

32783



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTE

DISTR.: GENERAL(E)

WHO/PBL/90.18

ORIGINAL: ENGLISH

FORMULATION AND MANAGEMENT
OF
NATIONAL PROGRAMMES FOR THE PREVENTION OF BLINDNESS

- SUGGESTED OUTLINES -

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced and translated, in part or in whole, but not for sale nor for use in conjunction with commercial purposes.

The views expressed in documents by named authors are solely the responsibility of those authors.

Ce document n'est pas une publication officielle de l'Organisation mondiale de la Santé (OMS) et tous les droits y afférents sont réservés par l'Organisation. S'il peut être commenté, résumé, reproduit ou traduit, partiellement ou en totalité, il ne saurait cependant l'être pour la vente ou à des fins commerciales.

Les opinions exprimées dans les documents par des auteurs cités nommément n'engagent que lesdits auteurs.

CONTENTS

	<u>Page</u>
PREFACE	iii
EXECUTIVE SUMMARY	iv
 SECTION I. INFORMATION SUPPORT	
1. GENERAL COUNTRY INFORMATION	1
2. HEALTH SITUATION AND EXISTING SERVICES	1
3. EYE HEALTH SITUATION AND EXISTING SERVICES	2
EXAMPLE I. INFORMATION REQUIRED IN SUPPORT OF BLINDNESS PREVENTION	5
 SECTION II. PLANNING PHASE	
1. NATIONAL POLICY AND CENTRAL ORGANIZATION	7
2. SITUATION ANALYSIS	7
3. OBJECTIVES OF THE PROGRAMME	8
4. BROAD PLAN OF ACTION - PROGRAMME AREAS	8
EXAMPLE II. A MODEL FORMULATION OF OBJECTIVES, TARGETS AND APPROACHES IN RESPECT OF CATARACT INTERVENTION IN EYELANDIA	11
EXAMPLE III(a) TIME SCHEDULE	13
EXAMPLE III(b) FIELD WORKSHOP FOR COMMUNITY HEALTH WORKERS	14
 SECTION III. INITIAL PHASE	
1. ADMINISTRATIVE ACTION	15
2. COLLECTION OF INFORMATION	15
3. TRAINING ACTIVITIES	15
4. INITIAL IMPLEMENTATION OF THE PLAN OF ACTION	16
5. LOGISTIC PROVISIONS	16
6. UTILIZATION OF RESOURCES	16
7. MONITORING AND EVALUATION	17
EXAMPLE IV. COMMON MANAGERIAL ISSUES	19
EXAMPLE V. OUTLINE OF MAIN BUDGETARY PROVISIONS FOR THE PROGRAMME	21

	<u>Page</u>
SECTION IV. EXPANSION PHASE	23
1. ADMINISTRATIVE ACTION	23
2. COLLECTION OF INFORMATION	23
3. TRAINING ACTIVITIES	23
4. IMPLEMENTATION OF THE PLAN OF ACTION	23
5. LOGISTIC PROVISIONS	24
6. MONITORING AND EVALUATION	24
EXAMPLE VI. MANAGERIAL FRAMEWORK FOR IMPLEMENTATION OF A NATIONAL PROGRAMME ...	25
SECTION V. CONSOLIDATION AND INTEGRATION PHASE	29
1. ADMINISTRATIVE ACTION	29
2. SITUATION ANALYSIS	29
3. PLAN OF ACTION, LOGISTIC PROVISIONS AND UTILIZATION OF RESOURCES	29
4. MONITORING AND EVALUATION	29
EXAMPLE VII : PROJECTION OF NEED FOR CATARACT SURGERY IN EYELANDIA FROM 1985 TO THE YEAR 2000	31
SECTION VI. FINAL EVALUATION	35
REFERENCES & BIBLIOGRAPHY	36
ANNEX LIST OF PROPOSED ANNEXES FOR A NATIONAL PLAN FOR THE PREVENTION OF BLINDNESS	37
APPENDIX 1. SCHEME FOR COMMUNITY EYE HEALTH CARE AT THE PERIPHERAL AND INTERMEDIATE LEVELS. BANGLADESH	39
APPENDIX 2. MALAWI PREVENTION OF BLINDNESS PROGRAMME WORK PLAN SCHEDULE 1982-1987	40
APPENDIX 3. SUGGESTED LIST OF OPHTHALMIC EQUIPMENT FOR A FIRST REFERRAL LEVEL HEALTH CENTRE	41
APPENDIX 4. SUPPLIES AND EQUIPMENT FOR PRIMARY EYE CARE (taken from <i>Strategies for the Prevention of Blindness in National Programmes</i> , Section III, part 4, World Health Organization, Geneva, 1984)	42

PREFACE

The objective of the WHO Programme for the Prevention of Blindness is "to prevent and control major avoidable causes of blindness and to make essential eye care available to all". In this context, the medium-term target of the Programme is the establishment of national programmes for the prevention of blindness, which should be operational in at least 60 countries by 1989, the long-term target being to reduce national blindness rates to less than 0.5%, with no more than 1% in individual communities.

In order to assist Member States in the planning and implementation of such national programmes, WHO has made available several relevant documents and publications, in particular: *Guidelines for Programmes for the Prevention of Blindness*; *Methods of Assessment of Avoidable Blindness*; *Strategies for the Prevention of Blindness in National Programmes*; and the *Report of a Task Force on Evaluation Mechanisms for Programmes for the Prevention of Blindness*. The aim of the present document is to facilitate the formulation of national programmes by suggesting outlines and providing guiding principles which should be flexibly interpreted and "translated" into the national context, while respecting the prevailing social, economic, technical and managerial issues and problems.

Each national programme for the prevention of blindness should be considered as a part of the national strategy and plan of action for achieving "Health for All by the Year 2000". One cannot overemphasize the many advantages of having formulated a national programme: it promotes national will and commitment, facilitates the mobilization of resources both nationally and internationally, and helps the monitoring and evaluation of programme implementation.

The extent and nature of the problem of major blinding diseases, as well as the needs, conditions and the information readily available, vary in different countries. In the present document, information considered desirable and relevant for the purpose of planning, implementation, monitoring and evaluation of a programme is included. However, at the time of formulation of a national programme, the national health administration may actually have only a very limited amount of reliable information; this should not prevent them from making a draft of the programme.

The programme should be drafted in close collaboration with national health and other relevant authorities, as well as with interested nongovernmental organizations and international agencies and representatives of people and their communities, thus ensuring their active involvement from the very beginning.

Geneva, August 1984

In accordance with a recommendation made by the WHO Programme Advisory Group on the Prevention of Blindness at its VIIth meeting in Alexandria, Egypt, in March 1987, a working group was convened in June 1988 on "Development of managerial skills for blindness prevention programmes". The working group revised this document in the light of experience gained since 1984, and included illustrative examples in the main sections.

Geneva, August 1988

EXECUTIVE SUMMARY

The WHO Programme for the Prevention of Blindness aims to reduce the present excess of avoidable blindness in developing countries, and this includes both the control of specific blinding diseases and the provision of essential eye care to all, within a framework of primary health care.

1. As an essential first step to the planning and implementation of a national programme, general information about the country, as well as on its health and eye health situation and existing services, should be collected. On the basis of this, the national health authorities would be in a position to proceed with the planning of a national programme.
2. The planning phase, which in fact consists of the formulation of a national programme, includes problem analysis, policy and priority determination, the setting of objectives, health strategy formulation and broad programming (e.g., integrated eye health care, intensive specific control programmes, training, logistic support, mobilization of resources, operational research, monitoring and evaluation).
3. Detailed programming, as part of a broader managerial process for national health development, is given in three consecutive phases of programme implementation: Initial, Expansion, and Consolidation and Integration Phases, each characterized by its title. Each phase has its objectives, targets, detailed activities, coverage, manpower planning, logistics and supplies, community involvement, relationship within the health system, programme budget, calendar of action, monitoring and evaluation.
4. Monitoring of the implementation of the programme is a continuing process from the start throughout consecutive phases of implementation in order to ensure that they are proceeding as planned and are on schedule; it keeps track of all relevant components of ongoing activities, personnel matters, supplies and equipment, and money spent in relation to budget allocated.
5. Full integration of the prevention of blindness programme with the health system based on primary health care is the ultimate goal, and is to be ensured at the time of the final evaluation of the national programme. Such an evaluation should take into consideration the impact of the programme on socioeconomic development.

SECTION I. INFORMATION SUPPORT

1. GENERAL COUNTRY INFORMATION

1.1 Topography, climate, population

The main geographic and climatic features (including wet and dry seasons) and demographic characteristics (such as age distribution, urban/rural ratio and the rate of population increase) should be summarized. This is briefly outlined in Example I.

1.2 Social and economic indicators

The per capita gross national product, the major economy of the country, predominant occupations of the adult population, literacy rate, housing, water and sanitation, and food availability are among the most relevant indicators.

Brief information on available transport and communication (roads, railways, rivers) should also be given.

A map of the country and details of relevant vital statistics should be annexed, as they would provide useful information for better understanding of the programme. (See Annex, items 1 and 2.)

2. HEALTH SITUATION AND EXISTING SERVICES

2.1 Health policy and plans

A concise statement on the national health policy adopted and on the major emphasis and characteristics of health plans (e.g., comprehensive health care delivery system, health manpower development) should be given. If there is a defined national eye care policy, it should be included.

2.2 Basic health status indicators

Morbidity and mortality rates, nutritional status and life expectancy at a given age are among selected indicators.

2.3 Coverage of primary health care

Details of the basic health service network with primary health centres and sub-centres should be provided, and should include the stage of development and proportion of population covered, accessibility of medical care, and the early detection and treatment of diseases; the percentage of utilization of health services and the role of traditional healers should also be mentioned.

2.4 Organization and coverage by the referral system

Information on accessibility, geographical distribution and actual utilization of the referral system would provide useful data for planning.

2.5 Manpower and training facilities at various levels

The ratios of population to different kinds of health workers and existing training facilities by geographical location would give useful information.

An organogram of health services at various levels (central, provincial and peripheral) should help to understand the existing services. (See Annex, item 3.)

3. EYE HEALTH SITUATION AND EXISTING SERVICES

3.1 Source of information

In order to obtain a correct impression of the information provided, it is essential to have full details of the source of information (e.g., hospital statistics, sample survey). It should be noted that hospital statistics often give an unreliable and biased picture of the pattern of eye disease and resulting visual loss, in view of the select population attending hospital clinics. Similarly, blindness registers often give an incomplete view of causes of blindness, as do schools for the blind, as the more wealthy population groups in urban areas tend to be overrepresented.

3.2 Major blinding conditions

It is most important to provide, as far as possible, concise information relevant to common eye diseases, such as data on the geographical distribution of major blinding conditions (e.g., trachoma, malnutrition, onchocerciasis, cataract, ocular trauma, glaucoma).

The relevant information required about the major blinding disorders is shown in the table below. The prevalence of a certain eye disease is, in itself, not always a useful piece of information for a managerial decision as to whether intervention is needed against the disease or not. Thus, trachoma may be prevalent in an area, but in a non-blinding form which does not give rise to a significant amount of visual loss; on the other hand the mere presence of indicators for xerophthalmia in an area is sufficient to lead to an intervention against vitamin A deficiency.

TABLE. RELEVANT INFORMATION NEEDED TO ASSESS THE SIGHT-THREATENING PROPENSITY OF SOME BLINDING DISORDERS

Disease	Relevant form	Prevalence of relevant form	Geographical distribution
Cataract	Cataract blindness	+	
Trachoma	Active disease in children, in particular severe inflammation; trichiasis in elderly	+	+
Xerophthalmia	Indicators of xerophthalmia	+	+
Onchocerciasis	Ocular complications	+	+
Conjunctivitis	Neonatal form	Incidence	+
Glaucoma	Angle closure	+	(+)

Available numerical data, with an indication of the source of information, should be provided. (See Annex, item 4.)

3.3 Eye health services

A review of present activities for the delivery of eye care at the primary, secondary and tertiary levels of the health system should provide essential information for rational planning. It should include information on mobile eye services, delivery of eye care as part of primary health care and the degree of utilization of the referral system for secondary and tertiary eye care. The personnel available for eye care, their training and their supervision should be reviewed. An account of available rehabilitation and welfare facilities and activities carried out may be given to complete this review of eye health services.

EXAMPLE I. INFORMATION REQUIRED IN SUPPORT OF BLINDNESS PREVENTION

"Eyelandia" is a country of 12 million people, 2 million of whom live in relatively well developed urban areas. The remaining 10 million population, traditionally conservative in outlook, with generally low standards of living, are scattered over a surface of 195 000 km² with a rudimentary road network. The climate of "Eyelandia" is tropical, with an average 4-month wet season per year.

The general health care system in the urban areas consists of one teaching hospital, one secondary hospital, and 25 dispensaries. There are 10 ophthalmologists available in the cities, working in both the public and the private sector. In the rural setting, there are two provincial hospitals and 10 district hospitals. Only two ophthalmologists are available for rural areas, and they are based in the two provincial hospitals. A total of 30 beds are available in the urban areas for surgical cases, together with one full-time operating theatre. In the rural area, there are 15 beds available for each ophthalmologist, with a theatre available one day per week. The primary health care system is fairly well developed in most parts of the country, with an overall ratio of one village health worker per 5000 population, and one health centre per 100 000 population.

The table illustrates demographic changes likely to occur over a 15-year period as a result of population growth, aging and urbanization.

TABLE. DEMOGRAPHIC STRUCTURE

	1985 (millions)		2000 ^a (millions)	
Total population	12.00		16.80	
0-9 years	3.60	(30%)	4.20	(25%)
50+ years	1.32	(11%)	2.50	(15%)
Urban population ^b	2.00	(17%)	4.30	(25.5%)
0-9 years	0.60	(30%)	1.07	(25%)
50+ years	0.22	(11%)	0.65	(15%)
Rural population	10.00	(83%)	12.50	(74.5%)
0-9 years	3.00	(30%)	3.13	(25%)
50+ years	1.10	(11%)	1.90	(15.2%)

^a 40% total growth over 15 years (annual growth rate of 2.3%).

^b Assumes 50% increase in urban distribution.

Overview of magnitude and causes of blindness

As in many developing countries, it has been estimated that around 1% of the population is blind. Half of this blindness is due to cataract, almost all of which occurs in individuals aged 50 years or more.

Thus:

Cataract blindness = 0.5% of total population of 12 million
This gives 60 000 cases of cataract blindness in 1985.

It is also known that trachoma is endemic in one rural province, consisting of 1 million population. The endemicity of active, inflammatory trachoma is estimated to be 40% of all children below the age of 10 years.

Thus:

40% of the 0-9 years age group in province X (population 1 million, with 30% children) gives 40% of 300 000 = 120 000 children.

In addition, the estimated need for trichiasis surgery is for 1% of the total population in the endemic area. It is known that most of these cases occur in the population over 50 years of age, particularly in females.

Thus:

1% of the total province population - 10 000 cases, which constitutes 9.9% of the population in the age group of ≥ 50 years (11% of total population).

Note: Whereas the cataract problem can easily be extrapolated from other countries, trachoma is a much more variable phenomenon which requires an assessment of its severity and the complications in each endemic area. Thus, in the example given, it is necessary to have a more detailed assessment of the trachoma situation in province X, to consider needs and possibilities for prevention and treatment, in addition to the services required for lid surgery.

SECTION II: PLANNING PHASE

1. NATIONAL POLICY AND CENTRAL ORGANIZATION

1.1 National policy and strategy

The national policy and basic strategy should include the following:

- (a) the promotion of eye health as an integral part of the existing health services based on primary health care;
- (b) the prevention of visual impairment and blindness through community-oriented ophthalmic services, including eye health education; and
- (c) the restoration of sight to the curably blind.

It is essential to emphasize that the goal "Health for All by the Year 2000" cannot be achieved by the health sector alone, and that coordinated efforts will be required of other social and economic sectors concerned with national and community development. Due consideration should also be given to ensuring that the legislative aspects of prevention of blindness and of welfare and rehabilitation of the incurably blind are adequately covered in the national health and social legislation.

1.2 Central organization

A national committee or a principal coordinator for the prevention of blindness usually functions directly under the ministry of health, prepares the national plan and monitors the implementation of the programme. A regular working procedure for this national committee or central organization must be established to ensure its active and continuous role with regard to planning and coordination of activities at the national level. It should include representatives of the health and other relevant services and organizations actively engaged in the programme (e.g., epidemiological, ophthalmological, primary health care, maternal and child health, nursing, health education, drug supply and management), and may call on representatives of other services or bodies on an ad hoc basis if and when the need arises (e.g., planning and research, finance, and education institutes).

Each country will, of course, decide on the optimal size and composition of the committee, depending upon the nature and scope of the problem and the availability of individual experts in the various disciplines. A person, preferably with ophthalmic training and managerial skills, should, in the capacity of principal coordinator, ensure the continuity of work. The post should be established at least on a part-time basis and be given adequate administrative/clerical support.

2. SITUATION ANALYSIS

2.1 Baseline assessment of blinding conditions

In most instances, data on the extent and the nature of the problem are insufficient for the planning of rational and effective preventive and control measures. It is therefore important to collect and analyse whatever data are available (e.g., from primary health centres, dispensaries, hospitals) and to review them with the population data available (e.g., registers, population and housing censuses). In some instances, it may be possible to make use of data on certain disorders (e.g., cataract) from neighbouring countries, for programme planning needs. Often it will be realized that additional information obtainable from a population-based sample survey (particularly on

the geographical distribution of major blinding conditions) is needed for planning. Detailed information on survey methods and examination techniques is presented in document PBL/88.1. It is desirable that, whenever possible, standardized reporting begins at least one year before programme implementation, to serve as a baseline for future comparisons.

2.2 Identification of manpower, needs and facilities

In order to assess and plan the needs of the programme, it is necessary to identify the existing manpower and that needed, as well as facilities for training in eye care. This is extremely important since the initial phase of the programme should be planned as far as possible using the existing manpower and available facilities, with any additional resources required being kept to a minimum.

3. OBJECTIVES OF THE PROGRAMME

The objectives of the programme need to be formulated in the short-, medium- and long-term perspectives.

3.1 Short-term objectives (within less than 3 years)

These should include: initial expected reduction of the incidence of major blinding conditions and/or their severity, development of eye health manpower for all levels (particularly at the primary and secondary levels), strengthening of permanent eye care facilities, health educational efforts and, if appropriate, rehabilitation services, with an indication of targets to be reached within a given time interval.

It should be possible to fulfil short-term objectives during the Initial Phase and the early part of the Expansion Phase of the national programme, as described further in Sections III and IV.

3.2 Medium-term (3-5 years) and long-term (more than 5 years) objectives

These objectives should, in principle, be to reduce the prevalence and incidence of avoidable blindness or its main causes. The reduction of blindness rates would, of course, depend on the initial rates, and changes are slow to appear; the blindness rate is therefore an indicator in long-term the perspective. Suitable medium-term objectives and targets may be the reduction in severity or incidence of certain disorders, such as trachoma.

4. BROAD PLAN OF ACTION - PROGRAMME AREAS

In developing the broad plan of action, both short- and long-term objectives should be covered. It should aim to foster prevention of blindness, restoration of sight to the curably blind, the provision of essential eye care and access to referral services. The specific targets for each area of activity (e.g., operations, training) should be decided upon in accordance with the defined short- and long-term objectives. The following principal areas should be included.

4.1 Integrated primary, secondary and tertiary eye health care (within national health plans)

Primary (peripheral) eye care should be developed in accordance with the principles of primary health care and be fully integrated with other sectors involved in community development, maximum reliance being placed on the community's own resources. The secondary (intermediate) eye care level should support primary eye care (with regard to

training, guidance, supervision, referrals), in addition to carrying out functions at its own level. Similarly, the tertiary level should also be strengthened in order to support secondary eye care, and to perform its own tasks, including research. All levels should participate in field services, such as the work of mobile units. Furthermore, information on the eye health situation should be used in planning intensive control programmes against specific blinding conditions (e.g., cataract, trachoma, blinding malnutrition, onchocerciasis).

4.2 Training of personnel

In general, two main groups of personnel should be considered for the implementation of the national programme, namely (i) general health services personnel (primary health workers, nurses, medical assistants), with general physicians trained in community eye care, and (ii) ophthalmic personnel, with specialized training in eye care. At the primary health care level, the major tasks should be carried out by the former category of personnel while, at the secondary and tertiary eye care levels, programme implementation should be entrusted primarily to the more specialized group.

Existing staff may be assigned additional tasks after receiving further training, but it would probably be necessary to create and sanction a limited number of new posts.

Training material in eye care, particularly primary eye care, should be developed for health and allied personnel (e.g., teachers, social service and rural development workers, voluntary health workers) to be trained in eye care as an integrated part of primary health care. Refresher courses should be planned and organized and supervisory personnel trained.

At the secondary level, training efforts may focus on ophthalmic nurses, ophthalmic assistants or general physicians.

At the specialist level, the planning of 3 to 6 months' training in community-oriented ophthalmology as part of postgraduate training in ophthalmology will require the development of a syllabus for the different levels of postgraduate training (e.g., one-year course leading to D.O., or longer courses leading to a Masters degree).

4.3 Logistic support

In planning logistic support, a review should first be made of the existing resources that could be used for the implementation of the programme, particularly during the Initial Phase. It is essential to plan the provision of essential equipment and the regular supply of drugs, both of which should be as standardized and as uniform as possible. The facilities of the existing system should be utilized to the greatest possible extent. Similarly every effort should be made to use the available transport network in the health services. However, it may be necessary to consider providing some additional items for field work.

4.4 Mobilization of resources

While taking into account the national health service budget schedule, the requirement for additional resources (both non-recurrent and recurrent) should be planned well in advance. Voluntary agencies' resources may be considered in the form of financial contributions and/or donations of supplies, or volunteer personnel.

It is important both to mobilize and to involve in the planning process various other organizations which may be able to contribute temporary technical staff, equipment and supplies. Such agencies, including international nongovernmental organizations, may be represented in the national committee.

Technical cooperation among developing countries (TCDC) should also be considered in the planning process.

4.5 Operational research

Research related to improved technologies for the prevention and treatment of blinding conditions, particularly within health care systems based on primary health care, should be included in the broad plan of action. Feasibility studies on the provision of low-cost spectacles, technology for cataract surgery, and socioeconomic studies on blindness and its prevention may be specific areas for such research.

4.6 Monitoring and evaluation of planning

The monitoring of the Planning Phase should ensure a chronological development, i.e., the broad plan of action should only be embarked upon once the national policy, central organization, situation analysis and objectives have been established. Assessment of the programme's expected effect is essential to demonstrate to key decision- and policy-makers that the programme is achieving its short-term, intermediate and long-term objectives.

EXAMPLE II. A MODEL FORMULATION OF OBJECTIVES, TARGETS AND APPROACHES
IN RESPECT OF CATARACT INTERVENTION IN EYELANDIA

General Objective (long-term objective)

To prevent and control major avoidable causes of blindness and to make essential eye care available to all.

Specific Objective

The elimination of blindness due to cataract in the country.

Sub-objectives

- To assess the magnitude of the problem of cataract blindness.
- To develop the eye health manpower needed at primary and secondary level.
- To strengthen/establish eye care facilities for cataract surgery.
- To foster community participation by creating awareness of the problem of cataract through educational efforts.
- To provide spectacles for all aphakic patients.

Targets

In respect of the specific objective:

- By 1992 to have increased the capacity for cataract surgery to a level whereby at least the annual incidence (6500 cases/year in 1992) is dealt with, thus achieving a 25%-50% reduction in prevalence.
- By 1998 to have eliminated 90% of the blindness due to cataract.

The targets in respect of the individual sub-objectives would be determined by the situation in respect of both cataract load and the resources already available or becoming available in "Eyelandia". These need to be spelt out within a time-frame, e.g., at the end of 2 years and of 5 years:

- By 1990 data on the prevalence of cataract and its backlog in the country should be available.
- By 1990 80% of the population should be aware of cataract and its cure.
- By 1990 all of those operated for cataract should be provided with aphakic spectacles.
- By 1992 at least 50% of the personnel required for the programme should be trained.
- By 1992 70% of the health facilities needed at the district level should have been developed for delivery of cataract services.

Approaches

The intervention required for the elimination of cataract has to be developed through the strengthening and/or establishment of an infrastructure as an integral part of primary health care through the district health system. Such an infrastructure might where necessary include appropriate forms of outreach services. A "team" approach would be a fundamental requirement in the intervention against cataract blindness. Such teamwork would include the active involvement and contribution of the community and all concerned health care personnel.

Example. Cataract problem definition

There are potentially 60 000 cases of cataract in need of surgery; of these, 10 000 cases are in urban areas and 50 000 in rural areas. In the urban areas, the 10 ophthalmologists available perform a total of 500 cataract operations per year. The two rural ophthalmologists each carry out 5 operations per week, giving a total of around 500 cases per year for rural areas.

Clearly, the number of cataract operations is inadequate in both urban and rural areas, making it impossible to eliminate the backlog of unoperated cases within a reasonable time-frame. Only 5% of existing cases are being operated on each year in the urban setting, and only 1% in the rural setting.

- Obstacles:
- limited utilization of or access to health care
 - insufficient facilities (beds, theatres, etc.)
 - lack of manpower
 - inadequate provision of supplies and equipment, transport, etc.

EXAMPLE III(a) TIME SCHEDULE

The timing of any programme or activity is important in phasing, monitoring and evaluation. Having decided on the prioritization and sequence of activities, a time plan can be drawn up for guidance.

Stages

1. List all activities.
2. Calculate the average time needed for each activity from initiation to implementation and the duration of the implementation period.
3. List activities in sequence of time (some need to be carried out before others; resources are available for some, not for others).
4. Schedule month/year to start and month/year to end.
5. Draw up a work plan schedule.

Example

Year	1985	1986	1987	1988	1989
Month	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
Activity description					
Development of national PBL programme					
Cataract programme					
Development of national eye institute					
Training courses DO					
Ophthalmic assistants					
Ophthalmic nurses					
Development provincial eye service					
Civil works					

EXAMPLE III(b) FIELD WORKSHOP FOR COMMUNITY HEALTH WORKERS

1. Decide on geographical area to be covered, the number of village health workers to be trained.
2. After initial discussion with primary health care unit, fix a tentative schedule.
3. Write training document to include:
 - (1) candidates;
 - (2) villages;
 - (3) materials needed - vehicles, teaching;
 - (4) budget;

and submit to responsible administrator; receive permission.
4. Pay initial visit to the area; sensitize all candidates and fix definite dates.
5. Purchase and assemble all materials.
6. Start workshops in field.
7. Check and replenish materials as necessary.
8. Conclude workshops; write and submit report.

Example

Month	1	2	3 + 4
Dates	_____	_____	_____
Activity			
1	_____		
2			
3	_____		
4		_____	
5		_____	
6)			(
7)			(
8)			(

SECTION III. INITIAL PHASE

1. ADMINISTRATIVE ACTION

During the early phase of programme implementation the national committee should consider inter alia:

- (i) the problems and difficulties that may arise from the large-scale application of the strategies selected - and ways of avoiding, overcoming or minimizing them; and
- (ii) the surveillance and assessment of the various blindness prevention measures selected for implementation, having regard to:
 - (a) operational feasibility,
 - (b) management aspects,
 - (c) socioeconomic acceptance.

The central bureau or office should at this stage be well established with a principal coordinator (focal point), provided with adequate authority and essential administrative support.

The designation of health administrators responsible for the implementation of the programme at the provincial, district and local community levels, their adequate briefing on their additional new responsibilities, and the establishment of direct links with other health personnel at different levels are some of the most important administrative arrangements that need to be made in the Initial Phase.

Short national workshops, with the participation of those responsible for programme implementation, offer an excellent opportunity for the people involved to get to know each other and discuss particular problems in the integration of programme activities with ongoing routines, and to review the progress and difficulties encountered. Such workshops should be organized at the beginning of the Initial Phase, and at convenient time intervals (e.g., quarterly/annually) thereafter.

2. COLLECTION OF INFORMATION

Data on blinding conditions will at this stage become available by means of regular reporting from various levels, as well as from particular activities such as population-based surveys or further assessments of specific disorders.

The inventory of manpower and facilities available for eye health care should be pursued and all available dispensaries, health centres and other institutions suitable for the delivery of eye care at the primary, secondary and tertiary levels should be listed, with an indication of the additional resources required (e.g., personnel, equipment, supplies), to enable them to strengthen eye care at all levels.

3. TRAINING ACTIVITIES

Training material in eye care should be finalized at this point in order to facilitate training at the primary and first referral levels. Some material may be available from the international organizations (e.g., UNICEF, WHO) or from nongovernmental organizations.

Syllabuses and training courses should have been elaborated for the various levels of eye care within the national health services system. The fullest possible use should be made of paramedical staff, in particular ophthalmic assistants and/or nurses, at the secondary level.

In order to enable the personnel in charge of the health centres to perform their supervisory functions at the primary level, it is necessary to provide them with refresher training. Whenever carried out, field surveys should be used as a means for training local staff in primary health care.

Eye departments of medical colleges should be enabled to develop training in public health ophthalmology for undergraduate students.

4. INITIAL IMPLEMENTATION OF THE PLAN OF ACTION

Among the main tasks of the Initial Phase of the plan of action are: the testing of integration of eye care into primary health care; the methodological approaches to intensive control programmes against specific major blinding conditions on a limited scale, in order to obtain experience on the most rational, effective and economical preventive and control measures under local conditions; and, at the same time, the training of personnel in connection with the gradual expansion of activities.

Although the Initial Phase has an operational research component (i.e., testing the application of various methods of investigation or control under local conditions), the need to include other appropriate elements of operational research (e.g., the study of the nature of occupational ocular trauma and methods for prevention) may arise.

In order to ensure the full and continuous cooperation of the population in operational research activities, provision should always be made for simultaneous treatment of eye disorders and other minor ailments, and/or referrals of major illnesses.

5. LOGISTIC PROVISIONS

Every effort should be made to use the existing resources of health services to the greatest possible extent. Nevertheless, some additional provisions will be necessary, such as basic equipment and ophthalmic drugs. If not already functioning, a reliable system for the regular supply of equipment and drugs should be established at this stage.

It should be possible to share existing transport (e.g., for the epidemiological team's field investigations) but certain additional means of transport, such as bicycles, may be needed for visiting villages around health centres.

6. UTILIZATION OF RESOURCES

6.1 Budget

Depending on national administrative procedures, the allocation of funds and their utilization may be coordinated either by the responsible officer at the central level under the ministry of health, or through the national committee, if it has an executive function or if there are important contributions from nongovernmental organizations or other agencies. At the lower organizational levels, the local administrator or responsible medical officer would be in charge of monitoring expenditure in relation to allocated funds.

The projected cost of the programme should be presented in a detailed budget, and estimates should ensure that contingency funds will be made available. The budget should be divided into investment costs and recurrent costs, and include several operational components, such as:

- (a) salaries and expenses of programme staff;
- (b) expenses for organizational activities;
- (c) transport, supplies and equipment for field operations;
- (d) training costs;
- (e) miscellaneous costs (e.g., for publications).

Budgetary estimates should be made for a 4- to 5-year period to facilitate long-term planning and commitments for contributions from other organizations. Revisions of the budget and projected costs may be carried out at annual intervals.

The utilization of nongovernmental and intergovernmental contributions (in cash or in kind) may probably be most rationally organized if coordinated by the central bureau/office of the programme ("principal coordinator") at the national health administration level, in consultation with the organizations concerned and the responsible health administrators.

6.2 International organizations' inputs

The input of these organizations is generally determined on the basis of specific requests made by Member States to the organization. During the Initial Phase contributions may include the advisory services of short-term consultants, fellowships for national staff to attend regional seminars or training courses, and the supply of relevant technical publications, equipment and drugs not produced or available in the country.

7. MONITORING AND EVALUATION

Monitoring is usually referred to as the day-to-day assessment of project activities and progress; evaluation is the overall analysis of project achievements at intervals.

In general, an evaluation examines the process (the way the project is being planned and carried out) and outcome (the effect it is having). Measurement of outcome is essential in order to demonstrate to key decision- and policy-makers that the programme is effective in achieving its short-term, intermediate and long-term objectives. For example, a trachoma control programme based on antibiotic prophylaxis should result in a significant reduction in the prevalence and severity of active trachoma within months; a programme based on changing hygienic and cultural practices may take considerably longer, but changes in the practices themselves can serve as an intermediary precursor suitable for evaluation. In either case, it may take many years before a reduction in the prevalence of blindness can be demonstrated, as those irreversibly blind remain with us until their death.

The following points should be considered in the evaluation process.

State the specific subject of the evaluation

This may address either the whole programme or one of its components, e.g., provision of cataract surgery.

Ensure that all the information needed for carrying out the evaluation is available

Define evaluation indicators

These are variables that demonstrate changes produced by a programme, e.g., an increase in the number of allied health personnel or in the number of cataract extractions performed.

Establish criteria

Criteria provide a specific - quantitative or qualitative - standard for each indicator by which progress towards attaining objectives can be assessed.

Example. objective : elimination of cataract blindness
indicator : prevalence of cataract blindness
one criterion : 50% reduction in prevalence of cataract blindness
one target : 50% reduction in prevalence of cataract blindness within
5 years

Progress

A review of progress helps monitor and control ongoing activities to ensure that operations are proceeding as planned, on schedule, and within the budget.

Efficiency

Efficiency is defined as progress in relation to the efforts and resources expended in its achievement.

Effectiveness

Effectiveness is a measure of how well the programme has attained its targets or objectives.

Impact

Impact refers to the overall long-term effect of a programme on health and the general socioeconomic situation. A programme may not only have achieved its objective of eliminating the backlog of unoperated cataracts, but in doing so may have improved the economic well-being of individuals, their families and communities.

Subjects for the monitoring and evaluation of blindness prevention programmes may include:

- specific eye diseases and blindness;
- health infrastructure and the delivery of eye care at various levels;
- the utilization of eye health services at the various levels by the population served.

Formulation of proposals for future activities

On the basis of the evaluation of the Initial Phase, proposals should be made regarding future development, including any modifications of the objectives, targets, methods and techniques applied, as well as of the human and financial resources to be deployed during the next phase, the Expansion Phase.

EXAMPLE IV. COMMON MANAGERIAL ISSUES

Task assignment

The general objectives of any eye care programme are the reduction of avoidable blindness and ocular morbidity and the delivery of eye care services to the entire population.

To achieve this, certain managerial skills (i.e., setting realistic targets, proper assignment of tasks, promotion of teamwork, and motivation and supervision of personnel) are vital.

A clear definition of tasks is an essential prerequisite for good teamwork. Ideally, the assignment of tasks starts with the analysis of the capability of the community. Problems should then be referred upwards, level by level, until they are dealt with. However, in practice, tasks are delegated from the tertiary level downwards.

In either case, the personnel with the most technical expertise should be left to do the most technical task. From the following diagram, it can be seen that any particular task can be performed by a number of different levels of personnel. The assignment of a particular task is not, however, purely theoretical, but is dictated by need and the resources available.

Example

	Village health worker	Community nurse	Integrated eye worker	Ophthalmic assistant	Cataract surgeon	Ophthalmologist
Other intraocular surgery						
Cataract surgery						
Extracocular surgery						
Refraction/dispensing						
Distribution of vitamin A/ivermectin						
Handling common eye problems						
Cataract identification/referral						
Vision assessment						
Environmental and personal hygiene						

EXAMPLE V. OUTLINE OF MAIN BUDGETARY PROVISIONS FOR THE PROGRAMME

Investment costs

- A. Civil works
 - Construction
 - Renovation
- B. Furniture and equipment
- C. Vehicles and transport
- D. Materials
 - Consumables (initial stock)
 - Drugs
 - Office supplies
 - Non-consumables
 - Printed materials, posters
 - Books, periodicals
 - Production costs
- E. Training
 - Overseas
 - Long-term
 - Short-term - seminars, study tours
 - Local
- F. Technical assistance
 - Foreign
 - Local
- G. Operations research studies
- H. Local initiatives

Recurrent costs

- A. Salaries and personnel costs
- B. Per diem and travel costs
- C. Vehicle costs
 - Operation (spare parts)
 - Fuel
 - Maintenance
- D. Building maintenance
- E. Equipment maintenance
- F. Materials
 - Consumables
 - Non-consumables
 - Subscriptions
 - Reprinting
- G. Post and telephone
- H. Water and electricity
- I. Data collection, monitoring and analysis

Some of the costing for this is part of central services.

SECTION IV. EXPANSION PHASE

1. ADMINISTRATIVE ACTION

Once the proposals for the Expansion Phase have been formulated and approved, the collaboration of nongovernmental, intergovernmental and international organizations should be negotiated and their inputs defined.

Targets for expansion need to be set. They will largely be dependent on the priority given and the resources made available.

While efforts should be made to implement the Expansion Phase with as few additional resources as possible, more personnel, equipment, drugs and transport would usually need to be sanctioned to cover an extended programme area.

It is important that the designation or identification of additional staff be made without delay, to allow time for their training and briefing on their duties.

2. COLLECTION OF INFORMATION

In order to decide on the priorities, methodological approaches and resources required in the expansion area(s), an assessment of blinding conditions may have to be carried out in new areas, on lines similar to those proposed in previous sections.

An inventory of the manpower and facilities already involved in eye health care activities in the new areas to be covered by the programme during the Expansion Phase will facilitate the decision on the need for additional resources to be deployed for the implementation of the programme.

3. TRAINING ACTIVITIES

An expansion of the training activities mentioned in Section III will be required in order to cover the needs of the Expansion Phase. Experience gained from such activities during the Initial Phase should make the expansion of training even more rational and effective.

4. IMPLEMENTATION OF THE PLAN OF ACTION

In the light of the experience gained during the Initial Phase, the process of integrating eye care into the primary health care system, including the referral system, should gradually be extended to the area(s) covered by the Expansion Phase.

Similarly, once the extent and nature of blinding conditions in the expansion area(s) are ascertained and priorities for control action have been decided, intensive control programmes against specific major blinding conditions should be extended to new areas.

Operational research

Operational research should be expanded, or new activities initiated, in so far as the development of the programme requires and available resources allow. It may be of great interest to conduct research on the utilization of eye health services in the programme area, as this will facilitate a meaningful evaluation of the final impact of the project at a later stage.

5. LOGISTIC PROVISIONS

Based on the experience of the Initial Phase, and depending on the objectives, targets and priorities set for the Expansion Phase, the necessary logistic provisions should be made to ensure availability of supplies and equipment and transport facilities in the extended programme area(s).

6. MONITORING AND EVALUATION

Monitoring the progress of the programme by assessing the adequacy of plans, the efficiency of implementation, and its effectiveness and overall impact should be carried out throughout the Expansion Phase and at its end.

Small-scale, simplified prevalence surveys in selected areas, limited to preschool-age children and adults over 50 years of age, may be used as short- and medium-term indicators of progress in controlling major causes of avoidable blindness, by revealing changes in prevalence of precursors of blinding disease or of cataract blindness.

Specifically, the evaluation of cataract intervention programmes may be carried out at different levels of sophistication:

- (a) Reported numbers of cataract extractions can be collected, at little cost, on an ongoing basis. This reveals the number of procedures performed towards the goal. It does not provide data on the quality or appropriateness of surgery nor the degree to which the prevalence of cataract-related blindness has been reduced.
- (b) Periodic follow-up and re-examination of subjects who have undergone cataract surgery will assess the potential improvement in vision achieved, and the degree to which this is limited by complications of surgery, inappropriate selection of patients (e.g., those whose vision was limited by other diseases, such as glaucoma, macular degeneration, etc.) or by failure to receive or retain/use aphakic correction.
- (c) Less frequent population-based studies will determine the effectiveness of the cataract surgical programme in reducing the prevalence of cataract-related blindness, and the degree to which such impact is limited by inadequate numbers of procedures for population needs and to poor outcome of surgery or lack of aphakic refraction as noted above. The impact of eliminating blindness due to cataract may be assessed in terms of quality of life, living standards and longevity.

In the light of experience thus obtained, proposals for the Consolidation and Integration Phase should be made.

EXAMPLE VI. MANAGEMENT FRAMEWORK FOR IMPLEMENTATION OF A NATIONAL PROGRAMME

The managerial framework for the execution of a national programme necessarily involves personnel interaction both at the same level as well as between different levels of the organizational structure. There is also a need for the managers at all levels to interact with staff in other sectors, such as finance and administration.

It is assumed that the person responsible is the manager for the national blindness prevention programme.

With whom to coordinate

- | | |
|---|--|
| 1. Plan implementation | Executive body of national committee |
| 2. Setting criteria/standards
- job descriptions
- selection of personnel | Head of health service, health manpower
division and relevant departments/units |
| 3. Preparation of essential drugs/
equipment/spectacles list | Ministry of health, national committee,
nongovernmental organizations |
| 4. Training
Deployment
Assignment of tasks | Head of health services
Professional council
Training institutions and organizations |
| 5. Supervision of personnel | Head of health services |
| 6. Mobilization and allocation of
resources | Ministry of health; nongovernmental
organizations |
| 7. Information collection and analysis/
utilization | Statistician and epidemiologist
Operational level staff |

The committee membership is determined by the ministry of health, in consultation with the programme manager, and ideally the latter should be the secretary to that committee.

Provincial level

The programme manager coordinates with the levels below through the provincial ophthalmologist or other responsible medical officer.

With whom to coordinate

- | | |
|--|--|
| 1. Outreach service
- scheduling
- vehicle allocation
- repair and maintenance
- fuel management | Provincial health authority
Operational level staff
Transport unit |
| 2. Information
- collection
- forwarding
- dissemination
- utilization | levels below
levels above
Programme manager |

With whom to coordinate

- | | |
|---|--|
| 3. Facilities | Provincial health authority or
management committee |
| - acquisition and management | |
| - wards | |
| - beds | |
| - theatre time | |
| 4. Supplies and equipment (including
spectacles) | Provincial health authority or
management committee |
| - determine type and amount | Programme manager; Matron |
| - inventory | Theatre superintendent; |
| - minimal stock levels | Pharmacist; Stores officer; |
| - repair and maintenance | Firms; Nongovernmental organizations |
| 5. Clinical Support Services | Chief, provincial hospital |
| - e.g., pathology, microbiology,
radiology | Relevant service units |
| 6. Manpower | Provincial health administration |
| - motivation | Programme manager |
| - supervision | |
| - retraining | |
| - coordination | |

The provincial ophthalmologist coordinates with the next level below in particular the medical officer in charge, or the responsible paramedical personnel.

Primary health centre levelWith whom to coordinate

- | | |
|---|----------------------------|
| 1. Outreach services | Visited facilities |
| - fuel management | |
| - mobile service staff, e.g., driver | Provincial ophthalmologist |
| 2. Information | Provincial ophthalmologist |
| - collection | |
| - utilization | |
| 3. Supplies and equipment, including spectacles | Provincial ophthalmologist |
| - inventory | |
| - minimal stock levels | |
| - regular order | |
| - notify repair and maintenance | |
| 4. Manpower | Provincial ophthalmologist |
| - motivation of PHC worker | |
| - supervision of PHC worker | |
| - retraining of PHC worker | |
| - coordination of PHC workers | |
| 5. Eye care activities | Units responsible |
| - general health workers | Health personnel |
| - community | |

CONCEPT OF TEAMWORK

1. A common objective provides the essential basis for teamwork.
2. Each team member works with the others, doing what he is trained for and assigned to, each recognizing the importance of his own job and the equal importance of everyone else's job, so that an atmosphere of trust and respect is created and maintained.
3. The essential ingredients are good leadership, appropriate resources and technology, clear instruction and reporting, and creativity and flexibility within the guidelines.
4. Every team member mutually reinforces the work of the others, so that performance as a team is enhanced.
5. There must be good information circulation within the team, e.g., regular meetings.

In the context of the prevention of blindness programme, a team would not only comprise the ophthalmologist, ophthalmic paramedical and community health workers, but could also include members from other sectors, e.g., education, agriculture, etc.

MOTIVATION, SUPPORT AND SUPERVISION OF PERSONNEL

1. Clear instructions by way of job descriptions, provided at the outset to personnel, would ensure the correct appreciation associated with the position and inherent organizational relationship. A well-defined career structure is an important requisite.
2. Explanation of terms and conditions of personnel and employment should be made known to all personnel.
3. Provision of resources necessary to perform assigned task, e.g., necessary supplies and equipment on a regular basis, should be arranged.
4. Adequate and timely supervision should be provided, as this motivates and supports personnel by reinforcing appropriate practices and by identifying and correcting those that do not meet expectations.
5. Inadequate performance should be identified, its cause(s) ascertained and appropriate solutions provided. For example, a lack of skill or knowledge should be solved by simplifying the task or providing practice/training.
6. Disciplinary measure(s) should where necessary be taken promptly following established guidelines, with adequate explanation to personnel and recorded as appropriate.

PERFORMANCE ASSESSMENT

Decide on scope, type, method, frequency and problem indicator for each category, for example:

scope	quality and performance of community health worker
type	diagnostic ability
method	count correct/incorrect diagnoses on referral cases or on impromptu visits
frequency	as necessary
problem indicator	frequent incorrect diagnoses

SECTION V. CONSOLIDATION AND INTEGRATION PHASE

1. ADMINISTRATIVE ACTION

The administrative action to be taken should depend on the degree of integration of eye care into the general health services at all levels, the level of reduction of blinding conditions and the proposals made for Consolidation and Integration Phase.

2. SITUATION ANALYSIS

The analysis should include all relevant aspects, such as ocular morbidity and blindness rates compared to baseline data, manpower and facilities engaged in the programme, and degree of attainment of targets set.

3. PLAN OF ACTION, LOGISTIC PROVISIONS AND UTILIZATION OF RESOURCES

Details should be given in accordance with the proposals to be made for the consolidation and integration of activities, and should largely depend on the situation analysis mentioned under Section V.2 above. In general, care should be taken not to reduce blindness prevention and control efforts prematurely.

4. MONITORING AND EVALUATION

Monitoring the progress and assessing the overall impact throughout this phase is of particular importance, since the prevailing situation in different areas covered by the programme may call for the application of different methodological approaches at the same time, and also because this monitoring and assessment should indicate the time at which the final evaluation of the national programme should be made.

EXAMPLE VII. PROJECTION OF THE NEED FOR CATARACT SURGERY IN EYELANDIA
FROM 1985 TO THE YEAR 2000¹

It has previously been shown that in Eyelandia, with its demographic situation, the annual growth of those aged 50 years or over is 4.2%. A long-term approach to reach equilibrium (ongoing need) such that there will no longer be a backlog of cataract blind is presented below.

In 1985, it was known that there were 4400 new cases of cataract requiring surgery and only 1000 operations performed. Taking into account the population growth in Eyelandia, and the resulting increasing need for cataract surgery, the following table can be given estimating the potential increase in cataract services consistent with realistic allocation of necessary resources:

1985	Year 0	Population (millions) 1.32 50 years	New cases of cataract	Cataract extraction	Difference	Cumulative difference
	1	1.38	4580	2200	+ 2380	+ 2380
	2	1.43	4777	2400	+ 2377	+ 4757
	3	1.49	4978	2800	+ 2178	+ 6935
	4	1.56	5178	3600	+ 1587	+ 8522
	5	1.62	5404	4600	+ 804	+ 9326
	6	1.69	5632	5800	- 168	+ 9158
	7	1.76	5868	6400	- 532	+ 8626
	8	1.83	6114	7000	- 886	+ 7740
	9	1.91	6372	7200	- 828	+ 6912
	10	1.99	6639	7400	- 761	+ 6151
	11	2.08	6918	7600	- 682	+ 5469
	12	2.16	7209	7800	- 591	+ 4878
	13	2.25	7512	8000	- 498	+ 4390
	14	2.35	7827	8200	- 373	+ 4017
	15	2.45	8155	8400	- 245	+ 3772

As can be seen, the breakpoint of reaching the capacity to deal with all new cases each year is reached after 6 years. Still, in order to cope with the increasing number of cases requiring surgery, a steady increase in the number of operations carried out is called for in subsequent years.

¹ Monocular surgery on people binocularly blind.

There are two important points not considered in the previous table. This model stresses a long-term and permanent approach to the problem of new cases of cataract surgery:

1. The problem of a backlog of unoperated cases is a different issue, and has not been addressed. Its solution may require particular efforts and resources for a limited period of time, depending on the objective and target formulated in that respect.
2. The need for cataract surgery in different population groups, e.g., urban versus rural, has not been taken into consideration.

The potential factors influencing needs and resources for cataract surgery in urban versus rural settings are demonstrated in the following examples:

A. URBAN presently performing 500 operations/year

Resource availability	Performance per week	Weeks of performance per year	Potential annual total	Annual needed
Ophthalmologists - 10	15 cases per week per ophthalmologist Total 150 cases/week	40	6000	
Operating rooms - 1	25 cases per week	50	1250	
Beds - 30	5-day stay - 30/week	50	1500	
Cataract cases in 1985				1467
Cataract cases in 1992				2900

1985: The immediate limiting factor is the capacity of the operating room.

Solution: part-time availability of additional operating room (at auxiliary hospital) or a modest increase in operating room efficiency.

1992: Medium-term: the increased number of cases, represents increased population growth, aging and urbanization. Operating rooms and beds, not ophthalmologists, are the limiting factors.

Solution: operating room time needs to be doubled (2 full-time rooms with slightly greater efficiency); reduce bed stay to 2 days or develop outpatient surgery.

B. RURAL presently performing 500 operations/year

Resource availability	Performance per week	Weeks of performance per year	Potential annual total	Annual needed
Ophthalmologists - 2	15 cases per week per ophthalmologist Total 30 cases/week	40	1200	
Operating rooms - 1 (available 2 days/week)	10 cases per week	50	500	
Beds - 30	5-day stay = 30/week	50	1500	
Cataract cases in 1985				2933
Cataract cases in 1992				2900

1985: All parameters are limiting factors; the most limiting is the availability of the operating room.

Solution: Increasing operating room availability to full time and slightly increasing efficiency, reaching a capacity of 1500 cases per year; matching the availability of ophthalmic staff and beds. In this way the maximum can be reached for all three parameters at about the level of half the total need.

1992: Due to urbanization, the number of cataract operations needed remains unchanged, but has still to be achieved.

Solution: All parameters need to be doubled (ophthalmologists, operating room time and beds) to meet the annual number of cases. Rural patients require 5 days' hospitalization (beds) because of the difficulty of travel for follow-up examination and treatment.

SECTION VI: FINAL EVALUATION

The final evaluation should include all relevant indicators of, for example, eye health status, coverage by primary, secondary and tertiary eye care systems, social and economic indicators, and the principal components of the evaluation process, e.g., the efficiency (i.e., relationship between results obtained and the efforts expended in terms of human, financial and other resources), the effectiveness (i.e., the measure of the degree of attainment of the predetermined objectives and targets of the programme) and the impact (i.e., overall effect of the programme on health and related socioeconomic development). Such an evaluation is often involving external expertise and input.

The ultimate long-term indicator of success will be the unbiased demonstration of a reduction in blindness rates, overall and by specific diseases (corneal, lenticular and posterior segment). A well-standardized prevalence survey, representative of the population served by the programme, is required for this purpose.

Full integration of the prevention of blindness programme within the health system based on primary health care will be its ultimate goal.

REFERENCES

- Report of the Task Force on Evaluation Mechanisms for Programmes for the Prevention of Blindness. Geneva : World Health Organization, 1984. 15p. (WHO/PBL/84.9). Unpublished.
- World Health Organization. Guidelines for Programmes for the Prevention of Blindness. Geneva : World Health Organization, 1979. 47p.
- World Health Organization. Methods of Assessment of Avoidable Blindness. Geneva : World Health Organization, 1980. 42p. (World Health Organization Offset Publication No. 54)
- World Health Organization. Strategies for the Prevention of Blindness in National Programmes - A primary health care approach. Geneva : World Health Organization, 1984. 88p.

BIBLIOGRAPHY

- Coding instructions for the WHO/PBL Eye Examination Record (Version III). Geneva : World Health Organization, 1988. 17p. (PBL/88.1). Unpublished.
- Dawson, C.R., Jones, B.R. & Tarizzo, M.L. Guide to trachoma control. Geneva : World Health Organization, 1981. 56p.
- Report of the Interregional Meeting on the Management of Cataract within Primary Health Care Systems. Geneva : World Health Organization, 1987. 20p. (WHO/PBL/87.13). Unpublished.
- Report of the Interregional Meeting on Corneal Blindness within Primary Health Care Systems. Geneva : World Health Organization, 1989. 22p. (WHO/PBL/89.16). Unpublished.
- WHO Expert Committee on Onchocerciasis. Epidemiology of onchocerciasis. Geneva : World Health Organization, 1976. 94p. (World Health Organization technical report series ; no. 597)
- WHO Expert Committee on Onchocerciasis: third report. Geneva : World Health Organization, 1987. 167p. (World Health Organization technical report series ; no. 752)
- World Health Organization. Conjunctivitis of the newborn. Geneva : World Health Organization, 1986. 31p.
- World Health Organization. Field guide to the detection and control of xerophthalmia. 2nd ed. Geneva : World Health Organization, 1982. 58p.
- World Health Organization. Global Strategy for Health for All by the Year 2000. Geneva : World Health Organization, 1981. 90p.
- World Health Organization. Health Programme Evaluation. Guiding Principles for its Application in the Managerial Process for National Health Development. Geneva : World Health Organization, 1981. 47p.
- World Health Organization. Managerial Process for National Health Development. Guiding Principles for Use in Support of Strategies for Health for All by the Year 2000. Geneva : World Health Organization, 1981. 61p.

LIST OF PROPOSED ANNEXES FOR A
NATIONAL PLAN FOR THE PREVENTION OF BLINDNESS

Annex 1: Map of country

This should show the principal administrative regions, communications (roads, railways, rivers), etc.

Annex 2: Relevant vital statistics

Should include total population, density of population, age distribution.

Annex 3: Organogram of health services

Central, provincial and peripheral levels should be shown.

Annex 4: Prevalence of major eye diseases

Particular notice to be paid to geographical distribution.

Annex 5: Sites selected for sample survey

To be considered if such a survey is contemplated.

Annex 6: Scheme for community eye health care

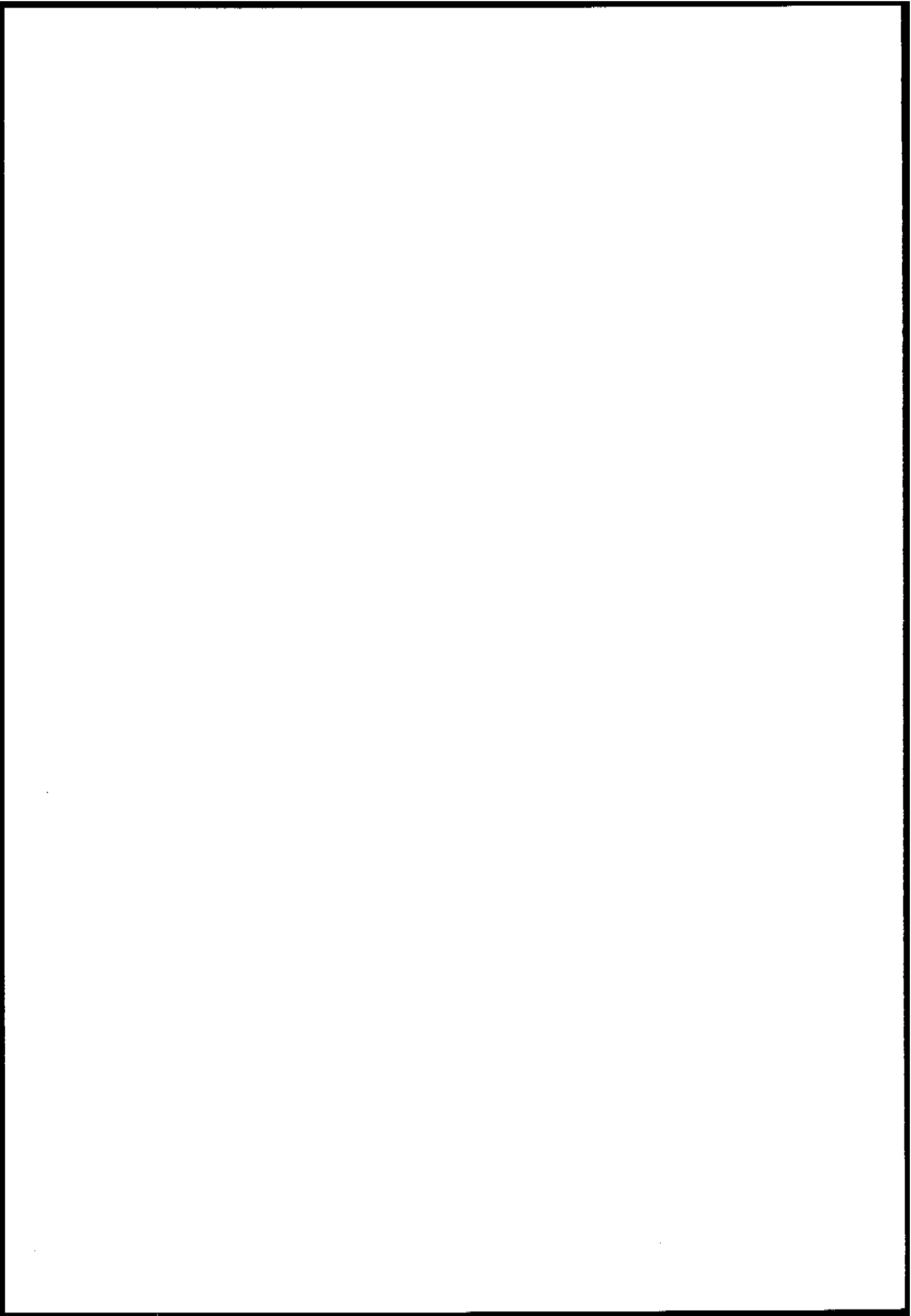
An example - the proposed scheme for Bangladesh - is attached in Appendix 1.

Annex 7: Work plan schedule

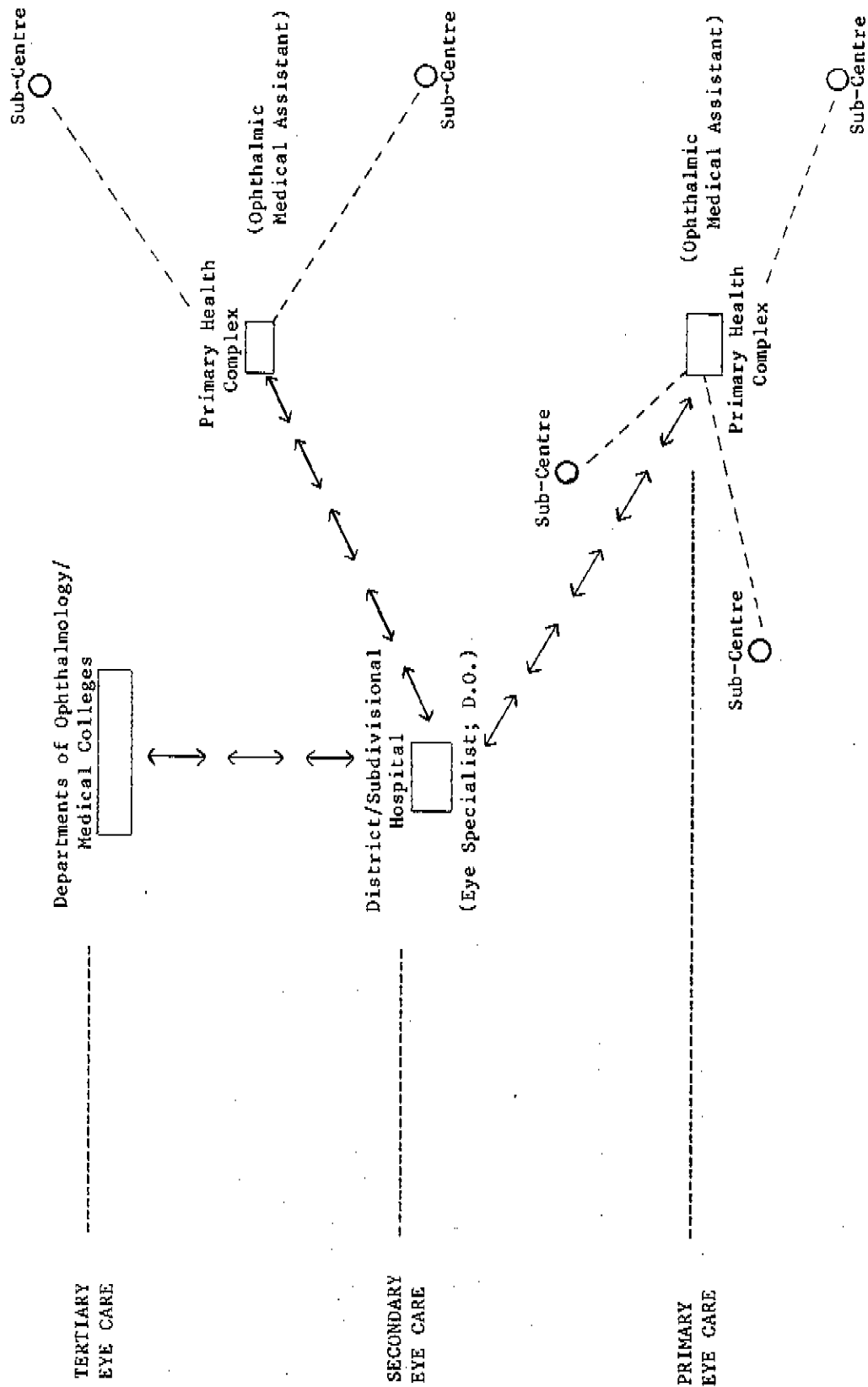
An example - the Work Plan Schedule, 1982-1987, for the Prevention of Blindness Programme in Malawi - is attached in Appendix 2.

Annex 8: List of equipment for primary eye care levels

Examples are attached in Appendices 3 and 4.



SCHEME FOR COMMUNITY EYE HEALTH CARE AT THE PERIPHERAL AND INTERMEDIATE LEVELS.
BANGLADESH



Referrals & Guidance = \longleftrightarrow

MALAWI PREVENTION OF BLINDNESS PROGRAMME WORK PLAN SCHEDULE, 1982-1987

Activity description	1982	1983	1984	1985	1986	1987
1. Development of prevention of blindness programme 2. Project for control of onchocerciasis 3. Project for the prevention of vitamin A deficiency blindness in Lower Shire 4. Training centre for auxiliaries 5. District-based "eye camps" for cataract operations 6. Production of low-cost cataract spectacles	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND

SUGGESTED LIST OF OPHTHALMIC EQUIPMENT
FOR A FIRST REFERRAL LEVEL HEALTH CENTRE

	<u>Quantity</u>
1. Ophthalmoscope	1
2. Tonometer	1
3. Trial case	1
4. Trial frame	2
5. Test charts for near and distance	3
6. Cutting instrument for surgery	1
7. Hand operating lamp	1
8. Binomag	1
9. Retinoscopic mirror	1
10. Desmarre's retractors	5
11. Instrument for lacrymal sac syringing	2
12. Chalazion clamp and scoop	1 + 3
13. Needle scoop 3 holder (Silcock)	2
14. Needles	12
15. Foreign bodies spud	2
16. Flat forceps	2

SUPPLIES AND EQUIPMENT FOR PRIMARY EYE CARE

In many areas, local conditions should guide the choice of drugs and equipment from the following lists:

Drugs

- tetracycline 1% eye ointment
- chloramphenicol or another antimicrobial preparation for topical use in the eye
- zinc sulfate 0.2% eye drops
- vitamin A capsules - 110 mg retinol palmitate (200 000 I.U.)
- silver nitrate 1% eye drops - for use in the newborn as a prophylactic

alternatively,

a single application of tetracycline 1% eye ointment can be given to prevent ophthalmia neonatorum

Equipment and supplies

- optotypes - these should be adapted to local needs and could include Landolt ring, Snellen chart, E types, Sjögren's hand chart - either as single optotypes or a simplified multiple optotype chart
- torch and batteries
- hand magnifying lens
- epilation forceps in trachoma endemic areas
- dressings - eye pads, bandages, sticking plaster, eye shields

Wherever feasible, local production of items such as bandages, shields and epilation forceps should be encouraged.

Eye-drops and ointments containing pilocarpine, atropine or corticosteroids should not be provided at the primary level.

It is highly desirable that the supply of ophthalmic drugs to the primary health care centres should be as standardized and as uniform as possible, in order to enhance availability and reduce cost.

To avoid the loss of supplies and drugs, it is recommended that there should be regular supervision and auditing, which would also ensure the adequate and regular supply of medicaments.

(Taken from: Section III, part 4 of Strategies for the Prevention of Blindness in National Programmes, World Health Organization, Geneva 1984.)