lease expenses and maintenance.

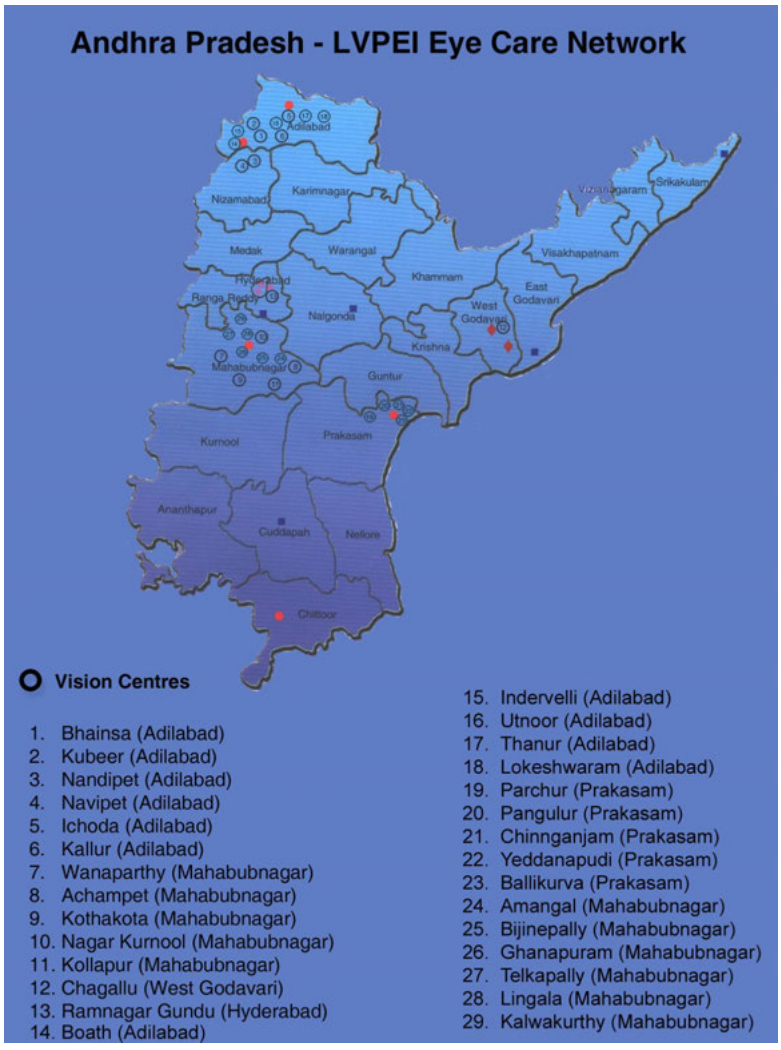


Fig. 4.16 Vision Centres with linked secondary hospitals in AP

The cost of setting up each centre is around US$ 10,000 – 20 cents per person served. Ten Vision Centres are planned to be attached to each secondary level service centre – e.g. the first was established at Bhainsa in August 2003, 12km from Mudhole, in Fig. 4.16. The spectacles are provided by LVPEI in Hyderabad and the set up costs are currently provided by international NGOs, although local community sponsorship is being investigated for future centres. Both Mudhole in AD and Thoodulurthy in Mahabubnagar District now have their full complement of Vision Centres.

Fig. 4.17 Lohesra Vision Centre in Adilabad on opening day in October 2005

A new Vision Centre at Lohesra (not mapped) in a small converted shop, 35km from Mudhole but nearer to another recently acquired satellite facility in Adilabad, was opened during my visit to AP in 2005. Fig. 4.17 shows the frontage of the new centre with a waiting area in front and a consulting room through a door behind. The name of the sponsoring INGO – Lavelle Fund for the Blind - is visible. The photograph, Fig. 4.18, looks along the road from the new centre and emphasises the rural nature of the community served. The official opening gave cause for a village gathering, especially the local elders - in Fig. 4.19 - emphasising the community's involvement in and recognition of the values of this new service.

Fig. 4.18 Lohesra village street in front of new vision centre

Fig. 4.19 Community support at the opening of Lohesra's vision centre

Community use of this facility is encouraged by providing free screening to all villagers. Daily average screening is of 10 – 19 patients. Generally 25 – 35% of patients need spectacles, of whom 50 – 60% buy them at the VCs. The technician also provides a screening service in the local school. If referral is needed (on average for 25% of patients seen) to the secondary eye hospital (Mudhole) for further eye care investigation or surgery, appointments are made to give greater assurance that patients will follow up their eye care needs. At present about 65% of referrals do attend this hospital appointment – ways are being sought of reducing the drop out. Payment status for surgery is determined by a counsellor at the hospital. Mudhole also provides the dispensing centre for new spectacles that are delivered to the vision centre for easy patient collection.

The project so far has brought undeniable success in terms of:

- improving access to care for remote communities
- increasing public awareness of the problems of visual impairment and blindness

- providing coverage for school screening services
- creating a sense of community ownership
- linking community, health and governmental organisations to bring economic benefits to individuals and families from transport savings and improved vision

Future developments in this programme may:

- transfer ownership of Vision Centres to local communities or businesses with LVPEI restricted to quality monitoring
- see the development of community-based rehabilitation services as a component service of the Vision Centres
- extend the role of these centres in the management of corneal infections, glaucoma and diabetic retinopathy – currently under investigation

There is an encouraging national response to this scheme in India. The government has included it in the national VISION 2020 programme, 2006-2010. It is committed to funding 2,000 Vision Centres. The AP government is creating Vision Centres within their 350 PHC centres.

2. Vision Guardians

An extension of the Vision Centre model is a deeper involvement with the community through 'Vision Guardians', a recent and developing initiative. These individuals identify with populations of 5,000. The individuals selected for this role come from the local community and satisfy criteria related to educational background, aptitude and willingness to be involved. As volunteers they work in a part time capacity, attached to the local Vision Centre. They pay special attention to children, the elderly and those who have surgical interventions.

3. Junior Vision Guardians

Fig. 4.20 Children entertaining fellow pupils at Pragati School in AD at a Junior Vision prize giving with teachers looking on

LVPEI is also experimenting with child to child and child to parent guardianship. In one example seen at Pragati School, Echoda, in eastern AD (Fig. 4.20), teachers volunteer to give basic eye health education to children, focussing on disease recognition, hygiene, nutrition and acuity testing at a very simple level. Children are then encouraged to investigate friends and parents and where there is cause for concern, they are encouraged to persuade them to attend a local Vision Centre. The Vision Centre technician keeps a record of these referrals and, at an annual prize-giving, awards are given to the most successful Junior Vision Guardians.

Fig. 4.21 Prize being awarded to a top Junior Vision Guardian at Pragati by Usha Raman from LVPEI

4. PEEP scheme (Providing Eye care through Empowered People)

This is a system for self help groups organising shared community insurance. Individuals agree to pay INR1/month into a community fund to cover the cost of future eye care for empowered people – with a photo identity to guarantee economy class provision in hospital. PEEP organisers also serve as Vision Guardians. The scheme is being trialled for three years with a target enrolment of 90,000 in 4 mandals (taxation districts of 50,000) around Mudhole.

5. The DBCS is normally responsible for health education through the local media and at pension collection points. Community volunteers, beyond the above schemes, help to (1) organise outreach, e.g. publicity, lunches, transport and patient support and (2) promote health education – with variable success.

6.3 How is the programme managed?

Externally

- As Mudhole is a satellite hospital within the LVPEI service area in AP, hospital policy is centrally determined by the trustees and executive committee of LVPEI. The agreed activities with annual targets for the eye care programme stem from decisions taken by that Institute and then effected with the oversight of ICARE. Representation of Mudhole's achievements, problems and proposals is provided to the Institute by the hospital administrator through monthly reports and by the attendance of a consultant and chief administrator for the outreach programme on LVPEI's Executive. These two officials interact with the local administrator and ophthalmologist at each satellite facility.
- More broadly, the governors and executive of AP's Right to Sight Society take investment decisions resulting from policies related to the implementation of VISION 2020 in the state. This, as outlined on page 45 and Table 4.2, has a wide-ranging influence on the decisions of LVPEI and its implementation programme.
- Since India has a federal structure, each state has the autonomy to take and implement its own health policy decisions. Beyond the support of the MoH in Delhi for VISION 2020 and the presence of a national co-ordinator for the effective promotion and implementation of that programme, there is no management level in operation influencing the Mudhole programme on a national scale.

Internally

- The Heads of Administration and Clinical Matters manage well their respective areas of responsibility in Mudhole hospital. Their roles focus on the effective and efficient implementation of the decisions passed down by LVPEI.
- Central to Mudhole's success is the motivation these two managers instil in their respective teams. Their management is very visible; successes are openly shared; staff meeting involvement is encouraged; appraisal is positive; employee of the year status is a carrot; social gatherings are organised and parties given to welcome new members.
- ICARE drafts the annual budget application based on Mudhole's reports for submission to LVPEI and possibly on then to another I/NGO (CBMI) as necessary.
- There is no local PBL committee and no direct community involvement in management at an official level. The Outreach Co-ordinator from Mudhole does however attend all community meetings – where community members can express their views. It is very important to remember that Mudhole's employees are very largely local villagers so this automatically provides a supportive spirit and sense of shared ownership that reduces the need for formal structures. The evident success of the hospital's treatment record strengthens that linkage.

6.4 How is the programme monitored?

- Regular and systematic reporting is essential for monitoring the programme's progress in meeting targets and objectives – there are 3 stages: (1) individual staff members report to the two internal Heads daily; (2) internal Heads to ICARE weekly; (3) ICARE to LVPEI monthly. Reports are in 3 formats – statistical, narrative and financial.
- A committee at LVPEI, comprising an ophthalmologist and two administrators, regularly monitors the satellite hospitals and their outreach services and proposes actions if necessary. This is supported by fortnightly visits to the satellite centres.
- There is also a national reporting procedure that links the eye care service activity with the DBCS, then with the state BCS (RSS in the case of AP), and then to the MoH in New Delhi. This reporting chain is essential for services dependent on state subsidy – not actually relevant to the LVPEI service structure with its policy of sustainable self-reliance through cost-recovery procedures.
- A strict and regular process of quality management is exercised and this is important for ensuring the continuing success of the NGO project as a whole and Mudhole in particular - the implementation of the LVPEI/ICARE model for eye care:-

1. Each activity – patient care, public health, training, research, and product development – is based on carefully planned and managed priorities that have grown from the total eye disease, demographic and socio-economic context of the service.
2. Quality management is data driven at all levels, for example:
   (a) Regional surveys are regularly conducted on the prevalence of visual impairment and programme effectiveness, to enable strategies to be built to address the specific problems that have been recognised.
   (b) Local tracking traces patient adherence to treatment programmes, treatment outcomes, costs and utilisation of services to ensure that targets are being met and procedures adjusted if necessary.
   (c) Organisational effectiveness is continually monitored through self-evaluations and quarterly supervisory evaluations, leading to reconsiderations of personnel and infrastructural utilisation if necessary.
   (d) Quantitive and qualitative service assessment was also planned to coincide with Mudhole's 10-year anniversary in 2006.

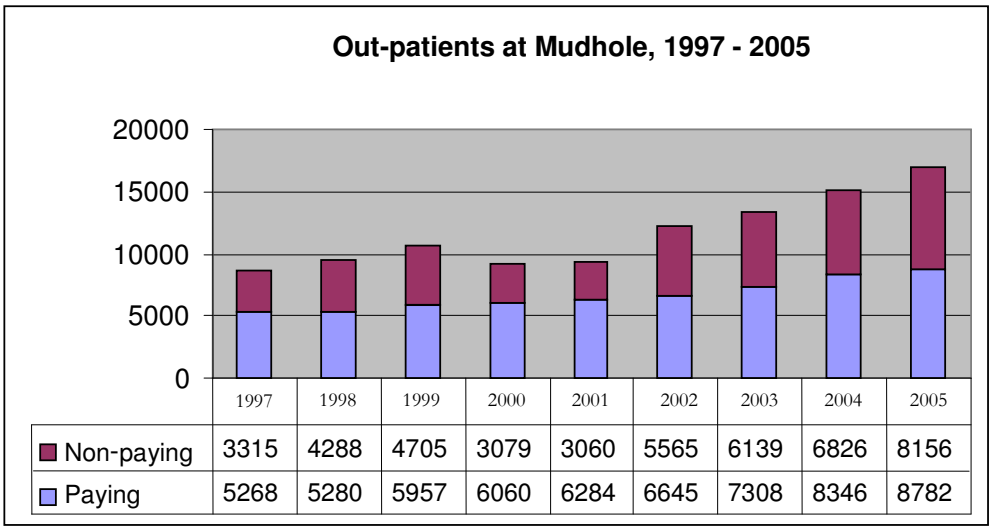
The **effectiveness of Bhosle Gopal Rao Patel Eye Centre at Mudhole** can be assessed through a study of treatment statistics. Although the hospital was founded in 1996, it is evident from Figs. 4.22 and 4.23 that eye care has significantly increased in outpatient numbers and surgeries with the introduction of VISION 2020 in 2001.

Referring in part to the **objectives** set out on page 56, several very encouraging trends can be seen:

1. The number of OPs treated freely at Mudhole has not yet reached the 50% target. It has nevertheless grown from 32.7% in 2001 to 48% in 2005. However, the number of surgeries treated freely at Mudhole (consistently >50% since the founding of the hospital) has grown from 52% in 2001 to 71% in 2005 – very significant in an area of relative economic disadvantage.
2. The growth of the paying patient sector, increasing over the period by 40% (OPs) and 40% (surgery), is noted against the graphs. This has enabled the planned cross-subsidisation to increasingly cover the costs of the non-paying sector, growing at a far faster rate of 167% for OPs and dramatically of 214% for surgery. The target year for full self-sustainability through cost-recovery for this satellite remains set at 2008.

3. The most recent patient statistics for the year April 2004 – March 2005, show approximately 2,600 surgeries of which 90% were for cataract. This is a 155% increase in cataract surgery for the VISION 2020 period, 2001 – 2004. (In a survey available for the period 2000 – 2002, 90% of the surgeries then were on patients >50 years and 56.5% were on females.) There is evident room to increase surgery activity further, given a present capacity of 4,000 and an intention to move more completely to a system of day rather than in-patient treatment. Increased success in finding patients, through for example Vision Centres and Vision Guardians, will promote a fuller use of this capacity. This will benefit both the drive to reduce the cataract backlog in Adilabad District and possibly advance Mudhole's schedule for total sustainability.

Fig. 4.22 Growth in Mudhole outpatients

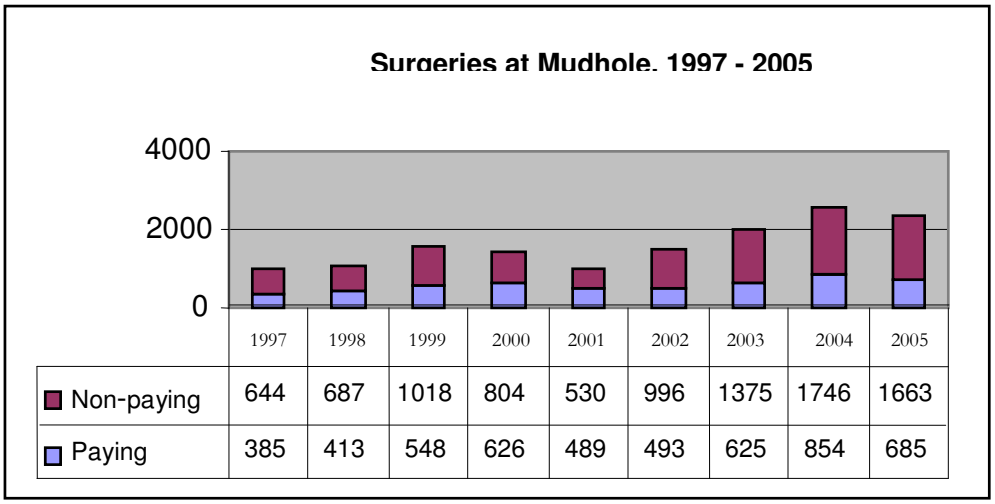


	1997	1998	1999	2000	2001	2002	2003	2004	2005
Non-paying	3315	4288	4705	3079	3060	5565	6139	6826	8156
Paying	5268	5280	5957	6060	6284	6645	7308	8346	8782

OP Growth 2001 – 2005 (with VISION 2020)

Non-paying 167%
Paying 40%

Fig. 4.23 Growth in Mudhole surgeries



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Non-paying	644	687	1018	804	530	996	1375	1746	1663
Paying	385	413	548	626	489	493	625	854	685

Surgery Growth 2001 – 2005

Non-paying 214%
Paying 40%

4. A further encouraging statistic is the trend recorded towards an increasing patient uptake of recommended surgery from eye investigations at Mudhole. In 2004, the monthly average for successful conversion from surgeries advised to surgeries performed was 74.5%. For 2005, the monthly average increased to 81.5%. The success of the patient support network, for example

through patient counsellors and a patient-friendly appointment system, together of course with the hospital's good reputation in the community for successful surgery outcomes, appear to be bringing this welcome success.

5. Away from the major concern of cataract, the objective to extend treatments both for refractive error and for other eye disease has been met by increasing the throughput of patients both at the base hospital and through the outreach initiatives described earlier in this chapter. At Bhainsa for example, the first Vision Centre attached to Mudhole and established in August 2003, 4,885 patients were screened 2005-2006. This led to 1168 spectacles being prescribed and 852 referred to Mudhole base hospital for follow up treatment on suspected eye diseases. Regretfully only 42% attended their appointments. The existence by the close of 2005 of the full complement of ten Vision Centres for Mudhole enhanced the refractive error coverage and also increased surgery activity at the base hospital in a wide range of eye conditions, largely but not solely for cataract – although, as stated earlier, ways have to be found of improving patient take up for these treatment opportunities.

   The growing number of community screening activities (including in schools) together with an increase of Vision Guardians, Junior Vision Guardians and PEEP schemes, as their merits are tested and increasingly acknowledged, will further the increase in finding patients in need of eye care. Also of great importance is the state-wide support for disease control, exercised by the AP RSS, summarised earlier in Table 4.2 and complementary to the work of LVPEI/ICARE. This brings welcome investment to evolve and apply prevention and treatment strategies that are much needed in the relatively poor and isolated communities of Adilabad District.

7. Mudhole – What conclusions can be drawn?

The key strengths of the Mudhole model programme are summarised in Figure 4.24

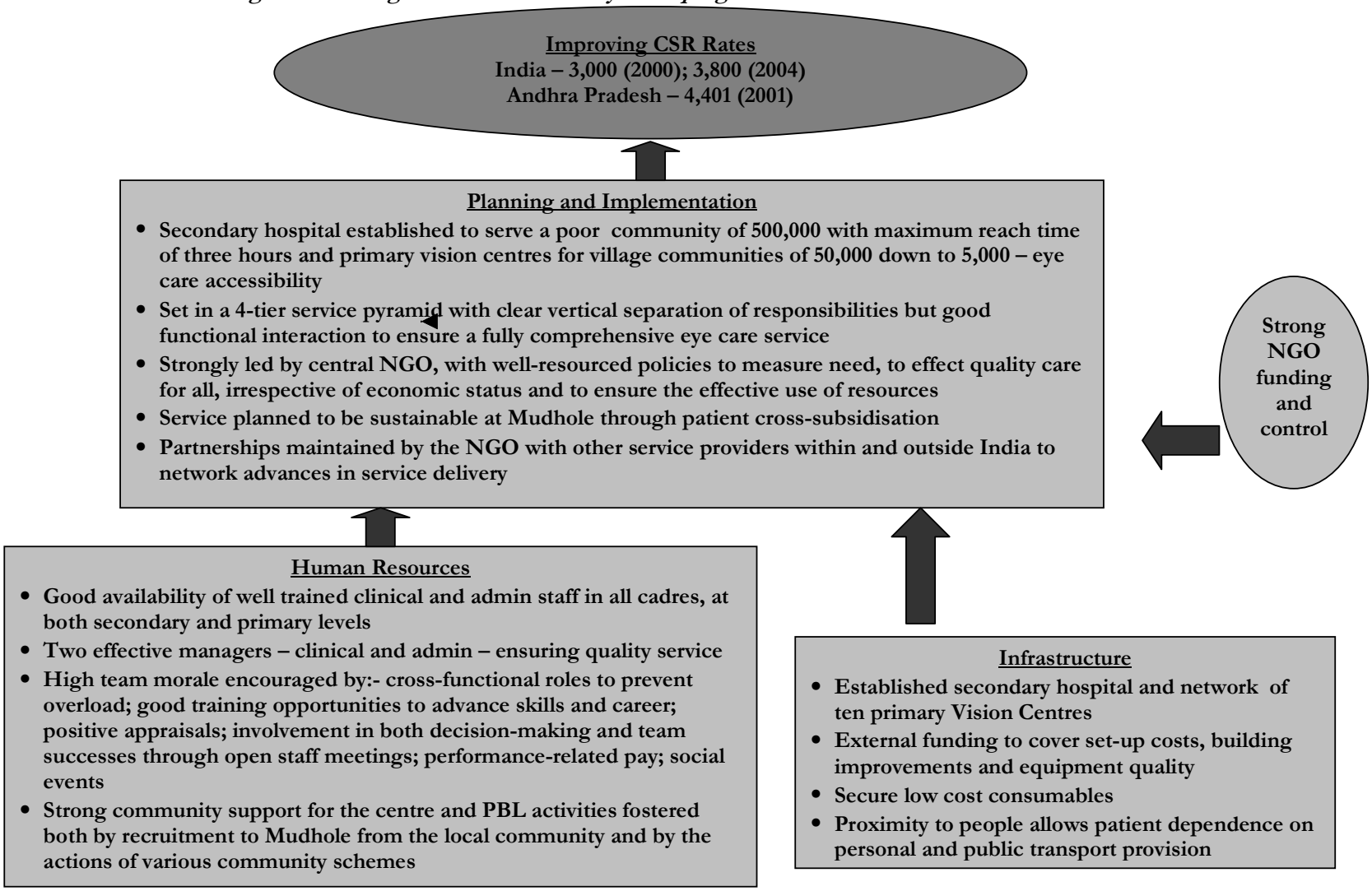
The reasons for the growing success of this model programme based at Mudhole can be explained through the way it resolves four important needs:

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

This is at present more successful for patients screened at Mudhole than in the wider catchment – ways are being sought of redressing this serious problem. In general however the following are effective in attempting to increase patient throughput and reduce the cataract backlog:

- The service centre is close to the target population, which ensures easy patient access without the need for expensive transport organised by the centre or for low income patients to pay public transport fares.
- Community initiatives have encouraged an awareness of PBL and stimulated a flow of potential patients across the catchment.
- Quality provision of skilled HR and modern infrastructure achieves fine surgery outcomes and stimulates community confidence.
- Patient counsellors ensure that barriers to surgery are minimised for the patients with regard to both their intellectual/mental concerns and their economic preparedness.
- The previous point underlines the importance of the availability of free patient care in an economically underprivileged community.
- Effective co-ordination for patient records exists between the primary Vision Centres and the base hospital at Mudhole.
- Patient satisfaction is enhanced by having all the critical needs for secondary level eye care available under one umbrella – a one-stop service delivery system.

Fig. 4.24 – Strengths of the Mudhole eye care programme as a VISION 2020 model



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

Two related influences can be recognised – the overall NGO structure and the base hospital.

Table 4.5 Influences on staff motivation at Mudhole

NGO (LVPEI) structure	Mudhole base hospital
Professional confidence in an NGO of high national/international reputation	Effective administration to promote organisational efficiency
Frequent appraisal visits by national/international representatives who clearly value the effectiveness of the eye care programme and boost staff morale as a result	Managers in clinical care and administration who engender team spirit and productivity through their own professional involvement and by establishing a variety of procedures to encourage individual ownership and pleasure in contributing to an effective and well-received service
Excellent training and promotion opportunities	Good local community relations and support
Confidence in infrastructure – buildings and equipment – to support their work	A pleasant working atmosphere – in terms of people and environment – domestically convenient

3. How is the project financed?

The recognition of the need to overcome a high and growing prevalence of blindness, in a society of limited economic potential, stimulated LVPEI/ICARE to frame a very individual cost-recovery model based on cross-subsidisation by the more wealthy of the less fortunate, without compromising quality of surgery and patient care.

The early self-sustainability achieved at Mudhole on the basis of running costs, shown in Fig. 4.14, illustrates the effectiveness of this strategy. Longer term sustainability, encompassing the full cost expenditure, including depreciation, is a more distant but certainly realistic target – possibly by 2008.

It has to be recognised that injections of capital to initiate new projects will almost always need external investment at the outset from I/NGO sources.

4. How is the project managed?

The leadership shown by the instigator of LVPEI and the management practices of that organisation during the subsequent period in planning and implementing comprehensive eye care, in Adilabad District in particular and AP in general, have produced a system working with great success to international renown. Although the care and authority of the NGO in establishing effective procedures has been previously set out, it should not be overlooked that each centre in the LVPEI pyramid, including the secondary satellite of Mudhole with its ten Vision Centres and community programme, is a key piece in the overall jigsaw. It is therefore necessary always to recognise that the internal management of Mudhole, though working under external controls, is contributing strongly to this overall success, through its clinical care, administrative procedures and integrating team loyalties. The supportive attitudes of patients and the community reflect clearly the merits of this well-conceived and managed establishment. Mudhole is a case of what could be termed 'watchful neglect' – autonomy within a broad policy framework.

In trying to identify whether aspects of this approach to community eye care can be replicated readily in other political or socio-economic situations, it should be recognised that some elements may seem to be better fitted to Mudhole, LVPEI and AP, while others are readily transferable – as Table 4.6 suggests:

Table 4.6 Key elements of the Mudhole (LVPEI/ICARE) model

Possibly unique and less easily copied	Transferable and usable in other locations
Heavily dependent on a single and internationally prestigious national NGO, founded and initially led by an ophthalmologist of vision and considerable leadership skills, with a capability for attracting global financial support in launching projects	System of satellites and vision centres with defined catchment populations, human resource provision, infrastructure support providing comprehensive, quality eye care to all
The strengths and centralised character of LVPEI with its ability and power to organise eye care for 50 million people through the four-tiered pyramid model	Ability to experiment, for example low cost Vision Centres, voluntary Vision Guardians and PEEP schemes
As each state in India has autonomy in health care provision, LVPEI/Mudhole is able to operate outside the national system for subsidy payments. The programme is however endorsed by the Indian MoH and elements have been adopted for eye care strategies nationally.	Uniform salary scales for cadres irrespective of working location, primary or secondary – but with the availability of incentive schemes to reward particular services
Based on a cost-recovery system funded by user fees to subsidise non-paying patients – the majority	LVPEI – quality resource centre for state eye care and the NGO service pyramid
Flexible staffing system with regard to both working times and cross-over roles	Strong community-based networks

While the Mudhole eye care service, as a part of the LVPEI/ICARE programme, has a number of locally unique elements and influences, it certainly is important to emphasise that there is much in this model that offers good prospects of fruitful imitation in other locations. The governments of both AP and India, recognising its success, are supporting the piloting of the model across the country. If we accept that LVPEI is unlikely to be totally replicated for the reasons suggested, we must appreciate that the devices it has initiated, both to bring eye care to the doorstep of the wider community and to ensure that no person should be or feel unreached by the quality, comprehensive services on offer, are relatively low cost innovations. These fruitful developments should not remain peculiar to AP or India. They should have the capacity for global consideration in the many and varied rural communities, where the intent exists to plan and implement VISION 2020 at the district level and a means is sought to ensure that reductions in preventable blindness are totally inclusive in their benefit.

Chapter

5

Case Study 3 – YARUQUÍ, ECUADOR

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What can we learn from Yaruquí?

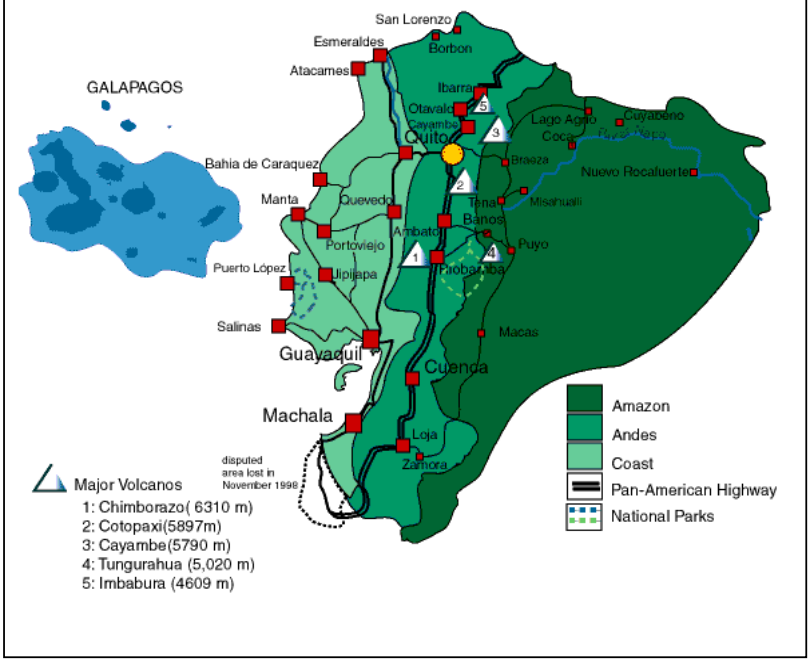
Advances in eye care in Latin America range widely in their progress and effectiveness. While it is possible to single out case studies from countries in the vanguard of PBL success in this continent, it is arguably more helpful to concentrate on a project in a nation where eye care services are less 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?

Fig. 5.1 Environments of Ecuador



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).

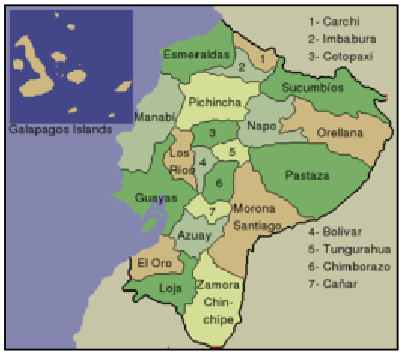
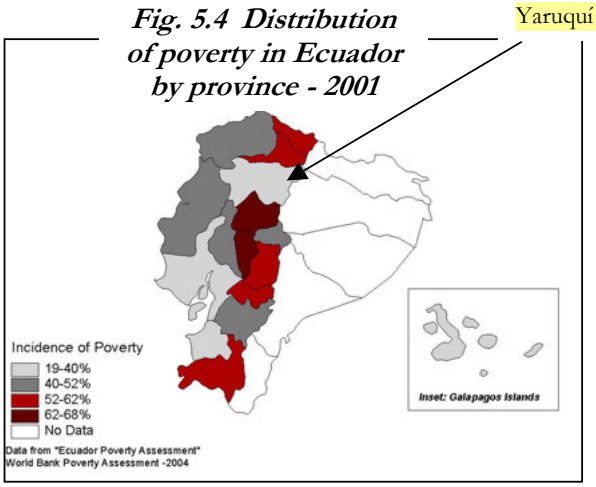


Fig. 5.2 The provinces of Ecuador

Fig. 5.3 Pichincha Province

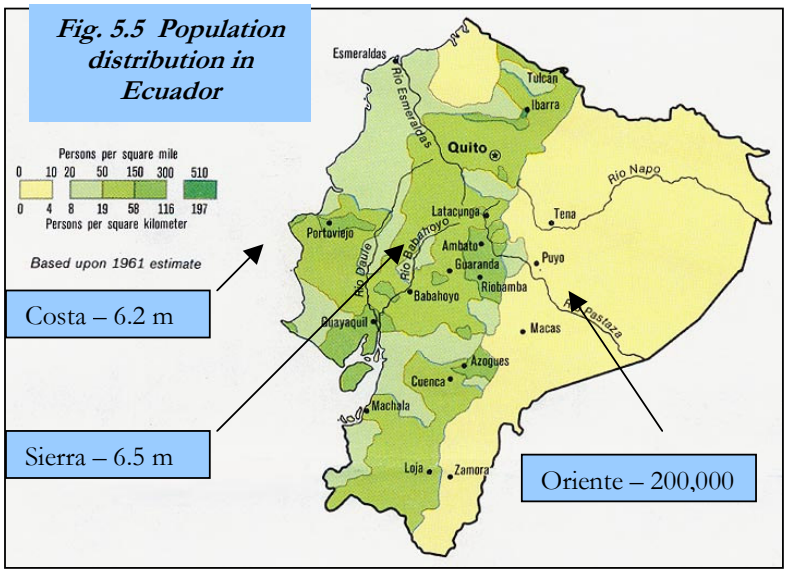
Yaruquí is a small town. It lies in the east of Pichincha Province, one of twenty two provinces in Ecuador (Figs. 5.2, 5.3), about 40 kms. north east of Quito. This city, with a population of 1.9 m., is the capital of both Ecuador and Pichincha Province. Although Quito is overlooked to the west by the 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.

Fig. 5.5 Population distribution in Ecuador



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 (%) **Underemployment (%)**	10.7 47	8.9 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?

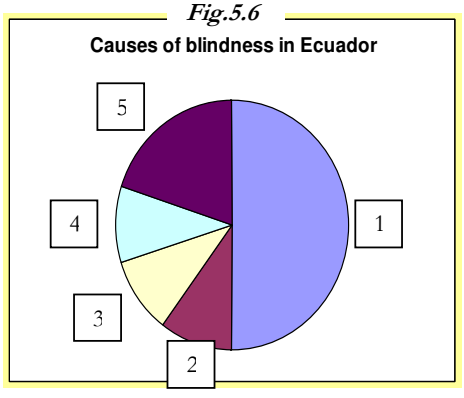
The Problem

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%

Fig.5.6



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?

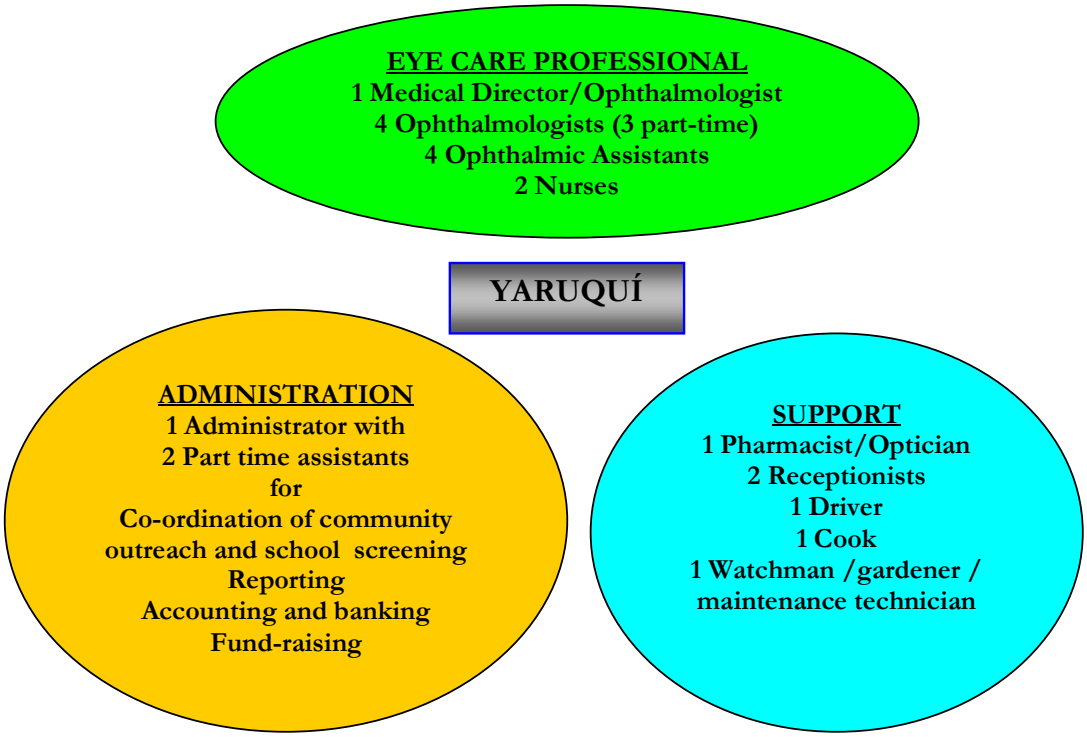
The present Medical Director of Yaruquí eye clinic opened the Valley Programme for Community Ocular Health with CBMI support in 1995 in Yaruquí town. Limitations of space and design, together with growing patient numbers, made all stakeholders soon realise that a larger and purpose built clinic was needed. 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



Th e 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 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.

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

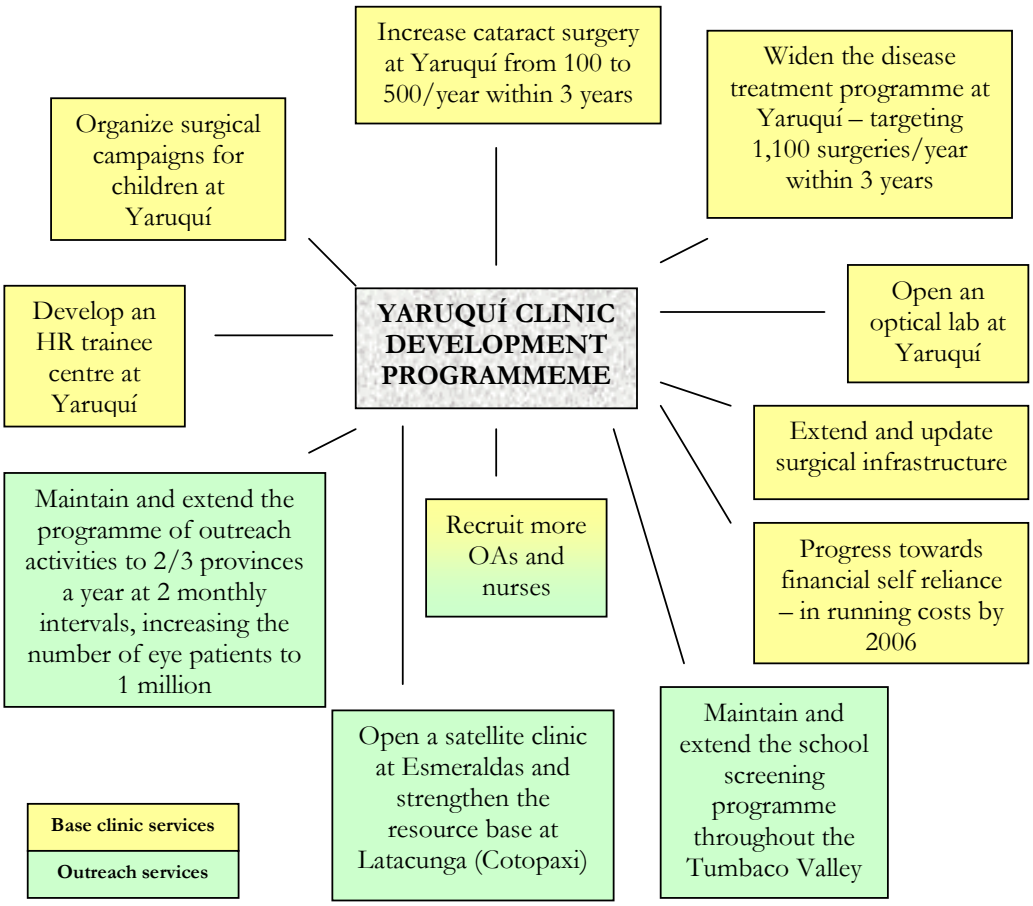
At present 60 – 100 patients visit the clinic each day.

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.

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

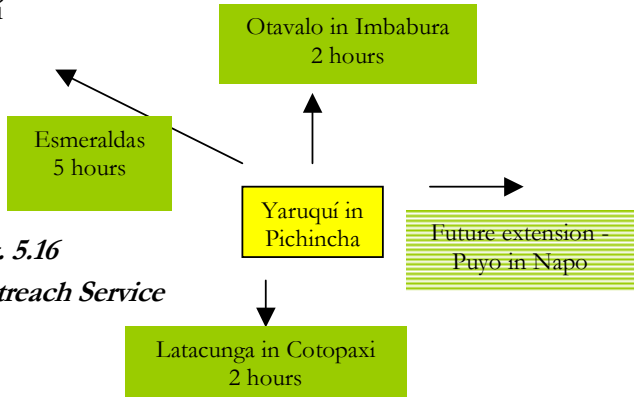


Fig. 5.16
Outreach Service

- 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.

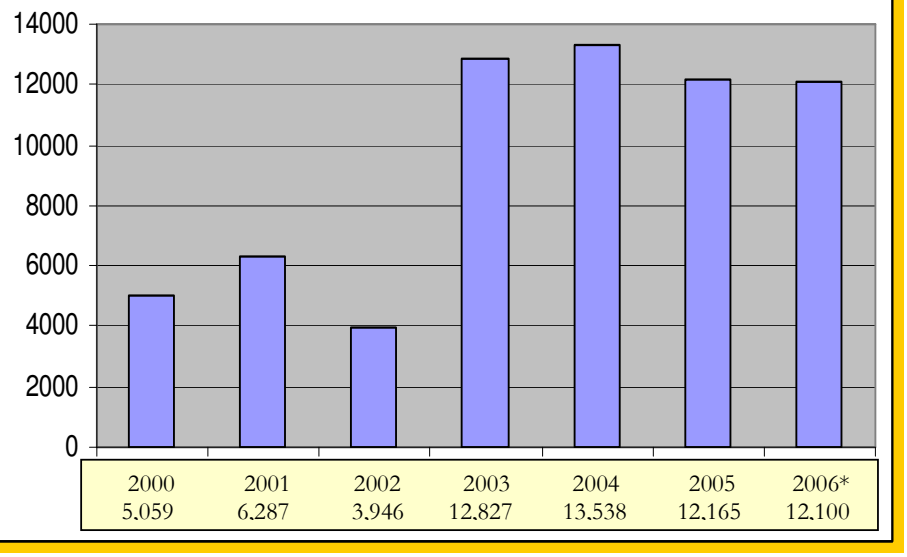
- The Clinic sends detailed quarterly reports to CBMI, giving short term development goals, patient statistics, training activities, problems with the programme, and providing general narrative comments on specific activities and planned intentions for the following quarter.

- 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 patents 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.

Fig 5.18 Growth of patient consultations in the Yaruquí programme 2000 - 2006



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

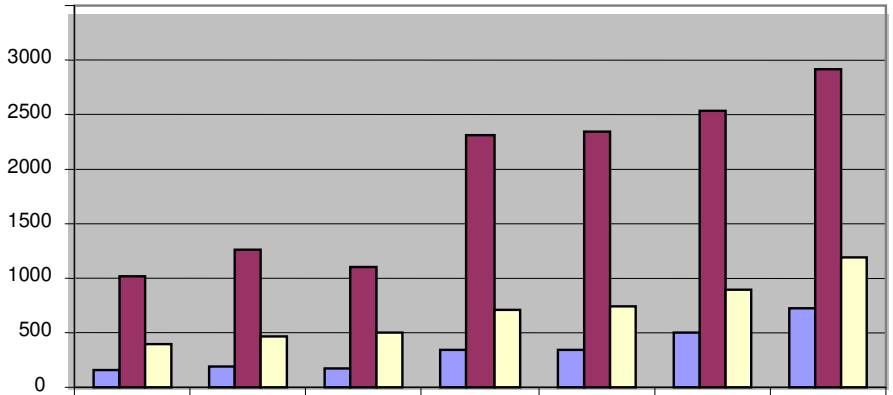
This pattern of patient consultations at Yaruquí shows three phases:

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.

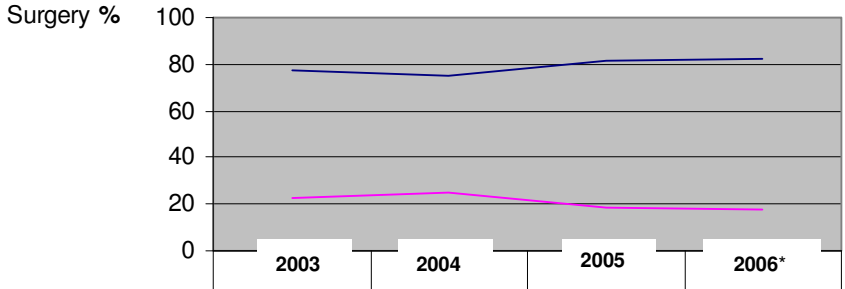
Fig. 5.19 Eye surgeries in the Yaruquí programme, 2000 - 2006



	2000	2001	2002	2003	2004	2005	2006*
Cataract surgery	153	187	170	346	351	506	730
CSR	1025	1252	1105	2318	2350	2530	2920
All surgery	402	459	496	708	746	902	1188

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.

Fig. 5.20 Location of cataract surgeries in the Yaruquí programme 2003 - 2006



	2003	2004	2005	2006*
Base Clinic	77.4	74.6	81.4	81.9
Outreach	22.6	25.4	18.6	18.1

* 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	• **Valley Programme for Community Ocular Health** starts in Yaruquí public Hospital • Optical shop and pharmacy offer stratified pricing	• 1,000 **patient consultations** • 65 **cataract surgeries** • 50 **other surgeries**
1996 **2001**	• April 1st - Programme moves to three separate buildings on present site • Need for new building agreed with CBMI and other German NGOs • **Construction of new clinic begins** • Equipment and vehicle obtained with NGO support	• 6,287 **patient consultations** • 187 **cataract surgeries** • 272 **other surgeries**
2002	• Japanese embassy funds equipment for clinic • Construction completed and building handed over in December	• 3,946 **patient consultations** • 165 **cataract surgeries** / 331 **other surgeries**
2003	**BASE CLINIC** • 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 **OUTREACH** ---------- • 4 visits of **surgical outreach**, largely cataract (2 in **Esmeraldas**) • **Community screening** in **Tumbaco Valley** and **Imbabura** **TRAINING** ---------- Courses for eye workers and health promoters begin	• 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 Chillos Rotarians
2004	**BASE CLINIC** • 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** **OUTREACH** ---------- • 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 ---------- **TRAINING** for eye workers and volunteers continues, e.g. for volunteers to combat barriers to surgery acceptance in the community	• 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	**BASE CLINIC** • 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 -**OUTREACH** ---------- • 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 ------- **TRAINING** ---------- Continues (1) to increase professional skills and encourage motivation and (2) for volunteers particularly to support health promotion in the community	• 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	• 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	**By mid year**: • 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 Minster 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

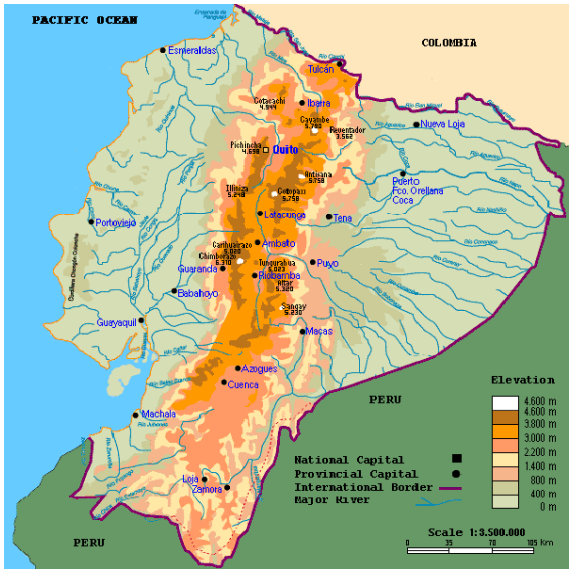


Fig. 5.21 – The map of Ecuador's relief divisions, shows Quito and Latacunga in the accessible Avenue of the Volcanoes. Esmeraldas however lies across the mountains on the Pacific Coast to the North West and Puyo over the ranges in the Oriente to the South East – both involving longer and more difficult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

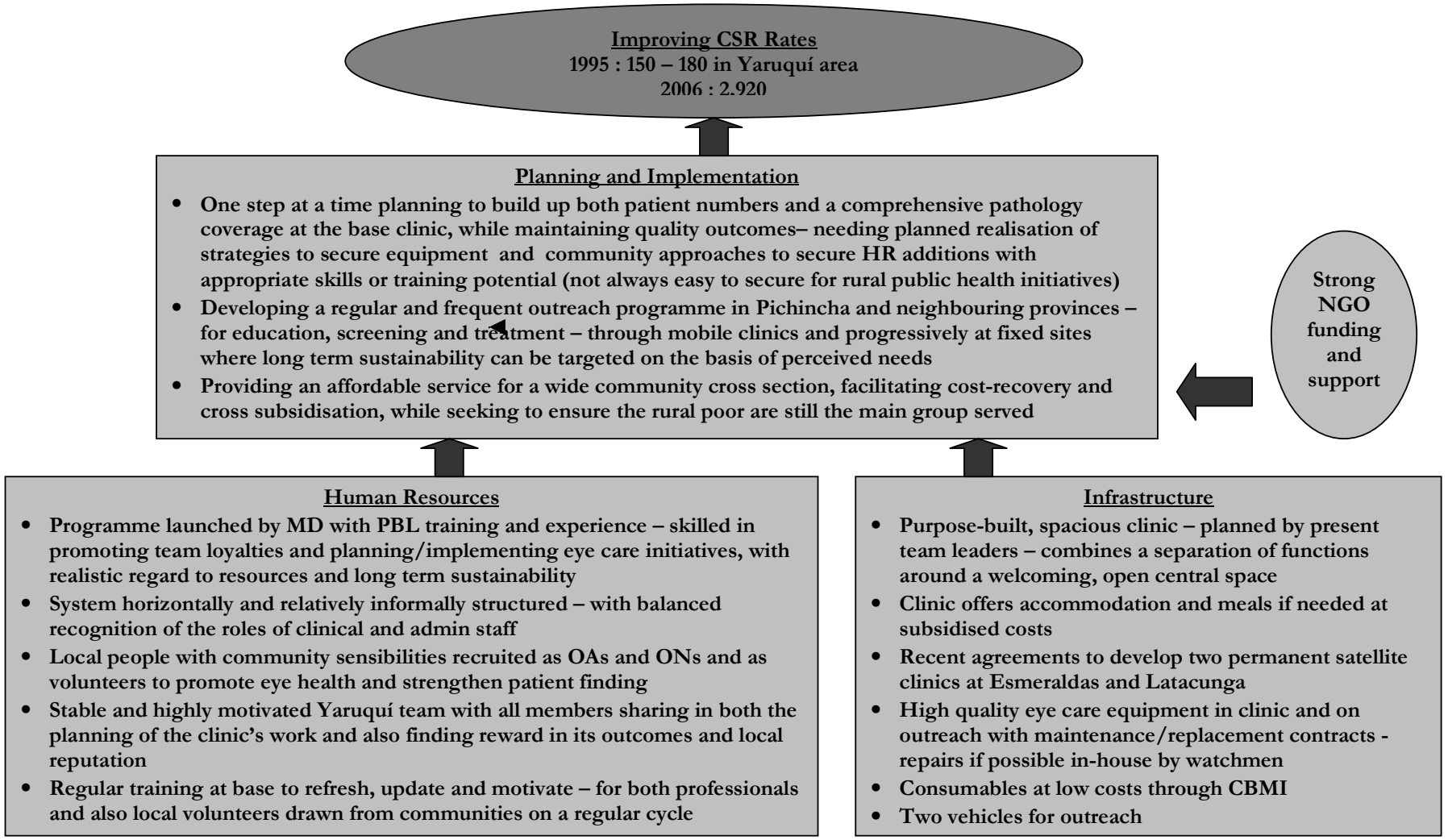
a. Ignorance – Volunteer health promoters, trained at Yaruquí, have worked to encourage an **understanding and acceptance of PBL** in the communities, sometimes with but often without the help of traditional healers. This group too is now beginning to receive guidance and persuasion through the programme's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

Chapter

6

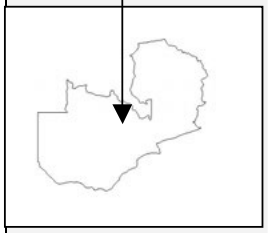
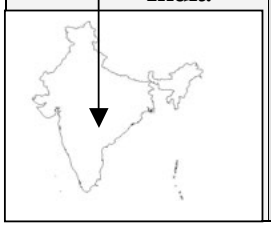
Summary – Designing a District Programme for VISION 2020

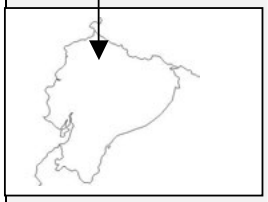
6.1 Three case studies

The purpose of this manual has been to highlight what has been achieved in district planning in three different situations. No attempt has been or should be made to compare these developing programmes, although it is clear that they have adopted many similar priorities. The emphasis must rest on noting their local circumstances and understanding how that context has led to the measures described to advance VISION 2020 and to reduce blindness in each district. These procedures have hopefully offered possible ideas for you to adopt or modify when planning a programme in your own district.

Before suggesting some planning steps for you to follow (in 6.2, 6.3), a brief summary of the three studies is given on pages 97-98. This emphasises both the negative and positive circumstances and the key elements in the design of each programme. **Some blank bullet points have been included for you to make additions to the lists given after reading and considering each case study.**

On page 99, using the blank table you can chart the circumstances and structure of your own current programme. This will help you to evaluate where you are now and assist the process of moving forward.

SAMPLE STUDY	LOCAL CIRCUMSTANCES	PROGRAMME ELEMENTS
KITWE **Zambia** 	• A high level of national and individual poverty • Other major diseases compete for scarce finance • Recruitment problems for suitably qualified staff and a lack of training provision in the country • Little movement from national to district planning for VISION 2020 • National eye care infrastructure that leaves very many people unreached • Some advantages in the selected district, regarding centrality in Zambia, literacy, hygiene and reduced poverty • Government support (national and provincial) and personnel investment • Considerable support from NGOs (financial and programme ideas) and the parent tertiary hospital • Independence of management despite financial dependence •	• Individual skills of the appointed medical director leading the programme • A well motivated and stable team, supported by the MD and a trained administrator • Two specific, measurable objectives and an annually reviewed programme of activities with monitored targets, efficiently planned and implemented • Improvement of human resources in all cadres to (1) increase output while ensuring quality of outcomes and (2) broaden available skills and achieve a more comprehensive service • Extension of outreach to serve people in more distant locations and reduce their travel for treatment • Provision of primary eye care through the existing PHC network, well coordinated with the satellite and base hospitals • Poorest people targeted for eye care both through active health education and screening programmes and through subsidised or free treatment • Community involvement to reduce barriers, enhance patient numbers and secure a caring reputation • A realisation that economic sustainability has to be sought but as a long term objective •
MUDHOLE **India** 	• High prevalence of blindness in a context of rural poverty, low literacy and scattered villages • Strong government and state support for prevention of blindness • Excellent human resource provision through the state's Right to Sight Society but distribution is unequal with regard to need in more inaccessible locations • Secondary satellite hospital within the LVPEI NGO service	• Individual skills of the clinical and administrative managers, as part of the wider ICARE - LVPEI structure • A well motivated, stable and optimally used staff team • Two specific objectives with clearly defined strategies – comprising a range of activities with measurable targets and a regular programme of monitoring to evaluate progress and promote growth • Concentration on the improvement of service efficiency by, for

	structure that provides set up support, leadership and management expertise, and comprehensive eye care of internationally recognised quality • Some NGO support for expensive equipment additions or replacement • Hospital location that is accessible and minimises the friction of distance for patients •	example, adopting day care surgery, improving surgery techniques, extending refraction services, targeting the patients most in need and broadening the range of treatable pathologies within the district • Extension of accessible eye care coverage in the district through such low cost initiatives as vision centres, vision guardians and PEEP volunteers • Drive to economic sustainability through a tiered charging structure that enables cost-recovery to support poorer patients and finance the salaries and running costs of the entire eye care programme • Good community liaison supporting eye health education, reducing barriers and providing personnel •
YARUQUÍ **Ecuador** 	• High levels of rural poverty but with advantages of high literacy and good water/hygiene conditions • Strongly centralised health care system with a poorly resourced public health service and little eye care • Political instability and low professional support have not brought national community eye health initiatives • Fee paying private eye care clinics away in Quito, above the income levels of most local people but not competitive with the services of Yaruquí clinic • Restricted national training opportunities below ophthalmologist level • Human resources nationally plentiful but selective in employment location • Clinic site very accessible through public transport and locally well populated to promote high usage • Excellent INGO support at set up and for ongoing equipment needs •	• Individual skills of the appointed medical director for the programme • A well motivated and stable team, fully supported by the MD and clinic administrator • A warm patient environment that welcomes, reassures and supports throughout the treatment process • Concentration on three measurable objectives – improving the services at the base clinic and in expanding outreach especially for poor people; improving HR training and health education; seeking financial sustainability – each defined and monitored through targeted activities, reviewed annually • Provision on site of CEH and VISION 2020 training as a national and international model • Strong community involvement – encouraging professional and volunteer recruitment, promoting health education and the removal of barriers to treatment acceptance – and so reaching more of the poor •

YOUR DISTRICT	LOCAL CIRCUMSTANCES	PRESENT PROGRAMME ELEMENTS

6.2 Steps in planning

Chapter 1.3 (page 3) in this manual listed the essential characteristics of a district programme for VISION 2020. Chapter 2 set out a generic model for designing and implementing such a programme.

We all acknowledge that to achieve a real change in eye care provision and blindness prevention there is an essential need to plan service provision at the district level – where needs are known, resources are measurable and community support is present. To move forwards from this awareness to a plan of action can be more difficult. At a meeting of involved professionals in 2005 in Uganda, in East Africa, it was agreed that this progress was often impeded by uncertainty over just how to proceed. How can we approach a planning exercise in such a way that successful outcomes should be guaranteed and eye care provision sustainably improved? It was suggested that some essential steps need to be taken:

- Determine who are the key decision-makers in the district and ensure their involvement from the beginning
- List the different eye care workers and determine the gaps in skills
- Review the available clinical data and list the information on service delivery for the previous year
- Ask the eye care leaders to list their priorities for a VISION 2020 plan (for example for disease control, , management systems and bridging strategies)
- List the potential donors and partners
- Divide the district into sectors based upon population and distance to the hospital, remembering the ideal population size for a district programme – 0.5 to 2 million.

These steps reflect the real concerns of key individuals wishing to promote district planning in one country, Uganda – but their relevance is global. These steps are also explicit and fundamental in the development of the generic model in Chapter 2. It is therefore now necessary to think how any district can work through this process. What practical steps should be taken?

Suggestions follow on both building up the necessary body of knowledge and shaping your planning strategy – so providing a framework around which you can build a secure programme for district eye care development. Many of the practical procedures suggested are available in the appendix to this manual and the numerical cross references are to the relevant sections in Chapter 2.

6.3 Planning exercises

Before beginning the district plan, it may be helpful to remind ourselves of the main differences between the purposes of **district and national plans**. These are given in **Ap1**.

2.2, 2.3 – Where are you now? A situational analysis of needs and resources – Only consider information you will need in your planning – it is too easy but wasteful in resources to exceed this.

A. Prepare a MAP of your district, as closely scaled as possible. Show key features in planning eye care services, for example:

- population distribution
- relevant environmental information – especially physical barriers
- transport routes
- eye health service units
- links with external service units

B. Collect and tabulate information on population indicators where known, for example:

- number and density in each sub-district
- gender and age structure
- economic groups
- levels of literacy
- health problems
- cultural and religious norms

C. Collect and tabulate information on eye diseases and blindness, for example:

- the prevalence and incidence of blindness and low vision in the district based on agreed levels of visual acuity
- the main causes of preventable and treatable blindness and their magnitude

A possible recording sheet is given in **Ap2**.

D. Make an assessment of the available resources – personnel and infrastructure

Two alternative exercises are given in **Ap3**, **4.** They are quite exhaustive and may need modification to meet your local situation.

It will also be helpful to complete **Ap5** that provides an overview of institutional resources and HR in relation to need.

As outlined in Chapter 2.3 (page 6), the district planning committee, comprising the key decision-makers and stakeholders, will then be able to identify gaps in the provision and initiate a discussion on the key objectives to be met.

2.4, 2.5 – Where do you want to get to? Setting aims and objectives

Ap6 provides one approach in considering how to improve the present service for tackling blinding eye diseases. Shortfalls are highlighted, targets are set and remedial activities proposed. Achieving the desired objectives will relate to human resource developments, infrastructure improvements and disease control strategies. The three case studies described in this manual have shown the need to target improved base clinic/hospital and outreach provision through these strategies.

2.6, 2.7 and 2.8 – How will you get there? Agreeing a plan, timetable and budget

Ap7 demonstrates a completed action plan to target the most prevalent treatable disease, cataract – through a fictitious example. The ideas are readily usable / modifiable to meet your own situation. It is important to remember that while National Plans will cover a 5-year span, District Plans should be drawn up for one year at a time and be subject to an annual reviewing programme.

2.10 – Monitoring progress and the management of resources

One tool used is the Gantt Chart. This sets out the activities and sub-activities (the strategy) to achieve a programme objective, displaying intended and actual progress through a year. It therefore enables progress to be monitored and provides a tool to make possible an evaluation of the programme and suggest adjustments if necessary for the following year.

The approach set out in **Ap8** is just one way of presenting this Chart. It builds on the example introduced in Chapter 2.4 (page 8) and followed up in Chapter 2.10 (page 13).

6.4 Final thoughts

Our global problem

The prevention of avoidable blindness by 2020 through VISION 2020

The obstacles repeat themselves

Governments without the drive or means to invest in eye health services

Professionals without the understanding or inclination to contribute to community eye health

Training opportunities that are inadequate in providing the leaders, managers and professionals to get things done

Communities that need to be involved in overturning a community problem

I/NGOs that are overstretched and of whom too much is expected

Resources that are unequal in their distribution and accessibility

Outcomes that fail to match expectations

Outreach that leaves many people unreached

People who should be patients but fail to come forwards

Collaboration that fails to materialise and lets populations down

And many, many more

Some of these obstacles we now know are being reversed

MUDHOLE **KITWE** **YARUQUÍ**

You have read of the achievements in these three eye health programmes. Their problems were not unique; their solutions at district level can be repeated. Preventable blindness is beginning to decrease globally and will do so more sustainably through the approaches of these and other model programmes.

What must you do?

Appendices

Ap1. The focus of National and District VISION 2020 Plans

National planning	District planning
Policy and guidelines for quality of care	Situation analysis regarding eye care in the district
Advocacy for VISION 2020 to government and other sectors	Establishment of targets for service delivery (e.g., cataract surgical rate and surgical load)
Guidelines on disease management	Activities needed to reach the targets
Standards for staffing, equipment, training, etc.	Personnel issues (gaps in terms of personnel and skills) to reach the targets
Plans for collection of information by "district" and dissemination of this information to stakeholders and others (and back to the "district")	Determining the gaps in terms of equipment, instruments, and supplies and setting in place activities to address these gaps.
Links with donors for assistance with prioritization of districts and national activities	Promotion and mobilization in the communities. Health education through relevant mechanisms
Co-ordination of training activities to ensure that health cadre are defined according to needs of the country	Establish or strengthen co-ordination and partnership. Establish a district VISION 2020 committee to guide progress
Monitoring/evaluation of human resource development to identify gaps	Determine who is responsible for specific activities to be undertaken
Coordinating national World Sight Day	Creation of a budget to undertake planned activities
Co-ordination of partners and stakeholders to identify gaps in partnerships and help identify new potential partners	Determining the time frame needed to carry out the project
Resource mobilization	
Procurement strategy for consumables for the country and negotiation with Ministry of Finance	Monitoring and reporting as required by national MoH, partners, and as needed by district authorities to make necessary revisions.
Recommendations regarding national information, education, and communication strategies	Advocacy with district authorities to identify sources of local support for eye care activities
Development of broad outlines of mobilization and implementation strategies	

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Ap2. Needs assessment

Country / region:	
Size of catchment population:	
Estimated prevalence of blindness:	
Estimate of number blind in catchment population:	

Major causes of blindness:

Cause	%	Estimate of number affected
1		
2		
3		
4		
5		
6 Others		
TOTAL:	**100**	

Major avoidable causes

1		
2		
3		

Ap3. Situation analysis

Infrastructure	
	Equipment (working?)
	Electricity/water
	Vehicle
	Roads (distance)
	Buildings
	Operating theatre
	Number of rooms (space)
	Number of operating tables
	Shared or dedicated?
	Number of days of surgery per week
	Number of days with GA (shared or dedicated?)
	Equipment in OT
	Number of cataract surgical sets (# functional)
	Operating microscope (functioning?)
	Sterilization equipment
	Anesthetic equipment (shared or dedicated?)
	Ward
	Number of beds (male and female)
	Tiered pricing
	Isolation ward
	Distance from OT
	Dedicated or shared toilets
	Average stay
	OPD
	Examining rooms
	Patient waiting area
	# VA lanes
	Dedicated registration
	Fast tracking /Appointment clinic
	Counselling service
	Equipment
	Slit lamp
	Ophthalmoloscope
	Tonometer
	Refraction set
	Torch
	Yag
	A scan & B scan
	Communication & management
	Phone
	Internet access
	Computer
Human resources (number, placement, who determines placement)	
	Ophthalmologists
	Cataract surgeon
	Refractionists/Optometrists/Opticians

	Nurses supporting eye care services/OCO
	Technicians (for VA, A & B scans, etc.)
	Counsellor/Social worker
	Support staff (drivers/guards/cleaners)
	Manager
	Primary eye care workers
	Maintenance technicians
	Local eye drop production staff
	Low vision technician
Outreach services	
	Screening (coverage)
	Referral and transport of patients to hospital
	Surgical (number and frequency and placement)
	Mobilization of acceptance
	Resources and logistics
Productivity of existing eye personnel	
	Number of patients seen/examiners
	Number of cataract operations per surgeon
	Number of all surgeries per surgeon
	Number of surgeries per day
	Number of spectacles dispensed/ refractionist or optometrist
	Number of refractions per refractionist
	Number of locally made spectacles per technician
	Number of eye drops produced
Productivity of services	
	Number of days on the ward/admission
	Number of days/surgical cases
Population served	
	Size (population) of the catchment area - for districts and sub district
	Age distribution
	Distance – to hospital & outreach camps
	Level of literacy (adults)
	Income
	Religion and cultural groups
Use of service by the population	
	Cataract surgical rate (by sub-district, by sex)
	% of recommended cases that got surgery
	Quality of cataract services
	Complication rate
	Outcome (VA)
	Type of surgery (phaco, ECCE)
	Childhood cataract
	% of children identified with traumatic, congenital/developmental cataract
	% of children identified that received surgery
	Surgical outcome (VA)
	% of children needing spectacles that received them
	% of children needing low vision services that received them
	Refractive services
	Number of children screened
	% of people refracted and needing spectacles that received spectacles

	Number of people refracted
Cost and price of services	
	Price of surgery
	% of patients paid/ free
	Package price or not
	Registration price
	Price for follow up
	Indirect costs for patient
	Cost of surgery
	Cost of consumables, spectacles & eye drops
	How much of fees are given to the hospital and how much is available for revolving fund
	Bank account separate?
	Health insurance?
Supplies	
	Spectacles: availability (regularity)
	Spectacles: affordability (price)
	Spectacles: quality
	Spectacles: donation or purchased or combination
	Consumables (IOLs/sutures/visco): availability and regularity
	Consumables: Donation or purchased or combination
	Consumables: Quality (where obtained)
	Consumables: Variety (IOL powers)
	Other surgical supplies: who provides, how ordered
	Pharmacy: availability, supplies, price
Co-ordination and partnership	
	Eye care co-ordinator for district?
	Eye care co-ordinators for sub-districts?
	District VISION 2020 committee present
	Frequency of meetings
	Membership
	Inter-sectoral collaboration
	Links with local decision-making groups
	Donors/NGOs
	Type (provide cash, equipment, supplies or implementing group)
	Supporting training
	Regular contribution or sporadic
	Size and type of relationship (partnership and agreement)
	MoH contribution (financial)
	Monitoring and reporting systemS

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Ap4. Questionnaire on available human resources, infrastructure and equipment

(to be completed by all eye care facilities in the district)

Eye care facility: _____ District: _____ Date: _____

Human resources

Cadre	Available in district	Training capacity in district	Place of posting
Ophthalmologists (total)			
Ophthalmologists - operating			
Ophthalmologists – not operating			
Full time eye worker – non doctor			
Cataract surgeons			
Orthoptists			
Ophthalmic assistants			
Ophthalmic nurses			
Low vision specialist			
Other mid-level eye care personnel			
Refractionists / Optometrists			
Primary Eye Care Workers			
CDTI workers for onchocerciasis			
Primary Health Care workers			
Community workers			
CBR workers			
Allied eye health workers			
Eye care managers			
Equipment technician			
Ophthalmologists operating on cataract			
Eye care staff performing lid surgery			
Eye care staff providing refraction services			

Maximum capacity:

Please indicate what you consider to be the maximum capacity per eye health worker per year under ideal conditions: (enough cases coming forward, sufficient support staff, sufficient facilities, equipment and supplies, but taking in consideration other tasks and responsibilities)

Cataract operations per cataract surgeon per year:	
Trichiasis operations per lid surgeon per year:	
Low vision care per low vision specialist per year:	

Infrastructure and Equipment

Instrument	No. available	No. in good working condition	No. beyond repair
Ophthalmic beds			
Operating theatre			
Operating tables			
Outpatient department			
Vehicle			
Spare parts			
Motorcycle			
Bicycle			
Slit lamp microscope			
Applanation tonometer			
Direct ophthalmoscope			
Indirect ophthalmoscope			
20D lens			
Goniolens			
Fundus lens			
Streak retinoscope			
Binomag loupe with headband			
Hand held slit lamp			
Keratometer			
Autorefractor			
A-scan			
B-scan			
Field analyzer			
Yag laser			
Argon laser			
Punctum dilator			
Irrigation canula			
Lid retractors			
Schiotz tonometer			
Head loupe			
Hand held loupe			
Trial lens set			
Trial frames			
Test types distance			
Test types near			
Lensometer			
Torch			
Examination loupe			
Autoclave			
Sterilizing drums			
Eye pressure reducer			
Drip stand			
Operating lamp			

Operating microscope			
Assistant binocular microscope			
Cataract surgery sets ECCE/ICCE			
Glaucoma set			
Instrument	**No. available**	**No. in good working condition**	**No. beyond repair**
Lid surgery set			
Chalazion set			
Pterygium set			
Enucleation / evisceration set			
Cryo therapy			
Bipolar cautery			
Slide projector with trays			
Tripod screen			
Overhead projector			
Transparencies and pens			
Teaching slide sets			
Library books			
Computer and accessories			
Software			
Photocopier			
Stenciling machine			
Spares			
Suture materials			
PC-IOL			
AC-IOL			
Artificial eyes			

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Ap5. Eye care infrastructure and human resources in relation to need

1. Infrastructure:

	Government	**Private for profit**	**NGO**	**TOTAL**
Eye units where cataract surgery is or could be performed				

2. Human Resources:

	Number in catchment population	**Number / million population**
Ophthalmologist/cataract surgeons		
Optometrists/Low vision specialists		
Ophthalmic nurse/assistant/techs		
Eye care managers		
Primary Eye Care trained staff		

Ap6. Charting the need and means for improvement in eye disease treatment

Situational Analysis - Eye Health Services (complete **one form for each eye health priority**)					
Area -		**Eye Health Problem** -		**Total population** -	
Estimated number of persons at risk for eye health problem -					
Estimated number of cases -					
	Present situation "Where are we now?"	**Adequate?** Yes / No	**If not, how to increase output?** "Where are the bottlenecks?"	**Future objective or target** "Where do we want to go?"	**Inputs / activities** "What do we have to do?"
Case finding					
Treatment					
Follow-up					
Prevention					

Persons at risk for **cataract** - all persons above 40; Persons at risk for **trachoma** - children aged 0-10 years and adults of 40+ in areas where trachoma is hyper-endemic;
Persons at risk for **onchocerciasis** - all ages in areas identified by REMO as Onchocerciasis affected; Persons at risk for **refractive errors** - 5-10% of all children; all people aged 40+ (presbyopia) and patients operated for cataract with (pseudo)aphakia; Persons at risk for **childhood blindness** - estimate affected children aged 0-15

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Ap7. An action plan for improving cataract services (in a fictitious example)

	Activity	Sub-activity	Start date	Completion date	Responsible for implementation	Costs
1.	**Increase cataract case finding and case motivation**					
1.1		Develop training materials for local health workers and for general public	01-01-04	01-06-04	District VISION 2020 Committee	50,000
1.2		Train 50 village health workers how to recognise and refer cataract (2 batches, 3 days course)	15-06-04	30-06-04	District Eye Surgeon	15,000
1.3		Provide health education and leaflets how to recognise cataract to local communities	01-08-04	Ongoing	Ophthalmic assistants	2,000
2.	**Increase uptake of cataract surgery by bringing surgical facilities closer to patients**					
2.1		Identify possible satellite centres with OT facilities	01-01-04	01-03-04	District Eye Surgeon	
2.2		Obtain permission to create 6 satellite centres for diagnostic and/or surgical intervention in the district	01-03-04	01-05-04	Ministry of Health & Family Welfare	
2.3		Arrange transport for diagnostic and surgical teams	01-05-04	01-09-04	District Eye Surgeon	10,000
2.4		Arrange equipment for diagnostic and surgical teams	01-05-04	01-09-04	District Eye Surgeon	20,000
2.5		Make time table for regular visits to all satellite clinics	01-07-04	Ongoing	District VISION 2020 Committee	

	Activity	Sub-activity	Start date	Completion date	Responsible for implementation	Costs
3.	**Increase surgical output by improving surgical facilities**					
3.1		Add extra tables in OT	01-05-04	01-08-04	Hospital director	15,000
3.2		Buy extra cataract sets	01-05-04	01-08-04	Hospital director	15,000
3.3		Train extra OT staff	01-04-04	01-07-04	Hospital director	5,000
3.4		Install air conditioning in OT and provide fans in the wards	01-06-04	01-09-04	Hospital director	11,000
3.5		Convince patients about safety of surgery in summer	01-03-04	ongoing	District VISION 2020 Committee	3,000
3.6		Arrange stand-by generator	01-05-04	01-08-04	Hospital director	14,000
4	**Improve outcome of cataract operations**					
4.1		Train maintenance and repair technician	01-10-04	31-12-04	Distr V2020 Com.	5,000
4.2		Train surgical staff in outcome monitoring	01-01-05	31-01-05	Distr V2020 Com	1,000
4.3		Purchase computer, printer, software for cataract outcome monitoring	01-01-05	01-03-05	Hospital director	3,000
4.4		Obtain outcome monitoring software and install this on the computer	01-01-05	01-03-05	Hospital director	
4.5		Open spectacle shop at hospital	01-07-05	01-09-05	Distr V2020 Com	25,000
4.6		Sub-contract provision of spectacles at standard cheap rates	01-09-04	ongoing	Hospital director	15,000 (-)

WHO/IAPB Tool Kit – Developing an Action Plan for VISION 2020

Ap8. Gantt Chart – A one-year time frame for district level VISION 2020 planning activities – a tracking tool to aid the monitoring process

A possible example.

Objective: To reduce the incidence of blindness through refractive error					
Strategy: To screen all schoolchildren aged 10 – 15 years for refractive errors					
Activity: To train 1 – 2 teachers per school in the use of a simple screening method to identify children who can or cannot see an 'E' of size 6/9 at 6 metres with each eye. Those who cannot are referred to an ophthalmic assistant for refraction					
	Sub - Activities	**Year 1**			
		Q1	**Q2**	**Q3**	**Q4**
1	**Get support of the district education officer**				
2	**Develop a simple screening methodology that can be used with teachers**				
3	**Develop training materials**				
4	**Develop a school eye-screening kit**				
5	**Develop a monitoring and evaluation system**				
6	**Train teachers in the use of the screening method**				
7	**Organise a referral system to ophthalmic assistants**				
8	**Arrange for a regular supply of spectacles**				

NB

Programme planning will show the quarter of the year by which each activity is to be completed.

Tracking will indicate the actual quarter by which each activity is completed.

Based on WHO/IAPB Tool Kit – Developing an Action Plan for VISION 2020

Useful resources and references

1. General

WHO and IAPB - Developing an action plan for VISION 2020; the Right to Sight – Tool kit available on CD-ROM (2nd edition - 2004). This is a detailed guide to the advocacy, design, planning, implementation and monitoring of VISION 2020 action plans. Distribution by IAPB, LV Prasad Eye Institute, LV Prasad Marg, Banjara Hills, Hyderabad 500 034 India.

Also available online at www.v2020.org – chapter 4.1 has an example on district planning.

Community Eye Health Journal – a number of recent issues contain many directly helpful articles with case studies:

Volume 18: Issue No.54: June 2005 – VISION 2020 at the district level

Volume 18: Issue No.56: December 2005 – People deliver eye care: managing human resources

Volume 19: Issue No.58: June 2006 – Outreach: linking people with eye care

Enquiries about receiving the Journal or obtaining back copies to Sue Stevens, International Resource Centre, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

Back issues are also available at www.jceh.co.uk

WHO and IAPB – State of the world's sight – VISION 2020: the Right to Sight 1999-2005

Foster A., Resnikoff S. - The impact of VISION 2020 on global blindness (Eye 2005 19, pp 1133-1135)

Johnson G., Minassian D., Weale R. - The epidemiology of eye disease (1st edition - 1998), ch.17 - Planning, management and evaluation of eye-care services

As above but 2nd edition - 2003, ch. 22 – VISION 2020: from epidemiology to program

2. Kitwe/Copperbelt Province, Zambia

[1]National Committee for the Prevention of Blindness - National Strategic Plan for the prevention of blindness in Zambia 2003-2008 (October 2003)

CBM Africa South regional office - Zambia country concept (December 2004)

Ministry of Health, Zambia and Sightsavers International - National eye care co-ordination project proposal and agreement August 2005-December 2008

Kitwe Central Hospital Department of Ophthalmology - Annual reports for 2003, 2004, 2005

3. Mudhole/Andhra Pradesh, India

LV Prasad Eye Institute - Annual activity reports April 2003-March 2004, April 2004-March 2005, April 2005-March 2006

Rao GN. - Primary eye care and vision centres – IAPB News Nov. 2005, No.48

Kyndt M. - Importance of affordable eye care – Community Eye Health Journal Volume 14, Issue 37, 2001

Shamanna BR, Nirmalan PK., Saravanan S. - Roles and responsibilities in the secondary level eye care model – Community Eye Health Journal Volume 18, Issue 56, December 2005

[2]Rao GN. - VISION 2020: The Right to Sight – Andhra Pradesh: Report 2000-2001, LV Prasad Eye Institute, Hyderabad

ICARE, LV Prasad Eye Institute, Hyderabad - Community eye health in ophthalmology residency programmes in India – recommendations of a workshop held October 10-11, 2003

4. Yaruquí/Pichincha, Ecuador

FOV - Annual project reports, 2003, 2004, 2005, 2006

FOV - Setting up an ophthalmic clinic in Yaruquí, Ecuador – a project description (2000)

Chiriboga F. - An on-going district VISION 2020 programme – Community Eye Health Journal Volume 18, Issue 54, June 2005