

# Blindness in the Western Pacific The Role of the World Health Organization



With a total population of approximately 1.6 billion people, the Western Pacific Region of the World Health Organization (WHO) accounts for an estimated 8 million blind people, or more than 20% of the world's blind population. More than 80% of the Western Pacific's blind population live in only 3 countries — China, The Philippines, and Vietnam. China accounts for almost two-thirds of the region's blindness.

The causes of blindness vary from country to country, with the most common being vitamin A deficiency in children, trauma in adolescents, and cataract, trachoma, and glaucoma in adults (figure 1). Cataract is the major blinding condition in the region, being responsible for more than 50% of all blindness.

Figure 1. Causes of global blindness.

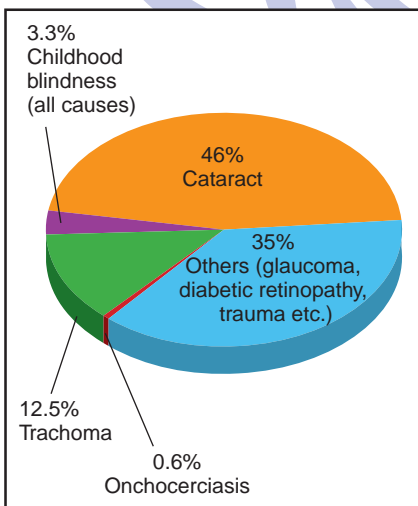
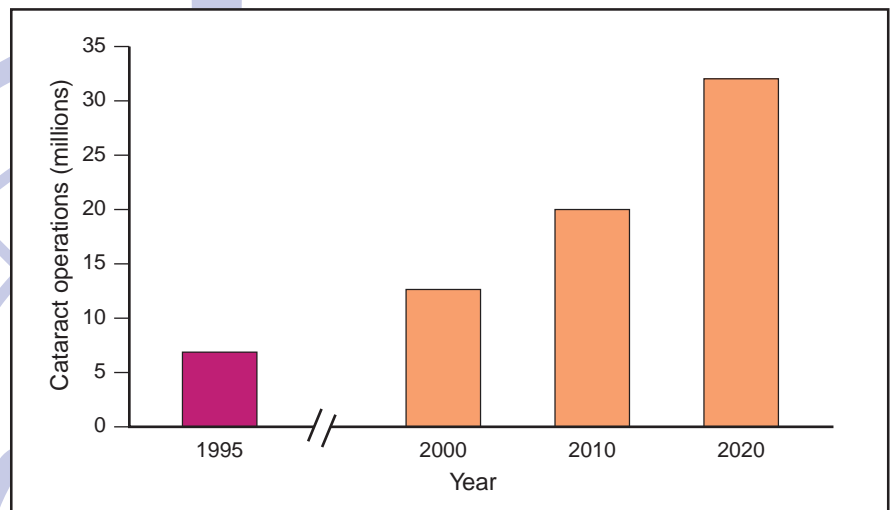


Figure 2. Global cataract targets.



Data on blindness is available from 7 countries in the Western Pacific Region of the WHO — Cambodia, China, Lao People's Democratic Republic (Laos), The Philippines, Vietnam, Australia, and Japan. In the developing countries, the estimated prevalence of blinding cataract ranges from 0.18% in China to 0.85% in Vietnam, significantly higher than that observed in Japan. Because of the size of its population, which is rapidly ageing, China bears a major burden of untreated cataract (more than 2 million people). In Vietnam, despite recent progress, there is still a waiting list for cataract surgery of more than 500,000 patients (figure 2).

During the last decade, the WHO has provided technical support to establish an essential eye care system, including referral services, in 9 developing countries

of the region — China, Fiji, Republic of Korea, Lao People's Democratic Republic, Malaysia, Papua New Guinea, The Philippines, Singapore, and Vietnam.

## Blindness in China

An estimated 450,000 Chinese become blind each year, with approximately 400,000 due to cataract. This means that, in China, almost every minute of every day a new case of blindness occurs. According to the Chinese Ministry of Health, there are a number of factors contributing to the ever-increasing number of blind people in China, including rapid population ageing, population growth, the lack of adequately trained ophthalmologists, and the absence of modern technologies to prevent and treat blindness. However, there have



**Table 1. Trachoma in China — the statistics**

- Trachoma blindness prevalence is 0.1% in Henan Province
- Trachoma is the second cause of blindness after cataract in Shandong Province and the third cause of blindness in Hunan and Yunnan Provinces.
- Trachoma is still considered to be a public health problem in Fujian and Hebei Provinces.
- Trichiasis surgeries are still performed in Anhui and Gansu Provinces.

been undeniable achievements in blindness prevention in China.

In 1949, when the Peoples' Republic of China came into existence, the principal causes of blindness were infectious eye diseases (mainly trachoma), vitamin A deficiency, trauma, and glaucoma. The prevalence of trachoma — a disease associated with poor housing, sanitation, and hygiene — was as high as 50%, reaching 90% in remote rural areas of China. Today, the disease is reported in only 8 of 31 provinces in the country (table 1).

From its inception the national authorities made great efforts to prevent and treat trachoma, which was declared a public health priority. Ophthalmologists throughout the country responded enthusiastically and actively participated in these nationwide efforts. As a result, by the 1960s the prevalence and severity of trachoma was significantly reduced throughout the country. However, during the Cultural Revolution, blindness prevention efforts in China were discontinued and were reinitiated only in the 1980s.

In 1984, blindness prevention in China received a new impetus. The Government established a National Steering Group for the Prevention of Blindness that has subsequently developed a Nationwide Working Programme for Blindness Prevention and Primary Eye Care, 1991-2000. In 1996, at the initiative of the Ministry of Health, June 6 was declared to be the annual National Eye-Care Day, a move that has played a significant role in mobilising the public and the national authorities for blindness prevention.

An epidemiological survey in the early 1980s was the first to suggest that the principal cause of blindness in China was no longer trachoma but cataracts. Blindness prevention and treatment projects that focused on screening and surgical intervention for cataracts were initiated throughout the country.

The China Disabled Persons' Federation — an influential nationwide organisation catering for the needs of an estimated 20 million people with disabilities — began promoting cataract surgery throughout the country. In 1988, the State Council approved the Five-year Working Programme of Activities for China's Disabled Persons. The programme set a target of 500,000 cataract surgeries to be performed during the following 5 years. The outline of the Eighth Five-year Plan of Activities for China's Disabled Persons, approved by the State Council in 1991, stipulated that 600,000 cataract operations be performed between 1991 and 1995.

The goal of the Chinese Ministry of Health during the next few years is to reduce the prevalence of blindness in the country to less than 0.3%. Special emphasis for the prevention of blindness in China is placed on improving the quantity and quality of cataract surgeries, as well as on intensifying efforts

to avoid eye injuries in the workplace and among children.

## Cataract Blindness in China

Cataract blindness in China reflects the overall problems the country is facing with eye care delivery. At present, China has 126 million people older than 60 years. The country is also estimated to have the highest growth rate of the elderly population in the world. By 2020, the number of older people is projected to increase by 90% and reach 240 million people. This estimated increase would place China at the top of the list of developing countries that are expected to have the largest elderly populations in the world by 2020.

Age-related conditions in China such as vision loss due to cataract will increase accordingly if no preventive actions are taken. The Chinese Ministry of Health

The World Health Organization estimates that a child goes blind every minute. Photograph reproduced courtesy of ORBIS.



estimates that if the current trends remain unchanged, the number of people blind from cataract alone will more than double, reaching 5 million by 2020, while the overall number of China's blind will increase 4-fold.

The number of cataract operations per million people per year (cataract surgical rate; CSR) is illustrative of the delivery of eye care in a country. Today, an estimated 360,000 cataract operations are performed in China, giving the average national CSR of 290 per million population per year. This rate is higher than in Africa (200) but is particularly low if compared with the developed countries, where the rate ranges between 3000 and 5000. On the other hand, the CSR in China is steadily rising (it was estimated to be 136 and 192 in 1994 and 1997, respectively). In certain provinces, the CSR is already considerably higher than the average national rate.

Lack of adequately trained eye care practitioners appears to be the main problem. There are an estimated 22,000 ophthalmologists in China with different levels of training and experience. Approximately 50% of them practice cataract surgery meaning that the country

probably has only 5 to 7 cataract surgeons per million people or 1 per 150,000 to 200,000 people. In addition, the distribution of surgically active ophthalmologists is uneven — most practice in urban settings, while more than 70% of the population live in rural areas.

45% of the 2400 county hospitals do not have a trained cataract surgeon. In some provinces such as Xinjiang, Tibet, and Hunan this percentage is even higher, often reaching 75%. The situation at the county level is frequently further complicated by the lack of appropriate equipment and supplies. Nevertheless, between 1988 and 1996, an estimated 1.75 million sight-recovering cataract surgeries were performed in China. However, 2 randomised sample surveys (Shunyi District, Beijing and Doumen County, Guangdong Province) performed in 1996 revealed that the outcome was poor for more than 10% of these cases. In the operated patients, sight was either not restored, or low-vision continued.

The surveys showed that the lower than expected quality of cataract surgery was not an isolated phenomenon. One of the reasons is the lack of practical knowledge about and supply of

intraocular lenses, which are successfully used in cataract surgery in developed countries. As a result, the cataract surgical coverage in China lags behind the expected needs by 80%. The current waiting list for urgent cataract surgery exceeds 2 million.

### *The WHO's Contribution*

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The WHO Programme for the Prevention of Blindness (PBL) started work in China in 1981 by assisting the Chinese health authorities to perform epidemiological surveys on blindness and its causes in many provinces. As a result of these collaborative efforts, the true picture of blindness in the country began to emerge. In 1986, a WHO Collaborating Centre was established at the Institute of Ophthalmology in Beijing. Thus, the foundation was laid for further collaborative research and training activities.

At the same time, in cooperation with leading scientists, institutions and collaborating organisations, the WHO continued to develop strategies and technical standards for control of specific blinding diseases. Scientifically sound, field-tested and regularly updated, these strategies were gradually gaining worldwide acceptance. For example, the 'SAFE' (Surgery for trichiasis, Antibiotics, Facial cleanliness, and Environmental improvement) strategy for the elimination of trachoma is of special relevance to China, where foci of the blinding disease persist in a number of provinces. The strategy consists of a combination of public health interventions that seek community participation and involvement.

A WHO Alliance for the Global Elimination of Trachoma (GET 2020) which constitutes an integral part of Vision 2020 was established in 1997. WHO-developed strategies have been adopted by governments, international agencies,

### *The Cost of Blindness*

In China, blindness is not only a public health and social problem. Apart from the unspeakable suffering and hardship that it has brought upon these millions of people and their immediate families, this condition is a serious drain on the national economy. However, statistics on the total direct and indirect costs of blindness to the Chinese economy do not exist.

As a comparison, in the USA in 1990, the total cost of blindness to the federal budget was estimated to be US\$4.1 billion. It was also estimated that if all the avoidable blindness in people aged less than 20 years and working-age adults were prevented, a potential saving of US\$1.0 billion per year would be made.

In an Indian study in 1989, these costs, including a minimal subsistence allowance for the blind, were estimated at US\$4.6 billion per year. Globally, the aggregated costs of blindness to the world economy were put at US\$25 billion.

non-governmental development organisations (NGDOs), and foundations in their work to prevent and treat blindness.

NGDOs have been playing an increasingly important role in blindness prevention worldwide. In developing countries, the NGDO network is currently spending an estimated US\$80 million per year on blindness prevention and treatment. Currently, there are approximately 12 NGDOs collaborating with the WHO and the Chinese Ministry of Health to actively support eye care delivery in 19 provinces (table 2). Other NGDOs such as the Health Hong Kong Foundation are working independently with the Ministry of Health.

## Vision 2020

Vision 2020: the Right to Sight is a global initiative to eliminate avoidable blindness worldwide by the year 2020. Vision 2020 for the Western Pacific Region has recently been launched in China by the WHO in partnership with international NGDOs and in cooperation with the Chinese Ministry of Health. The WHO has called upon governments, international agencies, and NGOs in the Western Pacific to join the regional

**Table 2.** Non-governmental development organisations working in collaboration with the World Health Organization and the Chinese Ministry of Health to treat and prevent cataract blindness in China

- Amity Foundation (China)
- Asia Foundation for the Prevention of Blindness (Hong Kong, China)
- Christoffel-Blindenmission (Christian Blind Mission International, Germany)
- Foresight (Australia)
- Foundation for Eye Care Himalaya (The Netherlands)
- The Fred Hollows Foundation (Australia)
- Helen Keller International (USA)
- The Lions Club International (USA)
- ORBIS International (USA)
- Singapore National Eye Centre (Singapore)
- Seva Foundation (USA)
- Tibet Vision Project (USA)

effort to eliminate avoidable blindness by the year 2020.

The NGDOs working within Vision 2020 will concentrate on developing model projects for delivery of high-volume, good quality and affordable cataract services and eye care at the county hospital level. Such efforts will require programmes to train Chinese cataract surgeons and provide assistance to the Chinese Ministry of Health and China Disabled Persons' Federation with appropriate equipment and technologies. These organisations will also continue to support the delivery of cataract operations.

Training activities will be carried out with emphasis on counties without a cataract surgeon. Trainee ophthalmologists will be identified on the understanding that they will return to work in

their own county. A uniform certification of competence for cataract surgery will be developed in consultation with the Chinese Ministry of Health.

Mr Christian Garms, Chairman of the Vision 2020 Task Force explained that, thanks to the work of the WHO "we know what the major causes of blindness are throughout the world. We also know how to deal with them. The question now is to raise enough funds to prevent blindness or restore sight in millions of people, including those in the Western Pacific and, particularly, in China."

This article was written by a staff medical reporter using information supplied by the World Health Organization.



## Vision 2020

Vision 2020 in the Western Pacific was launched in conjunction with the 6th General Assembly of the International Agency for the Prevention of Blindness (IAPB) in Beijing.

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