

**10TH MEETING OF GET2020 REPORT**

**MAKING PROGRESS**  
TOWARD THE GLOBAL ELIMINATION OF  
**BLINDING TRACHOMA**

**WHO Alliance for the Global Elimination  
of Blinding Trachoma by 2020**



**World Health  
Organization**

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On the occasion of the Tenth meeting of the WHO Alliance for the Global Elimination of Blinding Trachoma, Dr Lee Jong-wook, Director-General of the World Health Organization, said:

**“This is very encouraging progress. If countries continue at this rate, the global goal to eliminate blinding trachoma as a public health problem by 2020 can be achieved.”**

Dr Lee joined the WHO GET2020 participants at the opening reception on 10 April 2006.



Dr Lee died on 22 May 2006. This report is dedicated to the memory of his devotion to the vision of WHO – a world where health is a right for all.



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# 1. INTRODUCTION

The tenth annual meeting of the WHO Alliance for the Global Elimination of Blinding Trachoma by the Year 2020 (GET 2020) was held at the headquarters of the World Health Organization (WHO), Geneva, from 10 to 12 April 2006. The meeting was attended by 62 participants, of whom 30 were national coordinators for trachoma control programmes (Annex1).

Dr Robert Beaglehole, Director, Department of Chronic Diseases and Health Promotion, WHO, opened the meeting on behalf of the Director-General. Welcoming the participants, he drew attention to the impressive expansion of the WHO Alliance and to the considerable progress being made by many countries in eliminating blinding trachoma. On behalf of the Organization, he acknowledged the valuable contributions being made to national efforts by the international and bilateral partners in the WHO Alliance, especially Pfizer Inc., Corporate Philanthropy, for its long-term commitment to the provision of azithromycin (Zithromax) to countries endemic for the disease, through the International Trachoma Initiative (ITI). The members of the WHO Alliance should publicize their commendable successes in dealing effectively with a disease that affected the poorest among poor people. A March 2006 report by the World Bank entitled *Reaching the poor* had identified successes in similar programmes that were reaching those whose need was greatest yet who were the most difficult to reach. WHO was now approaching the control of neglected tropical diseases across the whole Organization. All those various efforts would have a significant impact on the control of the whole range of chronic diseases, which predominantly affected low- and middle-income countries.

Dr Serge Resnikoff, Coordinator of Chronic Diseases Prevention and Management, WHO, said that the first meeting of the WHO Alliance in 1997 had been attended by just four countries and 47 external participants, compared with 38 countries and more than 80 external participants a decade later. He paid tribute to the many individuals who had contributed to the WHO Alliance over that period, and to the scientific and operational partners for the part they had played, especially the nongovernmental organizations (NGOs), ITI, and Pfizer. Progress in trachoma control since 1997 had been significant, first and foremost thanks to efforts by countries, which also had many other public health problems to face. Nevertheless, challenges remained, in particular in relation to intersectoral collaboration – an aspect highlighted at the very first meeting of the WHO Alliance – and the monitoring and evaluation of national trachoma control programmes, which were difficult to achieve but which were vital for further progress towards elimination of blinding trachoma. Dr Catherine Le Galès-Camus, Assistant Director-General, WHO, who was able to join the meeting for its final session, assured the participants of WHO's continuing commitment to the WHO Alliance. WHO acknowledged with appreciation the valuable contributions made by the various partners. Now in its tenth meeting, the Alliance was at a key moment in its history. The country reports were indicating the remarkable progress being made in trachoma control in many parts of the world, and it was an appropriate time to undertake a critical evaluation of trachoma control objectives and achievements. The conclusions and recommendations adopted at the meeting would establish a road map for future activities and provide guidance to WHO and the other partners on their roles and responsibilities. The WHO Alliance had built remarkable public-private partnerships, bringing together national coordinators, technical experts, WHO, NGOs and donors, with strong support from the pharmaceutical industry. Its excellent collaborative work should serve as a model for other WHO programmes. Success would only come through cooperation. It was to be hoped that country representatives would share the results of their work with delegates from other Member States at the Fifty-ninth World Health Assembly in May 2006, at which an important draft resolution on prevention of blindness would be considered.<sup>1</sup>

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<sup>1</sup> Resolution WHA59.25 on prevention of avoidable blindness and visual impairment was adopted at the Fifty-ninth World Health Assembly in May 2006.

Dr Abdou Amza (National Coordinator, Niger) was elected Chairman and Ms Rebecca Teel Daou (Lions Club International Foundation) Vice-Chairman. Dr Grace E.B. Saguti (National Coordinator, United Republic of Tanzania) and Mr Chip Morgan (Operation Eyesight) were elected Rapporteurs.

The Agenda was adopted, with modifications to the list of countries presenting reports under item 2 (Annex 2).

## 2. WHO REPORT

*Dr Silvio Paolo Mariotti, Medical Officer, GET 2020 Secretary, World Health Organization, Geneva*

In accordance with the agreed procedure, standard trachoma data forms are sent by WHO to national coordinators for trachoma control in endemic countries to obtain data for monitoring progress in trachoma control at the national and global levels. There are 56 countries that are still endemic for trachoma. An increasing number of them are now reporting recent data and district-level information to WHO and are making good progress towards the elimination of blinding trachoma. At the national level, political support for trachoma control has increased, intersectoral collaboration is improving and delivery of the SAFE strategy (surgery, antibiotics, facial cleanliness and environmental change) for combating the disease is increasing. Partnerships for the implementation of national control plans are generally growing and long-term commitment of partners and coordination of activities are improving. Endemic countries with large populations are making progress in assessing the trachoma burden. Recent data are now being used to refine ultimate intervention goals (UIGs) and annual intervention objectives (AIOs), and are also included in WHO information on Neglected Tropical Diseases and in the WHO Global Health Atlas. However, some countries are still not providing any information or have incomplete reporting systems, some have inadequate resources for the elimination of blinding trachoma by 2020, and some are experiencing changes and uncertainties in the support they receive from partners.

Trachoma is receiving increased attention in the international media, as evidenced by a recent article in *The New York Times*,<sup>2</sup> and research on the SAFE strategy is expanding. At WHO, trachoma control has recently been incorporated in the Organization's framework for combating neglected tropical diseases, and a document resource centre has been launched on the WHO web site. Research is under way on the impact of the SAFE strategy as a package, and developments at the national level include additional mobilization of resources for delivery of the SAFE strategy and increasing links with the education and environment sectors.

The 2006 trachoma data forms were sent to all 56 endemic countries. In 40 cases the form was sent to the national coordinator for trachoma control; completed forms were received from 32, a significant improvement over the previous year. For 76% the data reported were obtained from recent surveys, for 45% from surveys at the district level. Detailed information on UIGs and AIOs for the "S" and "A" components of the SAFE strategy was provided in 59%, AIOs for the "F" component in 19%, and UIGs for the "E" component in 87%. Reporting on AIOs for the "S" and "A" components is increasing but reporting on facial cleanliness is still limited, reflecting the greater difficulty in collecting data on this indicator. Many countries are refining and extending their objectives and coming much closer to achieving them. Most countries have a good understanding of the extent of endemic areas, based on surveys, although some still have no data. Target dates for elimination of blinding trachoma are being brought forwards on the basis of more recent data, and many countries with a high burden of the disease are showing a strong commitment to the attainment of elimination by 2020. A majority of countries responding now have plans for implementing action to attain Millennium Development Goal 7 (Ensure environmental sustainability). Further details of the summary information provided are presented on the WHO web site.

### Discussion

*Data collection* remains a major challenge and countries are probably doing much more than they are reporting. Countries and their international partners are urged to provide as much detailed information as possible through the trachoma data forms. The prevention of blindness programme at the WHO Regional Office for Africa is starting to collect data on trachoma in African countries.

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<sup>2</sup> Diseases on the brink. Part Three. Trachoma. A stubborn blindness. Preventable disease blinds poor in Third World. *The New York Times*, 31 March 2006.

# 3. SELECTED COUNTRY REPORTS

## 3.1 SUDAN

*Dr Awad Hassan Mohamed Ahmed, National Coordinator, Sudan Trachoma Control Programme, Khartoum*

Sudan has an area of 2.5 million km<sup>2</sup>. Of the population of 34 million, some 4 million are internally displaced. The northern states are governed by the Government of Sudan, the southern states by the Government of Southern Sudan. Some 21 million people are at risk of trachoma, 2.8 million in Government of Sudan intervention areas. Estimated prevalence of active trachoma (follicular or intense trachomatous inflammation; TF/TI) is 11%. Rates have not been estimated throughout the country but are greatest in the south, in some areas reaching >50%. Trachomatous trichiasis (TT) shows a similar distribution with rates ranging from <1% to >10%.

In March 2005 the national trachoma control programme was relocated to the Federal Ministry of Health and subsequently decentralized to the state Ministries of Health. Primary eye care has been integrated with primary health care. Partners include WHO, through the Regional Office for the Eastern Mediterranean, the Al Bassar International Foundation, the Carter Center, the Christian Blind Mission (CBM), Medair and the Sudan Islamic Medical Association.

An analysis of strengths, weaknesses, opportunities and threats (SWOT) was undertaken in December 2005 as part of the strategic plan, with support from many partners, including ITI.

### *Strengths*

Trachoma control has been designated as a specific priority for intervention in six states, three in the north and three in the south, and water supply and sanitation needs have been determined. Workshops have been held and public health officers experienced in health and hygiene promotion, with particular concern for the environment component of the SAFE strategy, have been appointed. There is also a large pool of experienced community volunteers on which to draw. There has been some experience of lid surgery camps. Azithromycin is distributed to the local level from central medical stores.

### *Weaknesses*

Communication is hampered by the fact that more than 100 local languages are spoken in Sudan, in addition to Arabic and English. Moreover, media coverage of trachoma is inadequate. There is a lack of equipment and materials for eye surgery. Current levels of trained human resources are inadequate and distribution is inequitable, with more than 70% of ophthalmologists working in the capital; 13 of the 26 states have no ophthalmology services. In rural areas, health facilities are not well equipped and many hospitals have no general anaesthetics. There is insufficient follow-up of patients who have undergone TT surgery. There is no clear guidance on the distribution of azithromycin, although guidelines are currently being developed and disseminated to states.

### *Opportunities*

Following the 2005 comprehensive peace agreement there has been some increase in security, which has allowed increased coverage with the SAFE strategy. The further integration of primary eye care in primary health care includes training of health-care workers in the detection, grading and treatment of trachoma and the components of the SAFE strategy. There is political support for and commitment to the national trachoma control programme at all levels, and the Minister of Health has set a target date of 2015 for the elimination of blinding trachoma in the northern states. Other opportunities include: the potential for public-private partnerships; increased publicity and advocacy through the media and religious and community groups; approaches to various partners, including UNICEF and UNDP, for support to increase latrine construction; and introduction of environmental issues in the school curriculum. Provision of latrines for households is now mandatory, although the legislation is not well enforced. Communities are willing to contribute financially to the provision of water

supplies.

*Threats*

Despite some improvements, insecurity remains a threat, especially in Dafur, and land mines are a danger in many areas. Many areas are inaccessible and suffer from a lack of infrastructure and water supplies, and periodic droughts have exacerbated the situation. Environmental conditions for internally displaced persons also require improvement. Levels of education and literacy are low. Traditional healers are continuing to perform lid surgery and often do more harm than good.

**Discussion**

*Security and the trachoma burden*

The security problems and the existence of two governments in Sudan have made it difficult to assess the trachoma burden in the south of the country, although the situation has improved slightly since the 2005 comprehensive peace agreement. In the four states in the south that have been assessed (in eastern areas), the burden is enormous. Bilateral corneal opacity is present in 1.4%, prevalence of TT is 10%, and prevalence of active trachoma in children is up to 80%. It has not been possible to make any assessments in western areas of the south. Nevertheless, the Government of Sudan is to be congratulated for giving priority to trachoma control and developing a strategic plan. Partners are urged to increase their support in order to reach the enormous population that currently has no access to health services, and lives in an area of the world that is probably the most severely affected by trachoma. The WHO Eastern Mediterranean Region hopes to allocate more than US\$ 1 million of extrabudgetary resources for prevention of blindness activities, and is supporting trachoma control activities in southern Sudan.

*Community contributions to water supplies.*

Communities interested in developing or improving water supplies are encouraged to contact the authorities for technical support. Finance is needed to provide per diem payments for government-recruited help and to buy equipment. The work is funded through bank loans, which are repaid by small payments for the water.

*Traditional healers and eye surgery.*

The involvement of traditional healers in eye surgery is widespread in Africa. The law in Sudan prohibits surgery being undertaken by anyone who is not licensed, and traditional healers are not given training. It was suggested that a general prohibition is perhaps too negative and threatens the income of traditional healers. It might be better to train them to recognize TT and refer patients to health workers. Intensifying the presence of community health workers and increasing access to public services will discourage the use of traditional healers. Health messages, especially regarding the need for sterilization and risks of HIV infection should also be strengthened.

TT prevalence in northern states is estimated to be 2%, with more than 450 000 persons requiring surgery. Initial surveys indicate an additional backlog of at least 280 000 in the south. CBM is currently flying in teams to undertake cataract and TT surgery in camps in the south but there is no health infrastructure. It is hoped that national surgery rates can be increased gradually as infrastructure is put in place and more resources become available.

**3.2 MAURITANIA**

*Professor Sidi Ely Ahmedou, Coordinator, National Programme for the Prevention of Blindness, Nouakchott*

Mauritania has an area of around 1 million km<sup>2</sup> and a population of 3 million. Gross national product per capita is currently low at US\$ 500, although the recent development of a petroleum industry is leading to improvements in the economic situation.

In the period 1986 to 1991 prevalence of trachoma in schoolchildren was 40%. Trachoma education programmes were introduced and training of ophthalmic nurses was commenced. From 1991 to 2000 there were no trachoma control activities following the disengagement of supporting partners. A survey conducted in 2000 indicated pockets of trachoma endemicity but a low prevalence of TT. From 2004 partnerships were established with ITI, Lions Club International Foundation and Fondation Bouamatou, and implementation of trachoma control activities started in

2004–2005. A strategic plan for the elimination of blinding trachoma has been formulated and there is the potential for a successful outcome by 2010. The SAFE strategy is being implemented.

Prevalence of active trachoma remains high at up to 35% but rates of TT (0–0.7%) and corneal opacity (0–0.6%) are low. Cases requiring TT surgery, estimated at around 2500 in total, are widely dispersed and are difficult to reach in inaccessible rural areas. Fixed and mobile services have been tried and training given; 425 operations were performed in 2004 and 235 in 2005. TT surgery in isolation has not proved cost-effective, however, as there are only one or two cases in any particular area. Services are therefore being combined with those for cataract surgery, camps for which are undertaken every two months with support from Lions Club International Foundation. Door-to-door enquiries are made to detect cases.

In 2004, 103 000 doses of azithromycin and 4995 of tetracycline were distributed in two areas, with estimated coverage of 80–85%. In 2005 the situation improved, with distribution of 470 753 doses of azithromycin and 15 985 of tetracycline to health posts over a period of about one month. Heads of health posts were responsible for further distribution. A further improvement in coverage is anticipated for 2006 with support from Fondation Bouamatou, which is also supporting the computerization of records to improve distribution control and data collection.

There is a lack of health education, and surveys have indicated high levels of ignorance about trachoma and the need to improve water and sanitation services and personal hygiene. Information, education and communication (IEC) activities are therefore being stepped up, with seminars to sensitize administrators, NGOs and the media to trachoma. IEC materials are being produced. Such materials must be adapted to local conditions. Television and radio broadcasts appear to have much greater impact than printed materials.

Measures to improve the environment have proved more difficult to implement. Efforts have included the formulation of the 2006–2010 plan for provision of water, increased construction of latrines, and education and awareness-raising activities in schools and the community.

*Strengths*

There is a high degree of political commitment to trachoma control from the President downwards, with good intersectoral collaboration and strong support from international partners and local NGOs. These are reflected in the dynamic progress of trachoma control activities.

*Weaknesses*

Human resources remain inadequate and control activities show disparities between regions, partly due to difficult access. Further efforts to improve behaviours and the environment are required.

*Opportunities*

It is hoped that the continuing development of the petroleum industry will reduce national debt and expand the economy. There are also opportunities to promote south–south technical cooperation, for example with Mali and Morocco, and to extend partnerships.

*Threats*

Selective approaches by some partners, lack of equipment and human resources, and inadequate monitoring and evaluation of interventions are obstacles to further progress.

The major responsibility remains with the Government and there is every hope that the goal of elimination of blinding trachoma by 2010 will be attained.

**Discussion**  
*Antibiotic distribution*

Coverage in Mauritania has proved cost-effective. It is organized at the district level, with distribution of regular supplies to health posts by mobile teams. Careful planning and management are important to assess and adjust local requirements.

*Countries at the pre-elimination stage*

Like several other countries, Mauritania has reached the stage where trachoma is no longer a major public health problem but foci of endemicity remain. In such countries it is vital to make the case for continued funding of trachoma control activities by governments and partners in order to ensure attain the objective of elimination of blinding trachoma without draining resources that are vital for tackling other public health problems. Appropriate measures include reinforcing the integration of primary eye care and TT surgery in primary health care services and other eye surgery programmes, respectively. It is also important to integrate disease control and poverty-reduction strategies and to promote intersectoral collaboration, especially in respect of environmental change, which remains a weak component of the SAFE strategy. Examples of previous successes resulting from collaboration, such as the eradication of dracunculiasis in Mauritania, and regular reporting by a strong national trachoma control task force, is useful in this regard. The various ministries should be represented on the task force and should be required to report on how they are implementing measures relevant to trachoma control. Ministries of finance should also be involved to ensure that funding requirements are recognized. In Mauritania, the Health Minister is kept well informed of trachoma control progress; this promotes a strong negotiating position within the Government.

*Partnerships and private sector involvement*

Mauritania has a national committee for the coordination of partnerships, which should improve partner commitment and management of activities, and avoid any loss of momentum as the country moves towards elimination of blinding trachoma. Advocacy is vital. Government leadership is also an important factor, but without long-term support success is not guaranteed. Countries should explore ways of involving the private sector.

### 3.3 GAMBIA

*Mr Ansumana Sillah, Manager, Gambia National Eye Care Programme, Banjul*

The country has a population of around 1.3 million, 52% living in rural areas. Health services are organized through six health divisions. Trachoma surveys were undertaken in 1986 and 1996 and showed that there was a decline in the prevalence of active trachoma over that period from 17% to 5%. With support from the London School of Hygiene and Tropical Medicine, ITI and the Medical Research Council of the Gambia, a further survey was carried out early in 2006 in the two divisions that were most affected according to the 1996 survey. The objectives were to assess progress since 1996, to estimate treatment requirements, to pilot methods for certification of the elimination of blinding trachoma, and to pilot monitoring and surveillance methods with a view to establishing a surveillance system.

A sample of 50 children aged 0–9 years was taken in 60 areas in the two divisions, giving a total sample of 3000 children from an estimated population of 75 000 children under 10. The children were examined by experienced personnel for clinical signs, with inter-observer control, and information on their households (income, education, water and sanitation) was recorded. The survey showed a higher burden of trachoma than expected. Prevalences of active trachoma were 11.5% and 7.7% in the two districts. Prevalence of TF in the worse eye ranged from 0 to 40%. Prevalence of bilateral TF was 8.4%, only a modest improvement since 1996. The detailed data indicated hot spots, with some areas showing a TF prevalence of >20%, while in others it was <5%. The disease is generally mild, not usually bilateral and with little TI, although there are still areas where the level of active trachoma is sufficient to support the progression to blinding lesions. Consistent with previous research, it was found that cross-border movement of people and lack of eye-care services are risk factors for resurgence of the disease.

Reasons for the continuing prevalence of active trachoma include the lack of sustained provision of azithromycin. This has resulted in higher use of tetracycline with its greater compliance problems – application of the ointment in a hot climate can prove difficult. Treatment has proceeded mainly on a household basis. Uneven distribution of antibiotics and difficulties in identifying communities with a high prevalence are obstacles to provision of mass treatment.

Future interventions will focus on the treatment of all households with cases of active trachoma, and screening to identify hot spots and consider mass treatment. Further age-related data are required. It appears that prevalence of active disease is highest in children aged 2–5 years so that screening in schools might miss a substantial proportion of cases. Efforts are under way to make projections for the remaining health divisions in the country, secure donations of azithromycin and continue TT case-finding and surgery.

Thanks are due to the various international partners that have been supporting trachoma control activities in the country.

## **Discussion**

### *Public health approach*

The country is to be congratulated on its public health approach to trachoma and prevention of blindness control. It has achieved good overall results, with high antibiotic coverage in most districts, and has conducted surveys at regional, district and community levels. With further support, it should achieve elimination. The whole of the Gambia is included in the trachoma control programme and there is an extensive network of community workers trained to tackle a variety of public health problems, including malaria as well as trachoma. Such infrastructure and integration of services are important to ensure that control and surveillance activities can be sustained once mobile teams and external support are withdrawn.

### *Antibiotic donations*

The trachoma prevalence revealed by the survey qualifies the Gambia for donation of azithromycin, and an application for such support is anticipated.

### *Survey results*

Data from the recent survey are still being analysed but it is clear that, while in some areas blinding trachoma has been eliminated, in others there has been some resurgence of active disease, with hot spots of higher prevalence. The 1996 survey looked at children of up to 15 years, while the recent survey examined children up to 10 years, so the results are not strictly comparable. Annual screenings have been undertaken but because they have largely been limited to schoolchildren it is possible that cases in younger children have been missed. Clinical examinations and dissemination of public health messages have also been implemented. There has been little improvement in the socioeconomic situation in the Gambia in the past decade.

The community with the highest prevalence of active trachoma (40%) was a special case where there were political and social problems, which had resulted in a lack of cooperation on mass treatment. In addition, it contained a school where children were living, away from home, in crowded conditions. Special efforts are being made to tackle such hot spots of the disease and to motivate the communities concerned, for example by providing incentives for environmental change. It is important to sustain activities, however, so that communities do not feel they are just being used for research purposes.

The establishment of an effective follow-up and surveillance system and standardization of data collection are important to ensure that comparisons can be made in future and that there is no unexpected resurgence of disease. Information on general health status, prevalence of other diseases, such as malaria and tuberculosis, access to water and sanitation, and other public health measures being implemented can provide useful indications of the overall situation and should be included in future country reports.

Resurgence of the disease is likely if the “F” and “E” components of the SAFE strategy are neglected. These components are being implemented in the Gambia, with village cleaning and further construction of latrines. For the indicator on access to water, the time taken to fetch water is compared with the time it takes to cook rice, which in the Gambia is a minimum of 30 minutes. Number of latrines is less important than their condition and how they are used.

### *Cross-border movement of people*

Efforts are under way to facilitate cooperative actions with the neighbouring country, Senegal, through the Health for Peace Initiative. So far joint trachoma programmes have not attracted much support and the political situation is not always conducive to collaboration. Moreover, in Senegal priority is given to other areas where trachoma prevalence is much higher.

The WHO Alliance should discuss such cross-border issues. The key will be to ensure consistent development of health and environmental health services and the economy on both sides of the border.

### 3.4 MEXICO

*Dr Jorge Fernando Mendéz Galván, Director, National Programme for the Prevention and Control of Vector-borne Diseases, Ministry of Health, Mexico*

Although trachoma was found in Mexico in the nineteenth century, there is almost no published information on the disease prior to 1962, when a survey showed blindness due to trachoma in 30% of adults in one municipality in Chiapas, the most south-easterly state in the country. Further studies between 1985 and 2001 showed substantial evidence of active disease or past infection in the Chiapas population but the information was incomplete.

Mexico has a population of some 104 million living in 31 states and one federal district. Chiapas, with a population of 4 million, is the only state in Mexico where trachoma remains endemic. The disease is restricted to five municipalities (4.2%) in the highlands and is found mostly in indigenous people. The population at risk represents 0.13% of the national population. The 2000 census showed that illiteracy and mortality rates in the affected municipalities are higher than the national average. Most homes have electricity but provision of water and sanitation supplies is generally lower than the national average. However, these indicators have improved substantially over the past two decades.

A trachoma prevention and control programme was established in 2002 based on the SAFE strategy together with decentralization of plans to microregions and active epidemiological surveillance of households twice a year in the population at risk. Training, community and municipal participation, and intersectoral coordination and collaboration are also strong components of the programme, permitting the integration of actions beneficial to public health. In addition, budget allocations for water and sanitation services and education have increased. The programme has strong political support from the President, State Governor and the federal and state health authorities. It was launched with a budget of US\$ 450 000 and received more than US\$ 4 million for 2004–2005. Special activities on trachoma have been arranged in Chiapas, for example, for World Health Day and for a week against trachoma in October 2005. Microregional plans are tailored to the local situation, taking into account population size, number of villages, access to health and other services, and the possibilities for patient referral and follow-up.

In 2005, active surveillance covered 97% of households, and 100% of the 439 active trachoma cases detected and their families were treated with azithromycin. There were 220 cases needing TT surgery of which 22 have now been treated. Trachoma prevalence was lower than expected at 1.9% (TF 0.4%, TI 0.01%, TS 1.4%, TT 0.17%). Prevalences of TT in females under 40 years of age and TF/TI in children under 10 were 1.9% in each case.

#### *Strengths*

These include specific political support and budget allocations, microregional operation, careful definition of the epidemiology of the disease, an active surveillance system, personnel trained in integrated management of the disease, and community involvement. The programme provides a good model for tackling other public health problems, such as maternal and infant mortality.

#### *Weaknesses*

There is a need for further analysis of the data to provide information on risk factors, increased evaluation of the impact of interventions, and improved technologies for diagnosis and TT surgery. Further socioeconomic development in the indigenous population is also required. It is important to plan how the programme can be sustained once external support has ceased.

#### *Opportunities*

There are opportunities for increasing access to water and sanitation services, expanding and consolidating intersectoral collaboration, increasing the participation of local government and the community, and

sensitizing the population to the need for behavioural changes.

*Threats*

The political climate in Mexico is undergoing change and trachoma may not continue to be recognized as a public health problem. Moreover, use of health services remains low in endemic areas. Nevertheless the conditions are favourable for the elimination of trachoma in the near future.

**Discussion**

*Water and sanitation services*

Access to water and sanitation services has continued to improve in all the affected municipalities since the 2000 census. However, the way in which water is used to keep the face clean is the most important factor for the prevention of trachoma.

*Other factors critical for success*

In just a short time Mexico has realized a successful trachoma prevention and control programme that can serve as a model for others. Community diagnosis, political support for elimination, specific budget allocations, socioeconomic development of affected areas, good technical work and community participation are the main factors that have contributed to the good results. To attain the goal of elimination it will be important to ensure, through community education, that personal and family hygiene is maintained as trachoma declines. Activities will need to be integrated in primary eye care, primary health care and social services, with strong community participation to improve the local environment. Prevention and control of other diseases is organized in a similar way in Chiapas. However, another model is needed for most other states in Mexico where there is no trachoma and local and socioeconomic conditions are very different.

*Surveillance system*

Surveillance in Chiapas is undertaken by 28 trained workers (brigadists) supervised by an epidemiologist. All households in the affected areas are visited every six months, covering all the population at risk. Samples of households are reviewed to evaluate the work of brigadists. To improve cost-effectiveness, the Chiapas Ministry of Health is considering the inclusion of other diseases in this surveillance system, which is well accepted by the population.

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## 3.5 MALI

*Dr Sanoussi Bamani, Coordinator, National Programme for the Prevention of Blindness, Bamako*

Mali has a population of nearly 12 million, of which 49% are under 15 years of age. Gross domestic product is US\$ 850 per capita and average annual household income is US\$ 250. Trachoma control activities are under way in five states, with the support of the Carter Center, Eau Vive, Helen Keller International, Islamic Relief, ITI, Lions Club International, Médecins sans Frontières, Organisation de la Prévention de la Cécité, Sight Savers International, Swiss Red Cross and World Vision, to support trachoma prevention and control in five states. A survey in 1997 showed that national prevalence of TF/TI was 34.9% (23–46% by state). TT prevalence was 2.5% (0.7–3.8%), with TT surgery required by around 85 831 people. Trachoma remains one of the principal causes of avoidable blindness.

UIGs for the components of the SAFE strategy have been determined for the next five years and include: TT surgery for 105 896 people, 26.5 million treatments with antibiotic, 80% of children under 9 years of age with clean faces, a 52–70% improvement in water supplies, an increase in coverage for latrines of 70–90%, and 70% of households with a clean environment. AIOs have also been set for each of these objectives, with gradual increases from 2005 to 2009.

A survey was conducted in seven districts of one state, Koulikoro, in 2005 following the introduction of the SAFE strategy and three years of treatment with azithromycin. It showed a prevalence for TF/TI in children under 10 years of age of 2.51% and a prevalence of TT in women of 1.44%.

*Strengths*

Mali has a network of nearly 15 000 community distributors of ivermectin who can assist in administration of mass treatment with antibiotics, and the successful results shown by the 2005 survey in Koulikoro give rise to

optimism for the future control of trachoma.

*Weaknesses*

There is no clear policy for the management of the distribution network, although discussions with local and regional authorities are under way to resolve problems. Inadequate mobilization of financial resources is a major constraint, as is the delay in the validation by the Ministry of Health of the national trachoma prevention and control plan for 2004–2009, which complicates collaboration with international partners. A Vision 2020 plan was formulated in 2005. Contrary to initial indications, there has been some decline in support by certain partners as the country moves towards the 2015 target date for elimination of blinding trachoma.

*Opportunities*

There remains a strong partner base for most components of the SAFE strategy and there are opportunities to integrate trachoma control activities with those for the control of other diseases, such as onchocerciasis and lymphatic filariasis, in order to reduce costs.

*Threats*

The trachoma control programme could be put at risk if the Government fails to increase allocations to compensate for the loss of partner support; the allocation for 2006 is lower than that for 2005 and distribution of funds to the local level is often delayed. However, it is still hoped that mass treatment with azithromycin can be extended to areas where it is needed. There is a risk of resurgence of trachoma in populations if the “F” and “E” components are not maintained in areas such as Koulikoro, where mass treatment has now stopped owing to the low prevalence of active disease. The plan for these areas is to continue treatment in remaining pockets of infection and to increase trachoma control education, training teachers using a cascade method from an initial pool of trainers. Multisectoral involvement at the national and local level will need strengthening if the elimination objective is to be attained.

**Discussion**

*Reporting of survey results*

It is useful to add earlier rates of prevalence for comparison and to include changes in coverage of all components of the SAFE strategy.

Between the 1997 and 2005 surveys in Koulikoro, living conditions have improved considerably and surveys using a protocol indicate that hygiene messages have been understood.

As trachoma prevalence declines, sample size must be reasonable to ensure confidence in survey results. For the Koulikoro survey, sample size was around 2000 individuals per health district, each of which has a population of around 120 000. The samples comprised 1100–1200 children aged <10 years and 800–900 women aged >15 years .

*Continued efforts in areas where prevalence has dropped*

Activities to detect active trachoma and TT cases and give targeted antibiotic treatment are continuing in Mali. Where mass treatment with antibiotics has ceased, implementation of the SAFE strategy continues, with emphasis on the “F” and “E” components, funded by extrabudgetary resources. School attendance is 70% so a majority of children will receive health and hygiene education.

Screening can be costly and sustainable surveillance systems should be set up before the end of the mass treatment phase. Trachoma rapid assessments may be useful to identify communities where the disease is still active.

Budget allocations for health are a major concern worldwide and innovative solutions must be sought. Clearly, however, sudden changes in national or partner support can seriously affect the implementation of programmes.

*Distribution of antibiotics*

In Mali, stocks of antibiotics are stored centrally at national level and then distributed to regional depots. Supplies are sent to districts, according to needs, to trained focal points who train the heads of health posts. The heads of health posts train village distributors in the SAFE strategy, emphasizing the importance of all components. Minimum antibiotic supplies are sent to district and village levels to avoid stockpiling and storage problems.

Motivation of local distributors, who are chosen by communities

themselves, has become a problem following reductions in remuneration since the withdrawal of some partner support. Discussions are under way to find solutions, preferably within communities themselves.

*Antibiotic coverage*

Infants aged 0–6 months are treated with tetracycline eye ointment, those aged 6 months to 5 years receive azithromycin suspension and everyone over 5 years receives azithromycin tablets. Coverage rates of 89–91% were achieved in three states in 2005, coverage in the fourth region, in a single district, was lower because the area was added late and only azithromycin tablets were given. Coverage will increase in 2006.

*Latrine use*

In almost 80% of communities in Mali, latrines are used well. Efforts are under way to increase construction of modern latrines, which are not expensive for communities, and to educate other communities in their use.

*Publication of results*

There are valuable lessons to be learned from countries such as Mali that are implementing the full SAFE strategy, and it is therefore essential to ensure that the results are published and disseminated. Information on the impact of treatment of children under the age of 12 months is of particular interest.

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## 3.6 GHANA

*Dr Maria Hagan, Head, Eye Care Unit, Ghana Health Service, Accra*

Ghana has a population of 21.7 million, projected from the 2000 census. Trachoma is endemic in two of the 10 regions, and in 26 of the 138 districts in the country. The population in the endemic regions is around 2.7 million. Support for surveys has been provided by the Carter Center and ITI. A survey conducted in five districts in 2000 and a sixth in 2002 indicated prevalences of: 16.1% for TF/TFI in children aged 1–9 years, and 8.4% for TT, 29.3% for TS and 0.5% for corneal opacity in women aged 40 years and over. By 2004, trachoma status surveys had been conducted in all endemic districts, indicating prevalences of between <5% and >10% for TF and <1% and 10% for TT in adults aged >40 years. Reports from health workers indicate that cases of trachoma found in districts in the Upper East region of the country are imported and it is hoped to conduct a trachoma prevalence survey there in 2006.

The target date for elimination of blinding trachoma in Ghana is 2010. A five-year strategic plan is being implemented. There are national, regional and district trachoma control task forces, which meet quarterly and which include strategic partners. The national trachoma control task force is chaired by the Head of Disease Control, Ghana Health Service and there is a programme manager responsible for trachoma control.

Good progress is being made towards the attainment of UIGs and AIOs. Coverage for 2005 was 76% of the AIO for TT surgery, 91% for antibiotic treatment, 88% for facial cleanliness, >100% for safe water sources and 77% for latrines. The rate of TT surgery is rising steadily, with 1146 operations performed in 2005. Mass treatment with antibiotics is also increasing. However, it is being discontinued in districts where prevalence of TF falls below 5%. Information on facial cleanliness is collected on a monthly basis by environmental health workers.

International partners providing support for the construction of latrines and provision of water supplies include the Carter Center, Catholic Relief Services, New Energy, Professional Network Association, UNICEF, Water Aid, the West African Water Initiative and World Vision. In 2005, studies were conducted on the management of azithromycin distribution, by John Snow Inc. with support from ITI, and on affordability of latrines, by the Carter Center.

Systematic house-to-house searches have proved very effective for detecting cases requiring TT surgery, in particular when teams are led by ophthalmic nurses. The nurses also perform the surgery. Searches on market days result in a higher screening rate. Community-based health workers and informed community members can assist in identifying cases. Testimony by satisfied clients increases acceptance of surgery in their communities, especially in elderly people.

Acceptability of azithromycin is very high; the drug is widely recognized as a safe and effective treatment and has other benefits. Higher coverage is achieved in the dry season, when access to communities is good. Active involvement of community chiefs and volunteers, and incentives, such as the provision of bicycles to Red Cross volunteers, has improved the organization of community-based activities. Registers can be updated during drug distribution, permitting a more efficient use of resources.

Control activities in mesoendemic regions are difficult, especially when communities are far apart. They require more time and resources than in areas where prevalence is high. Implementation of activities can be planned for the dry season when farm work is limited and communities are easily accessible, and field staff can be encouraged to work overtime to compensate for lack of human resources. TT surgery camps, bringing in staff from non-endemic regions, can increase surgery rates. However, trachoma control activities may sometimes be disrupted by other large-scale health activities, such as national immunization days. Continued education on the health benefits of good personal hygiene is needed to promote the "F" and "E" components of the SAFE strategy and encourage construction and use of household latrines.

A media event was held early in 2006 to publicize trachoma and the risk factors for the disease. Other plans and targets for the year include detection and surgery for 1500 TT cases, treatment of 1.6 million people with antibiotics, and trachoma training or retraining for 1200 health workers, 650 teachers, 130 environmental health offices and 4000 volunteers. In addition, a trachoma baseline prevalence survey will be conducted in the Upper East Region. Intervention targets for advocacy for household latrines and safe water provision, production and dissemination of IEC materials and support for radio clubs have also been set.

Strategic partners include ActionAid, the Carter Center, CBM, ITI, New Energy, Sight Savers International, Swiss Red Cross, UNICEF, USAID, Water Aid Ghana, the West Africa Water Initiative, WHO and World Vision Ghana.

## Discussion

*Activities in communities with TF/TI prevalence of <5%*

### *Distribution of antibiotics*

Surveillance and advocacy are essential to ensure that infected individuals and TT cases are detected and treated, and further progress is made in implementing the "F" and "E" components of the SAFE strategy.

In Ghana as in other countries, azithromycin is well tolerated and individuals are actively seeking treatment with the drug. Supplies of the drug are available but resources for remuneration of distributors are declining. Communities should perhaps be invited to elect a greater number of unpaid volunteers to spread the work. There are lessons to be learned from experience with the distribution of ivermectin for onchocerciasis control programmes, where use of volunteers elected by the community has ended the need for remuneration and increased uptake of the drug.

## 3.7 NEPAL

*Dr Bal Bahadur Thapa, National Coordinator, National Trachoma Control Programme, Kathmandu*

Nepal is a mountainous country with an area of around 147 000 km<sup>2</sup>; there are five development regions, 75 districts and 4000 village development committees. The population is around 22.73 million, 86% living in rural areas. Per capita annual income is US\$ 271. The national trachoma programme is a collaborative effort to implement the SAFE strategy. A five-year memorandum of understanding was signed between the Ministry of Health and Population and Nepal Netra Jyoti Sangh (the Nepalese society for comprehensive eye care), the Department of Water Supply and Sewerage and ITI. Activities are overseen by a strong national programme steering committee in which WHO, UNICEF and the NGOs participate, and a focal person in the Ministry of Health and Population has been nominated. The SAFE strategy was launched in 2002 in nine trachoma-endemic districts and is being expanded gradually; a five-year strategic plan 2005–2009 has been elaborated.

Nepal has set a target date of 2010 for the elimination of blinding

trachoma. The elimination criteria are prevalence of TF of <5% in children aged 1–9 years and prevalence of TT of <1 per 1000 population in all age groups. The main objectives include clearance of the backlog of 39 000 cases requiring TT surgery and the distribution of azithromycin to 2.7 million people by 2010.

To date 46 TT surgeons have been trained in the bilamellar tarsal rotation procedure and mobilized, and 9758 TT operations have been performed. Training in the SAFE strategy has been given to 12 456 female community health volunteers and 1381 health post and sub-health post staff; 2473 teachers have been trained to be able to give appropriate health messages and to teach children face-washing procedures. Some 1.8 million doses of azithromycin have been distributed. Latrine coverage is 27%; drinking-water coverage is 71% and the target is 80% by 2006.

The strategic objectives of the national trachoma programme are to: identify districts with a substantial burden of the disease; increase intervention coverage in affected areas; foster collaboration and partnerships for the implementation of the SAFE strategy; mobilize national and international resources to ensure adequate distribution; provide good quality services at no charge to the target group; and establish a surveillance, monitoring and evaluation system.

Objectives have also been set for all the components of the SAFE strategy. Village committee members are being trained in TT case detection and referral, Surgery services are provided through existing hospitals and outreach camps, and ophthalmic assistants are being trained in TT surgery techniques. Networks of volunteers trained by the Ministry of Health and Population are being established for the distribution of antibiotics, and communities are educated about trachoma prior to distribution. Dose of azithromycin is calculated on the basis of height. Mass treatment is given for three years in areas where TF prevalence is >10% in the age range 1–9 years. The aim is to distribute 1.9 million doses in 2006. IEC materials are being prepared and health education messages are being broadcast and disseminated through schools and the national sanitation committee. Water and sanitation services are being expanded.

Trachoma rapid assessments have been conducted in 25 suspected districts. These were followed by detailed surveys in 13 districts covering 6.6 million people and conducted in accordance with the WHO protocol. The average prevalences of TF in children aged 1–9 years and TT in people aged >14 years were 14.3% and 1%, respectively. Further surveys will be undertaken in 2006.

#### *Strengths*

There is strong commitment to the national trachoma programme from Government and the major partners, including Helen Keller International, UNICEF and WHO. There is a good eye-care network throughout the country and trained surgeons are available to perform TT surgery. Azithromycin is supplied by Pfizer through ITI, and there is a Government budget provision for distribution. Adherence is good and the treatment is proving useful against other diseases (e.g. sexually transmitted diseases). The trachoma programme and IEC materials for face-washing and environmental improvement (produced by the BBC World Service Trust) are well accepted by the population. Water resources are generally adequate and there are a number of national donors providing support for water and sanitation services.

#### *Weaknesses*

The motivation of TT patients is a time-consuming and expensive activity. Few cases are found per district and the disease is not life threatening, blindness resulting only later in life. There is a lack of Ministry experience in the management and distribution of azithromycin, and Nepal has a difficult terrain to cover. There are some complaints about the adverse effects of the antibiotic (diarrhoea, nausea, headache) and there is the potential for its misuse at distribution sites. Moreover, some patients move away as there is migration from rural to urban areas. It is difficult to monitor the indicators for the “F” and “E” components, and efforts to change personal habits are time-consuming and costly. Poor socioeconomic status is an obstacle to progress in some areas.

#### *Opportunities*

Patients who have undergone surgery give testimony that motivates others to come forwards, and surgery can be conducted in outreach camps as well as health-care facilities. The Indian Embassy in Nepal has offered to

provide financial support to clear the TT surgery backlog. Azithromycin supplies for mass treatment and the budget for importation and distribution are assured and the mass treatment strategy is implemented easily. There is good collaboration in the area of water and sanitation services at all levels and there are no obstacles to delivering the programme.

*Threats*

The current unstable political situation is a threat to the timely implementation and sustainability of trachoma control activities, and inaccurate reporting may affect international support. The national burden of active trachoma and TT is unknown, and TT patients are often either unaware of the problem or fear surgery. Bureaucratic problems within the Ministry of Health and Population may cause delays in antibiotic distribution. There is a fear that the programme might fail without strong efforts from the national programme.

As in most other countries, trachoma is declining in Nepal although it remains a public health problem in some districts. Further efforts are therefore needed to sustain the implementation of the SAFE strategy and ensure the attainment of the goal of elimination of blinding trachoma by 2010. Further support from international partners is requested for prevalence surveys and control activities.

**Discussion**

*Trachoma control achievements*

Nepal is to be commended on managing to shift trachoma control from a project approach to a government-led initiative in just nine months. It has a well-developed NGO surgery network and strong community-based initiatives in relation to water and sanitation services. The prevalences of cataract, glaucoma and low vision are also taken into account when services are planned.

It would have been interesting to hear further details of the achievements of the past 12 months, and to be provided with disaggregated data in respect of the various indicators, especially for water and sanitation services, for the endemic districts.

*Azithromycin*

Pfizer has assured countries making progress towards elimination that donations of azithromycin will be maintained. However, customs clearance charges are not met by the company and governments should make adequate budgetary provision for these, especially as trachoma control programmes expand. One incident, in which 30 children in one village were reported to have adverse effects after administration of azithromycin, was investigated but the effects were not considered to have been attributable to the antibiotic. Further research is needed on the additional beneficial effects of azithromycin beyond trachoma control programmes. This should draw on the lessons learned from the use of ivermectin in onchocerciasis control programmes. Ivermectin has been found to reduce the prevalence of intestinal helminths and malaria. It appears that azithromycin may reduce skin and upper respiratory, urinary tract and sexually transmitted infections.

*Trichiasis*

Trachoma is the second cause of blindness in Nepal. It is hoped to increase the rate of TT surgery from 2007, although eye surgeons have other responsibilities, such as cataract, which has top priority. In terms of advocacy it is important to stress that people who are blind have a mortality rate that is 2–8 times higher than that of people of the same age living in the same place. Moreover blindness has significant indirect costs for the community and family. A literature review by the International Agency for the Prevention of Blindness (IAPB)/Vision 2020 on the links between blindness and poverty is available (in English only) from IAPB.

# 4. ANNUAL REPORTS FROM LARGE ENDEMIC COUNTRIES

## 4.1 ETHIOPIA

*Mr Tsgaye Bedane Fulassa, Coordinator, National Programme for Prevention of Blindness, Federal Ministry of Health, Addis Ababa*

Ethiopia has a population of 74 million, 84% living in rural areas. All regions and more than 550 of the 611 districts are endemic for trachoma; an estimated 63 million are at risk of the disease. Regional and local prevention of blindness programmes are managed by a unit within the Disease Prevention and Control Department of the Ministry of Health, which also coordinates training and collaboration with NGOs. The National Committee for the Prevention of Blindness is responsible for policy, advocacy and resource mobilization. With financial support from partners, a national survey on blindness and low vision, which included trachoma grading, has been conducted in all regions. Data analysis is under way and the final report is expected in the next few months. The provisional estimate for prevalence of blindness is 1.25%. International partners are supporting the implementation of the SAFE strategy in 76 districts. The strategy is also strongly supported by the Minister of Health. Partners include Addis Ababa University, the African Medical Research Foundation, the Carter Center, CBM, Grarbet Ledekuman, Light for the World, Lions Clubs International, ITI, the Ophthalmological Society of Ethiopia, Orbis International and World Vision Ethiopia.

Human resources development for trachoma is improving, with 390 surgeons/ophthalmic nurses and 7090 health extension workers in 2005 compared with 279 and 2737, respectively, in 2004. The health extension workers are deployed in villages for drug distribution and promotion of the "F" and "E" components. The AIO for TT surgery for 2005 was 90 000; the number of operations performed was 64 000 (78%), which represents less than 7% of the backlog of cases. External partners funded 98% of operations. The objective for 2006 is 70 000 operations. Coverage with azithromycin in 2005 was 2.6 million people in 23 districts. The objective for 2006 is 20 million in 200 districts. Tetracycline is mainly distributed from government health institutions. The proportions of the population with access to safe water and safe excreta disposal have risen from 28.4% and 11.5%, respectively, in 2004 to 35.9% and 29% in 2005. Activities to provide safe water supplies and sanitation are being scaled up in all regions, and health education emphasizing facial cleanliness and latrine construction is offered by health institutions and by NGOs at the community level. The Ministry of Health is strongly committed to the attainment of the Millennium Development Goals and is implementing a plan to meet Millennium Development Goal 7. The target is to halve the proportion of people without sustainable access to safe drinking water by 2015.

Implementation of the SAFE strategy is constrained by lack of personnel trained in eye care, inadequate facilities, equipment and materials and insufficient budgetary allocations. Coordination at regional level is also inadequate.

### **Discussion** *Scaling up activities*

Although Ethiopia has made commendable progress, only around 14% of districts are currently covered by comprehensive trachoma control activities and the trachoma burden remains very high. The huge size of the country, wide scattering of households and lack of communications pose major challenges, and there are many other health problems. Nevertheless there are considerable grounds for optimism for the scaling up of activities, with greater public sector involvement; the strategic trachoma control plan has been revised to take this into account. Government commitment to implementation of the SAFE strategy is strong. There are regional health

bureaux, public sector involvement is increasing and there are plans to construct more health posts. International partners have developed a geographical division of labour and established a task force that meets quarterly with the Government to discuss future action. Human resource training is under way, in particular to train ophthalmic nurses and health extension workers. Azithromycin supplies have been assured by ITI and Pfizer, and the Government has agreed to meet the expense of local storage and administration.

There are many opportunities for work by international partners and there is already partner support in 300 districts. For example, following a high-level meeting in Amhara in 2005, with representatives from the Carter Center, ITI, Lions Clubs International and Pfizer, it was announced that there would be an aggressive scaling up of activities in the region, and it was hoped that there would be sufficient funds to perform 200 000 TT surgeries and treat the entire population of 19 million with three doses of azithromycin. There have already been dramatic improvements in latrine coverage and provision of safe water, and CBM plans to provide another 122 water points. Lions Clubs International Foundation, in partnership with the Carter Center, is also training ophthalmic nurses and has given a direct grant to the Lions Clubs in Ethiopia for TT surgery training, surgical kits and the surgery itself. The lessons learned from cataract camps have been applied to reduce the backlog of TT cases. Lions Clubs International is willing to explore the possibility of supporting such activities in other countries. With the support of the Conrad N. Hilton Foundation, World Vision has extended its work from Amhara into Oromiya, and hopes to be involved in provision of water and sanitation services. Support is also available from WFP and UNICEF through the Extended Outreach Strategy for Child Survival Initiatives. For the time being Ethiopia remains heavily reliant on external partners for funding and technical support for activities but the Government hopes to take on increasing responsibilities in the future.

#### *Neighbouring endemic countries*

It will be important to work with neighbouring countries that are also endemic for trachoma to synchronize trachoma control activities.

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## 4.2 CHINA

*Dr Ai Lian Hu, Beijing Tong Ren Eye Centre, Beijing Tong Ren Hospital, Beijing*

In the 1950s the prevalence of trachoma in China was very high at 55%, with rates of up to 90% in some rural areas. Blinding trachoma was the first cause of blindness with a prevalence of 25–37%. The Government initiated trachoma control activities, which included health promotion, house-to-house visits for case detection, antibiotic treatment and research studies. In 1955 Chinese researchers successfully isolated the causal agent, *Chlamydia trachomatis*. Trachoma control was included in the country's 1956 development programme and a national campaign for the prevention and treatment of trachoma and for sanitation was conducted from 1957 to 1959 comprising training, public education, clinical examinations and treatment. Public knowledge about trachoma is high.

In the 1980s the national trachoma plan was incorporated in a national blindness prevention plan, which incorporates the SAFE components. Eye-care services were provided at all levels and primary eye care was integrated with primary health care. By 1987, the prevalences of trachoma and blindness due to trachoma had declined to 18.9% and 4.3%, respectively, and trachoma was no longer the leading cause of blindness.

In the 1990s greater attention was given to blindness resulting from cataract. Thanks to socioeconomic development, few cases of trachoma were found. However, no national epidemiological data were available and blinding trachoma remained endemic in some areas.

China joined GET 2020 in 1999 and, with support from WHO and IABP, launched a national plan for the elimination of blinding trachoma by 2010. The plan includes implementation of the SAFE strategy within primary health and primary eye-care services, training in the various aspects of the strategy and in conducting trachoma rapid assessments, education and eye-care promotion, trachoma screening and government monitoring. SAFE strategy modules have been published. Screening has shown that

many urban areas are no longer endemic for trachoma but that the disease is still present in pockets in some rural areas. In a total sample of 17 006 adults, trachoma (all cases) was found in 0.57% (0–5.5%), TF in 0.05% (0–0.18), TI in 0.13% (0–0.44%), TT in 0.15% (0–5.5%) and CO in 0.04% (0–0.12%). In a sample of 17 049 schoolchildren, active trachoma was found in 0.6% (0–7%), TF in 0.38% (0–7%), TI in 0.39% (0–7%) and TT in 0.06% (0–0.25%). Active trachoma is treated with azithromycin. Schoolchildren are given an eye-care promotion booklet, have their own face cloths for washing and are taught how to wash. With the exception of a few remote areas, clean water supplies are now available throughout the country (coverage was nearly 94% in 2004).

Active trachoma is no longer a serious problem in most of China. Prevalence assessment would be a major challenge in such a large and populous country and rapid trachoma assessments are used in endemic areas. Screening activities are focused on young people (0–19 years), who are screened for TF/TI, and elderly people (50 years and over), who are screened for TT and CO. A cost-effective approach will be needed to assess the country for elimination of blinding trachoma.

## Discussion

### *Prevalence figures*

The information is encouraging, especially given that until recently there have been few data from China. Although some changes in the figures can be attributed to a switch to the WHO grading for trachoma, there have nevertheless been significant reductions in the prevalence of active trachoma across the country since the 1950s, and in some areas ophthalmologists no longer see the disease. Socioeconomic development and the introduction of country-wide health services have been key factors in trachoma reduction. However, in such a populous country even a low prevalence actually means a large number of people affected, for example, a TT prevalence of 0.15% translates to 1.5 million people or 25% of the world's TT cases.

Children are not usually screened before they enter nursery school at 3 years of age. Children may live far from school and so only return home at weekends. They are taught to use their own washbowls and cloths. Prevalence of active trachoma is usually higher in primary than in secondary schools where the children have greater knowledge about personal hygiene.

### *Future surveillance*

Reliable national data are needed to be able to certify that trachoma has been eliminated. However, full surveillance in such a large country would be prohibitively costly. Trachoma rapid assessments are an appropriate way of tackling the problem. If no blinding trachoma is found in rapid assessments in areas where water and sanitation services are still inadequate then it is unlikely to be found in more developed areas.

### *Trichiasis*

Some 3–6 million people have TT, but this is often relatively mild and does not necessarily require surgery. Criteria for surgery should be developed. Surgery is available across the country for a small payment but the quality of surgery varies.

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## 4.3 INDIA

*Dr Rachel Jose, Deputy Director General (Ophth.), Directorate General of Health Service, Ministry of Health, New Delhi*

Trachoma and blindness due to trachoma are no longer major public health problems in India. Surveys have shown that trachoma blindness declined from 5% of blindness from all causes in 1971–1974 to 0.39% in 1986–1989 and a similarly small proportion in 2001–2002. Cataract remains the major cause of blindness; cataract surgery has increased substantially over the past 10 years, with some 4.5 million cataract operations performed in 2005, 90% with intraocular lens implantation.

The Indian Council of Medical Research conducted an epidemiological study of blindness in 15 major states in 1959–1963 using a random sampling technique. It showed prevalences of trachoma ranging from <3% to more than >50%, with higher rates in the north-west of the country. A national trachoma control programme was therefore launched in 1963; this was merged with the national programme for control of blindness in 1976.

A further survey conducted by WHO and the Government of India in 1986–1989 showed a reduction in prevalence, with a range of <3% to 10–25%; again rates were higher in the north-west. Analysis of the data showed that trachoma prevalence was higher in women and in people living in rural areas, and showed an increase after 5 years of age. Active disease was found in 53% of the cases detected. A survey of previously hyperendemic areas conducted in 1995 showed a trachoma prevalence of 8.5%. Active disease was present in 85.9% of cases, and 54.9% of these were antigen positive. There was an increase in prevalence after 3 years of age.

Trachoma control includes all the components of the SAFE strategy, which are integrated with other control of blindness activities. Health education is also provided. Schoolchildren are screened and mass treatment with azithromycin is given in areas found to have active trachoma (TF >10% in children aged 1–9 years). Azithromycin is made available when needed. Otherwise tetracycline ointment and eye drops are freely available through primary health-care centres and district-level hospitals. TT cases are detected at eye screening camps, where surgery is offered. Activities are part of the Vision 2020 programme and 50 000 people have access to vision centres. Trachoma control activities are supported by the Government, WHO, NGOs and the private sector.

A rapid trachoma assessment will be conducted in May 2006 in one district in a hyperendemic state. Further surveys are planned for 2006–2007 to assess childhood blindness in one state and to evaluate the national programme for the control of blindness. Further support is needed for these surveys and for provision of azithromycin for mass treatment.

## **Discussion**

### *Prevention of blindness*

India has been a leader in prevention of blindness in South-East Asia and the presence of a participant from the country for the first time at a meeting of the WHO Alliance is greatly appreciated.

In 2001–2002, some 6% of blindness was due to glaucoma.

### *Reasons for the decline in trachoma*

It is not clear how much of the progress made in eliminating trachoma is due to medical interventions and how much to socioeconomic development. India has seen significant socioeconomic development over the last few decades, although some rural areas are still lagging behind. India also has a well-developed school eye-screening programme, health and hygiene education is promoted, antibiotics are available, water supplies are generally available and there are good NGO hospitals to support care at the peripheral level.

### *Future prevalence surveys*

NGOs working at community level are not reporting high levels of active trachoma and large-scale prevalence surveys are therefore not justified. As in China, trachoma rapid assessments may be appropriate to assess prevalence in suspected areas, for example close to endemic areas of the neighbouring countries, Pakistan and Nepal. Sight Savers International operates its largest prevention of blindness programme in India and its second largest in Pakistan and is aware of the problems in those areas; it favours targeted assessments.

To reduce costs, surveys can be incorporated in surveys on all forms of blindness, as in Ethiopia. WHO is willing to provide support for surveys. Once the trachoma burden has been assessed, the Government should give priority to trachoma control in problem areas. Political commitment will generate expanded support from partners for further surveys and interventions, again as in Ethiopia, to provide mass or targeted treatment as necessary and help with the other components of the SAFE strategy.

# 5. INTERNATIONAL COALITION FOR TRACHOMA CONTROL

*Dr Jacob Kumaresan, President, International Trachoma Initiative, New York*

The International Coalition for Trachoma Control (ICTC) was established in 2004 with seven organizations, with the aim of contributing to the global effort to eliminate blinding trachoma and to advocate and implement the SAFE strategy. Its objectives are to identify areas for collaboration, engage new partners, mobilize additional resources to fund national programmes, play an advocacy role in raising awareness of the disease, and support the coordination of NGO activities in national prevention of blindness programmes. It comprises NGOs engaged in blindness prevention and socioeconomic development. Anyone who subscribes to the ICTC mission statement may join the Coalition.

The WHO Alliance is the working group for trachoma elimination within Vision 2020 and WHO reports on Alliance annual activities to Vision 2020. This report on ICTC's work will therefore be reported by WHO to the next level.

The International Coalition held two meetings in 2005: in Geneva, from 23 to 24 March, hosted by WHO; and in New York, from 1 to 2 November, hosted by Pfizer. New partners have joined, including organizations not specifically concerned with prevention of blindness such as WaterAid, the International Rescue Committee, Rotary International, the Micronutrient Initiative, and others more directly concerned such as the Carter Center, Lions Club International, Pfizer and Ulls del Món. The participants discussed how partnerships could work best within national trachoma control programmes, looking specifically at Kenya, United Republic of Tanzania and Uganda, and which organization would be the lead partner in supporting the national prevention of blindness manager in coordinating trachoma activities and enlarging national trachoma task forces. They also considered fund-raising opportunities and frustrations. Individual agencies have made efforts to find new funding sources. For example, Sight Savers International is working with the European Union on a proposal for Kenya, and Operation Eyesight is seeking to involve the Canadian International Development Agency (CIDA). In addition, ITI has been involved in advocacy efforts at the United States Congress in relation to neglected tropical diseases. It is therefore pleasing to note that in November 2005 Congress appropriated US\$ 15 million for 2006 for work on these diseases (lymphatic filariasis, onchocerciasis, soil-transmitted helminths, schistosomiasis and trachoma) and expects to continue such appropriations in subsequent years. Given the current emphasis on HIV/AIDS, tuberculosis and malaria and emerging diseases such as avian influenza, it is significant that a major bilateral organization, USAID, has recognized that resources need to be made available for these other diseases. The diseases concerned are linked to poverty and affect the poorest among poor people. It is hoped that tackling them together will provide opportunities for synergies, in particular at the community level. In addition, there are defined strategies and plans for controlling all the diseases included, mostly by means of mass drug treatment for which four pharmaceutical companies have made donations. USAID has requested proposals for the period 2006–2010 for a total of US\$ 100 million. It is hoped that other bilateral donors will follow this example. ICTC has not succeeded in involving the expert fund-raisers from its member organizations in its meetings. Further development of expertise in mobilizing resources for trachoma control and advocacy tools is crucial, and much greater efforts are needed in this area. Opportunities for fund-raising at the national level should also be explored. In 2005, the G8 countries made a commitment to debt relief for 18 African countries, which

provides an opportunity for gaining access to funds for health, education, water and sanitation, and infrastructure development.

*Ms Catherine Cross, Manager, International Programmes, Sight Savers International, Haywards Heath, England*

As indicated at the previous meeting of the WHO Alliance, trachoma is a significant public health problem in Nigeria, but the Government has not been able to mobilize adequate resources for control activities. However, Nigeria has had an active and well-coordinated onchocerciasis control programme for the past 10 years throughout the country, with the involvement of eight international NGOs, each of which takes responsibility for particular geographical areas. The programme has a strong national task force and it has been possible to use this to look at other diseases, including trachoma. In addition, the national coordinator for onchocerciasis control is also responsible for trachoma control. Although work to develop a national trachoma control plan and to build intersectoral collaboration appears to have stalled in recent months, a visit from ITI is being discussed with the aim of securing qualification for donation of azithromycin to support ongoing trachoma control activities in the north of the country. The terms of reference for the visit include advocacy at a high level, i.e. ministers or key decision-makers in all relevant sectors, and workshops at the operational level with the participation of state officers. Trachoma control in Nigeria will have to be scaled up in phases.

As already indicated, Kenya has submitted a proposal for support from the European Union. The country has applied for donation of azithromycin, and a consortium of NGOs and Government is applying for funding under the budget line for European NGOs. The consortium comprises the African Medical Research Foundation (which is registered in the United Kingdom), CBM, Sight Savers International and the Government, with Sight Savers taking the lead. The bid for € 1.5 million over three years was submitted in March 2006 but the response is likely to take up to a year. Several other NGOs and national groups stand to gain from the proposal.

*Mr Chip Morgan, Vice President, Operation Eyesight, Vancouver, Canada*

In conjunction with several other organizations, Operation Eyesight became involved with ICTC some years ago in a pilot trachoma control project in Zambia and decided to replicate that project in a district of Kenya. Thanks to earlier experience with ICTC, which had included the preparation of a consortium bid for funding from CIDA, fund-raising for the Kenya project is making progress. That experience had shown that when seeking funding, it is important not to underestimate the cost of implementing a full SAFE strategy and the collaborative effort involved. For example, for a district with a population of 1 million, the estimated cost is around US\$ 2 million, depending on the local infrastructure, so that a proposal for US\$ 10 million will therefore cover only five districts. It is also important to consider funding from the donor perspective. Bilateral donors are often not too interested in funding surveys alone and prefer to fund trachoma programmes as part of poverty-alleviation activities rather than just for the control of an eye disease. It is therefore necessary to adjust the way donors are approached for support to trachoma control and to emphasize the many additional benefits of the SAFE strategy in terms of poverty alleviation and broad-based socioeconomic development. This new approach has already brought some success: Rotary Canada has agreed to cover 75% of the costs of implementing the SAFE strategy in the Kenya district (US\$ 1.5 million), which includes the drilling of 50 deep wells for water, the most expensive part of the strategy.

*Dr Silvio Paolo Mariotti, Medical Officer, GET 2020 Secretary, World Health Organization, Geneva*

WHO is launching a new approach with its framework for neglected tropical diseases, which includes trachoma, and will look at the additional benefits of the SAFE strategy components. The revised organizational structure should provide greater opportunities for fund-raising and for identifying and exploiting synergies that are already being seen in the field.

## **Discussion**

### *Fund-raising*

The eye-care community and ministries of health are still too focused on clinical treatment and need to acquire better fund-raising skills. Neglected diseases affect neglected populations so it is important to stress the social determinants of prevention of blindness and trachoma control; the SAFE strategy goes far beyond the medical elimination of blinding trachoma. Much greater efforts are needed to tap into national resources for poverty alleviation, the attainment of the Millennium Development Goals and debt relief. Poverty-alleviation units are often located within ministries of finance, with perhaps the participation of a health economist from the ministry of health, and suitable approaches must be found in order to convince those responsible of the links between poverty and prevention of blindness and to emphasize the benefits of a strategic trachoma control plan. As experience in the eradication of guinea worm in Cameroon has shown, fund-raising requires passion, patience and commitment if political obstacles are to be overcome. Countries do have funds – strong advocacy is needed to gain access to them.

Where funds are available, it is important to consider the future rather than rushing to implement vertical programmes. Planning for organizational, structural and financial sustainability, in particular as external support declines, is crucial. In this context, there are lessons to be learned from the Onchocerciasis Control Programme.

### *Future of ICTC*

At its forthcoming meeting, ICTC should consider discussing how it can evolve to meet the new approaches to trachoma as one of the neglected tropical diseases in neglected communities, and to help ministries of health to gain access to debt relief and poverty-alleviation funding. It may be necessary to invite financial advisers or economists to join ICTC meetings, or to hire suitable consultants.

# 6. TRACHOMA SCIENTIFIC INFORMAL WORKSHOP 2006

*Professor Sheila West, Professor of Ophthalmology and Epidemiology, Dana Center, The Wilmer Eye Institute, Johns Hopkins Medical Institution, Baltimore, MD, USA*

The 2006 Trachoma Scientific Informal Workshop was held at WHO headquarters, Geneva, on 7 April 2006. The participants heard reports on immunological and diagnostic research, and field studies in endemic countries. The following section highlights research results with direct relevance to country programmes.

Data from the United Republic of Tanzania showed that trachoma was more common in populations with World Bank indicators of poverty and that the trachoma control programme was reaching all population strata. These results confirm that trachoma is a disease affecting poor people and that the SAFE strategy can be delivered equitably.

In Sudan, there was a significant reduction in active trachoma (up to 90%) in children after three years in two out of four districts where antibiotic coverage was high, rates of facial cleanliness were high and there was reasonable access to water, which confirms the importance of implementing the full SAFE strategy.

High TT recurrence rates lead to high surgery refusal rates, so that it is important to monitor cases after surgery and ensure that surgery standards are of good quality. After improvement of quality and monitoring in a clinical trial in Ethiopia, the recurrence rate at one year was only 8%. The post-operative administration of azithromycin decreased that rate by a further 30%. Guidelines for assessing the quality of TT surgery are available from WHO<sup>3</sup> and were used in the trial. Factors leading to post-operative adverse events (up to two months after surgery) included a surgical incision of <20 mm. Males tend to have more granuloma than females and severity of TT prior to surgery is a predictor of post-operative recurrence.

Studies in Ethiopia and the United Republic of Tanzania showed that in villages with antibiotic coverage of >90% and "F" and "E" activities there appeared to be a sustained absence of infection and in due course a notable decline in disease rates. After three years of annual mass treatment, rates were related to average antibiotic coverage (it is important to achieve coverage of >80%), size of village (results are better in smaller administrative units), initial endemicity, and subsequent surveillance and interim treatment of individual cases. In hyperendemic villages infection was low after 2–3 treatments but not absent, and trachoma would probably re-emerge unless the full SAFE strategy was implemented, since infection re-emerges after a single mass treatment. The addition of surveillance and interim treatment of individual cases improved results but cost-effectiveness of such activities requires further research. There is some evidence of other endemic pathogens in trachoma areas.

Research is continuing on the development of a vaccine against *Chlamydia* to complement the SAFE strategy, and to design novel delivery systems that avoid the cold-chain. However, a vaccine is not likely to be available for years and the SAFE strategy remains the best prospect for the elimination of blinding trachoma for the time being.

<sup>3</sup> *Final assessment of trichiasis surgeons*. Geneva, World Health Organization, 2005 (WHO/PBD/GET/05.2).

## **Discussion**

### *Surgery follow-up*

The study in Ethiopia is continuing and data for the second and third years are being analysed. The study is encouraging in that it shows that recurrence rates can be reduced significantly. A 17-year follow-up of patients in the original study to evaluate the bilamellar tarsal rotation procedure in Oman showed a recurrence rate of around 50% at 17 years, compared with 18% at 2 years. Surgery is a useful intervention to relieve patients, but prevention of the disease is the best option in the long term.

# 7. INTERNATIONAL TRACHOMA INITIATIVE

*Dr Ibrahim Jabr, Vice-President, Programmes, International Trachoma Initiative, New York, NY, USA*

## *Past, present and future*

Trachoma is the world's leading cause of preventable blindness. Some 8 million people are visually impaired by the disease and around 84 million have active infection. The estimated annual loss in productivity resulting from the disease is around US\$ 2.9 billion. Trachoma is a disease of poverty, related to poor access to water, sanitation and health services, and affects mainly children and their care-givers. Rates of blindness due to trachoma are up to three times higher in women than in men.

ITI support for country programmes currently represents coverage of around 27% of the global burden, although recent data suggest that the burden may be lower than anticipated in some countries, such as China and India.

While antibiotic distribution is an important component of the SAFE strategy, drug treatment alone will not eliminate blinding trachoma. Nevertheless, mass treatment with azithromycin represents a technical breakthrough that shortens the elimination period. Thanks are due to Pfizer, which in 2003 agreed to donate 135 million doses over five years, and in 2005 indicated that it would continue to offer donations to countries with a serious commitment to elimination.

From 1998 to 2005, countries receiving direct support performed more than 220 000 surgeries and gave some 37 million antibiotic treatments, with a dramatic increase in antibiotic treatment in 2005 (19 million treatments). Antibiotic treatments are projected to reach at least 29 million in 2006.

ITI was established as a public charity in 1999 and currently supports 12 national trachoma programmes. In the early years it focused on the launch and proof of effectiveness of the SAFE strategy. More recently, the emphasis has shifted to operation and ownership of country programmes by governments. In March 2005, the ITI Board asked ITI to re-evaluate its activities and to seek new approaches in planning its strategic directions for 2006–2010 so as to support countries more effectively. The exercise produced a collective vision for ITI's future: the trend towards increasing government ownership of trachoma control programmes will continue as countries scale up their activities; ITI will provide strategic and technical expertise to support the mobilization of national resources and monitor the coverage and impact of the SAFE strategy; and general fund-raising efforts will target two groups, the corporate sector and individual donors.

It is anticipated that, at the current rate of activity, SAFE coverage of districts in national programmes supported by ITI will increase from 17% in 2005 to 57% in 2010, and that at least four more countries will join Morocco in finishing intensive treatment – Ghana, Mauritania, Nepal and Viet Nam. That will reduce the global burden of blinding trachoma by 25%. ITI will look to expand its activities to other endemic countries and has developed criteria for new partnerships. Countries should have a proven burden of endemic trachoma assessed using internationally accepted methodology. Their governments should have made a commitment to give priority to trachoma control as a public health problem and to include trachoma control in their poverty-reduction strategies, and should be implementing a national water and sanitation policy and plan. There should also be an active trachoma task force with a designated national coordinator and

partners (ministries, NGOs, bilateral donors, etc.), with clearly defined roles and responsibilities that make the best use of comparative advantages.

Decision-makers are likely to react more favourably to appeals for support if data are presented visually, in an eye-catching way that emphasizes programme performance and achievements, such as the number of districts or communities with ongoing activities or which have finished three years of mass antibiotic treatment, rather than needs. Links between prevention of blindness and Vision 2020, other neglected diseases and poverty reduction must be stressed. The disease is mostly found in lower age groups and is more widely spread in Africa than elsewhere. Trachoma gains cannot be sustained unless water and sanitation services are available and there is behavioural change. When women in Ethiopia began to consider latrines as a means of achieving privacy, latrine construction became a women's rights issue too. It is important to point out the additional benefits of the SAFE strategy, such as support for progress towards the attainment of the Millennium Development Goals, reduction in poverty because people become more productive, better integration with other programmes, improvement in child welfare, and improvements in the health and environmental infrastructure.

ITI is looking to accomplish its mission by increasing government commitment to and ownership of national trachoma control programmes, strengthening partnerships, engaging and empowering communities, and mobilizing additional resources.

## **Discussion**

### *ITI strategic plan*

Thanks to strong support from its members, ITI is playing a leading role in trachoma control and has highlighted what needs to be done. Its 2006–2010 plan was drawn up after careful study and using WHO data, and has been approved by the ITI Board. There will be a mid-term review, at which time the plan will be refined. A five-year planning period was chosen to coincide with national planning cycles, which are also usually of five years. The current plan will be followed by further five-year plans.

### *Criteria for ITI support*

Many countries, especially in Africa, are involved in sector-wide approaches (SWAP) and World Bank poverty-reduction strategies. ITI advocates that, in their work with governments, World Bank country missions should include trachoma as a marker of poverty. Once that is done trachoma is likely to be included in the national plan and budget allocations for trachoma control will be forthcoming. ITI can support countries in developing tools for advocacy.

Countries often need external support in order to determine the prevalence of trachoma and thus demonstrate a burden of disease that qualifies them for ITI help, even when they are already making good progress in combating the disease, as in India.

### *Presentation of data*

In addition to attracting attention, graphic presentations of information can also indicate more clearly where data are lacking and therefore stimulate data collection. The data shown should be clarified, however, so that there is no possibility of misinterpretation. For example, ITI's assessment of the estimated global burden of trachoma is a proportional representation in terms of absolute numbers. It indicates that there are 48.7 million cases of TF in Asia, 30.6 million in Africa and 1.1 million in Latin America. It also shows proportional national burdens. This is distinct from country prevalence assessments undertaken using the internationally accepted methodology in which people are considered eligible for implementation of the SAFE strategy in districts where the prevalence of TF in children aged 1–9 years exceeds 10%. The representation of districts as "graduating" from three years of mass antibiotic treatment does not necessarily mean that trachoma control interventions are no longer required. Some districts may require more than three rounds, and mass treatment may be followed by targeted community treatment.

# 8. WELLCOME TRUST CD-ROM ON TRACHOMA, SECOND EDITION

*Mr Tim Beanland and Ms Julie Reza, Publishing Group, Wellcome Trust, London*

The Wellcome Trust is an independent charity providing funds for medical research, with annual spending on research of around £400 million. The first objective of the Trust's strategic plan for 2005–2010 is to fund research to increase knowledge. The second aim is to promote the use of that knowledge – the translation of research into practice. There is growing recognition that scientific papers represent only the start of that process. The Trust therefore also funds the development and dissemination of electronic educational and training materials, mainly for health-care professionals in the developing world, through the international health section of its publishing group. The market for such materials has no commercial drivers and is therefore an area where the Trust, with its philanthropic aims and access to the research community and partners, can provide help free from commercial or political influence.

The chosen delivery medium, CD-ROM, has a number of advantages over the Internet. It is an established, robust and durable technology that can provide multimedia content with photographs, videos, animation and interactivity. There is increasing access to personal computers, and use of CD-ROMs can enhance computer skills. However, CD-ROMs are expensive to develop and hard to update, and they do make demands on the end-user. The Trust is developing versions for delivery via the Internet, but it will continue to produce materials on CD-ROM for the foreseeable future since Internet connections can be costly and unreliable. The overriding principle is to balance the need to deliver rich content with the information technology infrastructure in target areas. To date the Trust has developed 13 titles in its "Topics in international health" series on various diseases. It also accepts commissions from external partners, generally targeted at control programmes, for example, for neglected diseases. Trachoma is part of the series but has elements of the commissioned titles.

The second edition of the CD-ROM on trachoma was launched in 2005 and provides training materials and information on basic science, epidemiology, clinical control and aspects of control programmes, and the SAFE strategy. It is designed primarily for clinicians, ophthalmic nurses and other health-care professionals, and trachoma control programme managers. It is also suitable for medical students, their teachers and researchers. It is envisaged that the CD-ROM will be used to complement other training activities. The material was written by Matthew Burton and Hannah Kuper (International Centre for Eye Health, London School of Hygiene and Tropical Medicine) and reviewed by a number of international experts and advisers. Development was supported by ITI, Sight Savers International, CBM, the International Centre for Eye Health and WHO. The CD-ROM is available free of charge to all national trachoma control programme managers in trachoma-endemic developing countries, and distribution is being supported by the International Centre for Eye Health and other partners.

The CD-ROM comprises 11 interactive tutorials covering the main aspects of trachoma, including the SAFE strategy, plus a collection of more than 300 images, a glossary of terms and a list of key

references to encourage further reading. Each tutorial lists learning objectives and provides self-assessments to help those using the CD-ROM as a self-teaching tool. The tutorials can be printed and outline versions of the tutorials are also included for those who do not require so much detail. Animation and video clips provide additional illustrations of various aspects of the disease and its control. Navigation is facilitated by numerous internal links.

Members of the WHO Alliance are invited to use the CD-ROM in their work in the field and provide feedback to the Wellcome Trust. The Trust is always looking for partners to support the production of new materials, and is hoping to prepare translations of the trachoma CD-ROM, which is currently available only in English.

# 9. NEW APPROACH TO NEGLECTED TROPICAL DISEASES BY WHO

*Dr Lorenzo Savioli, Director, Neglected Tropical Diseases, World Health Organization, Geneva*

WHO is pleased to announce the establishment of a new department on neglected tropical diseases, which will include trachoma. The diseases covered are very different from one another in respect of causal agent and route of transmission but they all affect poor people living in the poorest parts of the world and are fatal usually only in those populations. They can be divided into two groups. For one group, comprising leprosy, lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted nematode infections and trachoma, there are effective control tools: good drugs that can be given as mass treatment and have a major impact in reducing infection and morbidity; and good diagnostic approaches. They also have strategic control plans, some of which have been highly successful. For example, onchocerciasis control using ivermectin has allowed farmers to return to large tracts of arable land; 50 million people have been cured of leprosy; Brazil, Egypt and China have effectively controlled schistosomiasis, using praziquantel; the SAFE strategy, which includes mass treatment with azithromycin, is reducing the prevalence of trachoma in many countries; and Egypt has recently successfully eliminated lymphatic filariasis using diethylcarbamazine-fortified salt.

To date, the control programmes for these diseases have mainly been implemented in a disease-specific way using a vertical approach. At the international level, tools, drugs, technologies and control strategies have been developed separately for each disease. Similarly, at country level there are separate budgets for control of each disease even when, as in the case of helminths, control relies on the same drug (ivermectin). The Director-General has established the new department to send a clear message that, at the highest level, WHO has grouped the diseases together and is encouraging the development of new guidelines and manuals for common control activities at the country level. The Organization recently convened an informal consultation on the use of chemotherapy in public health, which included consideration of the use of azithromycin for the control of trachoma. Guidelines on this subject will be issued in the near future. The intention of the new arrangements is not to break up the technical expertise developed around each disease but rather to break down obstacles and boundaries at country level, to provide opportunities for synergies, and to look at common problems such as drug resistance.

## **Discussion** *NGO perspective*

Some of the NGOs working on trachoma control are also already working on some of the other neglected tropical diseases covered by the new WHO department, and are moving towards a similar integrated approach. For example, Sight Savers International is supporting onchocerciasis and trachoma programmes and has been asked to provide support for the joint onchocerciasis and lymphatic filariasis programme in Sierra Leone. Further, in September 2006 there will be a joint WHO/NGO meeting of the groups concerned with onchocerciasis and lymphatic filariasis at which consideration to bringing in other disease groups will be considered. However, some donors to partners involved in prevention of blindness, such as Sight Savers International, may

not necessarily be interested in providing support for non-blinding diseases. It is important not to alienate donors and to recognize that changing the focus of an NGO as a disease declines can be a complex and sometimes painful process.

#### *Future directions*

The role of WHO will be to ensure that the NGO support and technical expertise associated with each specific disease is not lost but that the various groups begin to collaborate more effectively in order to achieve synergies at country level. The WHO Alliance should consider what technical and programmatic information it can contribute to the integration process, and what it can do in terms of advocacy and leadership to move the process forward. Opportunities are developing for approaches to bilateral agencies, such as USAID, which are also moving towards the integration of activities on neglected tropical diseases.

It is clearly not cost-effective for three separate country teams to visit schools to treat three diseases each with a different drug. Further research on delivery systems is needed to determine whether co-administration or co-formulation is possible. The pharmaceutical companies involved in donations of the drugs concerned, including Pfizer, are already working in this area and the results of a preliminary study should be available in the near future.

There are also opportunities for synergies in many other areas, for example surveillance, monitoring, planning, integrated strategies, and the other components of the SAFE strategy.

Countries will clearly benefit from the new WHO approach but integration must begin without delay and the WHO regional offices and country offices should play a greater role in coordinating the work of NGOs and other partners with governments. There has already been some strengthening of staff and funding at the regional office level and efforts are being increased to involve external partners in activities at all levels.

# 10. CONCLUSIONS AND RECOMMENDATIONS

**The participants in the Tenth Meeting of the WHO Alliance for the Global Elimination of Blinding Trachoma by 2020 adopted the following conclusions and recommendations.**

1. It is encouraging to note the continued expansion in membership of the WHO Alliance for the Global Elimination of Blinding Trachoma by 2020. The annual meetings of the WHO Alliance have made a valuable contribution to global trachoma control efforts by providing a broad-based forum for sharing information and for stimulating partner support for national control programmes, and should be continued in their present form.
2. The role of the global public health community and other WHO Alliance partners in efforts to attain GET 2020 is acknowledged with appreciation, in particular:
  - the decision by WHO and some bilateral donors to include trachoma as one of the neglected tropical diseases
  - the contributions made by the private sector, especially by Pfizer, which is increasing its donations of azithromycin to national trachoma control programmes for as long as progress is evident
  - increasing advocacy efforts (e.g. the World Economic Forum Annual Meeting 2005, the UNDP Human Development Report, 2005; the integration of neglected tropical diseases in the United Nations Millennium Project Quick Impact Initiative on Malaria in January 2006; and the article on trachoma in *The New York Times*, 31 March 2006)
  - the recognition of trachoma as one of the neglected diseases affecting neglected populations and of the impact of the SAFE strategy on poverty alleviation and in bringing development to neglected communities
  - the development of new opportunities for funding and collaboration for national trachoma control programmes, e.g. through debt relief for 18 African countries, USAID funds for neglected tropical diseases, and the second phase of the Sight First Program of the Lions Club International Foundation.
3. Trachoma data profiles from 32 countries were reviewed. Reports from four countries failed to arrive on time and 19 endemic countries have not been in communication. All endemic countries need to be engaged in the WHO Alliance.
4. Countries have made further significant progress in establishing and implementing national trachoma control programmes based on the SAFE strategy. However, there are

still some that have not yet started trachoma control activities and others where activities do not yet cover all endemic areas. All endemic countries, in particular the more populous countries, should continue efforts to define the distribution and severity of trachoma; trachoma rapid assessments may be useful in this regard.

5. The national plans discussed represent control of trachoma in 25% of the at-risk population by 2010; plans for 100% coverage by 2020 are still required. In addition, countries should have developed their strategic 5-year national trachoma programmes by 2007, and integrate these in Vision 2020 activities. WHO should prepare a report on countries' strategic plans for attaining the WHO Alliance goal of global elimination of trachoma by 2020 for consideration at the Alliance's Eleventh Meeting in 2007.
6. WHO should develop methods and tools for the assessment of the trachoma burden and for the certification of elimination of the disease, and should provide a report on these to the WHO Alliance at its Eleventh Meeting.
7. Most countries are now providing information to the WHO Alliance using standard data reporting procedures. This facilitates the monitoring of progress towards trachoma elimination. The GET 2020 web site should provide access to the trachoma database for the 55 endemic countries. Countries should be requested to submit updated information to WHO as it becomes available, for inclusion in the database.
8. WHO should amend the trachoma data reporting form to include selected indicators of general health status and socioeconomic development, which are key factors in trachoma control.
9. Active leadership and participation by governments at the highest political level are prerequisites for the success of national trachoma control programmes.
10. There is a need for increased, well-coordinated intersectoral collaboration at the national and district levels in order to ensure the comprehensive implementation of all the components of the SAFE strategy. Community involvement is also a vital element.
11. Countries should institute an ongoing audit for quality of trichiasis surgery using the WHO guidelines for assessment.<sup>4</sup> Countries with a large number of people needing trichiasis surgery should increase efforts to reduce the backlog.
12. For mass treatment with azithromycin, experience currently indicates that better results are achieved with high levels of coverage, i.e. well above 80%, and that this may be one of the most important trachoma control measures when combined with the "F" and "E" components. Countries should therefore endeavour to increase coverage of the "A", "F" and "E" components of the SAFE strategy to the highest possible level.
13. In countries with districts in which active trachoma prevalence has declined to <5%, trachoma rapid assessments may be the most useful tool for identifying and prioritizing communities needing trachoma control activities in order to eliminate remaining pockets of the disease.

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<sup>4</sup> *Final assessment of trichiasis surgeons*. Geneva, World Health Organization, 2005 (WHO/PBD/GET/05.2).

14. Facial cleanliness is the most proximal indicator of successful relevant behavioural and environmental changes. Efforts to collect and report data on this indicator should be strengthened.
15. There is a need to gather and disseminate information on the collateral benefits to health of the “A”, “F” and “E” components of the SAFE strategy. Increased funding for trachoma control activities may be attracted by stressing these additional benefits.
16. WHO and the international development community should advocate and promote trachoma as a marker of poverty, and the WHO Alliance efforts as a model of a public–private partnership for tackling problems.
17. The 2007 World Sight Day should take as its theme “Trachoma and the SAFE strategy.”

# 11. DATE AND PLACE OF THE ELEVENTH MEETING

The representative of the WHO Regional Office for the Eastern Mediterranean proposed that the twelfth annual meeting, in 2008, should be held in Cairo. The WHO Alliance expressed appreciation for the kind offer and agreed that it was important to maintain strong links with WHO at the highest level and that it would therefore be preferable to hold the meeting in Geneva. It suggested, however, that consideration be given the offer of holding the GET2020 meeting in Cairo.

It was agreed that the eleventh annual meeting of the WHO Alliance will be arranged within the last two weeks of March 2007 at WHO headquarters, Geneva, respecting as far as possible international conferences and national festivals taking place in that period.

## 12. CLOSURE

WHO acknowledged the valuable contributions of partners, including Helen Keller International, the International Agency for the Prevention of Blindness, the International Trachoma Initiative, Pfizer Inc. Corporate Philanthropy and Sight Savers International, without which the meeting would not have been possible.

# ANNEX 1. LIST OF PARTICIPANTS

## *Representatives of national programmes*

- Dr. A.H.M. Ahmed, National Coordinator, Sudan Trachoma Control Programme, Federal Ministry of Health, Khartoum, Sudan
- Professor S.E. Ahmedou, Coordinateur, Programme National contre la Cécité, Ministère de la Santé et des Affaires Sociales, Nouakchott, Mauritania
- Dr A.A. Al-Amiri, Medical Director, Ilbin Al Haitham Eye Hospital, Baghdad, Iraq
- Dr A.H. Al-Raisi, Head, Eye Department, Al Nahdha, Ministry of Health, Muscat, Oman
- Dr A. Amza, Coordinateur adjoint, Programme National de Lutte contre la Cécité, Niamey, Niger
- Dr S. Bamani, Coordinateur, Programme National de Lutte contre la Cécité, Ministère de la Santé, Bamako, Mali
- Dr A.J. Bencomo Alerm, Technical Coordinator, Trachoma Programme, Health Institute of Chiapas, Barrio San Ramon, Mexico
- Dr S. Bubikire, Coordinator, National Eye Care Disability Prevention and Rehabilitation, Ministry of Health, Kampala, Uganda
- Dr Jia Dandan, Officer, Department of Medical Administration, Ministry of Health, Beijing, China
- Professor N.K. Diallo, Coordinateur National, Programme de Lutte contre l'Onchocercose et la Cécité, Ministère de la Santé Publique, Conakry, Guinea
- Mr T.B. Fulassa, Coordinator, National Programme for Prevention of Blindness, Federal Ministry of Health, Addis Ababa, Ethiopia
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- Dr J. Hammou, Coordinateur, Programme National de Lutte contre la Cécité, Rabat, Morocco
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# ANNEX 2. AGENDA

Opening

Introduction of participants

Nomination of officers

Adoption of the agenda

Agenda Item 1: WHO report

Agenda Item 2: Country reports (selection)

- Sudan, Mauritania, Gambia, Mexico, Mali, Ghana, Nepal

Agenda Item 3: Country reports (yearly reports from large countries)

- Ethiopia, China, India,

Agenda Item 4: NGO coalition report

Agenda Item 5: Update on research projects (Report on the trachoma scientific informal workshop, 2006)

Agenda Item 6: Any other matter

- Report on the International Trachoma Initiative
- Wellcome Trust CD-ROM on trachoma
- New approach to neglected tropical diseases by WHO
- 

Conclusions and recommendations

Date and place of next meeting

Closure



# THE "SAFE" MANUALS



AVAILABLE FOR DOWNLOAD AT  
[HTTP://WWW.WHO.INT/BLINDNESS/EN/](http://www.who.int/blindness/en/)