

useless. With training, skills can be acquired and they can be functional and not have to rely totally on others. Here the CBR volunteers, as well as all the other volunteer workers, are very important. All trained health personnel, school teachers, social workers can connect these incurably blind to rehabilitation programmes that exist in the area (Table 1).

Conclusion

To have a successful primary eye care programme, there needs to be coordinated teamwork. There should be regular interaction between the full time eye workers, the integrated eye workers and the volunteer eye workers. The complementary nature of the team needs to be understood and appreciated.⁵ Task oriented training of all team members should be based on the skills that they need to acquire and in which competence is necessary.

References

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Development of Primary Eye Care as an Integrated Part of Comprehensive Health Care

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Introduction

1. **Comprehensive health care** includes the activities of health promotion, disease prevention, curative measures at the time of illness, and rehabilitation if the damage caused by the disease is disabling. This type of health care may be made available, accessible, affordable to the poorest rural population and should be sustainable.

2. The concept of **primary health care (PHC)** was introduced in 1978 in Alma-Ata. It was envisaged as a solution to reach the unreached in poor rural populations of many developing countries. It was said that it would be made universally accessible to individuals and families in the community through their full participation.

Primary eye care (PEC) is the most basic eye care available to individuals and families wherever they live and whatever their socio-economic condition. The PEC worker will be able to manage some cases, diagnose other conditions, explain the possible interventions, with advantages and disadvantages, help the patient in decision making, encouraging active involvement of the individual and the family.

3. **Primary eye care is a vital component of primary health care** and includes the promotion of eye health and the prevention and treatment of conditions that may lead to visual loss.¹

The essential components of primary eye care are:

1. Promotive
2. Preventive
3. Curative
4. Rehabilitative

Such care can be provided by:

- GP's
- General duty doctors at basic health units and rural health centres
- Paramedics
- Community based rehabilitation workers
- Other interested personnel

In developing a primary eye care programme emphasis should be placed on training of the above groups of workers in providing basic eye care to individuals or communities.²

The job description of these health care

workers will be different according to the medical practices of that country. Written teaching material and methods of teaching will differ accordingly. The trainer in primary eye care has to keep in mind the educational background and experience of the trainees. The rationale desired for the training is not to make it too basic for doctors with MD/MBBS so that it becomes boring for them. At the same time it should not be too technical and sophisticated so that paramedics, particularly the community health worker, lose interest and the training course is considered very difficult and, therefore, less attractive for future potential candidates.

Most of the major causes of blindness in developing countries are either preventable, e.g., trachoma, vitamin A deficiency, etc., or curable, such as cataract.

Primary eye care activities can be integrated into primary health care as shown in Table 1.

Development of primary eye care in a region/country will mainly depend upon the existing health care services and the different categories of available health care workers. The success of primary eye care programmes will first address the following questions:

- 1 How good is the training of the primary health care worker?

Table 1: Primary Eye Care is Related to the Elements of Primary Health Care

(Safe) water	Prevention of trachoma and vitamin A deficiency; prevention of diarrhoea which may reduce cataract prevalence
Basic sanitation	Prevention of trachoma and vitamin A deficiency
Maternal/child care; family planning	Prevention of vitamin A deficiency, measles, trachoma and ophthalmia neonatorum
Immunisation	Prevention of childhood blindness from measles and congenital rubella
Control of locally endemic diseases	Trachoma control
Health and nutrition education	Trachoma, vitamin A deficiency, trauma
Treatment for common diseases	Corneal ulcers, refractive errors, trauma
Provision of essential drugs	Tetracycline eye ointment and vitamin A capsules



Refugee children collecting milk in the North West Frontier Province, Pakistan. The milk was made from powdered milk which contained vitamin A

Photo: Murray McGavin

- 2 What is the accessibility of the PHC system to the people in need?
- 3 What proportion of the population is utilising the available PHC services?
- 4 What is the implementation stage of inter-sectoral collaboration, e.g., supply of clean water and sanitation, availability of nutritious food at affordable costs and the availability of secondary health/eye care to look after referred cases?

Requirements of primary eye care: The development of primary eye care will require;

- 1 Political and professional will.
- 2 Manpower (master trainers, trainers and identification of trainees).
- 3 Management and material to conduct training and supervise and monitor the impact in communities.
- 4 Material (for teaching of PEC workers and distribution in communities and for maintaining the management information system).
- 5 Supplies for PEC workers.
- 6 Budgets; funding for capital and recurrent costs (training, supervision, salaries).

For the primary eye care programme to be effective it must have close liaison with secondary and tertiary levels of health care and a proper and adequate back up referral system.

Each primary eye care worker should be an effective educator and have good communication skills, and increase awareness of eye health by talking to village leaders, community administrative authorities, school teachers, pupils and individual households.

Each eye care worker should have medicines and basic equipment such as:

Medicines:

Tetracycline 1% eye ointment

Chloramphenicol 0.5% eye drops
Zinc sulphate 0.2% eye drops
Vitamin A capsules
Silver nitrate 1% eye drops

Basic equipment:

Snellen E chart
Hand magnifying lens
Torch and batteries
Epilation forceps (in trachoma endemic areas)
Dressings: eye pads, bandages, sticking plaster, eye shields.

A primary eye care worker should be able to treat certain conditions, treat and refer particular eye problems or refer patients directly for appropriate secondary or tertiary specialist care. (Please see WHO guidelines for primary eye care in K Konyama's article in this Issue).

Problems Encountered

The concept of primary eye care is very good but, in many countries, the concept remained in the Ministries of Health. The medical staff who were supposed to implement it in the field were neither involved in decision making nor in planning the implementation strategy and monitoring. As a result, the medical staff in the field did not 'own' the programme and were involved mainly in therapeutic medicine. Working conditions also were not good because staff were not mobile — whatever little transport was available did not work because of lack of fuel and maintenance funds.

The concept of PHC and its teaching was not introduced into the basic training curriculum of doctors (and paramedics). When these doctors were posted to rural health facilities, they were unaware of the elements of PHC and were lost as to what to do in these circumstances. As a result, they took the easy option of staying in the health facility, waiting for patients to come

to them for curative medicine. The low and uneven flow of patients resulted in a feeling of loneliness and frustration for the doctor. This affected his/her attendance and punctuality in the health facility, with a consequent further reduction in the number of patients. The people coming to health facilities expected medicine for every possible disease, because politicians used to tell them that the government would provide free treatment. The number attending health facilities started fluctuating along with the supply of medicines (anti-diarrhoeal, antibiotics, tonics, cough syrups and steroid/antibiotic eye drops, etc.).

As a result, PHC programmes in many countries did not achieve the objectives for which they were initiated.

Sustainability of a Programme

For any programme, the question of sustainability is an important issue. Sustainability can be divided into three areas:

- I Technical
- II Financial
- III Operational

I Technical sustainability: Teaching materials (e.g., colour slides of different eye diseases/text accompanying the slide set) need to be developed for different regions using African, Asian and Chinese faces so that these eyes/faces are familiar to the trainees in these regions. These slides sets can be organised in the following manner.

1. The most common eye conditions presenting to the health care worker while working in a community.
2. Presentation of visual symptoms, e.g., sudden loss of vision (showing different conditions), gradual loss of vision (with different clinical eye conditions), colour changes or changes in the size of the eye in different eye diseases, and their management.
3. Different common eye diseases in different age groups :
 - (a) neo-natal
 - (b) childhood
 - (c) adolescent/adult life
 - (d) eye problems of middle and old age

The text accompanying the slides will vary for different groups of trainees according to their previous knowledge of eye conditions.

Training in PEC will need master trainers who can train regional/country/provincial staff involved in teaching the basic curriculum for different medical, nursing and paramedical courses in the

country/province. Teaching of PEC can be made part of the curricula for different continuing medical education courses in the country. The inclusion of PEC may involve revision of the basic curricula taught in different medical/ paramedical institutions.

The courses in PEC can be run for different periods of time depending on whether it is in-service training or part of a basic curriculum. The one found useful in the North West Frontier Province of Pakistan is a course of one week initially and then 2–3 day refresher courses every 6–12 months. The refresher course will have a problem solving approach when participants will come with descriptions of cases they have seen in communities and discuss them with their course facilitators.

II Financial sustainability: Any government/organisation is particularly interested in the sustainability of a programme when outside financial support is withdrawn. Therefore, it is more appropriate to train staff providing primary health care who are on the regular budget of government or other organisations which decreases the recurrent cost. The role of different health workers in the private sector in the provision of primary eye care needs to be examined critically. Presently, the training of these workers is not accepted by many governments and NGOs. But these health workers are in place and are providing health care to a substantial proportion

of the population in urban slums and difficult rural areas. Because of their good public relations and appropriate communications skills, they are accepted in the communities at an affordable cost. They can be made 'safe' and effective health workers by reinforcing their technical skills.

Capital investment will be needed to train master trainers (community ophthalmologists) and for the provision of audio-visual and other teaching materials. Community ophthalmologists will become a new, desirable cadre involved in planning, implementing, monitoring and evaluating primary eye care activity as part of comprehensive eye care, which in turn will be an integral part of comprehensive health care.

III Operational sustainability: About 15–20% of patients seen/detected by the primary eye care worker will need medical/optical/surgical interventions in a secondary eye care centre (cataract, refractive errors in children, squints, trauma, corneal ulcers). For the acceptability of any primary eye care it is very important to develop appropriate secondary eye care services to deal with referred cases from the primary level. Without these support services the development of primary eye care may increase the agony of patients and their families, because they have been ignorant of the disease and now do not have access to a facility which is affordable and acceptable. It will also lead to

frustration for the primary eye care worker. Lack of these services may lead to dissatisfied communities and will be a failure of PHC in general and PEC in particular. These centres are desirable for a population of 250–350,000. The district will become the focus of comprehensive health care and will help in operational research to find out which barriers exist to patients coming forward for secondary eye care services, when patients are followed at regular intervals by primary eye care workers.

The development PEC in such a way will be cost effective and sustainable. The presence/simultaneous development of an appropriate secondary health centre will increase the usefulness of these health services to the communities. Non communicable eye disorders are more common in older age groups, usually accompanied by other systemic diseases which will need attention by other specialists available within the comprehensive health care at district level.

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Epidemiology

Epidemiology in Practice: Randomised Controlled Trials

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Randomised controlled trials are the most straightforward of studies to design and interpret. They are often considered to be the 'gold' standard of clinical and epidemiological studies. This is because, if they are conducted properly, it is often possible to be fairly sure that the results are correct, at least for the type of patients who took part in the study. Good clinical trials are almost always randomised and controlled. The study design

need not be limited to clinical situations, however. It is possible to investigate questions of relevance to communities, such as the effect of health education, for example, using a randomised controlled design.

Figure 1 sets out the basic design of a randomised controlled trial. There are many good textbooks on the topic, for example, Pocock's *Clinical trials: a practical approach*.¹ A sufficient number of fairly representative patients are randomly allocated to two or more treatment groups and followed up over an appropriate period of time. The outcome of interest, for example, vision or visual impairment, should be measured by people who do not know to which treatment group the patient was allocated. If possible, the patient should also be unaware of which treatment they have received.

Physicians and patients are often concerned about the ethics of withholding/subjecting treatment to half the patients. Random allocation of treatment in a randomised controlled trial requires explicit acknowledgement that it is not known which treatment is more effective; this may be difficult for an individual doctor or patient to accept. However, if there is no clinical consensus, with the result that a person may be treated differently depending on which doctor they consult, the study replaces random delivery of health care (at least from the patient's point of view), with a positive contribution to helping future patients. It is better to do a trial when a treatment is new as not only are fewer patients exposed to a treatment that may be dangerous, but also, fewer doctors and patients will have strong beliefs about whether it works. It is important that patients are fully informed as to the advantages and disadvantages of the treatment options, and the fact that treatment will be allocated randomly, before they give their