WHO in Action

Prevention of blindness – WHO’s mission for vision

B. Thylefors

Changes in the world order and in technology during the last half-century have revolutionized approaches to blindness prevention and sight restoration. Although the possibilities have improved and increased immeasurably, unnecessary blindness will remain common, especially among the poor, unless a concerted international effort is made to prevent it.

One of the first needs to attract the attention of the newly formed World Health Organization 50 years ago was blindness and care for the blind. This was logical, in the aftermath of a world war leaving behind a great number of people with visual disability, a large volume of migration, and the potential spread of infectious eye diseases, notably trachoma. That disease was already well known to immigration authorities in Europe, where trachoma was still endemic in several countries 50 years ago; it had been a common problem among immigrants to the United States of America during the first decades of this century. Hence, it was again only logical that one of the first diseases to be tackled by WHO after its creation was trachoma; already in 1950 the World Health Assembly called for its elimination through international action.

The first challenge – trachoma

The global control of trachoma turned out to be more complex than initially expected, but much progress was made during the 1950s and 1960s through WHO’s action. Three WHO Expert Committees defined the problem areas and research needs to be taken into account, and several major field programmes made it possible to gather the necessary experience for large-scale disease control. WHO was instrumental in working out strategies and technical guidelines for the control of trachoma, and, often together with UNICEF, provided support to a great number of countries in implementing them through the dedicated efforts of national trachoma control programmes.

Despite this achievement, trachoma control proved to be only a partial success for WHO: much progress was made in the short term, with the disease rapidly disappearing from urban and relatively affluent areas, but it was difficult to maintain a
campaign for long periods of time, and it was resource-intensive. If living conditions in the affected areas did not change, there was little prospect of maintaining the regular use of antibiotic eye ointment or drops over many years, to prevent the disease from causing blindness. For this reason, trachoma remains a considerable cause of blindness today among the poorest populations in remote rural areas in countries where the disease is endemic.

No doubt, the problem was dramatically reduced during the last two decades through the intervention of WHO, but trachoma remains a public health problem today in underserved areas where there is little potential for socioeconomic development. Thus, it is estimated that there are still some 146 million active cases of the disease in need of antibiotic treatment, with a further 5.6 million people already blind. Consequently, a new initiative is now being taken for the “Global Elimination of Trachoma by the Year 2020”. It is being led by WHO in collaboration with an alliance of nongovernmental development organizations and other interested parties.

"River blindness" control – a success story

For blindness as with many other diseases, prevention is probably one of the most cost-effective measures that can be taken, and has highly positive outcomes for quality of life and social interaction. However, there have been changing attitudes towards blindness over the years, from the strictly humanitarian grounds for preventing blindness, to the gradual realization of the significant negative socioeconomic consequences that blindness may have. The latter views came up in conjunction with WHO’s involvement with onchocerciasis, or “river blindness” control in West Africa, starting in the early 1970s. Following the significant input given to trachoma control, WHO embarked in 1974 on a partnership with the World Bank, FAO and UNDP for the control of onchocerciasis in the Volta River Basin Area. WHO has been the executive agency for this highly successful project, covering initially seven, but today 11 countries in West Africa.

The fight against onchocerciasis has undergone major changes over the past 23 years, from the original sole reliance on vector control by means of insecticides being sprayed into rivers from aircraft or helicopters to today’s approach using a new medicament, ivermectin, which keeps the disease under control if taken as a single dose yearly. The most recent approach to the worldwide control of river blindness is the community-directed distribution of ivermectin. This should eliminate blindness and other disability caused by this disease over the next 10–15 years, in both Africa and Central America, in all the remaining countries where it is endemic. The recently created African Programme for Onchocerciasis Control is an interesting example of a new partnership formula, where a group of nongovernmental development organizations work with WHO and other agencies in a concerted effort to mount national programmes and promote collaboration across borders.
The remaining challenge – cataract

Although trachoma and onchocerciasis are priorities for worldwide blindness prevention, it is in fact cataract that is by far the most common cause of blindness globally. It is responsible for the blindness of at least 19 million people, the vast majority of whom live in developing countries. So far there are no proven effective ways of preventing the most common form of ageing-related cataract, so the only way of dealing with it is surgery. The clouded cataractous lens can be removed, and its function replaced either by spectacles or by a plastic intraocular lens inserted in place of the extracted lens. Sight restoration is usually good, particularly with an intraocular lens implantation, and the success rate of surgery is high. Cataract surgery has become one of the most common surgical procedures in the world, and it is still in increasing demand, owing to the rapid increase in the numbers of elderly people. The efficient delivery of high-quality cataract surgery on a large scale is today’s most challenging task for global blindness prevention.

Fifty years ago, cataract surgery was undertaken only in hospitals in developed countries, and at a late stage of bilateral blindness, when the cataract was “mature”. WHO was not involved in dealing with cataract until the 1970s, when it was realized not only that it was a major cause of blindness in many countries but that low-cost surgical services could be delivered on a large scale, even at the community level through eye camps, or through mobile surgical teams. The fact that cataract blindness constituted a significant public health problem in many developing countries, and that there was a feasible way to tackle it, led to increasing attention to the setting up of structures for cataract surgery by several nongovernmental organizations.

Despite this awareness, it took several more years, and the creation of the WHO Programme for the Prevention of Blindness in 1978, for cataract to be regarded as a major area for intervention by the Organization. Over the past 20 years, there have been dramatic changes in our understanding of how to provide surgical services, as well as developments in technology. First of all, the magnitude of the problem was not sufficiently well-known in the 1970s particularly in the worst affected countries. The epidemiology of ageing-related cataract is still insufficiently known, although a number of risk factors, such as exposure to ultraviolet radiation, smoking, dehydration and possible nutritional factors have been put forward. So far, these findings have not led to any change in the strategy of dealing with cataract by means of surgery.

However, it became clear quite early in national programmes for blindness prevention that surgical services for cataract, where they existed, were not always made use of. There seemed to be certain barriers to the uptake of surgery. Apart from limited access, long distances to travel and high costs, there was also the perception of surgery as something that might perhaps be dangerous, painful and not always successful. This also became apparent in eye camps, particularly in India, where the
demand for surgery did not correspond to the real need.

It therefore became necessary to undertake studies of the perception and uptake of cataract surgical services, as well as looking at performance in terms of surgical outcome and restoration of sight. These studies have demonstrated the need for active and positive promotion of cataract surgery, and for attaining good quality in the services. The development of new technology, particularly intraocular lens implantation, has opened up further possibilities for improving the quality of services and restoring sight, albeit at a higher cost of surgery, which requires more sophisticated training and equipment for the surgeon.

Thus, the difficulty today is that although the needs, opportunities and technology are all there, the human and financial resources available are still largely insufficient for global success. The role of WHO, together with a very active international network of nongovernmental development organizations, has been to stimulate Member States to take steps to reduce the burden of cataract blindness. The Organization has developed the strategies and practical guidelines needed for doing this. It is now up to each country to assume the ultimate responsibility for providing cataract surgery to all those in need. However, many of the least developed countries will still need support from outside to manage health care in a situation of financial crisis, with an increasing number of other urgent priorities for action, such as HIV/AIDS, tuberculosis and malaria. The catalytic role of WHO will therefore continue to be of critical importance, in channelling resources from interested parties to the countries and populations most in need.

**National programmes and primary health care**

Apart from WHO’s involvement in the control of specific diseases, increasing emphasis has been put on the development of national programmes for the prevention of blindness. This became the main line of action from 1978 onwards, when the WHO Programme for the Prevention of Blindness was created, in view of the public health importance of the major global causes of blindness, which are cataract, trachoma, onchocerciasis, vitamin A deficiency, glaucoma and ocular trauma. The need for a holistic approach to blindness prevention became apparent as more data were collected on blindness and its causes in some countries in the 1970s, and the emphasis on integrating activities within primary health care gave further impetus to this move.

Thus, one of the major tasks of the newly established WHO Programme was to provide guidance and assistance to Member States for the planning, implementation, monitoring and evaluation of national programmes using the primary health care approach. This work included a number of issues, which were tackled one by one in specific task forces convened by WHO. They included the simplified and standardized assessment of blindness and its causes, the setting up of
national advisory committees, the planning of training for staff at all levels, and other such matters.

The particular concern of primary health care integration led to the development of primary eye care, comprising a limited range of basic interventions against major causes of visual loss, that could be executed at the community level. Primary eye care had to include both the promotion of eye health and the delivery of eye care, and it had to be geared to local needs and resources. The adoption of the primary eye care concept and model is almost universal today, with more than 100 countries including it in their national plans and programmes. It has been one of the great achievements that eye care has become part of essential health care in most populations, thus contributing to the overall awareness and action against avoidable blindness.

Similarly, the setting up of national committees or similar groups has been of great importance in many countries for promotion and coordination of blindness prevention, not least in bringing in nongovernmental organizations and other collaborating parties. This has resulted in mobilizing not only the resources and expertise needed in many instances, but also the grass-roots approach needed for effectively tackling diseases such as trachoma and vitamin A deficiency. The functions of national committees have varied over the years, and continue to evolve, from strictly technical standard-setting to a managerial role in implementing national eye health policies. The experience acquired over a number of years in many countries has shown that it is the dynamics of the committee that count. This should not always be a formal gathering of experts, but allow for communication across and beyond medical boundaries, and involving not least the field staff working at the community level.

Creating new partnerships

One particularly positive aspect of promoting community-based approaches to blindness prevention has been the development of close collaboration with a network of nongovernmental developmental organizations in the field of blindness prevention. The WHO Programme was fortunate in that there were several such organizations interested in collaboration, particularly the International Agency for the Prevention of Blindness. Over the years, there has been an increasingly close working relationship between what is today a group of 10 nongovernmental organizations in official relations with WHO and its Programme for the Prevention of Blindness.

In addition, working mechanisms have been established to facilitate the development of joint projects through a Partnership Committee at present comprising some 30 nongovernmental development organizations, which has a Task Force for the implementation of specific activities jointly with the WHO Programme. The international network of nongovernmental organizations involved in blindness prevention has managed to mobilize increas-
ing resources over the years. At present the group working with the WHO Programme spends more than US$ 80 million a year in support of national programmes

WHO has been instrumental in bringing about many key changes, being the only global forum for discussions and collective decisions on matters of health policy, technical cooperation, and coordination of work.

and specific projects in developing countries. Equally important is the advocacy role for blindness prevention played by these, and their ability to implement innovative community-based approaches.

A changing world

Looking at WHO as the lead agency for international health action, it is obvious that many changes have taken place over 50 years. The world’s political map changed dramatically over the period of a few years when former colonial possessions in Africa and elsewhere became independent countries. The Organization’s policy changed equally dramatically with the introduction of “Health for All by the Year 2000” through primary health care. The presence of the Organization in specific field projects has decreased over the years, as national expertise and teams have developed the competence and skills needed. Nevertheless, WHO has been instrumental in bringing about many of these changes, being the only global forum for discussions and collective decisions on matters of health policy, technical cooperation, and coordination of work. This is, perhaps, the most important contribution an organization such as WHO can bring to a changing world. The original idea of a strong, almost supranational organization which intervenes in countries to carry out specific public health campaigns has changed into one of an international broker for priority health issues, through which its 191 Member States can decide on how to work together for a better future for their populations.

Perhaps one of the most difficult challenges for WHO has been the changing economic conditions in which it has had to work, and the changing attention given to health in that context. WHO benefited from a solid financial basis throughout its first three decades. The world economic situation seemed relatively prosperous, and there was great willingness to invest in health care as a means of accelerating the transition of poorer countries towards development. Health is seen as essential for development by WHO, but this view is increasingly challenged in the political world. The downward trend of economic development in the less developed countries, with an increasing difference between rich and poor countries, is a cause of great concern. While rich countries continue to accumulate wealth, developing countries in many cases lag further and further behind. This has serious consequences for health care, and the relative priority of health as part of a developmental process.

New technology

The evolution of technology in medicine over the last 50 years has had a great impact on the work of WHO. It will continue to be one of the areas in which the Organization will have to play a critical role with regard to the application of appropriate technology, in particular for developing countries. The ethical aspects of applying new technology in
health care will require continuous attention, as new fields of possible intervention against a number of diseases, including hereditary disorders, will expand in the future. Ophthalmology and eye care are one of the medical areas where there has been a spectacular development of new technology, from new drugs and intraocular lens implantation to the common use of lasers to deal with eye complications caused by diseases such as diabetes, and the correction of refractive anomalies.

The availability of ivermectin against onchocerciasis has led to a revolution, in moving control activities from aerial operations and insecticides to community-based treatment schemes for annual dosing with the medicament. Similarly, the rapidly increasing use of intraocular lens implantation has radically changed the outlook for successful restoration of sight through cataract surgery. The latter example also demonstrates how technology can become accessible on a large scale through the transfer of production to developing countries: a few years ago, an intraocular lens cost about US$ 150–200, whereas today the cost of the same item has come down to US$10 or less, through production in developing countries. We can hope that the same will soon apply to laser technology, for which a cheap and robust laser is still needed for everyday use in rural areas of least developed countries to prevent blindness from diabetes and for the post-operative care of cataracts. Other examples of innovative approaches to appropriate technology include the local preparation of eye drops, and the manu-

facturing of spectacles and low vision devices at a fraction of the cost charged through the ordinary commercial channels.

**Into the next century**

What about the future? Unfortunately, it does not look very bright. If no further efforts are made, the prevalence of blindness in the world will have doubled by the year 2020, mainly because of the ageing of populations. There will be a gradual shift to more noncommunicable diseases as the major causes of blindness, in particular cataract, glaucoma, diabetes and macular degeneration. More people will be living in urban agglomerations, and the difference between well-off and poor population groups is likely to increase, thus again reinforcing the link between poverty and blindness. The danger is that mankind will see the development of two different societies, one with sophisticated health care for the affluent minority and the other with continuing misery, disease and disability for the majority, locked into poverty and developmental stagnation. The role of WHO must continue to be that of spokesman for a new world health care order, based on equity and placing health as a priority in societal development. There is still time to achieve this, but if the battle against world blindness is to be won, there is an urgent need for new partnerships and united efforts across political, professional and national boundaries.