

# **Nutritional Blindness in Developing Countries**

Interdisciplinary Symposium, June 6, 1996, Basel, Switzerland

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Task Force SIGHT AND LIFE

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## **Preface**

90 % of the world's estimated 42 million blind population live in the Southern countries. Blindness caused by cataract at an early age, vitamin A deficiency, and trachoma infection, which is in part attributable to a lack of hygiene, are typical diseases of poverty and could be prevented or cured with modest resources.

For a number of years, the Swiss Red Cross (SRC) has been focusing on the support and implementation of eye-care projects in different countries. Within the framework of the centenary of F. Hoffmann-La Roche Ltd, the SRC was given financial means in order to improve basic eye-care services in rural areas of Ghana, Laos, Mali, Nepal and Tibet. Great importance is attached to preventive ophthalmic programmes. Priority is given – in addition to the required infrastructure – to the training of selected local volunteers. One of the results of this close co-operation was the idea of this Symposium, which was implemented by the SRC together with the non-profit Task Force Sight and Life of Roche.

The present contributions to the Symposium show that the 1985 appeal of the World Health Organization (WHO) to fight vitamin A deficiency clearly had its effect. The extent of the clinical and above all of the subclinical vitamin A deficiency was realised and as a consequence numerous governments have taken on the challenge. Thanks to the combined action of several international, governmental and private organisations, vitamin A deficiency has been considerably diminished in various countries. However, this is only a small step towards the solution of the problem. As the contributions to the Symposium show, subclinical vitamin A deficiency has dramatic consequences on the state of health and increases child mortality. This is why more action is needed.

There are different strategies to fight nutrition-related blindness. Each country, in some cases even each different region, has to find its own way to

success as the circumstances may vary. This is one of the reasons why it makes sense for a number of organisations to work in this field. However, it is important to create forums such as this Symposium so that experiences can be exchanged and a minimum of co-ordination is obtained. The present publication is an attempt to share the findings with a wider group of people.

In conclusion I would like to take this opportunity to thank all the parties involved for their contribution to successful work: the speakers of the Symposium, the publisher of this book, the Task Force Sight and Life, the Roche-Centenary Team as well as the International Co-operation Department of the Swiss Red Cross.

Franz Muheim  
President of the Swiss Red Cross

## Opening Address

Dr Hiroshi Nakajima, Director-General, World Health Organization

WHO welcomes the initiative to combine and intensify efforts of the Swiss Red Cross and F. Hoffmann-La Roche Ltd, together with other partners, in the fight against preventable blindness. Prevention of blindness has been a major concern of the World Health Organization since 1978 when a specific programme was formed to spearhead an assault on the problem. Prevention of nutritional blindness has been a particular concern of the Nutrition Unit, working in close co-ordination with the WHO Prevention of Blindness Programme. WHO sponsored the first effort to assess the magnitude of the problem in the late 1970s. The results of that survey established that blinding malnutrition was unquestionably a major global problem, but that its magnitude could not be measured satisfactorily for lack of appropriate assessment and reporting mechanisms. Furthermore, at that point in time, there were virtually no co-ordinated efforts for prevention and control, at both international and national levels.

In 1984, the Thirty-seventh World Health Assembly adopted a resolution requesting the Director-General of the World Health Organization to give all possible support to Member States in the prevention and control of vitamin A deficiency and xerophthalmia. It also requested him to co-ordinate the launching and management of action programmes with other intergovernmental and non-governmental organisations involved in this area of activity.

In 1985, WHO proposed a 10-year plan of action for the prevention and control of vitamin A deficiency and xerophthalmia, within a larger initiative taken by several UN Agencies on vitamin A deficiency. The overall strategy included a combination of long-, medium- and short-term measures. Long-term measures are designed primarily to increase the availability and the consumption of foods rich in vitamin A, which may include fortified foods. Until the nutritional problem has been controlled, short- and medium-term

measures have to be taken and maintained; they include administration of vitamin A supplements, most often at high doses.

Our plan of action gained considerable impetus thanks to the World Summit for Children, held at the United Nations in September 1990. On this occasion, 71 Heads of State and Government and 88 other senior officials committed themselves to overcoming the worst forms of malnutrition, in particular vitamin A deficiency and all its consequences, including blindness, by the year 2000.

In 1991, together with several other international organisations, bilateral and nongovernmental organisations WHO sponsored a Policy Conference on Ending Hidden Hunger held in Montreal, Canada. Senior level politicians and ministers reiterated their pledge to give heightened attention to the prevention of micronutrient malnutrition within their development programmes.

This commitment was further strengthened at the International Conference on Nutrition held in Rome in December 1992. The Con-

ference was attended by senior representatives of 159 states and the European Economic Community. Its Plan of Action for Nutrition recognised that the control of vitamin A deficiency was one of the most cost-effective strategies which governments could implement to promote child health and survival. It was agreed that governments would enhance their collaboration with international agencies, nongovernmental organisations, the private sector and industry, and other expert groups and communities, to implement a combination of strategies for improving nutrition worldwide. These strategies include dietary diversification, food fortification, breastfeeding promotion, and supplementation, to achieve virtual elimination of vitamin A deficiency among vulnerable groups.

To ensure better co-ordination between WHO and UNICEF programmes and their focusing on these and related health problems, the Joint Committee on Health Policy of the two organisations established mid-decade goals for 1996. These will facilitate the evaluation of progress made towards achieving the virtual elimination of blinding malnutrition by the year 2000.

To monitor progress, a database has been established which has enabled the Nutrition Unit in WHO to track trends globally as well as on a country-by-country basis. Data has been collected not only on the clinical eye manifestations of vitamin A deficiency, but also on the subclinical problem which causes ill-health and reduces child survival. The information thus collected has shown that, in the last decade, as prevention and control efforts have been intensified, the potentially blinding clinical manifestations of the problem have declined markedly. From an estimated 14 million children affected annually, the figure has now gone down to 3 million approximately. However, the subclinical life-threatening form of vitamin A deficiency is now estimated to afflict over 250 million pre-school-age children annually against a total of roughly 190 million children before. The situation is evolving and WHO will periodically report on it to its governing bodies and its partners in the battle against vitamin A deficiency.

In summary, the last decade has generated heightened political awareness of this public health problem and its consequences for the survival, development and well-being

of children and their families. This has been possible because of the new partnerships formed between interested parties and also with national governments. WHO welcomes the initiative taken by the Swiss Red Cross and F. Hoffmann-La Roche Ltd to intensify their support to reaching virtual elimination of all the consequences of vitamin A deficiency, including blindness – our common target for the year 2000.



## **Swiss Red Cross Experience in the Fight against Nutrition-related Blindness**

Claude-André Ribaux, International Cooperation, Swiss Red Cross, Berne

As in other fields of activities, the Swiss Red Cross (SRC) works in eye care on a number of assumptions concerning cause and effect relationships. These assumptions are referred to here as 'general hypotheses'. When a need analysis is made for intervention in a particular country, assumptions specific to the project are formulated in the framework of, and as a supplement to, the general hypotheses; the SRC refers to these assumptions as 'specific hypotheses'.

In this paper, we shall briefly highlight the general hypotheses with which the SRC goes about its ophthalmological work, the basic assumptions on which it has designed an ophthalmological programme in the Bheri Zone of Nepal, the extent to which these specific hypotheses have proved correct, the strategies adopted in response to nutrition-related blindness, and the experience gathered by us in this connection.

### **1. Introduction**

Importance of blindness in developing countries:

In developing countries, blindness is synonymous with total incapacitation for around 1 % of the population. It is a severe economic burden, because poor households have to use people, who might otherwise be at work, to look after the visually impaired persons and also to spend money on their clothing and food. Nutritional blindness is certainly the most important form, as it almost exclusively affects children under the age of five, who have a longer life expectancy than, for instance, the average cataract patient who has already completed most of his or her productive life when blindness strikes.

### **Problem of the most vulnerable**

Guided by its mission to alleviate the suffering of the most disadvantaged, the SRC combines in its eye care programmes the use of modern medical technology with its experience in mobilising the population and in voluntary work. Firstly, training and supply of equipment must continually be incorporated into the local structures at a pace in line with the developments of ophthalmology and eye surgery; secondly, the active participation of the target population must be ensured, particularly in the medical sphere, so as to enable the provision of the necessary services to be entrusted to local people at a later date.

The combination of a predominantly technical approach to eye care with methods to secure popular participation is a speciality of the SRC. Organisations active in eye medicine or rehabilitation of blind people often specialise in certain specific technical areas. Matters relating to the participation of the target population and general sustainability with a relevance to development are seldom considered in these organisations.

### **Development and promotion of local partner organisations**

From the standpoint of an integrated approach to development and a holistic definition of health, utmost priority is to be given to partnership with local service-providers and aid organisations. In the course of this co-operation, questions relating to organisational development and the establishment of management capacity are examined in conjunction with intensive technical training and advanced training, which are generally provided on the job. Although the discussion of organisational capacities is vitally important to the success of a project, systematic consideration of the related issues has only begun relatively recently. The SRC approaches the process of development of partner organisations with methods taken from systemic organisational consultancy. It assists partners in two strategic areas:

- a) Development of the organisation as a system: In this respect our advisory interventions pursue two goals:
  - to improve the overall performance of our partner organisations, and

- to increase their flexibility in dealing with other players and with the social and ecological environment, while also strengthening their ability to react or intervene.
- b) Staff development: To pursue this goal the following measures are taken:
- Promotion of professional expertise and social competence of staff, including training in communication, leadership promotion, quality management, and computer training.
  - Improvement of participation opportunities for staff and for the target population as well as for other stakeholders relevant to the projects.

### **Method: the case study approach**

The objectives of the SRC are not those of a research organisation. As far as the biological and medical circumstances of nutrition and blindness are concerned, the SRC consults the existing literature. The main experience of the SRC resides in the application of this knowledge

in the field, i.e. in making it available to the end users.

In its practical project work, the SRC uses what is known as the case study method: it conceptualises a project which makes the latest medical knowledge available to a disadvantaged population as an outcome of experiments in which it verifies the validity of hypotheses. Each project is a particular case, which validates a series of hypotheses. These can be explicitly formulated or placed in the service of practical project implementation in the form of theories for everyday use derived from experience. The knowledge which becomes apparent in the concrete project implementation has been accumulated by the continuous validation of hypotheses, in that each 'experiment' creates theoretical generalisations which are relevant to the same or another programme of the SRC or of other agencies. Hereafter we explain how the experimental verification of the assumptions in the Bheri Zone of Nepal was made.

### The eye care programme in the Bheri Zone of Nepal

Since 1982, the SRC has been actively engaged in the development of ophthalmic service organisations in the Bheri Zone in the Middle West of Nepal. The Midwestern region of Nepal is the least developed in the country: only 25 % of the adult population are able to read and write, and only 15 % of the families have access to clean drinking water. 55 % of the children show symp-

toms of malnutrition and the infant mortality is around 10 %. In the hill and mountain districts, the food deficit is estimated at about 60 % of the total need.

The population of the Bheri Zone numbers 1.2 million and the prevalence of blindness is 0.96 %, i.e. around 11,500 persons, including 7,600 cases of cataract. The programme arranged by the SRC is based on a well-equipped regional eye hospital with referral and train-

### Nepal

