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of the WHO Alliance for the

Global Elimination of

Blinding Trachoma

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GET 2020

GLOBAL ELIMINATION OF BLINDING TRACHOMA BY THE YEAR 2020

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1. INTRODUCTION

1.1 Opening of the Meeting

The Sixth Meeting of the WHO Alliance for the Global Elimination of Blinding Trachoma was held at WHO headquarters, Geneva, Switzerland from 5 to 7 December 2000. The Meeting was attended by 26 national coordinators from endemic countries, 13 representatives of WHO collaborating centres for the prevention of blindness and other research institutions, 21 representatives of NGOs and foundations, and 1 observer, together with WHO Secretariat staff (see list of participants in Annex 2). PROFESSOR S. West, Chairman of the Alliance, opened the Meeting.

Dr D. Yach, Executive Director, Noncommunicable Diseases and Mental Health, WHO, welcomed the many interested parties to the Meeting as a sign of growing commitment to the common goal of eliminating blinding trachoma. Activities among the parties to the Alliance were continually growing, and the Meeting gave an opportunity to strengthen WHO's collaboration with governmental and nongovernmental organizations, foundations, and the pharmaceutical industry. The Meeting would review progress reports on the implementation of activities from the representatives of participating countries; 29 countries presented their epidemiologic situation and activities carried out in the last year, out of the 46 countries known to have areas of blinding trachoma. He welcomed the participation of new country representatives from Egypt, Guinea, Malawi and Yemen, which would help to expand control activities, as well as the first report from Mexico. Intersectoral cooperation and community participation were being successfully implemented in more and more countries. That was crucial to achieving the necessary social and environmental changes, as trachoma were chiefly linked to poor living conditions and lack of education. The prevention of blindness from trachoma could only be achieved sustainably if all four pillars of the SAFE strategy were implemented as a whole. More operational research studies were needed on treatment strategies, social and behavioural change, and monitoring and evaluation procedures. The Meeting would put emphasis on the development of plans of action, especially at the regional level. It would also consider the integration of trachoma control activities within the framework of Vision 2020, with a view to the development of comprehensive eye care services integrated within national health systems. If countries were not able to face the new challenges presented by the world's ageing population, the number of the blind could double in the next 20 years.

1.2 Election of officers

Professor S. West (USA) was elected Chairperson and Dr Tun Aung Kyaw (Myanmar) Vice-Chairperson. Professor M. M. A. Homeida (Sudan) and Dr Chad MacArthur (Helen Keller Worldwide) were elected Rapporteurs.

Dr S. Resnikoff, Coordinator, Prevention of Blindness and Deafness, WHO, expressed the Organization's appreciation of Professor Ton Thi Kim Thanh's contribution as Chairperson of the Fifth Meeting in December 2000.

1.3 Adoption of the agenda

The provisional agenda was adopted without amendment (see Annex 1).

2. REPORTING OF ACTIVITIES UNDERTAKEN SINCE THE PREVIOUS MEETING

2.1 WHO Secretariat

Dr S. P. Mariotti (WHO) presented the activities of the WHO Prevention of Blindness and Deafness (PBD) team relating to the Alliance for the period 1 December 2000-1 November 2001. PBD provided technical assistance and support to India and Pakistan for national programme development, and participated in national planning workshops in Chad, Guinea, Mauritania and Senegal. The secretariat also participated in the following technical and other meetings organized within the Alliance framework:

- International Trachoma Initiative (ITI) technical expert committee (New York, NY, USA);
- Conrad N. Hilton Foundation - partnership development (Los Angeles, CA, USA);
- French Ministry of Foreign Affairs - partnership development (Paris).

The production and dissemination of documentation (Alliance reports, training manuals, guidelines, etc.) continued. *Preventing trachoma: a guide for environmental sanitation and improved hygiene* was printed and distributed in Chinese (5000 copies), while the *Guidelines for rapid assessment for blinding trachoma* was distributed in English; the French would follow shortly. The reports of the Alliance's Fourth and Fifth Meetings were printed and disseminated. PBD also developed a standardized country report form for submission to national coordinators for the collection of information on trachoma and related control activities and for updating of the data bank.

The implementation of trachoma rapid assessment studies was supported in Guinea, Myanmar and Pakistan through training of national staff in methodology, data management, reporting, and planning with the data obtained.

Information and coordination activities included: preparations for the present Meeting of the Alliance; preparations for the forthcoming Meeting on the Development of Guidelines for the Assessment of the Elimination of Blinding Trachoma; dissemination of information on the Alliance and the GET 2020 programme, and updating of the trachoma website (www.who.int/pbd/trachoma); establishing contacts with potential new Alliance members (countries, organizations and foundations); strengthening of information and communication systems, including a data retrieval system, an interactive global atlas of infectious

diseases on the WHO website, and a trachoma module (indicators and training) for the WHO health mapping management information system; collaboration for the assessment of the global burden of eye diseases, with publication planned for the second quarter of 2002; and the eye care component of an interactive project on the cost-effectiveness of health interventions (publication planned in 2002).

Among other activities, trachoma rapid assessment activities were planned, in collaboration with Alliance partners, in Guinea and Myanmar, though similar work in Pakistan was delayed. Work started on the development of culturally adapted curricula to foster and strengthen health education activities, community participation and basic sanitation, under a grant approved by the Hilton Foundation, in collaboration with Helen Keller Worldwide. Through the WHO country programme in the Lao People's Democratic Republic, PBD began the development of an educational game for children on the prevention of trachoma and other eye diseases.

2.2 Endemic countries members of the Alliance

2.2.1 *Algeria (Dr S. Siagh)*

Trachoma was studied during the colonial era (1830-1962) in Algeria, and WHO and UNICEF had begun a control campaign in 1956. A 1974 thesis on the epidemiology of trachoma in southern Algeria showed that high prevalence was directly related to four factors: low socioeconomic status; absence of running water in the household; inadequate wastewater evacuation systems; and crowded living conditions. Surveys in the period 1984-1990 indicated that trachoma had diminished since the 1950s in the 10 southern districts constituting the endemic belt. However, a Ministry of Public Health survey in schools in those districts in 1995 showed an overall prevalence of 26% and a 20% rate of active trachoma.

Algeria's 557 ophthalmologists (1999 data) - 113 public health ophthalmologists, 105 in university hospital centres, and 357 in private practice - are sufficient to tackle the problem, but they are poorly distributed within the country. There are also adequate numbers of health centres and other treatment facilities, while all districts and communes have disease prevention and school health services.

The Institute for Trachoma and Tropical Diseases has been reactivated, and a task force has been set up to undertake systematic surveys throughout the endemic belt to determine the real epidemiological situation in southern Algeria. Practically all towns in the south where surveys were undertaken previously now have drinking-water supply systems, and most have sewage systems.

2.2.2 *Australia (Professor H. R. Taylor)*

Australia is the only developed country that still has trachoma. The disease has largely disappeared in most of the population, but is still a public health concern among indigenous communities in desert regions of central and western Australia, where some 28% of the nearly 400 000 aboriginal and Torres Strait Islander people live. The prevalence of TF/TI, estimated from surveys in the 1990s in various aboriginal communities, ranges from 15% to 60%. A study in the Kimberley

region of Western Australia indicated a TT prevalence estimated at 3% among aboriginal people aged 50 and over.

Unlike other countries, Australia shows equal rates of trachoma in children and adults of both sexes. The populations concerned engage in subsistence farming, where poverty, lack of development and adverse environmental conditions favour the disease. The National Aboriginal and Torres Strait Islander Eye Health Programme - part of the Office for Aboriginal and Torres Strait Islander Health (OATSIH) - promotes WHO's SAFE strategy for trachoma control. Eye health coordinators are in place in all states (except Tasmania) and the Northern Territory. Ophthalmic equipment, ophthalmological services, training, guidelines, tetracycline and azithromycin, and environmental improvement programmes are being or will be provided. The coordination of activities and funding between federal, state and local governments and other stakeholders requires complex negotiations, and strong political will is essential.

2.2.3 *Burkina Faso (Dr B. B. Yoda)*

Trachoma is a public health problem in five regions of the country, with national prevalences of 26.9% (TF/TI), 8.4% (TS), 5.1% (TT) and 0.6% (CO) among its 10.3 million inhabitants.

Trachoma control has political support, within the framework of the National Blindness Prevention Programme for 2002-2006. The Government considers blinding trachoma a public health problem; changes in its control strategy are reflected in the 2002-2003 budget. A trachoma control programme is in preparation, and the Permanent Bureau for Trachoma Control is resuming activities.

In 1999, 537 trichiasis operations were performed; there were 110 operators, 64% of them in rural areas, and a further 15 were in training at the National School of Public Health. There is a shortage of drugs, surgical instruments and supplies, and many patients are unable to pay the Ministry's charge of US\$ 11 for an operation. Thus the 17 ophthalmologists and 80 ophthalmic nurses now available focus on other eye care work; they cannot do trichiasis surgery because they lack surgical kits. Campaigns by NGOs are likely to attract patients by offering treatment free of charge.

Also in 1999, 12 250 TF/TI cases were treated with antibiotics. Primary health care (PHC) workers are trained to identify and treat trachoma. Treatment is recorded, trachoma being registered as a separate entity. Tetracycline ointment is available in all PHC centres (at US\$0.3 per tube) and in all pharmacies. The cost of operating on 200 000 TT patients for trichiasis, at FF 46.75 /person, is estimated at FF 9 350 000, while the purchase, distribution and treatment cost of the estimated 2 400 000 TF/TI patients with tetracycline ointment would total FF 20 0160 000 (after identification of communities needing treatment). At the moment the financial resources available for trachoma control do not allow to provide all the needed drugs to endemic areas; training of eye care personnel (eye nurses and trichiasis surgeons) also require more resources but the Ministries' budget can not

be expanded to cover all needs. International support would be welcomed to fill the existing gaps.

Activities to promote the F component of the SAFE strategy in endemic areas include radio broadcasts, discussion groups and a school health programme conducted by Helen Keller International (HKI). For the E component, work includes maintenance of water supply points (communities); drilling of boreholes (NGOs and the Water Ministry); afforestation; and hygiene demonstrations. The training of community health workers includes personal and environmental hygiene.

Planning of the National Blindness Prevention Programme's activities involves the Directorate of Preventive Medicine, the Ministry of Communications, WHO, the Organisation pour la Prévention de la Cécité (OPC), HKI and the Association Bourkinabé pour la Promotion des Aveugles et Malvoyants ABPAM. Current partners include HKI (awareness raising and training), the European Union and OPC (training). OPC developed an action plan for a wide-ranging trachoma control project in Burkina Faso in 2001. Coordination at the national level requires improvement.

2.2.4 Cambodia (Dr U. Yutho)

Cambodia, with a population of 12 million, has a blindness prevalence of 1.2%. Among national indicators, only 36% of people have access to safe water, 14% to adequate sanitation, and 53% to health services. The scale of the trachoma problem is not known. Preliminary surveys show that the prevalence of TF/TI in children under 10 years of age is 2.5%, and 3.2% in children under 5. Surveys in the northwest of Cambodia found TT to be prevalent in women over 16 years. The first Trachoma Rapid Assessment, applying the WHO developed methodology, was carried out in 2000 with the technical assistance of WHO and support from HKI: it covered 16 803 people in 41 villages in three provinces. The overall percentage of children under 10 years with TF/TI was 2.9%, while 34.5% of children had dirty faces. The highest percentage (11.7%) was found in Thum village, Prey Veng province. Overall TT prevalence was 0.7%; the highest prevalence (3%) was recorded in Chheu Teal village, Svay Rieng province. After the assessment, 132 lid operations were performed in a surgical campaign, together with health education sessions and environmental improvement activities with community participation.

Water, sanitation and other issues were also addressed by a national micronutrient survey in 12 provinces, in which 30 mothers were interviewed per commune. The self-reported prevalence of trichiasis among mothers was 6.8% ($N = 15\ 104$); a mean of 505 communes per province had at least one case of trichiasis.

There is no official national trachoma control programme in Cambodia, but the national prevention of blindness Programme consider trachoma control as one of the priorities for its interventions. For this reason, trachoma control activities are being carried out, at all eye care levels. Control measures are based on the SAFE strategy. In surgery, the National Blindness Control Programme, in collaboration with HKI, established a mobile team led by Basic Eye Doctors at the district level. Trichiasis surgery using the bilamellar tarsal lid rotation procedure accounts for 2-

7% of all eye surgery at secondary centres. Training is being provided. Antibiotic treatment is provided by eye care centres in the provinces, and by health centre staff trained in primary eye care. Trachoma accounts for 4-7% of outpatient visits at secondary-level centres. Tetracycline ointment is the antibiotic of choice in the centres.

For the E and F components, activities are carried out at the community and health centre level; health centre staff provide eye health education as part of an integrated approach to primary eye care. School eye health activities have been carried out, and various NGOs screen pupils in some schools. Eye health education materials are being developed, and NGOs are involved with communities in digging boreholes and VIP latrines.

The Ministry of Health is implementing the National Primary Eye Care Programme in 10 provinces in collaboration with Helen Keller Worldwide, the Fred Hollows Foundation, Mekong Eye Doctors and HelpAge International. The training programme for health centre staff includes the diagnosis and treatment of trachoma and education on the prevention of eye diseases. Community health workers and volunteers are also being trained.

Trachoma remains a public health problem in Cambodia. The findings of the first trachoma rapid assessment could form the basis for a national trachoma control programme, indicating the priority districts for intervention. Further emphasis is needed on socioeconomic development, intersectoral collaboration and community participation.

2.2.5 Chad (Dr M. O. Madani)

Two epidemiologic surveys carried out the eastern and western region of Chad in 2000 and 2001 showed that the prevalence of active trachoma (TF/TI) among children aged <10 years was 29.7% in the east and 33.4% in the west. The prevalence of trichomatous trichiasis (TT) and corneal opacity (CO) among women aged >14 years was 1.1% and 1.7% in the east and 1.3% and 0.9% in the west. Bilateral loss of visual acuity attributable to trachoma was found among 0.3% of the women in the east and 0.6% in the west.

The surveys also gathered data on housing, water supplies, waste disposal, educational level and so on. The findings were considered representative of the country as a whole. When extrapolated to Chad's overall population of some 7.5 million, they indicate that 228 670 children aged <10 years have TF and 124 596 children have TI, i.e. a total of **353 260** children requiring antibiotic treatment. Among women aged >14, there would be **7382** cases of trichiasis requiring operations; in addition, there would be **5442** cases of CO and **2737** women already blind because of trachoma.

Because of the shortfall of trained staff for trichiasis surgery, at least 10 operators need to be trained each year, together with at least 20 village health workers and primary eye care staff. That training has begun.

Chad is grateful to the French Government, OPC, WHO and the Swiss Red Cross for all their help. However, to develop effective trachoma control within the

National Blindness Control Programme it needs more partners and additional flexible funding from WHO.

2.2.6 Ethiopia (Dr W. T. Mekuria)

Ethiopia has a population of some 65.3 million people, and trachoma is known to be a public health problem in all parts of the country and as such is recognized by the Ministry of Health.

National data from a country wide epidemiologic surveys are not available, as a national survey has been planned but not yet implemented, due to lack of financial resources; based on small-scale community surveys, the estimated prevalence of active trachoma is 45%, TS 80%, TT 3% and CO 0.4%.

The Government views blinding trachoma as a public health problem; the control programme, with a trachoma task force, is part of the country's National Programme for the Prevention of Blindness. Rural communities are actively involved in the implementation of all components of the SAFE strategy.

In 2001 there was an estimated backlog of 1 890 000 TT cases: 15 000 surgeries were performed. Of the 131 TT surgeons, 93.2% operate in rural areas; a further 6 were being trained. The national policy for health intervention is based on a cost-recovery system: when applied to TT surgery, the current cost of one intervention is US\$ 1-2. There is a severe shortage of surgical instruments, consumables and drugs to implement trachoma control. PHC workers are trained to recognize and refer TT cases.

According to estimates in 2000, there are more than 20 million TF/TI cases; the number treated is not known, as the referral system does not allow to obtain this data. PHC nurses are trained to recognize and treat TF/TI. Tetracycline ointment is available in most PHC centres and town and village pharmacies, at US\$ 0.25-0.50 per tube. Azithromycin is not available in rural pharmacies, though 300 000 doses are to be distributed by NGOs in three districts.

Activities for the F and E component of the SAFE strategy have included health education using posters and leaflets, the provision of safe water supply to schools and small communities with NGO support, and health education and demonstrations at schools by NGOs, Ministry of Health staff and teachers. Work on the E component involves also the construction of demonstration VIP latrines, slab production, health education on garbage disposal, latrine construction and general environmental health, and the production and distribution of fly swabs and traps.

Among achievements in the past year were a national workshop to design a national trachoma control strategy, the registration of azithromycin, and the establishment of a task force to coordinate NGO activities; the national launching of Vision 2020 is scheduled for December 2001, and is expected to provide substantial support to trachoma control activities. Major constraints at the moment include the shortages of TT surgeons, their equipment and antibiotics.

2.2.7 The Gambia (Mr M. Bah)

Trachoma remains a major cause of preventable blindness in the Gambia. The Department of State for Health has fully adopted the SAFE strategy. The first four-year programme for trachoma control (March 1997-March 2001) was evaluated in August 2001. It was found that the F and E components of the SAFE strategy are widely implemented; that there is effective intersectoral collaboration for those components; and that the Management Information System/Geographical Information System (MIS/GIS) is used to map and monitor control activities in all target communities, especially the S and A components.

The urban eye health programme is designed to meet the eye health needs of the marginalized urban poor. One community ophthalmic nurse is assigned to each of the five operational units, with populations of 40 000 - 70 000, in urban areas. Programme strategies are community sensitization through women's and youth groups, traditional communicators and municipal ward committees; school eye health, through a manual, training of teachers, and mass screening of schoolchildren; eye health messages, through TV spots and panel discussions; and an environmental cleaning exercise, with a competition for the cleanest ward.

Health ministers of the Gambia, Guinea, Guinea-Bissau and Senegal met in Banjul to discuss Vision 2020 and its inclusion in the Health for Peace Initiative. All the ministers signed a declaration and a declaration to support Vision 2020 - The Right to Sight initiative. The Gambia will coordinate this component of the Initiative; Gambian staff will work in the countries, following a regional and subregional approach, to transfer and gain skills.

Collaborative studies continued on flies and the eye, trachoma scarring, strategies for the control of blinding trachoma, trachoma re-emergence, and a randomized control trial of azithromycin following trichiasis surgery. The network set up by the Government for clearing, storing and distributing medical products is operational and will be used to distribute antibiotics.

Among achievements in the period January 2000-November 2001, 80% coverage was reached for primary eye care services; 1000 trichiasis operations were performed; and three community ophthalmic nurses were trained in community lid surgery. It is now proposed to develop a five-year action plan to finally eliminate all forms of blinding trachoma and active cases. The overall aim is to reduce the prevalence of trachoma to a level where it ceases to be of public health significance in any single community, through WHO's SAFE strategy. An epidemiological survey is planned for 2003 to measure the decrease in active disease.

Strategies for the S component include: the procurement of 30 Trabut sets, drugs and consumables; training of five lid surgeons per year; training of community-based workers to identify trichiasis and recruit patients for community lid surgery; procurement of two motorcycles per year; and performance of 500 trichiasis operations each year, with two trichiasis camps yearly.

For the A component, main strategies are: training of community-based workers in the identification and treatment of active cases; trachoma screening in villages and schools; use of azithromycin to treat active cases; dialogue with the International Trachoma Initiative (ITI) for the Gambia to be included in the azithromycin donation programme; height-based dosing where feasible; integration of azithromycin into the central medical store management and delivery system; and treatment of 40 000 active cases with azithromycin each year, the families of active cases also being treated. If more than three active cases are found in any community, the whole community is treated. Active registers are kept at district level and sentinel surveys will be conducted to evaluate height/weight dosage.

The F component follows a community-based approach, targeting mainly women, children and traditional communicators. Strategies include: launching and promotion of the Friends of the Eye Initiative; a multimedia campaign to promote face-washing among children; and involvement of the Department of Water Resources in providing water for highly endemic areas. Activities under the E component include the establishment of six divisional intersectoral committees for trachoma control; the mobilization of resources to support the construction of pit latrines in all hyperendemic settlements; mobilization of social groups to form groups for the village cleaning exercise; assistance to communities with sanitary equipment to facilitate the village cleaning exercise and refuse management; and mobilization of communities to provide animal enclosures. It is hoped that promotion of pit latrines will bring the cost (about US\$ 500) down so that their use can be extended. They have proved culturally acceptable, and communities that already use them wish to continue.

2.2.8 Ghana (Dr M. Hagan)

Blinding trachoma is most prevalent in the hot and dry areas of the northern part of Ghana. A trachoma rapid assessment (TRA) conducted in the Northern and Upper Western Regions in July 1999 identified cases of active trachoma and trichiasis and helped to prioritize endemic villages. In March/April 2000, the Carter Center assisted the National Trachoma Control Programme in conducting a prevalence study in 41 communities identified by the TRA in each of the two regions. Overall prevalences were 16.1% for TF/TI; 29.3% for TS; 8.4% for TT; and 0.5% for CO. The Carter Center also supported knowledge, attitude and practice studies in the two regions in 1999 and 2000 through household surveys, focus group discussions, and community observations.

A new manager of the Trachoma Control Programme was appointed in January 2001. The programme is making progress in all components of the SAFE strategy. National, regional and district task forces are in place. The programme has trained 10 ophthalmic nurses as community-based TT surgeons. Trachoma surgical instruments have been donated by Christoffel Blindenmission and the Swiss Red Cross. In 2000, 150 surgeries were performed, while in 2001, 350 TT surgeries have been conducted so far out of 500 registered cases; the number of surgical interventions will be increased in 2002.

ITI approved Ghana's application for supplies of azithromycin in April 2000, thus making 2 640 000 tablets and 176 000 ml of Pfizer-donated Zithromax[®] available. Distribution took place in five districts in July-September 2001. In a target population of 92 000 people in 206 endemic villages, 77% were treated. Of a further target population of 8000 needing treatment with tetracycline ointment, 89% were treated. Dosing schedules are based on height, not weight. Of the endemic communities, 59% are estimated have access to potable water, while only 2% have access to covered latrines.

In January 2001, a health education strategy workshop based on the KAP study findings was held. Health messages have been developed and tested for all components of the SAFE strategy, with the assistance of the Carter Center and BBC World Service Trust through a grant from ITI.

The messages are disseminated in endemic communities using educational materials and video shows, and elsewhere through newspaper articles and TV and radio discussions with phone-in facilities. The health education campaign was launched in July 2001 in conjunction with the antibiotic distribution campaign.

Other planned Trachoma Control Programme activities include the distribution of antibiotics to communities not fully reached, further assessment to identify more endemic communities in project districts for treatment in 2002, and a programme review meeting in December 2001.

2.2.9 Kenya (Dr J. K. A. Limo)

Kenya's population is estimated at 28.7 million, 66% of it rural. Of the country's 73 districts, 18 mainly semi-arid districts have trachoma. There are 50 ophthalmologists - only 11 of them active in rural areas - and 70 ophthalmic clinical officers. Trachoma, which is responsible for some 15% of cases of blindness, is considered a public health problem. Estimated prevalences in 2000, based on hospital and health centre data, were: TF/TI, 30%; TS, 30%; TT, 24%; and CO, 16%.

Planned activities include: the introduction of trachoma eye care into PHC through the National Prevention of Blindness Committee (NPBC), with the support of AMREF; training of community health workers in primary eye care; trachoma rapid assessment in 10 districts; and training of ophthalmic nurses in trachoma surgery. Major achievements have been the distribution of tetracycline eye ointment to all government health centres, and the establishment of a subcommittee (task force) to deal with trachoma issues in the NPBC.

2.2.10 Lao People's Democratic Republic (Dr V. Visonnavong)

The country plans to continue implementing trachoma control until it is no longer a public health problem. Trachoma control, and eye care in general, are being integrated into PHC to prevent blindness, with multidisciplinary participation.

Current objectives are to: prepare a communication strategy for information, education and communication (IEC); promote facial cleanliness among mothers and children; ensure coordination with agencies active in environmental sanitation and latrine construction; ensure coordination in the distribution of tetracycline eye ointment in priority communities and undertake operational research to identify the best means of intervention and evaluation. The national programme gives top priority to human resources development, to meet shortfalls in the numbers of both surgeons and assistants.

Among activities during the past year within the SAFE strategy, the Institut de la Francophonie pour les Maladies tropicales organized a teaching workshop, both to train teachers and to identify educational objectives for the training of physicians responsible for curative medicine in health districts. Belgian Technical Cooperation provided one-day training in the rapid diagnosis of trachoma for commune and district primary eye care workers. The project focused on environmental improvement, trichiasis surgery and antibiotic treatment for active trachoma, face-cleaning and hygiene education. The preparation of communal action plans for trachoma control was then organized; each commune drew up its own action plan, which it is now implementing.

As to the production of information and educational materials, 10 000 posters on primary eye care were produced in Lao and distributed by the Sight First project. Belgian Technical Cooperation provided folding maps with health messages for the prevention of trachoma. In addition, the WHO representative's office in Vientiane prepared 185 copies of a trachoma educational game, 1800 books for schoolchildren and 200 books for teachers on trachoma control for 37 village primary schools.

Among the difficulties encountered, the SAFE strategy is new to the health workers who must implement it; they lack updated information on the new strategy for primary eye care and trachoma control. Moreover, patients with trichiasis are reluctant to be operated on.

Priorities for the next two years include implementation of a TRA in the central and southern provinces of the country; health education; improvements in safe water supplies and use of latrines; ultimate target is the reduction of the prevalence of TF/TI among children and adults.

2.2.11 Mali (Dr D. Sacko)

Numerous trachoma control activities have been conducted since December 2000, all based on the SAFE strategy. The Government's efforts have been accompanied by support from a range of partners. Mali is committed to eliminating blinding trachoma by 2020. To provide an institutional framework for interventions, a draft medium-term strategic plan for trachoma control was prepared for the period 2001-2005. The National Trachoma Control Committee met in May 2001.

Trichiasis surgery has not expanded appreciably. Of the 2000 operations (less than 5% of cases) between 1 October 2000 and 30 September 2001, 600 were at the African Institute of Tropical Ophthalmology (IOTA, Bamako) and 1400 at 17

other ophthalmological centres and departments. Strategies to increase the number of operations have included the training of lid surgeons and a three-day workshop on micro-planning for trichiasis surgery attended by regional and local health staff, heads of ophthalmological units, and the partners involved in blindness control. The workshop prepared a micro-plan designed to improve trichiasis case management.

Mali was one of the first five countries selected to receive azithromycin under the International Trachoma Initiative. It received its first donation of some 200 000 doses in January 2001. These were distributed in two health districts using a mass distribution strategy focusing on children aged 1-5 years and non-pregnant women aged over 14.

In communities where onchocerciasis control is ongoing, the person already distributing ivermectin also distributed azithromycin, in order to integrate, at field level, the two control/elimination activities and check the feasibility of this integration before further expanding this strategy. Some 1100 distributors were trained in 433 villages with a population of 500 000. A total of 190 000 persons were treated with azithromycin and 45 000 with tetracycline ointment in Kati and Kangaba districts. A second azithromycin donation received in July 2001 is being distributed in Bandiagara (Mopti region), with the help of Médecins sans Frontières-Luxembourg, and Kolokani (Koulikoro region).

Activities to integrate trachoma care into the minimum PHC package continue. As part of UNICEF cooperation in northern Mali a National Blindness Prevention Programme (NBPP) mission introduced the SAFE strategy, health and welfare workers were trained in trachoma control, and a plan of action was drawn up.

For the F and E components, activities are based on IEC. A workshop on the national IEC strategy for trachoma control led by a Moroccan consultant was held in December 2000. A communication plan has been drawn up and new educational material has been made available. Some 40 trainers of the users of IEC material have been trained and in turn trained some 700 users in Koulikoro and Ségou regions. Each of the users will convey IEC messages in a community of 15 000-20 000 people. The NBPP's school health programme has been developed in collaboration with Helen Keller International, and its first phase implemented in Bougouni (Sikasso region) and Kita (Kayes region) districts, where teachers have been trained in the SAFE strategy. Communication days have been held in schools.

The head of trachoma control for Orbis International in Ethiopia, Dr Wondu, made a study trip to see the trachoma programme in Mali and visited the complete azithromycin distribution circuit. As part of its monitoring and evaluation activities, the programme decided to conduct an annual opinion poll in five regions. Together with its partners in blindness prevention, the NBPP celebrated World Sight Day on 11 October 2001, and organized a national blindness prevention week under the slogan "Together, let's eliminate trachoma in Mali".

Future plans include the finalization of the national strategic trachoma control plan; implementation of the micro-plan for trichiasis surgery in all regions; better availability and use of tetracycline ointment throughout Mali; an increase in

azithromycin distribution from 200 000 to 750 000 persons; and implementation of the national IEC strategy for trachoma, expansion of the school health/trachoma project, and advocacy for water supply, hygiene and environmental health.

2.2.12 Mauritania (Professor S. E. Ahmedou)

At the request of the Ministry of Health and Welfare, within the framework of the GET 2020 Alliance, a planning workshop for the elimination of blinding trachoma was held in Nouakchott from 11 to 14 February 2001 with the support of the French Government and WHO's technical assistance. The workshop, attended by some 50 participants representing the different actors involved, prepared for the introduction of the SAFE strategy over a three-year period. Implementation of the plan of action has met with some delays, and some modifications have proved necessary because expected resources are lacking. For the training of senior ophthalmological technicians and trainer-nurses from the northern regions - the worst affected - in the S and A elements of the strategy, WHO, through the Organisation pour la Prévention de la Cécité, made a grant of US\$ 11 300 available.

The training was organized for a group of health workers in the four regions, from June to September 2001. In each region, a technician and a nurse were given practical training in trichiasis surgery. Subjects covered were: the epidemiology, clinical evolution and complications of trachomatous disease; prevention of trachoma (F and E); treatment of active trachoma (TF/TI) (A); how to conduct an information campaign and who to target; and trachomatous trichiasis and the Trabut method (S). On completion of the training, each team was issued with four trichiasis surgery kits, sufficient consumables for 100 operations, an initial supply of 5000 tubes of aureomycin ointment, and educational posters on trachoma prevention.

With regard to social mobilization, NGOs active in Nouakchott were asked to take part in campaigns to promote the education and sanitation elements (F and E) with a view to integrated activities in the future. It has proved difficult to change the behaviour of bedouins rooted in their own ways of life. In seminars at Nouakchott, the regional departments of health and welfare were told that planned activities would continue, though they would be delayed for lack of resources. Four two-hour educational radio programmes were broadcast, and a sanitation campaign was held at a cattle market and slaughterhouse in Nouakchott in October 2001.

Missions in November 2001, after the start of the school year, were planned in the towns of Akjouit (Inchiri region) and Atar (Adrar), and in Nouadhibou (Dakhlet Nouadhibou) and Zoueratt (Tiris Zermour). The objectives were to: evaluate the surgical activities of the regional teams and supply them with consumables as necessary; prepare for regional training activities; set up regional trachoma control committees; and establish regional policies for the distribution of tetracycline ointment.

2.2.13 Morocco (Dr S. P. Mariotti for Dr Y. Chami Khazraji)

In 2000, the National Blindness Prevention Programme and the International Trachoma Initiative, with WHO's technical support, drew up a comprehensive plan for the evaluation of the process of trachoma elimination in Morocco in accordance with the SAFE strategy. The objectives were to monitor progress, provide political decision-makers with necessary information, and formulate strategies and approaches appropriate to the field situation.

In May 2001, a cross-sectional (prevalence) survey was carried out in the five endemic provinces to measure the epidemiological trend and the short-term effects of control activities. The target populations and selected indicators were children aged <10 years (prevalence of TF) and women aged 15 years and above (prevalence of TT). Sampling was based on full lists of localities, in rural communes and in urban areas. The first tier of the sample consisted of randomly selected localities; the second tier of households within those localities. Participation rates exceeded 90%.

The results for TF and TI in children under 10 years and TT in women aged >14 in the five provinces were: Errachidia, 9.4% 1.6% and 2.4%; Figuig, 0.1%, 0% and 1.3%; Ouarzazate, 0.7%, 0.05% and 0.3%; Tata, 5.2%, 0.6% and 2.5%; and Zagora, 22.1%, 1.3% and 4.0%. TF and TI prevalences continued to decline from their 1997 and 1999 survey levels. TS, TT and CO rates in some cases rose from their 1997 levels in 1999, but fell again in 2001, reflecting the more sensitive survey methods introduced between 1997 and 1999. Control targets for TF and TI in children aged <5 years were broadly achieved or exceeded, except in Tata province, where rates of 7.5% for TT (target <5%) and 1.3% for TI (target 0%) persisted. For TT among women aged >14, the ambitious target of a 75% reduction in all provinces was not achieved; observed reductions varied between 17.2% and 62.5%. Because the Moroccan trachoma control programme regularly captures data on environmental sanitation, it should be possible to derive correlations between the 2001 survey results and hygiene behaviour.

2.2.14 Mozambique (Dr N. P. Dos Santos Fumo)

A trachoma prevalence survey was carried out in a cluster sample of 24 zones in three districts in Manica province in July 2001. The participants were a Helen Keller trachoma consultant (coordinator), two Mozambican ophthalmologists, and four ophthalmic assistants. During the 17 days of the study, 8893 people (87% of the population) were examined, 54% of them female and 46% male. The first objective was to assess the prevalence of all stages of trachoma in the districts of Guro, Macossa and Tambara. The indicators selected were: TF/TI in children aged 1-6 years; TS in persons aged 10-20 years; TT in persons aged 40 years and older; and TT in women aged 40-50 years. In addition, swabs were collected from a random sample of 100 children aged 7 years or less for ligase chain reaction (LCR) testing to confirm the presence of *C. trachomatis* in the communities. All people found with active trachoma were given two tubes of tetracycline eye ointment. A Magellan 330 Global Positioning System was used to record the longitude and latitude of each zone for linking to the WHO global database.

Overall prevalence of TF/TI among the 2161 children aged 1-5 years examined was 40%, the rate increasing with age from 27% to 46%. Among all age groups, 2919 (33%) of the 8893 people had TF/TI, the rate declining with age after the preschool years. In people aged 10-20 years (2255 people) and >20 years (3255 people), the rates of TS were 5% and 19%. TS prevalence gradually increased by age group, from 1% in the 1-5 year age group to 36% in people aged 51 and over. In total, 781 (9%) of the 8893 people had TS.

Of the 1279 people aged 40 years and over, 4% had TT, as against 0.2% of the 7614 people aged <40. In women aged 40-50 years, 3% had TT; in those aged 51 and over, the rate was 8%. Men were at significantly lower risk of TT; the equivalent rates for the two age groups were 0.9% and 4%. The overall prevalence of TT among all people examined was 0.7%, with a CO rate of 0.3%.

The LCR test results confirmed the presence of *C. trachomatis*; 90% of the specimens were positive. Geographical coordinates were obtained for 14 of the 24 zones.

The findings show the need to implement programmes in accordance with the SAFE strategy in order to address the high trachoma prevalence, including both preventive and curative measures. Preventive educational strategies should target young women, who are at high risk of developing multiple signs of trachoma and advancing to the severe stages. Political support needs to be secured for trachoma prevention and treatment from various sectors and at various levels. Health staff working at district level and in health facilities should be trained in basic eye care and trachoma prevention and treatment.

2.2.15 Myanmar (Dr Tun Aung Kyaw)

The trachoma control programme in Myanmar has been in operation for 36 years and has been integrated into general eye care and PHC since 1970. Its sound administrative structure, with good surveillance and reporting, has led to progress in very difficult environmental conditions.

The national policy for trachoma control and elimination is based on the WHO-recommended SAFE strategy.

With regard to the S component of "SAFE", in 2000 a total of 2316 cases of trichiasis were seen, and 1917 surgical operations were conducted. Thus only 82% of patients had operations, because of either fear (to be countered by health education and awareness campaigns) or financial constraints (the cost needs to be affordable). The recurrence rate 10 years after surgery is about 20%; the bilamellar tarsal rotation technique is being used for both normal and recurrent cases, with good results,

For the "A" component, a total of 6118 people with TF/TI were treated with tetracycline eye ointment, together with some 25 000 family members. Supplies of ointment are not available in necessary quantities, and non-compliance with treatment can sometimes be a problem. One solution adopted to counter this is for

teachers and senior pupils to apply ointment to schoolchildren just before school and just before the closing bell at the end of the day. This method has proven, through the years, to be very effective, as school attendance is high even in rural and mountain areas. Antibiotics were distributed in 793 villages by field teams, 142 villages by ophthalmologists, and 533 schools.

For the F and E components, 675 trachoma-endemic communities were given health education on facial cleanliness. Children need to be approached when they are young, so to root in them healthy behaviours. Teachers and senior pupils can help in health promotion activities. Schools need a healthy environment with a clean water supply, a tube well - which is less expensive than antibiotic treatment - and regular delivery of school eye health services. Individual and group environmental improvements could be introduced in the home, school or village, and cover such measures as latrines, fly traps and clean water supply. On a larger scale, the Government and NGOs could deal with clean water supply, ponds, tube wells, irrigation, and greening or firewood substitute projects.

Prevalence rates for schoolchildren and for the community as a whole in nine districts were as follows: TF/TI, 3.2% and 1.33%; TS, 0.7% and 0.71%; TT, 0.004% and 0.46%; and CO, 0.004% and 0.05%. Pending different instructions and recommendations from WHO, Trachoma will be considered eliminated as a public health problem if those prevalences reach the following levels: TF/TI, <1% in children under 14 years of age; TS, <0.1% in both sexes in all age groups; TT, <0.05% in women aged 35 or more years; CO, <0.01% in women aged 35 or more years.

The factors that influence the prevalence, intensity and gravity of the disease serve as general indicators: the availability of a clean water supply in schools and villages; the presence and utilization of fly-proof latrines in villages; and the proportion of clean faces in the child population.

2.2.16 Nepal (Dr C. R. Pant)

Trachoma is the second leading cause of avoidable blindness in Nepal, but had low priority until the launching of WHO's GET 2020 initiative. House-to-house searches for trachoma and its sequelae were conducted in the 1980s, and cases were given appropriate treatment, including surgery. Such campaigns, organized as camps, were held annually in the hyperendemic districts of Kailali and Kanchanpur. A formal trachoma control programme was established in the districts of Bardia, Banke and Kailali between 1990 and 1995. Mobile surgical camps were held after a number of trichiasis/entropion (T/E) cases had been identified. The findings of a survey in 1996 were compared with those of the 1981 national blindness survey. In eye hospitals and clinics, 728 (45%) of 1604 T/E cases had operations in 1997, and 939 (77%) out of 1224 cases in 1998. Various organizations conducted a total of 43 eye camps in 1998: cases received medical or surgical treatment.

Since 1998, Nepal Netra Jyoti Sangh (NNJS) and Helen Keller International (HKI) have taken the initiative to reduce trachoma prevalence to an acceptable level, mobilizing existing health workers and local volunteers in accordance with WHO's

SAFE strategy. Activities have included a survey in 2000, the training of PHC staff and schoolteachers (in hygiene promotion), tetracycline ointment distribution, health education, and mobile surgical camps. A National Trachoma Task Force Committee (NTTC) was formed in 1999 and an Apex Body for Eye Health was established under the Ministry of Health in 2000.

Other major steps have included the preparation of a draft National Plan of Action for Eye Care Services in Nepal (Strategic Plans for 2002-2019) in the context of Vision 2020 initiative by the Apex Body for Eye Health in September 2001; the plan includes a section on trachoma blindness prevention and control. In July 2001, HKI prepared a report on a trachoma prevalence survey in Chitwan and Nawalparasi, with funding from Pfizer Inc. pharmaceutical company, as part of a trachoma reduction and control programme. After HKI reduced its involvement in trachoma control activities in Nepal, a conceptual framework has been developed for new NNJS initiatives in collaboration with ITI; figures for nine districts indicate that the trichiasis surgery backlog is estimated at 20203 cases, while the number of children under 10 years of age needing treatment with Pfizer-donated azithromycin are 740 507.

Further technical and financial support is needed from partners in the WHO GET2020 Alliance.

2.2.17 Niger (Dr A. Amza)

A recent national epidemiological survey showed an overall prevalence of 36.4% for TF/TI and 1.7% for TT in Niger's 10.2 million population. Trachoma is the second leading cause of blindness after cataract. The capital, Niamey, and the country's seven regions are all concerned, particularly Zinder, Diffa and Maradi; in Zinder, 62.7% of children aged <10 years have TF/TI, while 4.1% of women aged 14 and over have TT. Control activities focused on Zinder and Diffa in 2001. Staff were trained as trichiasis operators and community workers were trained in IEC. Teachers and marabouts were also trained in trachoma screening, prevention and treatment. Pilot school health projects were run in four areas.

Human resources are not yet sufficient in Niger to face the epidemic: all national eye care system include 7 ophthalmologists, 20 ophthalmic nurse specialists, 107 trichiasis operators, 25 hygiene and sanitation workers; to these 200 teachers, 95 marabouts, and 400 community workers trained in trachoma management constitute additional resources to fight the disease. The infrastructure consists of 3 national hospitals, 5 regional hospital centres, 9 district hospitals, and 50 integrated health centres. A trachoma control committee was set up in 1998.

Activities for the S and A component of the WHO-recommended SAFE strategy, that is the national strategy adopted in Niger, an estimated 68 300 people need trichiasis surgery, and some 5000 operations were performed in 2001 to reverse trichiasis. In health centres a cost recovery system is implemented, and the cost per trichiasis operation is US\$ 1.30 to 4.66; operations at mobile clinics are free. Persons with TF/TI - estimated in 2000 at 1 321 468 - are treated with tetracycline ointment, which costs 30-60 US cents per tube. Azithromycin donated by Pfizer

Inc. will be available from January 2002 through ITI; 100 000 doses will be distributed with a community-based system in Magaria and Matameye (Zinder). For the F and E components of the SAFE strategy, activities include the promotion of facial-cleanliness and sanitation, and provision of safe drinking water. Operational research on how to make this available to the populations in need is under way in Zinder, Diffa and Maradi regions.

The country receives international cooperation from foundations and NGOs. A number of them are represented on the Trachoma Task Force, which guides the trachoma control programme as part of the National Blindness Prevention Programme. Central supervision is supported by Helen Keller International and the Carter Center, with local supervision from regional and district health authorities, the chief ophthalmologist at Zinder hospital, health communicators, and NGOs.

Future plans include the extension of control activities to Maradi, with the training of trichiasis operators and community workers; the distribution of azithromycin and follow-up; and the strengthening of training of operators, teachers, community workers and marabouts in all regions.

2.2.18 Nigeria (Dr D. I. Apiafi)

Nigeria does not have a national trachoma control programme, and national data on trachoma prevalence are not available. Available data concern only limited geographical areas.

A survey in Borno state indicated rates of >20% for active trachoma (TF/TI) in children aged under 10 years and >15% for TT in women aged 15 years or more.

A 1999 survey in 15 randomly selected villages in Katsina state showed that the prevalence of blindness was 1.5%, trachoma accounting for 20% of the total; TF/TI prevalence in children aged 0-15 years was 11.8%, while TT prevalence among women aged >15 years was >8.6%.

In 2001, Helen Keller International (HKI) and the Carter Center conducted a survey in 30 villages in Adamawa state, during which 4986 persons were examined. Out of 1234 children aged 1-5 years, 5.2% had TF/TI. Among 577 young people (male and female) aged 10-19 years, 0.7% had TS. TT prevalence among 407 men and women aged >40 years was 2.0%, or 8 people, all of them women. The prevalence of TT among 327 women aged 40-50 years was 1.5% (5 people).

The country endorses the WHO-defined SAFE strategy, but no plan of action for its implementation has yet been adopted, though the need was recognized during a workshop held in June 2001 to develop a plan of action for Vision 2020. Given the scarcity of available resources and the opportunity to piggyback on ongoing programmes, it is considered acceptable that trachoma control activities should begin with the F and E components of the SAFE strategy.

Apart from the community surveys by HKI and the Carter Center, Sight Savers International (SSI) has shown interest in conducting trachoma rapid assessment (TRA) based on the WHO guidelines in the states of Kebbi, Kwara, Sokoto and

Zamfara. A meeting of all international NGOs working on blindness prevention activities in Nigeria was rescheduled to late November 2001 following civil unrest. Meanwhile, free tetracycline ointment distribution has begun in conjunction with ivermectin distribution in states where SSI is working, and distribution is also to be integrated into National Immunization Programme days. Free lid surgery for women identified by HKI as having TT is scheduled for December 2001.

Nigeria will soon produce its five-year action plan for Vision 2020, which will cover trachoma control. As the country expands into the S and A components of the SAFE strategy, it is hoped that ITI will consider it for azithromycin donations and that other organizations will offer technical or financial support.

2.2.19 Oman (Dr A. H. J. Al Lawati)

A national survey of blindness and trachoma in Oman in 1996-1997 in collaboration with WHO showed an active trachoma prevalence of 2.2%; Dhakhiliya region had the highest prevalence, at 4.7%. Schoolchildren in the first primary class (aged 6-7 years) have been screened and treated for trachoma since 1992. However, because two-thirds of the active trachoma pool is among adults, it was considered that surveillance of cases among the children might not be sufficient, and that trachoma activities should also cover adults. A study was therefore undertaken in Nizwa district, Dhakhiliya region, to examine the role that surveillance of active trachoma through health facilities might play in addition to case-finding and contact tracing through school health programmes.

The study population consisted of all cases of active trachoma reported by ophthalmologists at Nizwa Extended Health Centre (EHC) between 1 July and 30 September 2000 and their contacts in the community. Treatment was offered free of cost to all cases and their family members. The active trachoma cases were notified to the regional eye care supervisors, who conducted home visits to all cases within two weeks, providing prophylactic treatment to household members and health education on eye hygiene. Cases were followed up after 1, 4 and 8 weeks by an ophthalmologist, and again after 6 months.

During the study period, 52 patients with active trachoma were seen at Nizwa EHC, of whom 49 were enrolled for the study. The houses of all 49 cases were visited, and 437 family contacts were examined. Of the cases detected at Nizwa EHC, only 8 (16%) were aged less than 10 years. More than half were aged 10-19 years; the remaining third were aged 20-39. The small percentage of patients aged <10 years could be the result of current trachoma control activities, or of the children's improved lifestyles. However, the high percentage of older school-going children aged 10-19 with active trachoma is a matter of concern, and extension of interventions to senior classes may be advisable.

Only two (4.1%) of the patients who visited Nizwa EHC with active trachoma were in the first primary class age group, the remaining 95.9% of cases being in other age groups. Thus the health centre approach enabled pockets of trachoma infection in the community to be detected that would have been missed using only the school approach. Among the household contacts, 26 schoolchildren in the first primary class did not have active trachoma but one of their family members was

infected. Because the family members were not covered by the school approach, the children were at risk for trachoma and could be a source of infection for other schoolchildren, thus continuing the cycle of infection.

It was concluded that surveillance of active trachoma can usefully complement current control activities by identifying new pockets of trachoma in the community. The approach will be extended to all districts; treatment of cases, prophylaxis and health education will be provided when pockets are found.

2.2.20 Pakistan (Professor M. D. Khan)

Pakistan's population of 140 million is 62% rural, with a 1988-1989 blindness prevalence of 1.78%. A national anecdotal rapid assessment on trachoma in 1997 indicated prevalences of 2.4% for TF/TI and 1.6% for TT. On 26 February 2001, at Pakistan's launch of Vision 2020, the Federal Minister of Health pledged to support GET 2020. Trachoma rapid assessment (TRA) is now under way, with the assistance of WHO, Sight Savers International, Christoffel-Blindenmission, the Fred Hollows Foundation and the Ministry of Health.

The terms of reference of the new National Trachoma Task Force set up in July 2001 by the Government are:

- to determine prevalence and incidence at the national level;
- to identify high-risk communities and groups;
- to develop and present intervention and implementation strategies; and
- to approve an action plan and implement it through the provincial committees.

The Task Force held its first meeting in August 2001, to review developments in trachoma, impart essential TRA knowledge and skills to all participants in accordance with WHO guidelines, and arrange the field-testing of the TRA strategy and forms.

An action plan was formulated at the meeting providing for preliminary assessment by 15 September 2001; TRA fieldwork from 15 September to 30 October, data entry and analysis by 30 November, and submission of a report to WHO by 30 December. A budget of US\$ 30 568 was approved (WHO, US\$ 15 000; Sight Savers International, US\$ 15 568). The preliminary assessment was undertaken to identify the communities with blinding trachoma, based on anecdotal and documentary evidence. Rapid assessment followed in the communities identified. WHO's standard guidelines for TRA were applied, using standard proformas. Data were entered first by the provincial eye cells, and then by the Pakistani Institute of Community Ophthalmology.

In total, 231 communities were examined in Sind, Punjab, Baluchistan, North-West Frontier Province and the Northern Areas, with some unexpected findings. Areas requiring TT and active trachoma interventions were mapped and ranked as high, medium or low priority, and structures for policy-making, implementation and coordination with other sectors and NGOs were worked out. Analysis of the validated data and report writing are scheduled for December 2001, together with the preparation of an intervention plan. The trachoma control programme is to be

integrated with the National Eye Care Programme. Pakistan makes both tetracycline and azithromycin.

2.2.21 Senegal (Dr M. B. Sall)

A national survey showed that the mean prevalence of active trachoma in children aged 0-10 years is 10.8%, while the rates of TT and CO in women aged >14 years are 2.6% and 1.4%. Thus some 372 000 children aged < 11 years require antibiotic treatment, while an estimated 91 500 trichiasis operations are needed.

In February 2001, a meeting funded by the World Health Organization through the Organisation pour la Prévention de la Cécité (OPC) was held to review the findings of the national trachoma prevalence survey. The 35 participants included representatives of the Gambia, WHO, UNICEF and OPC; the Ministries of Water Resources and Communications and the National Health Education Service; and regional chief medical officers. The meeting recommended: the creation of a multisectoral committee to guide the trachoma control programme; advocacy for trachoma control with the Ministry of Health and other sectors and partners; involvement of regional and district health teams; introduction of free medical and surgical care for trachoma; operational research to optimize trachoma control; and emphasis on South-South cooperation to draw on the experience of African countries that have taken major steps forward in trachoma control (e.g., the Gambia and Morocco).

Another initiative pursued in 2001 was training in primary eye care, with the overall objective of training all regional and district health teams, head nurses of health centres and midwives over a three-year period. Head nurses and midwives are being trained and equipped to recognize, treat and, if necessary, refer the main blinding conditions. Secondly, the primary level will be enabled to handle the prevention of avoidable blindness, mainly trachoma, by the training of relays who can convey health education messages. Thirdly, regional and district health teams are being trained in improved supervision of structures at the operational (primary) level. The training covers basic anatomy, simple pathology of the eye and addenda, and prevention of the three leading causes of blindness in Senegal - cataract, trachoma and glaucoma. By 1 November 2001, some 400 head nurses of health posts and midwives had been trained at five-day seminars in several health districts. Training had also been given to 150 doctors and senior technicians. After being trained, the head nurses will use community health workers as relays for prevention and IEC, principally for cataract and trachoma.

For the S component of the SAFE strategy, eight head nurses of health posts in Diourbel region were trained in primary eye care and trichiasis surgery, and were given trichiasis operating kits. Eight centres were given trichiasis kits, and 466 operations were conducted in the first half of 2001. Further resources and equipment are needed to enable staff trained in surgery to function fully, and treatment needs to be free. For the A component, tetracycline ointment was distributed in Diourbel, Thiès and Louga regions. Management of the F and E components calls for concerted multisectoral action, NGO support, and political will to fight poverty in all sectors.

The trachoma programme has political backing and has gained some impetus thanks to WHO and OPC support. However, it needs additional support for the coordination with other MOH sectors and organizations to implement the F and E components of SAFE.

2.2.22 Sudan (Professor M. M. A. Homeida)

Sudan continues to be divided by war, and health systems have suffered. Efforts to build a trachoma control programme are being supported by Global 2000/The Carter Center. Studies in two pilot areas, Malakal in the south and Halfa in the north, have shown that the prevalence of active trachoma is very high, though the burden in the country as a whole is not known. A national survey was completed in 12 states (10 served by the Government and 2 others). The results are being analysed, and will be discussed at a workshop in February 2002 - supported by Chirstoffel Blindenmission - on trachoma and other causes of blindness.

Ideally, work should go ahead on all four components of the SAFE strategy. However, surgical work has been greatly hampered by insecurity and lack of resources. A team in Juba, south Sudan, is aiming to perform 400 operations in 2001, mainly for cataract and trachoma. A generous donation of 100 000 doses of azithromycin from the International Trachoma Initiative has been used in Halfa and Malakal. As part of a health education campaign, women activists have been trained in trachoma control and gone back to their villages to educate their communities in facial cleanliness. Water supplies have been improved by 25% in Malakal, while more water has been fetched for face washing in Halfa.

The authorities recognize that blindness is a priority, and the National Trachoma Task Force is part of the National Blindness Control Programme. However, trachoma control has proved very difficult to implement in the south, where conditions are not secure and access is often not possible. Without Government support, and with few NGOs, funding there is equally difficult. Once the prevalence survey has been analysed and a national plan completed, it is hoped that more NGOs will be attracted and that the programme will be ready to move forward when peace is achieved.

2.2.23 United Republic of Tanzania (Dr S. Katenga)

A survey in central Tanzania in 2000 indicated prevalences of 46.5%-54.5% for TF/TI, 20% for TS, 7.6% for TT, and 0.5% for CO. The launching of the national plan to control blinding trachoma was attended by all relevant ministries. The national trachoma control programme is run by the Ministry of Health in partnership with NGOs. Communities are involved in all components of the SAFE strategy.

Of an estimated 5000 TT cases, 1201 were operated on between January and June 2001. There are 35 TT surgeons, 90% of them in rural areas. Except in ITI-supported programme districts (9 out of 50 trachoma-endemic districts), there is

a lack of surgical instruments, consumables and drugs. Surgery is free when performed in the communities, but costs US\$ 0.30 in health facilities.

There were some 105 600 TF/TT cases in the country in 2001, of whom 84 480 were treated. Azithromycin is not distributed by ivermectin distributors already working with the onchocerciasis control programme, as the distribution mechanism is quite different. Tetracycline is widely available at US\$ 0.10 a tube; azithromycin is not generally available. It is hoped to expand control activities from the Iringa region in 2002. ITI has agreed to provide azithromycin.

For the F component, activities supported by ITI included radio promotional spots, a book for schoolchildren on the SAFE strategy, and promotional songs in communities. The E component comprised radio spots on the use of latrines, the children's book, and songs. The list of partners for the F and E components includes relevant ministries and departments, ITI, Helen Keller International, WaterAid and Rotary.

2.2.24 Viet Nam (Professor T. K. T. Ton)

Viet Nam's Trachoma Control Programme benefits from the experience gained over the past four decades and the presence of an effective health network at all levels. On the other hand, trachoma is unevenly distributed throughout the country; there is a large backlog of TT cases for operation; people's level of awareness of trachoma and hygiene is low, so that their participation in control is limited; programme management structures, especially the integration of treatment and prevention activities, are unclear; and the capacity of health workers at grassroots level is low, notably their IEC skills. Thus stronger political commitment to the goal of eliminating trachoma by 2010 is needed, together with better coordination among all partners. Organizational structures and working procedures need to be improved, community management and participation should be improved to ensure sustainability, and a surveillance system needs to be established.

The general objectives of the Trachoma Control Programme are to eliminate trachoma by 2010; to set up models of trachoma prevention and control; and to reduce blinding trachoma in all areas at risk immediately. The specific objectives are to treat more than 1 million people with antibiotics, mainly azithromycin; to conduct TT operations for 17 600 patients; to build the capacity of programme implementers at all levels; and to promote hygiene through IEC outreach to 1.4 million people.

The Trachoma Control Programme follows the SAFE strategy with a package of interventions including surgery for TT patients, treatment with azithromycin for active trachoma cases, face-washing and environmental change. Treatment is seen as an immediate intervention to reduce blinding trachoma, while prevention is a long-term approach for sustainable programme development. First priority is given to high-risk areas.

After one year, good progress has been made. For the S and A components, 6300 patients have had TT surgery (some 40% of the target). 350 000 doses of azithromycin have been provided, and 126 000 have been distributed, with 200

000 more to come. Training has been given to 30 provincial and district health officers, 1000 commune health workers and over 5000 village health workers. Some 640 000 children aged <15 years (>95% coverage) have been screened for TF/TI, and 550 000 adults aged >35 years (>95% coverage) for TT.

For the F and E components, 550 school teachers and 3000 Women's Union members have been trained as motivators; IEC materials have been developed, printed and distributed; over a million people in the programme areas have been reached with hygiene education; and a KAP study and a mid-term evaluation on F and E have been conducted; as a result, the proportion of clean faces has increased from 55% to 88%.

Operational research on TT surgery and the prevalence of active trachoma is going well in the two study districts. Baseline data collection was completed in 2000. The six-month follow-up showed that TF/TI had been reduced by 2-5% and TT by 45%. The 12-month follow-up has just started. A data management system has been set up, and data are now being processed. As to programme management, detailed implementation plans were drawn up at the start for each district. Periodic coordination and programme review meetings are held, backed by regular field monitoring trips.

During the second round, the programme will treat over 200 000 people with azithromycin, perform surgery on 11 300 TT patients (out of an estimated 70 000 cases), continue operational research, conduct an end-programme evaluation and a national programme review meeting; prepare for the expansion of control activities to new districts and provinces, and develop a master plan for trachoma prevention and control in Viet Nam for the period from now to 2010 with a view to elimination by that year.

2.3 Presentations by new participating countries and organizations:

2.3.1 *Egypt (Dr M. A. M. Mehanna)*

Egypt covers an area of a million square kilometres. Its population of some 65 million is 65% rural; 52% is male and 48% female. In the 1960s, trachoma prevalence was reduced significantly by a programme using tetracycline. However, because of indications of high endemicity in the Nile delta, a survey was conducted in Menofya governorate in 1999. The survey showed rates of 36.5% TF/TI in children and 6.5% TT in adults, with the conclusion that trachoma is a public health problem in Egypt.

A pilot project supported by ITI was conducted in collaboration with the Al-Noor Foundation and British Columbia Centre for Epidemiologic and International Ophthalmology (BCEIO) in a target population of 20 000 people. To determine the change in active disease, 500 children were examined before distribution of azithromycin and 250 afterwards. Health staff were trained in distribution and supervision, and screening of adults for trichiasis was followed by surgery in the community for cases found. Three trachoma rapid assessment (TRA) projects

have been planned, in Menia and Fayoum in upper Egypt, and Kafr El Sheikh in the delta. The projects are supported by Pfizer Inc. and administered by the Al-Noor Foundation. The Menia TRA in 15 villages has been completed, showing TF/TI rates of >25% in all villages and >50% in two-thirds of them, with a range of 27-70%; 106 cases of TT were found, implying a significant need for surgery. To monitor surgical outcome in Menofya, 340 trichiasis patients were enrolled; 334 were examined 8 weeks after surgery (bilamellar tarsal rotation) and 204 will be checked after one year.

For the F and E components of the SAFE strategy, the findings of a two-year KAP study funded by the Canadian International Development Agency as part of the health education programme showed that knowledge had improved from 46% to 96%; attitudes from 46% to 87%; practices from 32% to 78%; and recognition of active trachoma in children from 38% to 96%. The focus is now on schoolchildren, and teachers are helping to design educational materials.

The Ministry of Health and Population has requested Egypt's inclusion in the Alliance as a priority country. Work to assess the scale of the blinding trachoma problem and identify high-risk areas is continuing. The control programme is being developed, partnerships are being explored, and Egypt is being considered by ITI for collaboration to implement the SAFE strategy.

2.3.2 Guinea (Dr A. Goépogui)

Guinea has an area of 246 000 sq. km; its population in 1999 was estimated at 7.76 million. In order to estimate requirements for implementation of the SAFE strategy in Guinea, a cross-sectional survey was conducted in 2001 in the Haute-Guinée region, which was thought to be most affected by trachoma. The indicators selected were the prevalence of active trachoma (TF/TI) in children aged <10 years and the prevalence of TT and CO among women aged >14 years. First, 30 villages were randomly selected; a subsample of households was then selected at random. A total of 2459 children and 1632 women were examined. The study sample was considered representative of the population of Haute-Guinée with regard to both age structure and sex.

Overall prevalences among children aged <10 years were 32.3% for TF (777 children) and 2.8% for TI (68 children). Altogether, 22.7% had dirty faces, with higher rates for females than for males; 83.6% of children with dirty faces had active trachoma, as against 18.8% for children with clean faces. Of the 17.8% of the children who had flies on their faces, 75% had active trachoma, while only 25% did not. TF prevalence declined slightly with age, and TI prevalence increased. The prevalence of dirty faces and of flies on the face both declined with age. Among women aged >14 years, the recorded prevalences were: TT, 2.7%; CO, 0.8%; and decline in visual acuity due to trachoma, 0.4%.

Extrapolated to the Haute-Guinée region as a whole, these findings would indicate that a total of 149 854 children aged <10 years require antibiotic treatment. Similarly, 12 339 women aged >14 years and 6170 men - a total of 18 509 people - would need trichiasis operations.

Trachoma is evidently a major health problem in Guinea. Support was provided by the Organisation pour la Prévention de la Cécité, WHO and Sight Savers International for the first survey, and other organizations are also helping. A National Blindness Prevention Programme and a national committee for trachoma control are being set up. The SAFE strategy will then be implemented, and IEC activities will be promoted. The Government, health authorities and rural communities will all participate. Further trachoma survey is to be conducted in Moyenne Guinée, the next most affected region.

Much assistance will be needed to develop human, material and financial resources, as trachoma control is at an early stage. For example, there are no trained operators or equipment for the rural areas, and barely 20 trichiasis operations are performed each year. The tetracycline ointment available in health centres is deteriorating for lack of trained health workers and strategies for case-finding and treatment. Azithromycin is rare and costly. Very few F and E activities have been undertaken, as the high rates of dirty faces and flies indicate. Thus much support is needed to put the SAFE strategy into practice.

2.3.3 Malawi (Dr D. D. Kathyola)

Work has gone ahead in the trachoma control project supported by Sight Savers International in Salima District, Malawi. Because resources are scarce and the S and A components of the SAFE have had limited impact, it was decided to adopt a community participatory approach and to focus on the F and E components, for which two NGOs based in the United Kingdom - WaterAid and Save the Children - are providing support.

The project has three objectives: to use a trachoma rapid assessment (TRA) methodology in 10 villages in Salima to assess the priority for action to control active trachoma and count the number of women requiring surgery for TT; to rank the villages according to severity and priority for intervention; and to use community eye health workers to gain community support for trachoma control activities. The three TRA indicators chosen were: the number of children aged between 1 and 10 years, out of 50 examined, with TF/TI; the number of such children, out of 50 examined, with dirty faces; and the number of women aged 15 years or more with TT. The project called for the community to be involved at all stages. Integration into the existing district health management structure ensured access to health facilities, managerial support, leadership on water and sanitation issues, and training of PHC staff in primary eye care.

The TRA survey showed an overall TF/TI percentage of 46.4% (range 32%-62%) in children aged <10 years, while 55% (range 30%-80%) had dirty faces; 43 women found to have TT were offered surgery, of whom 32 (74%) accepted. Transect walks by community eye health workers to enumerate trachoma risk factors in the 10 villages showed a total population of 6312 people in 1292 households. There were 408 existing pit latrines - a household/pit latrine ratio of 3:1 - and 39 boreholes. Following meetings with community members, another 207 latrines have been built or are under construction, and 12 village health committees have been formed.

Trachoma is evidently a disease of public health importance in Salima district, and many women and men are at risk of blindness. Poor sanitation and poverty prevail. It is recommended that TT surgery be provided to all patients identified, backed by training of operators and identification of barriers to acceptance of surgery; that children with TF/TI in all households be treated with tetracycline ointment, supply problems being countered by using the village health committees and efforts being made to secure azithromycin; that intersectoral collaboration be maximized for environmental improvements such as pit latrines and boreholes; that operational research and collaboration with international research institutions be extended; and that financial support be mobilized to undertake surveys and expand the programme to other areas.

2.3.4 Mexico (Dr S.P. Mariotti)

In Mexico, trachoma is mainly prevalent in the central highlands region of the southern state of Chiapas. The endemic zone is formed by five rural Tzeltal communities (Cancuc, Chanal, Huixtán, Oxchuc and Tenejapa) with a total population of about 150 000. In 1985, a study in two communities in Oxchuc found inflammatory trachoma in 25% of children <10 years of age, and scarring trachoma in 100% of adults. Twelve years later, in 1997, a prevalence survey in 10 communities in Oxchuc showed rates of 6% for active trachoma and 17% for scarring trachoma.

Since 1996, a team from El Colegio de la Frontera (ECOSUR) has undertaken epidemiological and sociomedical studies on trachoma in Chiapas. In 1997, the Tzeltal people's perception of trachoma was studied. Between 1998 and 2001, ECOSUR surveyed a total of 1100 households in 18 rural communities in Cancuc, Oxchuc and Tenejapa. Over 6800 people were interviewed, and 5700 were examined for trachoma. 49% of the population was aged <15 years, 91% of households had earth floors, 49% had no toilet or latrine, 98% were without piped water, and 87% had 1-2 rooms. The prevalence of all forms of trachoma was higher among females than males. Among children aged <15 years, it was 1.9%, while among people aged >15 years, it was 16.9%.

The objectives of ECOSUR's ethnomedical studies are to involve the communities in the development of intervention strategies, and design a model for the training of health staff and the population. The main findings of a study in two Tzeltal communities in Oxchuc were that perception and knowledge of trachoma are low. Most participants did not link infection and contagion to trachoma. The numbers of children with clean faces and of patients attending clinics were low. Participants could not recognize patients who needed surgery, and mystery and fear surrounded TT surgery; there was a lack of confidence in doctors and health services. Few educational materials were available on trachoma; participants appreciated the discussions on trachoma and believed that pictures and videos helped them to understand the subject.

Health services research is aimed at adapting WHO's SAFE strategy to local conditions. Both the Instituto Mexicano del Seguro Social (IMSS) and the Ministry of Health run health facilities in the region, but 28% of the population live more than two hours from a health facility. No large-scale screening programme exists

except for the work done by ECOSUR and NGOs. Diagnosis of trachoma in health centres is uncommon. There are no nationally produced guidelines for the diagnosis and treatment of trachoma, and the two health service providers use different treatment protocols. Antibiotic treatment is not always available at health centres. Since 2000, a group drawn from health institutions, other government agencies, Médecins sans Frontières – The Netherlands (MSF-NL) and ECOSUR has been developing a plan to control and eliminate trachoma for submission to the Chiapas state government. The activities carried out by MSF-NL will later on be continued by a national NGO named Asesoría, Capacitación y Asistencia en Salud, Asociación Civil (ACASAC).

The prevalence of active trachoma is less than 10% in the endemic area of Chiapas, with evidence of a decreasing trend over the past two decades. There is a great opportunity to implement interventions to control and eliminate trachoma in Chiapas. However, the health institutions do not give priority to trachoma as it affects the most isolated indigenous communities. Coordination between the health service providers is weak and there is no joint plan.

Thus, coordination between the providers and research institutions should be strengthened to develop a strategic plan. National trachoma guidelines should be developed, together with training materials for health staff and community health workers and a health promotion package. Health education materials should give priority to facial cleanliness, especially among children. Antibiotics need be available in both health facilities and communities, all populations at risk should be screened, and all members of infected families should be treated yearly. The federal and state governments should improve water supplies and socioeconomic conditions. All programme interventions developed should be extensively pilot-tested.

Figures from the MSF-NL trachoma project in the Chiapas highlands indicate that 118 164 people are at risk in the five municipalities, and that an estimated 12% of the population is affected by trachoma, three-quarters of them women. Water supplies in the municipalities are poor, and 51% of communities in the endemic region have no access to running water. The project's objectives are: in coordination with target communities and responsible institutions, undertake promotion, prevention and trachoma detection; identify ways of improving access to water supplies; and detect and surgically treat people with trichiasis.

Activities include active case-finding in communities, free treatment with antibiotics, free surgery for trichiasis, training of rural health workers in detection and treatment, the technical study of water access in the endemic region, a public awareness campaign, coordination with institutions in the area, and handover to the local partner NGO. Some 10 000 examinations and 286 operations for trichiasis were carried out between April 2000 and August 2001, with 71 other ocular surgical interventions. Training was provided for 15 MSF-H field staff, 175 health promoters and 60 doctors from other institutions, and one doctor from the State Department of Health in trachoma surgery. Advocacy activities included the stimulation of institutions to detect and refer patients and awareness-building in liaison with local authorities. Over 50 visits have been paid to communities to present trachoma during assemblies, together with the design of posters and distribution to 46 communities, public awareness radio spots, the production of a

promotional video film, the design of training manuals for community health workers in trachoma detection, and a photo report of activities for health and local authorities.

Current challenges include the lack of commitment and resources in local institutions, inadequate social services (health, water and hygiene), the cost of antibiotic treatment, the isolation of communities, the fact that the disease affects indigenous people and is not life-threatening, and gender issues. MSF-NL plans to move ahead in all these activities in the future, and considers that Mexico should join the GET 2020 Alliance in order to eliminate blinding trachoma in Chiapas by 2020.

2.3.5 Yemen (Professor A. H. S. Shafer)

From available data, WHO has concluded that trachoma is a major cause of blindness in Yemen. It recommends that a survey should be conducted to determine actual prevalence, and that the Ministry of Health should adopt the SAFE strategy in a national campaign integrated into PHC.

Trachoma was long considered the main ophthalmological problem in Yemen. Though reported hospital cases have fallen in the past 10 years, trachoma was still one of the two main causes of blindness in 2000. A survey in 1996 showed that the overall prevalence of blindness in villages was 2.9%, the third leading cause (15%) being trachoma.

In 1999, trachoma control activities gained support from the Carter Center and the Conrad N. Hilton Foundation, in collaboration with the National Blindness Control Programme and the National Centre for Epidemiology and Disease Surveillance. In November 2000, with support from the Ministry of Health, the Carter Center and WHO, an integrated trachoma prevalence survey was planned as a multi-stage random cluster sample of all governorates throughout the country. In 2001, in the first four governorates to be surveyed, representing all Yemen's geographic and climatic regions, 1825 people were examined, 539 (30%) of whom had some sign of trachoma. The TF/TI rate for all ages was 20% (361 people); for TS and TT (all ages), the rates were 4% (75 people) and 6% (103 people). The preliminary age-specific findings were that 30% of children aged <10 years had TF/TI, with a range of 28% to 35% in the different governorates, and 22% of adults aged >35 years had TT (range 17-29%).

As to the SAFE strategy today, surgery is available only in local hospitals; various operating techniques are used. Tetracycline ointment is used for antibiotic treatment, but is in short supply. The F component requires health education and integration into PHC, while the E component similarly calls for health education, improved water supply and fly control. The national prevalence survey needs to be completed to assess the extent and severity of trachoma in Yemen, but prevention activities should begin before the survey is finished.

2.4 Discussion

Dr S. P. Mariotti, Prevention of Blindness and Deafness, WHO, presented a series of maps based on data received from countries before the meeting. The maps

showed the countries of the world with blinding trachoma; those reporting data for the preparation of a country profile for the year 2001; the data available; the existence or otherwise of a national plan, political support, and trachoma as a public health problem; countries with a trachoma control programme or task force on trachoma; and availability or otherwise of data on TT surgery and TF/TI treatment performed. He also presented a table summarizing information for 21 endemic countries on seven parameters: adequacy of surgical equipment; availability of tetracycline eye ointment in PHC; number of TT surgeons; percentage of TT surgeons in rural areas; cost recovery policy for TT surgery; existence of activities for the F component of the SAFE strategy; and existence of activities for the E component. The data will be updated, distributed, and placed on the WHO website.

The Alliance welcomed the fact that 29 countries had reported to the Meeting on their trachoma situation, and congratulated them on the progress made in the implementation of the SAFE strategy. Because the aim of Vision 2020 is to eliminate all avoidable blindness by 2020, control activities now need to be expanded from every village to every province. Daunting as the task might be, each country needs to work out from the start what has to be done to achieve the set targets. Even where the resources are lacking, it is essential to know what the needs are and to develop national plans with costing. Some countries have already reached that stage, so that they are in a position to seek international collaboration; others need to follow suit.

That implies the collection of much more information on the epidemiological situation, the situation with regard to the F and E components, and resources. Partial surveys covering only the worst affected areas need to be expanded to full national surveys. At the same time, data would be much easier to compare if countries used standard indicators and the same age groups. The WHO form does not specify age groups for the reporting of TF/TI. Countries' needs might be better served if TF/TI could be reported only for children aged under 5 years, so that trachoma control could be integrated into other programmes for that age group. Moreover, it was suggested that presentations should follow a uniform format, e.g. background information, recent achievements, and current status, activities and resources. Clearly, not all countries are at the same stage in trachoma control. Indeed, some have the necessary information but still lack outside resources.

Participants also stressed the need for good coordination between sectors and organizations. A number of programmes have shown that ministries, national institutions and NGOs can work well together, and that must be replicated in national plans and partnerships. Otherwise, piecemeal successes will be interspersed with areas of need. NGOs can act as catalysts, but should still work within national programmes designed to maximize synergies between all partners.

It was recognized that for eye care in general, and especially for trachoma, IEC and KAP are important. Further reflection on the best IEC strategies to follow to have the most impact on KAP would be valuable. For example, could the excellent results achieved in Egypt serve as a model to be replicated elsewhere?

The Alliance emphasized that success depends on achieving goals, and that the battle to control trachoma must be fought in the endemic countries. Countries are

at various stages of development, and in some health, and hence trachoma, is not a priority. International bodies such as the Alliance can help to put the disease on the national agenda. At regional level, WHO and NGOs should work in that direction; governments have so many priorities that blindness needs a boost to get the attention it deserves. Health must be on the development agenda; as part of that, blindness; and as part of that again, trachoma.

3. UPDATE ON MONITORING AND EVALUATION OF ELIMINATION OF BLINDING TRACHOMA

Dr Maria P. Neira, Director, WHO Department of Communicable Disease Control, Prevention and Eradication, recalled that at the Alliance's Fifth Meeting WHO had undertaken to assist in the definition of guidelines for assessing the elimination of blinding trachoma. It was now planned to discuss the criteria for elimination at the forthcoming Meeting on the Development of Guidelines for the Assessment of the Elimination of Blinding Trachoma on 8 November 2001, in order to produce recommendations for consideration by the Alliance. The meeting would be the first step in planning the details of work on the ground; a document would be developed for wider discussion.

4. DEVELOPMENT OF PLANS OF ACTION FOR GLOBAL COORDINATION AND TECHNICAL COOPERATION BETWEEN DEVELOPING COUNTRIES

4.1 Background

In accordance with the recommendation at the Fifth Meeting that more time should be spent on planning for action and less on scientific issues, the Meeting divided into three working groups in order to develop and report back on regional action plans for the next five years for trachoma control activities at country level during the next five years. At the same time, input was needed on ways to operationalize the regional programmes proposed within the framework of Vision 2020.

The three groups were constituted as follows: Group 1 - French-speaking African countries; Group 2 - English-speaking African countries; and Group 3 - other countries, from the Middle East to Asia and the Pacific. Other participants were invited to join the group of their choice according to interest and experience.

4.2 Report of Group 1: - *French-speaking African countries*

Mapping

Group 1 noted that five of the eight countries represented had uniform epidemiological data (Burkina Faso, Mali, Mauritania, Niger and Senegal), while the data for the other three countries (Algeria, Chad, Guinea) were incomplete. It recommended that trachoma rapid assessment (TRA) be conducted in the three

countries to determine endemic areas, followed by epidemiological surveys in priority areas to obtain standardized data.

Implementation of the SAFE strategy

The Group proposed the action outlined below to implement the components of the SAFE strategy.

Surgery

1. Organize a regional workshop in the first half of 2002 to examine problems of case-finding, treatment of trichiasis, follow-up and evaluation of surgery.

Prepare a guide for the training of trainers covering theoretical, practical and organizational aspects.

Set up a working group for continued study.

2. Provide trained operators with surgical and sterilization equipment and consumables.
3. Provide for full kits for all operators on completion of training and ensure a regular supply of consumables for all those who need them.
3. Set up a supply system for equipment and consumables at subregional level.
4. Make optimum use of existing training centres.

Antibiotics

Seek ways of making an antibiotic locally and/or generally available at affordable cost and in sufficient quantities to cover all needs. To achieve this, it is necessary to:

- establish contacts with organizations that already have experience as done for intra-ocular lenses in cataract surgery;
- organize a workshop to review this topic at the African regional level.

Facial cleanliness and environmental change

In most of the countries multisectoral action remains a pious wish and is very difficult to achieve. The Group proposes:

- the integration of messages on trachoma in health promotion programmes;
- continued advocacy for the intersectoral approach, from the local level upwards.

4.3 Report of Group 2: *English-speaking African countries*

Situation assessment

The Group noted the varying levels of performance of the countries represented in terms of: (a) national surveys and prevalence data and studies; (b) mapping trachoma and TRA studies; (c) implementation of the components of the SAFE strategy; and (d) production of IEC materials and procurement of medical supplies and kits. Three of the nine countries represented (the Gambia, Ghana, Sudan)

have reliable national data. The other six (Ethiopia, Kenya, Malawi, Mozambique, Nigeria, United Republic of Tanzania) hope to carry out TRA or national blindness surveys in the coming 1-2 years. Little information is available on trachoma prevalence in other endemic countries of the Region that have not responded to WHO's regular invitations to attend the Alliance's meetings. The Group recommended that these countries should be encouraged to report and to become involved in the GET 2020 programme; otherwise the disease could not be eliminated.

The importance of subregional workshops was stressed. Two countries - the Gambia and the United Republic of Tanzania - were identified as potential resource countries. The Group recommended that WHO be formally requested to arrange subregional workshops in 2003, with a view to sharing experience in the implementation of the SAFE strategy, particularly training, TRA methods and procurement of supplies and equipment, and learning from field visits to programme areas.

Implementation of the SAFE strategy

Surgery

1. There is a need for standardized reporting of such factors as cut-off age (e.g. TT in women aged >15 years or > 40 years), coverage and outcome. A working group should be set up under WHO auspices to examine the question.
2. The needs for equipment and supplies should be addressed.
3. Sufficient TT surgeons should be trained.

Antibiotics

1. The Group stressed the importance of making antibiotics widely available for the treatment of active trachoma.
2. Even though tetracycline is available and affordable in many areas, significant shortages and distribution problems still occur. Effective procurement and distribution systems need to be put in place.
3. The treatment strategy should be based on the available evidence.
4. Local production of tetracycline eye ointment should be encouraged and facilitated.

Facial cleanliness and environmental change

1. Baseline qualitative studies on community perceptions and attitudes are important and should be pursued.
2. Behavioural changes should be sought through health education.
3. The F and E components should be integrated with other community development projects.
4. Safe water and latrines need to be provided. Pumps operated and maintained at village level, with appropriate training and funding, are a good option for clean water supply.

4.4 Report of Group 3: *Other countries, from the Middle East to Asia and the Pacific.*

Status of trachoma control

Group 3 comprised countries from three WHO regions: the Eastern Mediterranean (Egypt, Oman, Pakistan, Yemen); South-East Asia (Myanmar, Nepal); and the Western Pacific (Australia, Cambodia, the Lao People's Democratic Republic, Viet Nam). Most of the countries have had national trachoma control programmes/activities for periods ranging from two to four decades, and blinding trachoma is on the decline. However, some of the countries have remaining pockets of the disease that require further TRA efforts and interventions based on the SAFE strategy, as appropriate.

Although trachoma control activities preceded prevention of blindness programmes in most countries and GET 2020 antedated Vision 2020 - The Right to Sight, the elimination of blinding trachoma must be considered in the overall context of Vision 2020, which includes trachoma as one of the disease control priorities. Consequently, national trachoma task forces should be represented on national Vision 2020 bodies or committees.

Regional recommendations

Eastern Mediterranean Region

The Group recommended that a regional workshop should be held to bring together all countries with a known problem of blinding trachoma and interested or potential partners from the Alliance. The purposes would be:

- ◆ endorsement of the SAFE strategy;
- ◆ review of the existing situation in respect of blinding trachoma;
- ◆ identification of unmet needs;
- ◆ preparation of action plans to meet those needs;
- ◆ identifying and applying opportunities for technical cooperation between countries (with Morocco, Oman and Saudi Arabia as potential resource countries);
- ◆ mobilizing resources;
- ◆ adoption of a monitoring, surveillance and evaluation framework drawn from the guidelines for the certification of elimination being prepared by a WHO scientific group.

South-East Asia Region

1. TRA has been carried out in both Myanmar and Nepal. Resource support to implement the SAFE strategy is needed in remaining endemic areas.
2. Existing partnerships need to be built up and new partners, especially for the F and E components, need to be identified.
3. The Vision 2020 Regional Coordination Group could serve as a sounding board for advocacy and resource mobilization.
4. National Vision 2020 entities and trachoma task forces should undertake these tasks.

Western Pacific Region

1. TRA is still required in the three countries.

2. The subregional IAPB/WHO meeting scheduled for February 2002 is to review the status of trachoma elimination in the countries.
3. Support is needed for all components of the SAFE strategy, particularly the F and E components. Such support should be mobilized through subregional and national bodies.

General recommendations

1. The number of cases that would benefit from antibiotic therapy far exceeds the number now receiving it. Cost is a barrier in nearly all communities, given that residual blinding trachoma is found in the poorest communities, some of which are getting poorer.
2. Efforts should be made by WHO to source regionally produced antibiotics at affordable cost.
3. Blinding trachoma often occurs in pockets. Evaluation of progress in trachoma control needs to recognize this and to include process indicators such as definition of the areas with blinding trachoma, coverage in terms of the SAFE strategy, and outcome measures such as rates of active trachoma and trichiasis.

Structure of the 2002 meeting

The Group suggested that at future Alliance meetings it might be useful to convene regional group meetings at the start of the session for the presentation and discussion of the country reports from that region. A summary of the discussions from each region could then be presented to the Alliance in plenary.

4.5 Discussion

Responding to the reports, participants noted that action plans needed to include all countries, whether or not they were represented in the Alliance. They stressed the value of the potential resource countries in assisting others to move forward in trachoma control. The importance of sound distribution of equipment and antibiotics was reiterated. However, there was no universal model for distribution; the system would depend on the country's particular circumstances. The brevity of the F and E components of the plans clearly showed the need for greater resources for those activities.

Group 3's suggestion on the structure of the 2002 meeting was discussed at some length. A further option would be to hold meetings regionally, as already planned in some regions, but that would remove the opportunity for the exchange of ideas and expertise. It was pointed out that at present countries were at very different stages. The current structure encouraged countries with less experience to become committed, to prepare available information for presentation to the full meeting, and indeed to undertake activities they could report to the Alliance. Another possibility would be to hold regional meetings one year and a full meeting of the Alliance the next.

It was acknowledged that if many more countries joined the Alliance the present structure could prove too unwieldy. However, Group 3's proposal did not relate to

the holding of regional meetings - an entirely different matter - but to a new organization of work whereby the Alliance would open its session in the usual way and then divide into regional groups for half a day to hear and discuss country reports. The regional groups would then report back to the plenary meeting. All country reports would be included in the meeting's documentation.

The Alliance recalled that at its Fifth Meeting it had decided to focus on country programmes, with less emphasis on scientific information. Participants accordingly felt that it would be premature - and inconsistent - to change the structure until many more endemic countries had joined. At that stage, as pointed out, the present format might no longer be practical. On balance, the Alliance therefore concluded that the current structure of country presentations should be retained for the time being.

5. TRICHIASIS SURGERY

Professor V. Klauss, Medical Consultant to Christoffel Blindenmission, reported on the present status of research in trichiasis surgery. With regard to surgical methods, the bilamellar tarsal rotation (BTR) procedure is generally accepted. Trials are needed to test other methods against BTR, and to check whether different methods are best for different degrees of severity. The related question of lid shortening should also be investigated.

The figures presented by many countries during the meeting showed a large gap between the demonstrated need for trichiasis surgery and the numbers of procedures performed. Work is needed to investigate what can be done to meet the targets and where the problems lie, whether in manpower, money or equipment.

He referred to recent articles giving information on the outcome of surgery. Among risk factors for recurrence were: the surgical method used; the length of time since surgery; the presence of TI/TF; infectious conjunctivitis; and gender, as women were at higher risk than men.

He pointed to various questions requiring research. There is a need for long-term follow-up and for an active search for recurrent cases, as they often do not present. Further work is needed on surgical methods in recurrence, including lid shortening. Some of the questions to be addressed are: how can the acceptability of trichiasis surgery be increased? Does surgery stop the scarring of the cornea? Does it improve visual acuity? Does treatment with azithromycin at the time of surgery help? The scientific rapporteur emphasized that all concerned could contribute to the answers by monitoring cases.

In the subsequent discussion, it was noted that the severity of TT at the time of surgery is a risk factor for recurrence, though more studies are needed, since studies so far have covered different methods used at different stages. Some data were available on the effect on recurrence of the level of qualification of the operator. In one study now in progress, little difference was found between ophthalmologists and ophthalmological nurses. In some areas the nurses' results

were better. Recurrence was related to severity at the time of surgery. A study in Morocco had found that nurses had the best outcome, followed by ophthalmologists and then by general practitioners: the ophthalmologists dealt with the worst cases, while the general practitioners had too little practice. Scarring is considered a predictive factor in recurrence. Ophthalmologists are reluctant to operate on early cases, though patients need surgery as early as possible. It was suggested that ophthalmologists should monitor their own cases, but recurrence rates then tend to be shown as lower than they are. In general, evaluation from outside is preferable.

The problem of the surgical backlog is urgent. Most of the data are derived from low levels of surgery. If operations can be expanded, the quality of work might improve as staff gain experience. Data on recurrence are at present often too vague to be useful. If the causes of recurrence are to be determined, the factors included in the data - lid thickness, surgical method, age of the patient, etc. - need to be standardized. The Trachoma Technical Meeting held in New York in autumn 2000 had recommended that prospective studies should be carried out to compare other methods (Trabut, Cuenod-Nataf) with the BTR procedure. The Alliance urged countries to consider undertaking such studies.

6. UPDATE ON ANTIBIOTICS

6.1 Reporting on Pfizer-donated azithromycin through ITI (Mr J. Mecaskey)

In his presentation on behalf of the International Trachoma Initiative (ITI), Mr Mecaskey focused on issues related to donated azithromycin: resistance; unintended consequences; pregnancy; height-based treatment; research; and the future.

With regard to the possibility of resistance, the concern relates to pneumococcal pathogens, and not to *Chlamydia trachomatis*. Theoretically, periodic mass or targeted treatment with azithromycin should not provide the sustained pressure necessary to induce clinically significant changes in sensitivity. Indeed, macrolides/azilides are rare, and seldom the treatment of choice in trachoma-endemic areas. The preliminary results reported by Fry & Lietman at the Alliance's 2000 meeting showed no significant change in pneumococcal sensitivity patterns in Nepal. A further study is under way in the United Republic of Tanzania; the results are expected towards the end of 2002. The preliminary finding is that few resistant organisms have been observed that could be selected out.

As to unintended consequences, concern was expressed about possible adverse events at the Trachoma Technical Meeting in New York in autumn 2000. Data from Bailey et al. suggest that there may be unintended positive outcomes associated with azithromycin treatment. There have been no reports of major adverse events, but a "due diligence" protocol is being developed to estimate adverse and beneficial unintended consequences of the use of azithromycin in the control of inflammatory trachoma.

Azithromycin is a class B drug. There is no evidence of negative effects on the fetus, but there are insufficient data to recommend its use in pregnancy except in the absence of an adequate alternative. Thus its use needs to be decided by the countries concerned. New data to be published from Uganda point to the possibility of improved outcomes according to several measures of neonatal well-being. As information is received, ITI's policy might therefore change.

The height-based treatment approach is being adopted widely. An analytic study has been submitted for publication and should appear shortly. Meanwhile, further work on regional, and possibly international, standards is in progress. In research, studies have been proposed on the use of azithromycin in trachoma, its effect on surgery, and who and what to treat.

As to the future, the ITI programme continues to expand, both in the core countries and through partnerships. It is hoped to add three more countries shortly, and others may follow soon. Discussions are under way to formalize an extended commitment by Pfizer Inc., which is likely to be linked to continued demonstration of measurable progress towards WHO's goal of the elimination of blinding trachoma.

6.2 Discussion

Professor Taylor said that three questions on antibiotics needed answering. When should treatment be given to families, to children, or to communities? Should treatment be given every 6 months or every 12 months? How long should treatment be continued?

Professor Taylor went on to comment on two documents before the Meeting under agenda item 8. The first was the paper by Burton, Jeffries and Bailey on "Height-based dosing for azithromycin in Gambian children" (document GET/ALL6/WP/8.4 EN). The recommended dose by body weight in the Gambian study was 20 mg/kg, and a nine-category system had been developed that enabled 99% of individuals to receive doses within a range of 15-30 mg/kg. However, the upper limit of 30 mg/kg was only one third of the normal dose in the United States. For onchocerciasis, a system of three height ranges and just three doses had proved effective despite the wider dose range. He suggested that the Gambia might reanalyse the data by height, weight and dose, in order to simplify treatment by reducing the number of categories.

The second paper, from Viet Nam and the Children's Hospital Oakland Research Institute, was entitled "Effect of azithromycin on clinical trachoma and infection rates at 6 months for the SAFE programme in Viet Nam" (document GET/ALL6/WP/8.2 EN). Some of the data seemed improbable. For example, the older people were probably not truly positive. If the baseline data gave cause for concern, the follow-up data would be unreliable. Careful monitoring is necessary at every stage. He made the radical suggestion that surveys should concentrate on just two signs: TF and TT. TI made a minimal contribution to trachoma, while TS was also of little value.

Other speakers noted that doses of azithromycin for sexually transmitted diseases are up to 2 g/kg for sexually transmitted diseases (STDs) and 1 g/kg for respiratory infections. It would be useful to know the degree of tolerance in dosing. Were data available to show that doses above 30 mg/kg - e.g. up to 50 mg/kg - were dangerous, or that doses below 15 mg/kg - e.g. 10 mg/kg - were still effective? And did the fact that Pfizer packaged azithromycin for trachoma in smaller dosage forms have a bearing on the recommended dose? Given that CDC recommended as much as 3 g/kg as the usual dose for STDs in clinical practice, regardless of pregnancy or lactation, could pregnant or lactating women be treated? Did Pfizer have useful data on antibiotic blood levels?

On behalf of ITI, Mr Mecaskey said that Pfizer was very cautious about higher dosages; it wanted to see more data in the literature on how children tolerate them in treated populations. What countries decided with regard to higher doses, e.g. in the 50-100 mg/kg range, was their prerogative, but Pfizer was very conservative, because it did not wish to face accusations of promoting second-class medicine in endemic populations. It could not promote higher doses without supporting data. As to pregnant women, Pfizer could not tackle the burden of data needed to satisfy the US Food and Drug Administration. As indicated earlier, azithromycin might even have beneficial effects. The situation for lactating women was similar. Pfizer considered the existing data insufficient, but countries were free to treat them with azithromycin if they so decided, in the absence of suitable alternatives. Pfizer would not stop donating the drug if countries used it in pregnancy.

As to the Viet Nam study, it was pointed out that the staff had washed their hands between each patient and all precautions had been taken against cross-contamination. The cold chain had been maintained, and samples had been kept in dry ice until shipment to the laboratory in the United States. In research, results were sometimes outside the normal; researchers should not simply dismiss them, but try to learn from them. On the question of the significance of positive PCR or LCR findings, it was hoped that data from one study would be available early in 2002.

7. FACIAL CLEANLINESS AND ENVIRONMENTAL CHANGES

7.1 Introduction

With regard to the evidence base for the effectiveness of the F and E components of the SAFE strategy, the Meeting's attention was drawn to a recent journal article on determinants in Central Ethiopia. Though high rates of face-washing were reported after health promotion activities, it was found in practice that the reported rates were false, with the conclusion that careful evaluation must be part of the control programme. A further article on a study in Burkina Faso showed that after a health promotion campaign the proportion of mothers washing their hands both after using the latrines and after washing children's bottoms rose. However, the fact that people could repeat health education messages did not mean that those messages were put into practice,

since in the Bobo Dioulasso study the percentage of women actually observed washing their hands after washing children was not correlated with the percentage who reported washing their hands. The outcome of F and E activities was also covered in a review article by Mabey et al. A one-year evaluation in the United Republic of Tanzania showed that the district with the best figures for latrine building and face-washing had the biggest reduction in trachoma. Indeed, the decline was dramatic. The data from work in the Gambia on flies and eyes would soon be forthcoming. The Meeting noted that care is needed to ensure that the indicators used to show that F and E measures are having an effect are valid.

Participants stressed that, while further data would be welcome, there is no doubt that the two components make an important contribution and must be a commitment under the SAFE strategy. The question is how best to integrate such activities in control programmes and what practical steps should be taken in what is likely to be a lengthy process.

Rapid changes in socioeconomic circumstances can bring about quick changes in trachoma, which can disappear in three years. In Saudi Arabia, changes in the environment have seen trachoma controlled in two years. However, prospects for socioeconomic development are bleak in some countries. Though finding additional water resources can also be very difficult, health education and latrines can still make a substantial contribution. It is not known how much change must be induced in order to reduce trachoma - is it one latrine per house, or one for every 10 houses?

7.2 Partnership activities of Helen Keller Worldwide

Ms Lisa Tapert, Director, Trachoma Program, Helen Keller Worldwide (HKW), read out a letter from the President of HKW, John M. Palmer, in which he expressed his gratitude for the support received following the destruction of the organization's headquarters during the attack on the neighbouring World Trade Center in New York on 11 September 2001.

Ms Tapert also referred to the Second International School Health Workshop convened by Helen Keller International (HKI) in Cape Town, South Africa, from 2 to 6 April 2001. The report had been circulated to the Alliance's meeting. The workshop attracted 34 participants from seven HKI country offices, four partner NGOs, and governmental partners from national and district offices of ministries of education and health in countries where HKI was conducting trachoma school health activities. Information on her organization's country programmes was available on its website.

Dr C. MacArthur, Director of Training and Community Education, HKW, said that his organization regarded investment in school health as an investment in the child, and eventually in the family, community and country. HKW's Trachoma Program is working to change behaviour, chiefly in the F and E components of the SAFE strategy, through health and other curricula where a trachoma element can be inserted. The school can become the model for healthy behaviours, with outreach to families and children not in school.

With the support of the Conrad N. Hilton Foundation, WHO and HKW are exploring the feasibility and effectiveness of a model trachoma curriculum, in collaboration with health and education ministries, communities, and school health committees. The curriculum will include a full set of teaching aids and guides, and will be adapted to different age groups. Many countries are already working through schools, and wish to make maximum use of their experience and the materials produced. Water is of particular importance. The sponsors are hoping for collaboration with many other organizations in the development of the curriculum.

Dr S. Mariotti, Prevention of Blindness and Deafness, WHO, gave an outline of the WHO/HKW/Hilton Foundation project, entitled "Alleviating human suffering through education and empowerment". Its aim is to design and set up a cost-effective method for the development of culturally adapted curricula to foster and strengthen health education activities, community participation and basic sanitation. Project activities will centre on the development, field-testing, evaluation, publication and dissemination of the methodology. Expected outcomes will include: improved KAP among communities on trachoma and its treatment and prevention; improved personal and environmental hygiene at household, school and community level; an increased sense of responsibility for and control over individual and community health; and enhanced sustainability of trachoma control programmes through empowerment of the communities.

The time frame for the project is the five-year period 2002-2006.

7.3 Work of the BBC World Service Trust

After introductory remarks by Mr R. Head, BBC World Service Trust, Mr J. Penn made a presentation on the Trust's work relating to trachoma. Referring to the project in the United Republic of Tanzania described at the Alliance's meeting in December 2000, he gave details of audience research into the impact of four SAFE messages, focusing chiefly on the F and E components, and subsequent evaluation.

In collaboration with ITI, the Trust is embarking on a project in five countries (Egypt, Ethiopia, Ghana, Nepal and Niger) to conduct and measure the effect of media campaigns on F and E after antibiotic treatment. The duration of each project is being extended from four to 18 months and the local staff from two to five people. The Trust will report to the Alliance on the outcome in 2002 or 2003.

The campaigns will use video vans to visit the communities as in Tanzania. However, mass media (TV and radio) are 250-1000 times cheaper per person; they may also have a bigger impact, and their cumulative effect as compared to one-time drama performances or discussion groups may be better. It is not practicable to scale up F and E activities to the necessary level using only community media, so that mass media are essential.

In response to comments by participants, it was explained, that while the work will be done in partnership with ITI, close collaboration with ministries of health is crucial. The initial funding provides for 18 months. Awareness can be raised in 6 months, but it remains an open question whether behaviour can be changed in 18 months, or indeed if 12-18 months is sufficient to demonstrate a reduction in

disease; a longer period may be needed. In some countries, women will need to be encouraged to present for surgery. Men listen to the radio, but women are too busy, so the target audience may not be reached. Evaluation will therefore be carried out by gender. Participants commented that the Trust's work could be seen as a new intersectoral approach. If the impact on trachoma is substantial, the approach could in turn be scaled up to cover other Vision 2020 target diseases. It was suggested that there should be more technical input into the programme from the Alliance, with a view to extension to the whole of Vision 2020. Media work would need to be linked to the national Vision 2020 plans, and cover the requisite diseases. There is also the possibility of linking with other diseases governed by the environment such as diarrhoea.

It was emphasized that there is a difference between awareness-raising and behaviour change, and that the Trust should not promote the mass media at the cost of community media; there is a place for both, using an integrated approach. The Trust entirely agreed, to the extent that community media accounted for 70% of its trachoma budget. As to the length of the Trust's huge anti-leprosy campaign in India, the Meeting was informed that the campaign, in five northern Indian states, had covered two one-months periods, six months apart. As a result, 186 000 leprosy cases had been diagnosed, and stigma had been greatly reduced. In addition to the mass media, the campaign had used song and dance performances and more than 5000 shows by video vans. Evaluation had indicated that the impact of community media had been 5-10% less than the mass media. The Meeting found it encouraging, nevertheless, that awareness can be raised among the poorest of the poor through community media if mass media cannot reach them, though in many countries even the poorest people have access to FM radio. Because trachoma is unevenly distributed, often in pockets, the Trust's work in Tanzania was targeted specifically at endemic areas where people were being treated with azithromycin. All information gained in its campaigns is been shared between the different media, and the materials developed continue to be used, for example, in HKW's activities in Tanzania.

It was pointed out that the Trust's approach is shown to be effective, demand may be overwhelming. The Trust's capacity is indeed limited for community media, because of lack of resources. On the other hand, the use of mass media is very flexible, since radio stations can be easily reached. Participants noted that, while people are thirsty for knowledge, their countries experienced difficulties in gaining access to the mass media for contractual or financial reasons. Support is needed from NGOs in order to inform people through the media before treatment. The Trust has the advantage that the media like to work with the BBC, which provides training and other support, so that time is given free. It should be borne in mind that one-time broadcasting often does not work, and messages must be repeated. One approach is to make, for example, five radio spots, and then broadcast them as often as possible.

It was suggested that the potential link between school health programmes and media campaigns should be exploited and the use of media for children developed. It was worth remembering that when campaigns raise awareness, they also create demand. Media campaigns should not be undertaken until the necessary services are in place; otherwise, there could be a backlash.

8. UPDATE ON OPERATIONS RESEARCH PROJECTS

The Meeting took note of the five documents before it for this item:

- *Is the surveillance of active trachoma through health facility approach complementary to the ongoing school approach?* - R. Khadekar, A. J. Mohammed and A. H. J. Al Lawati (document GET/ALL6/WP/8.1 EN);
- *Effect of azithromycin on clinical trachoma and infection rates at 6 months for the SAFE Programme in Viet Nam* - Viet Nam (Ton Thi Kim Thanh et al.) and the Children's Hospital Oakland Research Institute (D. Dean, S. Lagree, and B. Atik) (document GET/ALL6/WP/8.2 EN);
- *Antibiotic use in Western Nepal: Implications for Trachoma Control Programme* - T. Lietman, M. Bird, V. Farell, H. Jha, R. Bhatta, and J. S. P. Chaudary (document GET/ALL6/WP/8.3 EN);
- *Height-based dosing for azithromycin in Gambian children* - M. Burton, D. Jeffries, and R. Bailey (document GET/ALL6/WP/8.4 EN);
- *Three strategies for azithromycin distribution in Mali: Interim clinical results* - L. Traore, D. Sacko, M. Dembele, G. Momo, and J.-F. Schémann (document GET/ALL6/WP/8.5 EN).

9. OTHER MATTERS

9.1 Global burden of trachoma (Dr K. D. Frick)

Dr Frick introduced document GET/ALL6/WP/9.1 EN, which describes work in progress to estimate the global number of cases of trachomatous blindness; the number of cases of trachomatous low vision; the number of disability-adjusted life years (DALYs) experienced as a result of trachomatous low vision and blindness; and the one-year dollar value of lost productivity associated with trachomatous low vision and blindness. The work, supported by ITI, follows methods used in studies in 1995 and uses 2000 population figures. To improve accuracy, however, it is based only on studies from countries that have known or suspected trachoma, while the findings from those countries are generalized only to countries in the same regions that have also known or suspected trachoma.

It is estimated that there are 3.6 million cases of trachomatous blindness worldwide, distributed as follows: China, 604 000; India, 41 000; Middle eastern Crescent, 391 000; Other Asian and Islands, 38 000; and sub-Saharan Africa, 2 522 000. Based on data from previous studies, it is assumed that there are 1.4 cases of low vision for each case of blindness, which in turn are assumed to be distributed in proportion to the cases of blindness. The age distribution is assumed to be uniform around the world.

The number of DALYs is calculated only from the years of life with disability, and not years of life lost, since data on excess mortality from blindness and low vision are limited. The resulting lifetime number of DALYs associated with trachomatous low vision and blindness worldwide is 36 979 904, distributed as follows: China, 6 208 656; India, 416 994; Middle Eastern Crescent, 4 021 950; Othe Asia and Islands, 392 599; and sub-Saharan Africa, 25 939 705.

Productivity loss has also been estimated, using a combination of weights for disability and age to calculate the one-year loss in productivity, using the average value added per agricultural worker to value one year of a person's time. The calculated loss in 1995 dollars is US\$ 1.5-2 billion a year, with total lost productivity up to 2020 of US\$ 30 million.

In the ensuing discussion, the Alliance noted that a number of studies have demonstrated decreasing life expectancy among people with low vision or blindness; that differential mortality - since blindness might lead to a three-fold rise in mortality - could well be factored in. Dr Frick explained that it had been deliberately omitted because it seemed so high, though in fact the authors of the study estimated the increased risk at 25-50%. The figures were indeed an underestimate for that reason; they could be recalculated with excess mortality included.

While the ratio of low vision to blindness of 1.4:1 applied in the study was considered low, since a ratio of eye diseases to blindness of 4: 1 was often used, the data found had shown the ratio stated. As to the somewhat arbitrary nature of the figures as they stood, the final version of the study's findings would show a range and confidence level for each figure. However, the figures would still show, for example, a total productivity loss of between US\$1billion and US\$ 10 billion a year.

Dr Frick agreed that, if the total loss per year was less than US\$ 10 billion, the cost of trachoma might be lower than that of many other diseases, though few diseases had been costed globally. The calculations were based only on visual loss, and did not yet take into account the loss due to morbidity, which would both add to the estimated burden and greatly complicate the calculations, since there was no complete model of the course of the illness. The data could be separated for males and females, for use in programme planning; there would certainly be a difference in life expectancy.

To arrive at estimates covering all 46 endemic countries, some 9-11 studies had been analysed and then combined in regions, on the assumption that a small subset would apply across the region and that the data could be applied to all the countries.

9.2 Research into behavioural change (Ms V. Blagbrough)

Ms Blagbrough reported briefly on the start of a three-year research project by the International Water Resources Research Centre in Delft, Netherlands, to review the results of water and sanitation projects in eight countries after 1-3 years. The project will examine how environmental change has affected three factors: hand-washing; the use of latrines, and the protection of water from contamination. Information on the project is available from the Centre by e-mail (info@irc.nl). The Centre will also distribute a six-monthly e-mail newsletter summarizing the progress of research. WaterAid is involved in the project to a small extent in Nepal and Uganda.

10. DATE AND PLACE OF NEXT MEETING

The Alliance traditionally holds its meetings towards the end of the year, usually in December. Dates need to be found that avoid clashes with holidays and other meetings. It was suggested that the Seventh Meeting might start on 28 October 2002 or, though the timing would be more difficult, 16 December 2002. The secretariat was asked to select the most suitable dates.

It was agreed that the Meeting would be held in Geneva, for administrative convenience and to secure a full attendance.

11. CONCLUSIONS AND RECOMMENDATIONS

11.1 General

The WHO Alliance for the Global Elimination of Blinding Trachoma noted with satisfaction the increasing number of endemic countries represented at the Meeting, and expressed appreciation of the countries and organizations attending for the first time. Countries reported on progress since the Alliance's Fifth Meeting through a questionnaire distributed to country representatives. They also presented results from studies carried out during the year. The information provided will be tabulated, mapped and distributed for use by Alliance members.

As recommended at the Fifth Meeting, country representatives reported on activities at national level in a single format that included implementation supported by both governments and partners. Also as recommended at the Fifth Meeting, an update summarizing scientific reports was presented.

Member countries expressed their appreciation to international NGOs for the support received in the development of activities to eliminate blinding trachoma. They stressed the importance of long-term commitments to ensure that programmes reached the stage of sustainability.

11.2 Recommendations

1. Additional efforts should be made, through appropriate encouragement and assistance, to ensure that endemic countries that have not so far attended meetings of the Alliance are represented at future meetings.
2. Many endemic countries need further epidemiological information in order to provide reliable data for planning future activities. Such information should be based on existing standardized and uniform protocols (see document WHO/PBL/93.33). It was reiterated that the trachoma rapid assessment methodology is a priority-setting tool, and should not be used to project prevalence data.
3. The comprehensive assessment of country needs is a necessary prerequisite for both planning and resource mobilization. Meetings of the Alliance provide a unique opportunity to match national needs with the resources of

international NGOs and other interested parties. To facilitate that process, country reports should reflect the areas of greatest need.

4. The Alliance urged the International Trachoma Initiative (ITI) and Pfizer Inc. to expand the information available on treatment with azithromycin to include pregnant and lactating women and to simplify the guidelines for the use of height-based approaches to the treatment of active disease. In particular, data are required on the safety and efficacy of azithromycin outside the 15-30 mg/kg range.
5. Countries are at different stages in efforts to eliminate trachoma. Countries that are close to achieving elimination should have surveillance systems in place to monitor the possible re-emergence of blinding trachoma.
6. Individual countries have made considerable progress towards the elimination of trachoma as a blinding disease. Such countries should serve as a resource to advise countries in the early stages of trachoma control in the spirit of TCDC.
7. With regard to the development of guidelines for the assessment of the elimination of blinding trachoma, the Alliance noted that a meeting with the participation of the WHO Department of Communicable Diseases Control, Prevention and Eradication was planned for 8 and 9 November 2001. The report is expected to assist in the implementation of surveillance systems.
8. Coordination at the global level has been achieved to a large extent through the GET Alliance and the Vision 2020 Task Force. The development of regional and, more importantly, national partnerships is now urgently needed to ensure coordination among all interested parties.
9. Regional and subregional workshops involving all member countries with a known problem of blinding trachoma and of interested and potential partners from the Alliance should be organized. It is recommended that these meetings be held within the framework of Vision 2020.
10. Efforts should be made by WHO to ensure a supply of affordable antibiotics, ideally produced locally, as well as surgical instruments and supplies for trichiasis surgery.
11. As part of ongoing health sector reforms, many countries have introduced cost recovery schemes for trachoma treatment. There is some evidence that user fees act as a deterrent to indigent patients seeking treatment. The Alliance therefore recommends that innovative approaches be explored to provide treatment at subsidized or no cost.
12. Training and retraining are an important component in programme development. Existing institutions should be identified and their capacity strengthened to serve training needs. Such training should ensure that each person trained is provided with an adequate working environment together with equipment and supplies. Those already trained and in place should be provided with the necessary equipment and supplies as a matter of urgency to ensure that their acquired skills are used.

13. Behaviour change and community participation are important strategies to achieve elimination of blinding trachoma. The Alliance urges the inclusion in all trachoma control programmes of measurable objectives, together with clear process indicators for those objectives and for surgery, antibiotic distribution, facial cleanliness, latrine use and access to water.

**SIXTH MEETING OF THE WHO ALLIANCE FOR THE
GLOBAL ELIMINATION OF BLINDING TRACHOMA***Geneva, Switzerland (5-7 November 2001)***ANNEX 1****DRAFT AGENDA**

Opening ceremony
Introduction of participants
Election of officers
Administrative announcements
Adoption of agenda

1. Reporting of activities undertaken since the previous meeting by:
 - The WHO secretariat
 - Representatives of endemic countries members of the Alliance
2. Presentations by new participating countries and organizations
3. Update on monitoring and evaluation of elimination of blinding trachoma
4. Development of a plan of action for global coordination and technical cooperation between developing countries (Working groups)
5. Trichiasis surgery
 - Human resources
 - Quality monitoring
6. Update on antibiotics
 - Resistance
 - Treatment strategies and regimen
 - Reporting on Pfizer-donated azithromycin through ITI
7. Facial cleanliness and environmental changes
8. Update on operations research projects
9. Any other matters

Conclusions and recommendations
Date and place of next meeting
Closure of meeting



Wednesday 7 November

Technical briefing for National Coordinators

**SIXTH MEETING OF THE WHO ALLIANCE FOR
THE GLOBAL ELIMINATION OF TRACHOMA**

**Geneva, Switzerland
(5-7 November 2001)**

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