



Report of the Fifth Meeting

of the WHO Alliance for the

Global Elimination of

Blinding Trachoma

Geneva, Switzerland
(5-7 December 2000)



GLOBAL ELIMINATION OF BLINDING TRACHOMA BY THE YEAR 2020

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1. INTRODUCTION

1.1 Opening of the Meeting

The Fifth Meeting of the WHO Alliance for the Global Elimination of Trachoma was held at WHO headquarters, Geneva, Switzerland from 5 to 7 December 2000. The Meeting was attended by 21 national coordinators from endemic countries, 2 representatives of governmental organizations, 17 representatives of WHO collaborating centres for the prevention of blindness and other research institutions, 24 representatives of NGOs and foundations, and 2 observers from Pfizer, Inc., together with WHO Secretariat staff (see list of participants in Annex 2). The Meeting was opened by Dr L. D. Pizzarello, Chairman of the Alliance.

Dr S. Resnikoff, Coordinator, Blindness and Deafness, WHO, speaking on behalf of 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. The Meeting would review progress in the development of national control activities in more than 25 countries, which exceeded the target set in 1996. Intersectoral cooperation and community participation had been successfully implemented in several countries. Working groups had been set up during the year to monitor the quality of trichiasis surgery, finalize the trachoma rapid assessment methodology, and discuss the use of systemic antibiotics. A growing number of operational research studies were being carried out on treatment strategies, social and behavioural changes, and monitoring and evaluation procedures. The Meeting would also discuss progress with the Global Information System and the establishment of a process for the certification of the elimination of blinding trachoma.

1.2 Election of officers

Professor Ton Thi Kim Thanh (Viet Nam) was elected Chairperson and Professor S. West (USA) Vice-Chairperson. Dr Y. Chami Khazraji (Morocco) and Dr G. P. Pokharel (Nepal) were elected Rapporteurs.

Dr Pizzarello, outgoing Chairman, noted that the past year had been busy, as azithromycin distribution got off the ground and the Trachoma Technical Meeting at Columbia University in New York had been held successfully. He welcomed the new officers, who were taking over at an exciting time for trachoma control, and expressed his thanks to the WHO Secretariat for its work. Dr Resnikoff expressed WHO's appreciation of Dr Pizzarello's significant contribution to the Alliance's work.

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 presented the activities of the WHO Blindness and Deafness (PBD) team relating to the Alliance for the period 1 December 1999-1 December 2000. Technical assistance and support to national programme development was provided by PBD to Chad, Cambodia, Lao People's Democratic Republic, Mauritania, Morocco, Myanmar and Senegal. Participation in technical and other meetings organized within the Alliance framework was also reported:

- C Monitoring antibiotic resistance (Centers for Disease Control and Prevention, Atlanta, GA, USA, 9 February 2000);
- C Carter Center Trachoma Control Review (Atlanta, GA, USA, 10 February 2000);
- C 14th Congress of the Moroccan Ophthalmological Society (Rabat, 24-26 February 2000);
- C International Trachoma Initiative (ITI) technical expert committee (New York, NY, USA, 11 April 2000 and Ouarzazate, Morocco, 18-19 September 2000);
- C Trachoma Technical Meeting (Columbia University, New York, NY, USA, 30 September-1 October 2000).

The production and dissemination of documentation (reports, training manuals, guidelines, newsletter, etc.) continued. *Preventing trachoma: a guide for environmental sanitation and improved hygiene* had been completed and distributed, though the operations manual for trachoma rapid assessment and the report of the Alliance's Fourth Meeting had been delayed by staff cuts. Protocols on quality control in trichiasis surgery (Oman) and evaluation of the national programme's progress towards trachoma elimination (Morocco) had been completed. At countries' request, simplified trachoma grading cards had been produced and distributed in Arabic, Dari, Khmer, Laotian, Portuguese and Pushtu. A standardized country report form for national coordinators had been completed and the data bank has been regularly updated.

The implementation of trachoma rapid assessment studies had been supported in Cambodia, Chad, the Lao People's Democratic Republic, Mauritania and Senegal through training of national programme and NGO staff in methodology, data management, reporting, and planning with the data obtained.

Other activities had included: preparations for the present Meeting of the Alliance; dissemination of information on the GET 2020 programme and updating of the trachoma web site (www.who.int/pbd/trachoma); strengthening of information and communication systems, including a Majordomo discussion system (<http://majordomo.who.int/trachoma>), an online chat room at the WHO server, and a data retrieval system; and the publication of scientific articles.

Dr Mariotti concluded by noting that the number of national coordinators present at the Fifth Meeting had grown to 21, and that there were some 72 participants.

2.2 Endemic countries

2.2.1 Algeria (*Professor M. L. Kebbouche*)

Surveys in El Oued in 1998 showed prevalences of 48% for active trachoma (TF/TI) and 4.6% for trachomatous trichiasis (TT). Trachoma is known to be a public health problem in southern Algeria. It is dealt with by a sub-department for Trachoma Eradication within the Ministry of Health's Department of Prevention. A national trachoma control programme is needed as part of blindness prevention.

Current activities focus mainly on school screening and the treatment of families when cases are diagnosed. As to the S component of the SAFE strategy, it is estimated that some 18 000 people require trichiasis surgery (Trabut method). Antibiotic treatment is needed by 275 000 people. Tetracycline ointment is in short supply; availability needs to be improved, relatives need to be treated when cases are found, and azithromycin should be introduced. For the F component, the problem arises only in the south. Schoolchildren in towns and villages are careful about personal hygiene, but trachoma is hyperendemic in areas of scattered population where water points are scarce. Tribes and nomads need to be brought together and settled round a water point, which they do not readily accept. Few environmental measures have been undertaken for scattered populations. Providing water supplies is difficult given the scale of the Algerian Sahara. The risk factors include the lack of water, clustering of trachoma among nomads, and the absence of community-level treatment. Again the necessary measures include bringing the nomad peoples together, settling them near water points, building latrines, and involving the Ministry of the Environment.

A study of the different categories of health personnel involved is being undertaken as part of defining a national strategy for trachoma control. Theoretical and practical training is needed for school physicians and primary health care staff in southern Algeria. The work of NGOs will need to be coordinated with the national strategy. The main operational research problem is how to settle people in sparsely populated areas and provide them with water. Evaluation mechanisms are being worked out. Priorities for the coming two years are to undertake further surveys to obtain reliable prevalence figures, and to find the necessary resources to define and implement the national strategy.

The past may hold lessons for the present. Trachoma control was undertaken in Algeria in the 1960s, and by 1972 the disease was hypoendemic. Now it is at best mesoendemic in the south, while some areas are hyperendemic. A new focus is needed on health education, research, operational issues such as service delivery, and a dialogue between sectors.

2.2.2 Burkina Faso (*Dr L. Ilboudo*)

Trachoma is a public health problem in five regions of the country, with national prevalences of 26.8% (TF/TI) and 5.1% (TT) among its 10.2 million inhabitants.

For the past two years, Helen Keller International (HKI) has funded trachoma control in the Health Region 2, which is hyperendemic, with prevalences of 45.5% (TF), 6.4% (TI) and 8.3% (TT). Twenty operators have been trained and have performed 1021 trichiasis operations; refresher training was given during 2000. Trachoma health education with HKI support began in region 2 with the training of teachers and introduction of information technology in four areas. Region 1, where HKI started its control work, has prevalences of 32.8% (TF), 3.2% (TI) and 4% (TT). Ten

operators had been trained but activities were suspended because of lack of resources. HKI has now trained an additional 10 operators, given refresher training to the earlier operators, trained staff in stock management, provided supplies and supervised activities.

Also in region 1, trachoma control campaigns were carried out from 12 to 18 November 2000 in the provinces of Yaga, Sourou and Kossi. The campaigns included mass consultations, distribution of tetracycline ointment, and trichiasis operations. A national day for trachoma control is planned to be held in Ouagadougou in March 2001. Training of community development workers will start shortly.

A project for trachoma control supported by the Organisation pour la Prévention de la Cécité (OPC) began in the hyperendemic provinces of Oubritenga and Sanmatenga in August 2000. Health education messages were broadcast from early August to early September. A KAP survey was conducted in Kaya health district to assist in designing and disseminating messages. In October, 10 trichiasis operators were trained at Ziniare for the medical centres in the two provinces. Mass consultations followed by trichiasis operations were conducted at two sites, together with early screening for trachoma among primary school children in Ziniare. The project was successful, and a second phase is underway for follow-up of trichiasis cases operated and eye care in schools, while an action plan has been established for 2001.

In general, 2000 saw the strengthening and extension of trachoma control in Burkina Faso, but much remains to be done and the support of international partners remains crucial.

2.2.3 Cambodia (Dr U. Yutho)

Cambodia, with a population of 11.7 million, has a blindness prevalence of 1.2%. Trachoma is a major public health problem, although no nation-wide survey has been carried out. An estimated 171 000 people have TT and over 260 000 have TF/TI. Cambodia recently became a member of the WHO GET Alliance.

Cambodia undertook its first trachoma rapid assessment (TRA) project from November 1999 to June 2000, with WHO technical and financial support. Three provinces (Takeo, Svay Rieng and Prey Veng) were selected on the basis of population, geographical features and hospital information on high trichiasis and lid surgery rates, using data from the 1998 national census and maps. Available data suggested that trachoma could be a much bigger problem than suspected, but there was no direct trachoma-related information. A total of 43 villages appearing to meet the TRA manual criteria for high priority, using information on risk factors and living standard indicators (e.g. high populations, poor water supply and sanitation, and crowded housing) collected during the 1998 national census. Two provincial field facilitators were selected by the two departments concerned (health and rural development).

The facilitators then paid community assessment visits to the villages to collect basic information and to finalize arrangements for the TRA. Schedules and timetables were updated and a logistic plan was developed. As the WHO funding was insufficient to cover the revised financing requirements, Helen Keller Worldwide provided additional funds. TRA training was given to three ophthalmic nurses and three rehabilitation workers with a Caritas/Christoffel Blindenmission project, and the HKI eye health officer was designated as field coordinator.

An examination form for the TRA and the forms in the TRA manual were translated into Khmer,

equipment has been ordered and contacts made with eye units for referral of trichiasis patients. The data obtained have not yet been fully analysed. Preliminary results are tabulated and mapped for each province in document GET/ALL5/WP1.2E.

Based on preliminary analysis of the TRA data, it can be seen that field team findings were validated by supervisors in 2 out of 3 areas, emphasizing the importance of the quality of the training given to the field workers and the supervision provided to field teams.

In Takeo province, active trachoma (TF/TI) was found to represent between 0 and 9.5% of the children examined (0-9 years old) while TT prevalence was between 0 and 1%. Children faces were overall clean, but no household had latrine nor garbage collection system. F & E are high priority in the study area. In Svay Rieng, TF/TI was found to represent between 0 and 4% of the children examined, and TT was recorded between 0.3 and 3%, setting a high priority for the "S" component of SAFE. The assessment also revealed that in the selected villages no household had latrine or a garbage removal system. Further, personal hygiene (clean faces) was found to be worse than in Takeo (8.6 to 85.8% of dirty faces in children below 10 years). In Prey Veng province, active trachoma ranged from 0 to 11.7% among the children examined, and TT was between 0.1 and 1.7%. Personal hygiene was found to be better than in the other provinces, even though no selected household had latrine or human wastes removal systems.

2.2.4 Chad (Dr M. O. Madani)

A random cluster survey was conducted in the Ouaddaï-Biltine region of Chad in 2000 to determine two indicators: the prevalence of active trachoma (TF/TI) among children aged <10 years; and the prevalence of trichomatous trichiasis (TT) and corneal opacity (CO) among women aged >14 years.

Among children aged <10 years, TF prevalence was 29.7% and TI prevalence 13.6%. Prevalence of dirty faces was 40.5% and of flies on the face 39.3%. Among women aged over 14 years, prevalences were: 27.9% for TS; 1.7% for TT; and 1.1% for CO. Bilateral loss of visual acuity attributable to trachoma was found among 0.3% of women.

The survey sample was representative of the rural population of Chad in the Ouaddaï-Biltine region, and can be extrapolated to Chad's overall population of some 7.5 million. This would mean that 77 913 children aged <10 years have TF and 35 677 children have TI, i.e. a total of 113 590 children requiring antibiotic treatment. Among women aged >14, there would be 3493 cases of trichiasis requiring operations; in addition, there would be 2301 cases of CO and 617 women already blind because of trachoma. There is a severe shortfall of trained staff for trichiasis surgery, and efforts are being made to train general physicians and nurses in the procedures.

The survey has made it possible to evaluate the need for medical and surgical treatment and to estimate the number of people requiring treatment or an operation in each region. The National Programme for the Prevention of Blindness will now seek to move ahead, with the support of the Alliance and its partners.

2.2.5 Ethiopia (Dr W. T. Mekuria)

Ethiopia has a population of some 62 million people, and trachoma is a public health problem in all parts of the country. According to small-scale community surveys, the prevalence of active trachoma is over 45%, with a TT prevalence above 1. The trachoma programme is part of the

country's National Programme for the Prevention of Blindness. Action is required to create awareness of the disease at all levels, with community participation.

Surgery: As regards the SAFE strategy, about 1 million people require TT surgery. A total of 236 staff in different categories perform TT surgery, in the ophthalmic departments of the main hospitals, in health centres or district hospitals, or during screening campaigns for cataract. A modified Trabut-type procedure and bilamellar tarsal rotation are both recommended. Training of non-ophthalmological medical personnel and of instrument maintenance technicians needs to be strengthened, and community awareness should be raised to increase uptake of TT surgery in mass treatment settings. More TT surgery sets and consumables are needed.

Antibiotics: An estimated 10 million people need antibiotic treatment, which is given at individual consultations or during screening campaigns. Tetracycline eye ointment is recommended, but quantities available are insufficient. Ethiopia would like to manufacture tetracycline ointment locally, and to try azithromycin, if supported by ITI or other donors.

Facial cleanliness and environmental improvement: Activities for the F component have included health education using posters and leaflets, while teachers promote personal hygiene in most elementary schools. Water supplies to endemic communities need to be improved, community awareness of the importance of facial cleanliness needs to be raised, and teachers should be encouraged in their promotional work. In environmental change, communities need to be convinced of the importance of latrine construction, proper waste disposal, etc. Action is needed to combat risk factors such as the lack of safe water supplies, lack of awareness about personal and environmental hygiene, and high fly density.

The number of staff engaged in trachoma control falls far short of needs. It is estimated that at primary level some 2480 TT surgeons and at secondary and tertiary levels some 250 ophthalmic assistants and 200 ophthalmic nurses are required. Operational research to compare the results of different lid surgery procedures and treatment with tetracycline versus azithromycin would be needed.

A number of NGOs are involved in eye care delivery, including trachoma control. Their work would be more effective with stronger collaboration among NGOs and in the informal task force meetings with the Ministry of Health.

Action scheduled for the next two years includes the preparation of a five-year plan (early 2001); increasing the quantity and performance of TT surgeons (2001-2002); mass antibiotic treatment (2001-2002); education to increase awareness of trachoma (2001-2002); and facilitating NGO activities in community development, including water supply.

2.2.6 The Gambia (Mr M. Bah)

The Gambia is the smallest country in West Africa, with a population of 1.3 million. Trachoma remains a major cause of preventable blindness. The SAFE strategy has been introduced, and the National Eye Care Programme has adopted the Management Information System/Geographical Information System (MIS/GIS) as a management tool for trachoma surveillance (see section 5 below). Given the high prevalence of trachoma in urban areas, an urban eye care programme, including trachoma control, has been launched in Banjul and Kanifing municipalities. The programme targets the marginalized and underserved communities that

make up 90% of the urban population.

Research has indicated that azithromycin gives cure rates of 88% in TF and 80% in TI, versus 73% and 25% for tetracycline. The aim is therefore to treat all TI cases with azithromycin. TF will continue to be treated with tetracycline eye ointment on cost grounds. Sight Savers International (SSI) has provided support in this regard. SSI held an international workshop in the Gambia in November 2000 to share experience on the establishment of the trachoma control programme and implementation of the SAFE strategy in the Gambia; eight countries participated. Under the proposed health for peace initiative, eye care teams from the Gambia and Senegal have exchanged visits, and collaboration in two areas has been agreed. Guinea and Guinea-Bissau have also shown interest in the initiative. Collaborative studies have continued on flies and the eye (see section 7 below) and trachoma scarring.

Among achievements for the period January-November 2000:

- Ⓒ 29 out of 34 health facilities are staffed with community ophthalmic nurses to implement the SAFE strategy;
- Ⓒ 317 active cases were treated with antibiotics;
- Ⓒ 269 trichiasis operations were performed;
- Ⓒ 7 community ophthalmic nurses received training in community lid surgery;
- Ⓒ 70 environmental sanitation equipment kits were supplied to 70 communities with high prevalence of active trachoma.

Planned future activities include an evaluation of the impact of the sanitary equipment kits; training for 10 community ophthalmic nurses in trichiasis surgery; training of nurses in operating the MIS/GIS; assessment of the quality of trichiasis surgery at community level and identification of recurrent cases (if any) operated since 1997; evaluation of the trachoma control programme; visits to Guinea and Guinea-Bissau; and development of an action plan for the health for peace initiative, including trachoma.

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

The Lao People's Democratic Republic is a poor, landlocked, chiefly rural country with some 5 million inhabitants. Trachoma is a public health problem in at least four provinces (Luangprabang, Khammouane, Saravanne, Champasack). In the absence of recent data on trachoma, it was decided to undertake trachoma rapid assessment (TRA) in all seven provinces, to gain an idea of trachoma prevalence and to identify priorities among the components of the SAFE strategy. Particular objectives were to study the endemicity of TT among adults aged >15 years and of TF/TI among children aged 0-9 years; environmental and personal hygiene and primary health care services were also studied.

One study team covered three provinces, and a second covered the remaining four. Each team consisted of an ophthalmologist, provincial eye care staff, and district health workers. Team members attended a WHO-designed workshop in order to standardize TRA methodology. In the sample examined, the overall rate for the seven provinces was 12.2% for TF and 0.5% for TI among the children, while the TT rate among adults was 0.03%. These figures suggest that some 500 people may require trichiasis surgery, while 500 000 need antibiotic treatment.

Priorities for the next two years include continuation of the TRA; health education; improvements in safe water supplies and use of latrines; and reduction of the prevalence of TF/TI among

children and adults.

2.2.8 Mali (*Dr D. Sacko*)

Nationwide surveys among Mali's 10 million population indicate an overall TF/TI prevalence of 34.9% and a TT prevalence among women aged >14 years of 2.5%. Further studies are needed on barriers to trichiasis surgery; the most cost-effective surgery strategy; and knowledge, attitudes and practices on trachoma, for the design of a national IEC strategy. Trachoma control activities are based on the SAFE strategy, with current emphasis on the S and A components. Mali is one of the five countries to benefit from azithromycin donations from the International Trachoma Initiative (ITI), and has several other international partners.

An estimated 86 000 people need trichiasis operations, while some 3 million people require antibiotic treatment. At present, treatment is given to cases found during screening, while azithromycin is given to the whole population in hyperendemic areas. Health staff need to be trained in diagnosis and treatment of trachoma, and tetracycline ointment should be distributed more widely.

For the F component, trachoma control should be introduced into basic education, IEC activities should be expanded, and intersectoral collaboration should be promoted. The E component requires the provision of safe water and education of communities on environmental prevention of trachoma.

Human resources are scarce; more training and education are needed for trichiasis operators, general medical staff, teachers and the community as a whole. A workshop has been held to develop indicators for evaluation. Efforts to coordinate the work of all the sectors involved in trachoma control are continuing, and a manual has been prepared.

2.2.9 Mauritania (*Professor S. E. Ahmedou*)

Mauritania carried out a survey in four regions during 2000 to assess the TF/TI prevalence in children aged <10 years and the prevalence of TT and its effects on corneal opacity (CO) and visual acuity in women aged >14 years. The objective was to forecast needs for medical and surgical care and estimate the number of people requiring treatment or an operation. The overall TF and TI rates for children aged <10 years were 16% and 4.2%. The TT rate in women aged >14 years was 0.26%, the CO rate was 0.26%, and the blindness rate was 0.1%. The findings are set out in document GET/ALL5/WP1.5E.

The sample was representative of the structure of Mauritania's population of 2.6 million people, and so the results can be extrapolated to the whole country. This would indicate that there are 129 600 children aged <10 years with TF and 34 020 with TI, or a total of 163 620 children requiring antibiotic treatment. Among women aged >14 years, there are an estimated 1892 cases of trichiasis in need of surgery, 510 women with CO attributable to trachoma, and 728 women already blind because of the disease.

The results of the survey will be analysed in further detail. Meanwhile, the National Blindness Prevention Programme will do its utmost to control trachoma with the Alliance's support.

2.2.10 Morocco (*Dr Y. Chami-Khazraji*)

Morocco applies a two-pronged approach to trachoma control in accordance with the SAFE strategy: curative measures, including surgery for complications and antibiotic treatment for active trachoma; and preventive measures, based on personal and environmental hygiene and backed by community development.

During the period, 14 surgery training sessions were held, attended by 112 physicians and nurses. Of the 9255 people operated, 25 were aged <10 years. Women accounted for about two-thirds of cases. The recurrence rate after surgery was 1.5%, and there were 663 refusals.

During the November 1999-January 2000 campaign for the antibiotic treatment of active trachoma, 225 136 children aged <10 years and 405 151 people aged 10 years or more were treated. In the next campaign, in September-November 2000, a further 185 184 children aged <10 and 391 435 people aged 10 or more were treated. Over 95% of people were treated with a single annual dose of azithromycin, nearly all in mass treatment programmes. Azithromycin was well accepted by the population, with few side-effects.

For the F and E components, community participation was stressed, with the creation of 350 village committees, 150 new water points, 1010 environmental sanitation campaigns, 660 fly control operations, and 1395 demonstrations of waste and dung management. Other activities included advocacy, IEC (over 30 000 health education sessions for the public, with nearly 1.2 million beneficiaries, women's literacy and the development of an IEC manual for trachoma control within the literacy course, community-based development, and water supply. Partners organizations made a strong contribution.

2.2.11 Mozambique (*Dr Y. Zambujo*)

For its population of 16.9 million people, Mozambique has 11 ophthalmologists, of whom 4 are nationals, and 25 ophthalmic assistants. Three physicians are receiving ophthalmic training. The country's trachoma control programme is just starting. A national workshop was held in November 2000 attended by all the ophthalmologists and assistants, to mobilize them for the control programme, to get information on trachoma in Mozambique and constraints to control, and to update staff on trachoma epidemiology, the SAFE strategy, trachoma grading, and medical and surgical treatment. Each assistant received a new surgery kit at the end of the workshop.

All ophthalmic workers are doing trachoma surgery at hospital level, using the Trabut technique. Treatment is with tetracycline eye ointment; oral treatment with azithromycin is not available. Operational difficulties include the shortage of staff, lack of transport to reach rural areas, lack of supplies such as antibiotics and sutures, and funding.

Information at the workshop indicates that trachoma is present throughout the country, with active trachoma prevalences of about 60% in some rural areas. More information is being gathered for January 2001, when the trachoma programme for the coming year will be planned, starting in the worst areas. A TRA exercise is planned for each of the country's three trachoma regions (north, central, and south). A further workshop with NGOs operating in the country is planned for early 2001 to mobilize their support for the programme.

2.2.12 Myanmar (*Dr Tun Aung Kyaw*)

Myanmar, with a population of 50 million, has an estimated TF/TI prevalence of 1.16% and a TT

prevalence of 0.49%. The TF/TI prevalence in the 0- to 10-year age group is about 5%. The present Trachoma Control and Prevention of Blindness Programme has its roots in the country's first trachoma control project, launched in 1964. Vision 2020 was launched in Myanmar in October 2000, and a workshop has been held to formulate a national strategy as a priority within that framework.

Health personnel of different level perform trichiasis surgery. The surgical technique used is the grey line split and splint method. More trained staff and logistic support are needed. It is estimated that about 500 000 people need antibiotic treatment using tetracycline eye ointment with blanket mass treatment in highly endemic areas and more selective approaches through school, village or health centre programmes elsewhere. The country would like to test azithromycin treatment scheme.

For the F and E components, behavioural change, clean water supplies, clean towels, fly-proof latrines and fly control are emphasized. More health education and advocacy materials, community participation and training are needed. Priorities for the coming two years include trachoma rapid assessment through 2001, continued treatment of patients and families, and trichiasis surgery where needed.

2.2.13 Nepal (Dr G. P. Pokharel)

Nepal's more than 23 million people live in three geographical zones: the mountains, the hills, and the terai. Trachoma is a public health problem in the Mid-West and Far West Regions. Recent studies in hyperendemic areas indicate that the TF/TI prevalence in children aged 10 years or less is 16-35%, while the TT prevalence is about 1%.

The Government does not handle the trachoma control programme directly. The national trachoma task force committee is led by an NGO representative, with members from the zonal eye care programmes. Action is needed to inform political leaders, publicize the size of the problem, highlight the economic loss to society, and convince people that trachoma control and elimination is possible applying the SAFE strategy. In one endemic district, community volunteers conduct the programme with help from district eye centres. They provide information and education on the importance of face washing and environmental cleanliness, apply tetracycline ointment to children, and detect and refer trichiasis for surgery.

An estimated 20 000 lid surgeries are required. In 1999, there were 1680 operations, undertaken chiefly by ophthalmic assistants at district eye centres, using the bilamellar tarsal rotation procedure. Trichiasis screening and referral need to be stepped up, more ophthalmic assistants need to be trained to perform surgery; evaluation of surgical outcome is also needed. Some 130 000 people need antibiotic treatment; and tetracycline is the treatment used. Azithromycin is being tried in a few pilot areas; 250 mg tablets made in India cost US\$ 0.50 each. To strengthen the A component, the cost of antibiotics needs to be reduced, and awareness of the side-effects of azithromycin needs to be raised.

Activities to promote facial cleanliness include health education, with the support of volunteers and teachers and using posters, pamphlets and radio. Eye health education should be included in the school curriculum and through mothers, while availability of clean water near homes needs to be improved. For the E component, activities include the promotion of latrine use, cleanliness around the home, and keeping animals in separate shelters. Again, further health education is

needed, with emphasis on household and animal waste disposal.

As to human resources, there are presently 320 community volunteers and primary health care workers, 120 ophthalmic assistants and health educators, and 33 ophthalmologists and programme managers, compared with estimated needs of 1500, 300, and 100 respectively. International cooperation will be more effective if the recently formed national task force guides, coordinates and monitors the programme. Research is needed into the feasibility and cost-effectiveness of using azithromycin; long-term education programmes aimed at mothers; and the availability of cheap and absorbable suture material.

2.2.14 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 million population. Rates are much higher in Zinder and Maradi departments, and trachoma is also a public health problem in Dosso, Tahoua and Tillaberi departments. Trachoma is the second leading cause of blindness after cataract. A trachoma control committee was set up in 1998 under the National Programme for the Prevention of Blindness. Community health workers, marabouts and schoolteachers are being trained to contribute to trachoma control.

An estimated 68 300 people need trichiasis surgery. It is expected that some 4000 operations (Trabut method) will have been performed by the end of December 2000. All community health workers in Zinder, Diffa and Maradi should be trained in trichiasis surgery, and district deputy chief physicians in supervision of operators. About 132 000 people need to be treated with antibiotics. Niger uses tetracycline, but is negotiating with the International Trachoma Initiative for donations of azithromycin for distribution at community level. Adequate supplies of tetracycline at an affordable price need to be made available at village level.

Training is being given to health and sanitation workers, health educators, teachers and marabouts in the target departments of Zinder, Diffa and Maradi to promote facial cleanliness. Marabouts are being asked to use religious teachings to convey messages about hygiene. Environmental activities include construction of latrines and education in their proper use and the elimination of household and animal waste. Human resources now include nine ophthalmologists, 15 eye care technicians, and 92 trachoma operators.

Research is needed on methods and costs of community-based distribution of azithromycin, and on reasons for non-use of latrines. Future prospects include the extension of control activities, the distribution of azithromycin in 2001, and the strengthening of training in Diffa, Zinder and Maradi regions.

2.2.15 Nigeria (Dr D. Apiafi)

Nigeria - represented for the first time at a meeting of the WHO Alliance - has an area of nearly 924 000 sq.km. and a population of over 120 million people. There have been few trachoma control activities in the past. As NGOs begin to work in this field, it is hoped that a trachoma control programme can be launched. A national prevalence survey is required, followed by advocacy using the survey data and publicity in the media.

Helen Keller International (HKI) is starting to work on trachoma in Borno State, with a population of 2.6 million (1991 census). It has recently completed a survey in children aged below 3 years

and women above 15 years; the data are now being analysed. Initial findings suggest that 80% of children in the sample have TF/TI and >50% of the women have TT. For Nigeria as a whole, the problem is enormous, and it is hoped that HKI will be able to take its work forward after the survey. On the human resource side, there are some 250 ophthalmologists in the country, though unevenly distributed. There is a need to train ophthalmic nurses and general physicians in trachoma screening and treatment.

It is not known how many people need trichiasis surgery or antibiotic treatment in Nigeria. Work is beginning using tetracycline eye ointment; adequate supplies need to be secured, and azithromycin should also be available. Facial cleanliness is part of school eye health programmes, though widespread public education is needed through the media, child-to-child programmes and health education for mothers. The E component requires better environmental sanitation and personal hygiene, and the provision of adequate water supplies.

Donor agencies and NGOs can help particularly by providing financial support for trachoma control, together with free or subsidized antibiotics and local training of staff. The priority activity for 2001 is a prevalence survey, to be carried out by the National Blindness Prevention Programme.

2.2.16 Oman (*Dr A. Al Raisi*)

A national survey of blindness and trachoma in Oman in 1996-1997 in collaboration with WHO showed a trachoma prevalence of 2.2%. After a review of trachoma-related data, the Vision 2020 programme was adopted in Oman in April 1998. Six-year-old schoolchildren have been screened and treated for trachoma since 1992. Contact tracing and prophylactic treatment in the community has been a Government priority, with a consequent sharp fall in prevalence. Some 6300 trichiasis cases have been diagnosed and 3000 operated. Health education on ocular hygiene has built on improved sanitation and provision of water since 1985. Thus trachoma has declined considerably, and the pool of infection is among adults, not new cases among children. School screening activities have made an impact, and are to be continued. The target is elimination of blinding trachoma by 2010.

In 2000, azithromycin was adopted in the national list of drugs; 400 students were treated for trachoma with azithromycin free of charge; and 3000 contacts were screened and given free tetracycline eye ointment. At the primary health care level, 2050 cases of trachoma were identified in 1999 and 1154 in the first half of 2000; they were treated with tetracycline free of charge.

Among IEC activities in 2000, brochures on trachoma and trichiasis were prepared in Arabic and distributed in the community; posters on eye hygiene were prepared and used in health education in schools, health centres and the community; trachoma was included in the school curriculum through the inclusion of a chapter on trachoma in a health-for-all book; a paper on trachoma in Oman was presented at an international conference; and revised standard operating procedures for trachoma were included in the new edition of a manual.

Operational research included a long-term assessment of the outcome of trichiasis surgery in Oman; the clinical response of school students to azithromycin was reviewed; a health centre approach for trachoma surveillance in the Dhakhiliya region was piloted; dysplastic eyelashes in trachomatous trichiasis were studied; and a study was started on the feasibility of using

azithromycin in surveillance for trachoma at health institutions and in the community.

Future plans include the expansion of azithromycin use in ophthalmic units and in primary health care; a review of alternative surgical methods for trichiasis; laboratory testing to study the response of trachoma to azithromycin; the transfer of active trachoma from the C to the B list of notifiable diseases; and training of community support groups to increase awareness in communities with high rates of endemic trachoma.

2.2.17 Pakistan (*Professor M. D. Khan*)

Pakistan's population of 135 million is 62.5% 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. Action is now being taken to organize trachoma control in the country. A second national blindness survey is planned for 2001, to be followed by trachoma rapid assessment in the same year. The results of the TRA will form the basis of a strategic plan for intervention in 2002. The reconstituted National Committee for Prevention of Blindness has set up a task force on trachoma control.

The Pakistan Institute of Community Ophthalmology will undertake situation analysis and monitor and evaluate programmes. The Institute holds master's courses in community eye health with support from Sight Savers International and Christoffel Blindenmission; some of the graduates now run provincial eye care cells to help implement provincial blindness prevention programmes. The Institute has also trained some 300 ophthalmic paramedical staff as primary eye care workers.

As to the implementation of the SAFE strategy, the programme will build on existing resources. Ophthalmic staff are available to undertake surgery, but will need training in the bilamellar tarsal rotation procedure, if this technique is selected. Training of staff at all levels will be developed. Locally-manufactured tetracycline ointment is readily available, and azithromycin tablets and syrup manufactured in Bangladesh can also be obtained. For the F and E components, eye health education is part of the curriculum. The public health education cell at the Institute of Community Ophthalmology will help to develop eye health education materials. Emphasis will be placed on face washing for children up to 7 years of age. Each province has a public health engineering department. Action is required to provide adequate safe water supply, latrines and waste disposal through community participation.

The launch of Vision 2020 in Pakistan is planned for February 2001. The event is intended to secure commitment from the Government, health professionals and international NGOs to the goals of Vision 2020 and GET 2020.

2.2.18 Senegal (*Dr M. B. Sall*)

Senegal has a mostly rural population of 9.5 million people. A study among women aged >14 years showed high rates of eye damage caused by trachoma, which is a significant public health problem. Senegal would like to work with and learn from the Gambia, its close neighbour, which has made substantial progress in trachoma control.

The risk factors found elsewhere - e.g. lack of safe water supplies and inadequate personal and environmental hygiene - prevail in Senegal. Needs for trachoma care are enormous. Some 372 000 children require antibiotic treatment, and an estimated 91 500 trichiasis operations are

needed. Thus the country seeks help from its partners. Following earlier well-drilling programmes, the incidence and prevalence of trachoma have been reduced in villages that now have water from boreholes.

2.2.19 Sudan (Professor M. Homeida)

Trachoma is a public health problem in many parts of the Sudan, notably the Wadi Halfa area in the north, the Upper Nile zone in the south (areas served by the Government from Khartoum and by Operation Lifeline South/Sudan (OIS/S) from Nairobi), Gezira, other areas in the south served by OIS/S, and camps for displaced persons.

A cross-sectional survey of 2000 people in 10 villages in the Malakal area in 1999 indicated that the TF/TI prevalence in children aged 1-10 years is 45%; 86% of women aged 30 years or more had trichomatous scarring (TS) and 25% aged 40 or more had TT. The risk of TT was 4.2 times greater for women than for men. In Halfa, the results were similar: in 2800 people in 14 villages, 47% of children aged 1-10 years had TF/TI, and 87% of women over 30 had TS. However, just 4% of women over 40 had TT, and the risk of TT was no greater for women than for men. The age of TS cases ranged from 10 months to 80 years and of TT cases from 5 years to 80 years; 277 (13%) TS patients and 3 (3%) TT patients were aged 10 years or less.

The national plan for trachoma control is being updated by the new Trachoma Task Force. The work of the National Onchocerciasis Task Force is being used as a model for the Sudan Trachoma Control Programme (STCP); starting in 1995 in the north and south, in Government and OLS/S areas, the onchocerciasis programme provided over 1.2 million ivermectin treatments from 1998 to 2000. The STCP is organized by a Technical Consultative Committee and benefits from a number of partnerships with ministries, communities and NGOs. Some 6000 people need trichiasis surgery and a further 400 000 need antibiotic treatment; these estimates may have to be raised much higher after further surveys.

In 2000, the Malakal programme implemented the SAFE strategy to four villages. Workshops were held to train supervisors and village volunteers. A surgical campaign in November with two ophthalmologists, a medical assistant and a nurse performed 235 interventions, half of them for trichiasis. 12 734 villagers were treated with azithromycin donated by the International Trachoma Initiative, representing coverage of 78% of the eligible population. A campaign to promote face washing, personal hygiene and fly control was conducted. For the E component, a KAP study was carried out in November and environmental and personal hygiene data were collected. Many people have access to latrines but do not use them because of inappropriate design.

The plan of action for 2001-2002 includes surgical training and the standardization of surgical procedures; health education and sociological studies on face washing; coordination of NGO activities in sanitation and water supply; and a target of 207 600 people to be treated with antibiotics each year in both Government-served areas (Malakal, Halfa and Khartoum displaced persons camps) and OLS/S areas (Jonglei and Upper Nile states). It is hoped to use azithromycin supplied through Khartoum and Nairobi.

2.2.20 United Republic of Tanzania (Dr S. Katenga)

The trachoma situation of this country of some 945 000 sq.km. and more than 30 million people is not fully known. In the past, trachoma control has been limited to the S and A components of the SAFE strategy, with surgery and antibiotic treatment provided at health facilities. Under the

expanded trachoma control programme, activities from December 1999 to November 2000 integrated all components of the SAFE strategy, and treatment and surgery were community-based. In six districts, azithromycin has been distributed to all communities, after advocacy campaigns using children's stories, trachoma songs, and radio messages. District distribution teams of 12-18 people spent two days for each village; 36 villages (6 per district) were covered in 1999, and 90 (12 per district) in 2000. Treatment coverage rose from 65-75% in 1999 to 75-77% in 2000.

So far, some 3000 TT cases have been identified, of which 1670 (55.6%) have been operated on. There are nine operators, using the bilamellar tarsal rotation procedure. It is planned to train another two surgeons for each expanded programme district, and allocate at least one surgeon to each endemic district.

To help communities to understand the disease process, facial cleanliness messages were relayed through radio, drama, songs, posters and stories. To achieve environmental improvements, village health workers are undertaking advocacy for the construction of latrines as part of integrated health messages. A recent epidemiological evaluation in programme areas has shown a 50% reduction in active disease (see section 8.2 below) and a rise in community awareness from 26% to 66% in one year.

In view of the progress in the first phase (1999-2001), the International Trachoma Initiative has approved phase II of ITI-supported activities. This will include expansion within the current districts, more focus on districts as the implementing units, strengthened trichiasis surgery throughout the country, and rapid assessment and surveys to permit mapping of trachoma prevalence in Tanzania.

2.2.21 Viet Nam (*Professor T. T. K. Thanh*)

Cross-sectional surveys have shown prevalences of 7.04% for TF/TI and 1.15% for TT in Viet Nam, with a population of over 76. Trachoma is a public health problem in provinces in the Red River delta and parts of the mountainous provinces in the north. The Government supports the trachoma control programme in 20 provinces, and further projects are run in cooperation with the International Trachoma Initiative (ITI), Helen Keller International and World Vision. Communities are active in mobilizing human and financial resources to execute control activities.

Viet Nam has an estimated 2000 patients who need trichiasis surgery; some 500 ophthalmologists do trichiasis operations (modified Cuenod Nataf method). Treatment is provided to cases and their families where the TF/TI prevalence is 8% or more; and just to cases where the prevalence is below 8%. Tetracycline and azithromycin are available. Further funds are needed for training and screening, and information on treatment needs to be disseminated.

For the F and E components of the SAFE strategy, KAP studies have been carried out, hygiene is taught in schools, and media such as radio, television, posters and leaflets are used. Under the National Water Supply and Environmental Hygiene Programme, safe water is being provided and the construction of appropriate latrines promoted. To strengthen the SAFE strategy, awareness among decision-makers and intersectoral collaboration need to be increased, and more funding from all sources is required. A reporting system from village level to the National Institute of Ophthalmology is in operation, and each project is evaluated to measure output, outcome and cost-effectiveness. Priorities for the coming period include continuation of the ITI project, and the expansion of the national control programme to other districts and provinces as

resources permit.

2.2.22 Discussion

The Alliance congratulated the speakers on their overviews of the situation in the endemic countries and on the progress made. Yet the reports show that huge numbers of people still need treatment or operations. Common problems remain, for example, the difficulty of convincing governments to take the necessary action and the need to find and train human resources at different levels.

A clear picture of the magnitude of needs and of present coverage is still needed. To reach that point, firm indicators must be developed. An ITI conference at Annecy (France) has produced indicators of process, management and outcome that might be standardized. Tangible impact indicators are not easy to find; one is the decline in trachoma prevalence. Work is being done in the United Republic of Tanzania to evaluate management, advocacy and community acceptance, including material and logistic indicators covering equipment and constraints. Figures used as measures in cataract might be helpful, e.g. the number of surgical interventions.

The Alliance again stressed the importance of all four components of the SAFE strategy. While health professionals might concentrate on the S and A elements, the F and E components must continue to be strongly promoted until they are integrated into effective national environmental programmes; otherwise, the goal of global elimination of blinding trachoma by the year 2020 will not be attained. At the right stage, modification of vertical structures and the integration of trachoma surgery and antibiotic treatment into primary health care will have the advantage of mobilizing general health care professionals and making trachoma control sustainable. For the present, integration of control activities into general health services can make indicators hard to find and the impact of trachoma control difficult to measure.

2.3 Participating organizations of the Alliance

2.3.1 World Vision Inc. (*Dr J. Riverson*)

World Vision Inc. has joined in partnership with the Hilton Foundation to fund collaborative activities to eliminate trachoma in three countries where the disease is highly endemic: Ethiopia, the United Republic of Tanzania and Viet Nam. Document GET/ALL5/WP1.9E presents the annual reports from the three country programmes for the period 1 October 1999-31 August 2000, and describes in detail the progress made. The three programmes have qualified staff in place and have undertaken training at all technical and management levels. Based on epidemiological surveys, all three have initiated IEC and trachoma treatment protocols.

During the year, all three projects have encountered improved levels of success in meeting their implementation targets.

Ethiopia: In the Borkena Valley project in Ethiopia, accomplishments related to: completion of the baseline survey; an operational surgery programme; purchase and distribution of instruments and drugs; treatment of cases; health education (videotaping of dramas, sessions at schools, in communities and in health centres); training of health workers, school teachers and development agents; water and environment (latrines and access to safe water); and supervision of prevention and control activities. The baseline survey completed during the year found prevalence rates up to 10 times greater than the WHO criteria for considering trachoma a serious public health

problem. The prevalence of active trachoma among children aged <10 years was 53.2%.

Viet Nam: During the year the SAFE strategy was fully implemented in the target districts of Chi Linh and Phu Cu in Viet Nam. Workshops were held to train trainers in primary eye health care, trachoma prevention and control, and trichiasis surgery. IEC activities were conducted for key eye care staff in 10 new communes in Chi Linh and 14 communes in Phu Cu. Trachoma rapid assessment was conducted in both districts and an epidemiological survey for eye diseases in Phu Cu. Trachoma screening and treatment and cataract surgery were implemented in both districts. Demonstration latrines and kitchens with less smoke were constructed. Wells were drilled in both districts for face washing and environmental promotion.

Tanzania: Key accomplishments in the two programme areas in the Dodoma region of Tanzania included training of community and district leaders, teachers and staff on the SAFE strategy and the technical elements of trachoma prevention and control; increased access to safe water supplies through hydrological surveys and well and dam construction; improved knowledge and practices in communities with regard to personal and environmental hygiene (workshops, meetings, formation of local committees, school surveys and construction of VIP latrines, and drama performances); increased access to surgery for trichiasis patients (refresher training for surgeons in eyelid surgery); and increased access to antibiotics (mass distribution of azithromycin and tetracycline eye ointment).

2.3.2 Al-Noor Foundation (*Dr G. Ezz El Arab*)

The Foundation, in collaboration with the Egyptian Ministry of Health and Population and other partners, undertook a large-scale survey of blindness, low vision and trachoma in Menofiya Governorate, Nile delta. Trachoma was shown to be a serious public health problem. TF/TI was found in 36.5% of children aged 2-6 years. Trichiasis was found in 8-10% of adults and trachoma was the third leading cause of blindness (after cataract and other corneal scars).

A pilot trachoma control project was implemented in four villages in Menofiya, working through village-based women's groups to provide education on the SAFE strategy. Topical antibiotics were provided and surgery was promoted. In the year after the project began, there were significant changes: knowledge of the SAFE strategy increased, attitudes improved, diagnosis and referral of trichiasis cases rose, and screening for trachoma increased.

In mid-2000 the Minister for Health and Population informed WHO that trachoma was a significant public health problem in Egypt. He asked for Egypt to be included in the *Vision 2020 – The Right to Sight* initiative and sought WHO's support against trachoma. At a meeting in November 2000 on prevention of blindness and trachoma in Egypt, he reiterated his wish for trachoma control to be included in the country's primary health care programme.

A prospective study of trichiasis surgery uptake and outcome in Menofiya is under way; some 300 patients have been enrolled. A separate study of the stigma surrounding trichiasis and the disease's contribution to visual function and quality of life is expected to be completed in early 2001. Among future activities, it is planned to expand the trachoma control project to other areas, collaborate with WHO's "healthy villages" programme, and emphasize training for local staff. Rapid assessments will be carried out in four governorates, and the environmental conditions responsible for the high prevalence of active trachoma will be further investigated.

2.3.3 Conrad N. Hilton Foundation (Ms D. M. Hayes)

The Hilton Foundation was founded in 1944 with C.N. Hilton as the founder and grantor. Priority areas upon which the Foundation focuses its efforts include blindness, early childhood development, domestic violence, homelessness and substance abuse prevention and research.

The Foundation has recently committed itself to supporting trachoma control activities through grants awarded to the Carter Center, Helen Keller International, the International Trachoma Initiative, and World Vision International. The support is provided principally for promotion of health education, personal hygiene and sanitation in Ethiopia, Ghana, Mali, Niger, Nigeria, Tanzania, Viet Nam and Yemen.

2.3.4 Christoffel Blindenmission (*Professor V. Klauss*)

Christoffel Blindenmission (CBM) supports over 1000 projects in more than 100 countries, working through national blindness prevention programmes. Trachoma is a priority. A current issue, because of the cost, is the possible change from tetracycline to azithromycin for antibiotic treatment. Among the geographical priorities, CBM is working in Ethiopia and plans to hold a workshop shortly to discuss the establishment of a national programme for the prevention of blindness in the Sudan.

2.3.5 Helen Keller Worldwide (*Ms L. Tapert*)

Helen Keller Worldwide works in 80 countries and has field offices in 19. The Helen Keller International (HKI) trachoma programme works to empower national counterparts to eliminate trachoma as a cause of blindness by increasing knowledge, capacity, and sustainability of national programmes. Trachoma activities in 2000 included:

- C 4726 trichiasis surgeries performed in Burkina Faso, Nepal, Niger, Tanzania and Viet Nam;
- C 256 trichiasis surgeons trained in Burkina Faso, Niger and Tanzania;
- C 1100 village health workers trained in Burkina Faso, Nepal, Niger and Tanzania;
- C 152 614 active trachoma cases identified and treated in Burkina Faso, Nepal, Tanzania and Viet Nam;
- C in Morocco, women's empowerment through vocational, literacy and community development programmes; 8200 women involved in literacy and vocational education; 10 schools structurally rehabilitated;
- C Additional activities in Cambodia, Mozambique and Nigeria.

As part of the HKI integrated school health programme in 2000, teachers were trained in Burkina Faso (42 teachers in 14 schools); Mali (30; 4); Morocco (63; 30); Nepal (61; 26); Niger (12; 2); and Tanzania (70; 35). Trachoma health education materials were developed in all six countries and will be available on the HKI Trachoma Programme's new website. Emphasis is being placed on information technology. Offices and partners will have computers for education and training, and a trachoma listserv in French and English is being managed by the Niger Regional Office. Three international trachoma workshops were held in 2000, on school health (Zagora, Morocco); information technology (Bamako, Mali); and monitoring and evaluation (Noordwijk, Netherlands).

2.3.6 International Agency for the Prevention of Blindness (Dr H. Faal)

Dr Faal welcomed the remarkable strides made in trachoma control as part of Vision 2020. She

expressed the hope that the format for reporting to the Alliance can be standardized.

2.3.7 International Trachoma Initiative (*Dr J. Cook/ Mr J. Mecaskey*)

Dr Cook expressed his gratitude to WHO for its leadership in trachoma and to all ITI's partners for the good work done. The hope in starting ITI had been that Pfizer would contribute, and indeed Pfizer had agreed to give Zithromax if it went to the poorest countries and its effectiveness could be shown. That progress had been described by the endemic countries earlier in the Meeting, and Pfizer will now increase its donation to some 10 million doses, through ministries of health and partners. ITI has also received support from the United Kingdom Department for International Development and the Bill & Melinda Gates Foundation.

Mr Mecaskey said that ITI is to expand its work with the support of Pfizer - as long as the programme shows results - and the Edna McConnell Clark Foundation. It will extend its SAFE programmes both in the present countries and to new countries. It is now developing strategic plans to manage programme expansion, operational research and health education.

With the Hilton Foundation's support, ITI is strengthening its role in health education, collecting best practices, conducting and evaluating health education activities, and developing norms for evaluation. It held a first workshop in New York on action to reduce trachoma risk and a second with HKI, attended by eight organizations and 10 countries, on the congruence of audience, media and message. It is applying research experience and lessons learnt through a range of health education approaches for different populations at risk, recognizing the need for a standard framework for monitoring and evaluating health education efforts.

2.3.8 Global 2000, The Carter Center (*Dr C. Withers*)

The Carter Center is working with ministries of health in a number of countries. In Ghana, it has undertaken surveys of trachoma prevalence and knowledge, attitude and practices (KAP) surveys in two regions. It is also involved in health education, emphasizing the F and E components of the SAFE strategy. It has done a KAP survey in Mali and is working in Niger, which it hopes will be a candidate for azithromycin, the Sudan and Ethiopia. It has held a workshop in the Yemen, and expects to organize further workshops for all countries in 2001, in French and English. Dr Withers expressed gratitude to all donors to the Carter Center's programme.

2.3.9 Orbis International (*Dr E. Friedlander*)

Orbis International is running five country programmes, in China, India and Bangladesh, Viet Nam and Ethiopia, from four offices. It is moving from short-term to longer-term projects and from a clinical to a more holistic approach.

2.3.10 Organisation pour la Prévention de la Cécité (*Dr P. Huguet*)

Dr Huguet presented OPC's trachoma control activities for 2000 and planned activities for 2001, in close collaboration with national programmes for the prevention of blindness, WHO, and the African Institute of Tropical Ophthalmology (IOTA) and with the support of the French Ministry of Foreign Affairs. The activities include epidemiological assessment of trachoma (Chad, Guinea, Mauritania and Senegal), SAFE strategy planning seminars (Chad, Mauritania and Senegal), and introduction of the SAFE strategy (Burkina Faso and Mali in 2000 and Chad, Mauritania and

Senegal in 2001). Thus the strategy will be introduced in all French-speaking countries in the Sahara region in 2000 or 2001.

2.3.11 Sight Savers International (*Mr R. Porter/Dr H. Faal*)

Sight Savers International (SSI) has continued work with partners in four countries. In Mali, it is working with ITI in the Koulikoro region, where it has distributed ivermectin. In Tanzania, works continues in the Ruvumi region, with good collaboration with other trachoma control projects. In Malawi, SSI is exploring the trachoma rapid assessment methodology. In the Gambia, it has continued to support all components of the SAFE strategy; further details are reported under other agenda items.

SSI sponsored a workshop for programme implementers and SSI staff from nine countries (the Gambia, Ghana, Guinea, Kenya, Malawi, Mali, Pakistan, Tanzania and Uganda) in Banjul, the Gambia, from 27 November to 1 December 2000. The workshop enabled participants to review the SAFE strategy, share their experience of establishing trachoma control programmes and learn from good practice, and see field work in the Gambia. They went on to develop action plans for their countries.

Because SSI works with NGOs, it would find a directory of organizations and their interests very useful. Secondly, as the Gambia was one of the first countries to start a trachoma control programme, it would like to share its experience with Guinea-Bissau and Senegal, and present work in the three countries as one unit.

2.3.12 Pfizer Inc. (*Ms H. Lauver*)

Ms Lauver expressed satisfaction with the results achieved in trachoma control in Morocco and Tanzania, and announced that Pfizer has increased its donation to 10 million doses of azithromycin. As the programme expands and moves forward, Pfizer's commitment to providing azithromycin will increase, to ensure that the A component of the SAFE strategy succeeds. Pfizer is giving \$6 million through ITI, while cutting back on other trachoma donations.

2.3.13 Swiss Red Cross (*Mr J. Kasper*)

Swiss Red Cross has been working for some 15 years in the field of eye care, in a number of countries. In trachoma control, it works with local Red Cross volunteers, especially on the F and E components of the SAFE strategy.

2.3.14 Discussion

Participants referred to the question of the best way to obtain support from partners and to the need for further coordination. Working methods varied. ITI, for example, began with a limited mandate in five countries. It has examined how best to manage growth, and is now identifying the next set of countries through expert visits and the review of local circumstances. The Board will then make its decision. During the first nine months of 2001, it hopes to engage with Nepal and Niger, with Egypt and Ethiopia to be considered. ITI plans to continue first with large-scale pilot projects, and then expand to entire countries if the goals are achieved.

It was noted that in Australia the Fred Hollows Foundation hopes to work with aboriginal medical services on the E component of the SAFE strategy, and should obtain funding with governmental

support in the coming six months. As to the Australian trachoma control programme, azithromycin is purchased from Pfizer for the aboriginal medical services, surgery is provided and fragmentary work is done on facial cleanliness. There is a considerable time lag in activities.

Speakers pointed out that each NGO tends to work on its own. To achieve the objective of eliminating blinding trachoma by 2020, the organizations need to share their experience and coordinate their work. Although support for control activities exists, coordination and exchange of experience is still lacking. Further strengthening of the coordination is required for implementation of the SAFE strategy in each country.

2.4 Information concerning the Technical Meeting on Trachoma held at Columbia University, New York, USA (30 September-1 October 2000) (Dr L. D. Pizzarello)

On the recommendation of the Fourth Meeting of the Alliance, a meeting was convened at the E. S. Harkness Institute, Columbia University, New York, with WHO's cosponsorship, to discuss a wide range of technical aspects of the S and A components of the SAFE strategy. Eleven experts from universities and research institutes attended, together with WHO staff and representatives of the US Centers for Disease Control and Prevention, ITI and Pfizer Inc. Dr Pizzarello thanked Columbia University and Pfizer for their support for the meeting.

The report of the Technical Meeting, containing the background papers and a series of recommendations and conclusions, has been distributed for the Alliance's Fifth Meeting. The conclusions and recommendations (attached as Annex 3) will be introduced under the appropriate agenda item for the participants' consideration.

3. TRACHOMA RAPID ASSESSMENT METHODOLOGY

3.1 Presentation of the results of the validation of the trachoma rapid assessment methodology and comparison with the results of a prevalence survey (Dr H. Limburg)

Dr Limburg presented the findings of a study in the Gambia to test the validity and repeatability of the trachoma rapid assessment (TRA) methodology as set out in the 1998 version of the WHO Guidelines. The aim of the methodology is to provide a simple operational tool to determine whether or not blinding trachoma is a public health problem; it is not intended for determining precise prevalence. The study is described in document GET/ALL5/WP2.1E.

Results from an initial TRA in 20 villages (TRA1) in May 1999 were compared with those of a second validation TRA (TRA2) in July 1999 in 13 villages randomly selected from the original 20. The two rounds were conducted by different field staff. The findings of TRA1 and TRA2 were compared with those of a door-to-door survey of the entire population of the 13 villages.

There was considerable variation between the results of TRA1 and TRA2 and between the results of the TRAs and the door-to-door survey. Even indicators that should have remained the same, such as distance to primary health centre or distance to trichiasis surgery facility, scored differently.

The study showed that the TRA methodology is easy to use and results are available quickly. The scoring system indicates which intervention(s) of the SAFE strategy are needed and facilitates priority setting. The definition of some indicators, such as availability and use of latrines, might

need modification. In some cases, the scoring system seems to exaggerate differences between the actual findings. The consistency between the scoring of the two TRAs in the same village was low and accuracy of measurement of the actual situation was doubtful. It was noted that comparison of TRA is inconsistent when conducted during different seasons and when active trachoma has been treated during the previous assessment.

3.2 Presentation of the final version of the WHO methodology (Professor H. Taylor)

The TRA methodology is now nearing final form as an operational tool to show where there is blinding trachoma; to rank districts in order of priority; and to help in the planning of control measures. It is not intended for the conduct of accurate epidemiological surveys, and is not suitable for monitoring. The methodology proceeds from the analysis of information already available to the selection of what appears to be the worst districts and villages and subsequent visits to assess the levels of trichiasis and active trachoma. Districts and villages will be ranked by priority to start implementation based on a number of indicators - notably number of trichiasis cases and proportion of children with TF/TI. The methodology will be ready for distribution in the first half of 2001.

4. TRICHIASIS SURGERY

4.1 Presentation of the conclusions and recommendations of the Trachoma Technical Meeting held at Columbia University (Dr L. D. Pizzarello)

Dr Pizzarello drew attention to the conclusions and recommendations relating to trichiasis surgery appearing on pages 50 and 51 of the report of the Trachoma Technical Meeting (see section 2.4 above and Annex 3), under the headings:

- C Who should be a candidate for trichiasis surgery?
- C Ongoing surgical audit;
- C Record keeping;
- C What needs to be done pre- and post-operatively?
- C Management of lid closure defects;
- C Management of recurrences;
- C Need for a new procedure for trichiasis;
- C Grading systems.

Page 52 of the report sets out six recommendations for trichiasis research; several organizations attending the Alliance's meeting expressed interest in the topics listed.

4.2 Clinical findings of the Oman study on recurrence of trichiasis after surgery (Dr A. Al Raisi)

Dr Al Raisi introduced document GET/ALL5/WP3.1E, which raised the question whether trachomatous trichiasis (TT) should be redefined. A pilot study had been carried out to investigate the causes of recurrence after trichiasis surgery in Oman. All TT cases visiting the oculoplasty unit of Al Nahdha Hospital between June and September 2000 (605 patients) were examined. Age, gender, type of pathology, past history of lid surgery, and presence of distichiasis and dysplastic lashes were noted. Of the 605 cases, 35 had previously undergone lid surgery, 61.8% of them more than three years previously. It was decided to review the role of

metaplasia in recurrence.

It was found that 46% (16 out of 35) of the recurrent cases had either distichiasis or dysplastic eyelashes. All had undergone lid surgery for trachomatous entropion in the past. Most were over 40 years of age. There was no significant association of those conditions with extent of visual loss or gender.

Metaplasia is common after cicatricial conjunctival conditions such as ocular pemphigoid and burns. Chronic irritation is a known factor for benign and subsequent malignant transformation. Moreover, frequent infection of conjunctival cells by *Chlamydia trachomatis* might alter cell activity, resulting in metaplasia. The study concluded that this different entity should not be included in the definition of TT, that the success rate of trichiasis lid surgery should be assessed after such cases had been excluded; that careful preoperative examination under magnification and appropriate modification in the surgical approach were necessary; and that TT should be redefined taking dysplastic eyelashes into account.

5. UPDATE ON GEOGRAPHICAL INFORMATION AND MANAGEMENT SYSTEMS (GIS & MIS) FOR TRACHOMA CONTROL

5.1 *Technical developments concerning the WHO-designed Health Mapper Data Manager (Mr J. P. Meert)*

The Alliance saw a demonstration of Health Mapper 2, an integrated information and mapping system for public health developed by WHO with support from the Edna McConnell Clark Foundation. This computer program has been used successfully in the Gambia and Mali (though less successfully in Morocco) for various diseases, including malaria, guinea worm infection, onchocerciasis and filariasis. The Data Manager capability works only if the requisite data are entered on the computer; it can draft reports, produce charts, process data at any level, calculate indicators, and perform similar tasks to enable health workers on the periphery to measure the impact of field activities. The software is available for use as an official tool through ministries of health.

5.2 *Lessons learnt from the use of GIS/MIS in the Gambia (Dr H. Limburg)*

A trachoma MIS/GIS has been operational in the Gambia's National Eye Care Programme since October 1999. Data were collected in national door-to-door surveys conducted in 1997 and 1999, together with follow-up data from registered cases and from new cases. The system enables key indicators of active trachoma and trichiasis to be recorded. The purpose of the system is to:

- C identify and prioritize need for intervention;
- C facilitate efficient and effective use of eye care infrastructure for trachoma control;
- C facilitate efficient and effective planning;
- C follow the outcome of trachoma treatment;
- C ensure that all trachoma cases are seen twice a year;
- C provide up-to-date information for the GIS;
- C facilitate research.

In an evaluation of the trachoma MIS/GIS by questionnaire, the comments of community ophthalmic nurses, ophthalmic medical assistants and senior programme staff were generally quite positive. Field staff involved felt that the system helped to increase the efficiency of their work and more patients were mobilized for lid surgery. It was believed to facilitate planning and resource allocation at all levels, and to be more important for trichiasis than for active trachoma.

In contrast, it was found that the integrity of the software had not been maintained; data entry was far behind; the indicators produced were not integrated in regular reporting; the number of treated patients was not known; it was not possible to visit all patients twice a year; there was no monitoring of the information flow; and there were no protocols for optimal use.

Proposed remedies include: clear allocation of tasks and responsibilities; involvement of all divisional eye care staff in the planning process; allocation of tasks to field staff for a limited period only; introduction of routine procedures for information flow; use of an updated anti-virus program; and decentralization only when the central level functions satisfactorily.

Final lessons are:

- C the trachoma MIS/GIS should be the engine of the trachoma control programme;
- C trachoma data lose their value over time, TF/TI data faster than TT data;
- C if not used and updated regularly, the MIS/GIS may give a false feeling of knowledge and lead to wrong decisions.

6. UPDATE ON AZITHROMYCIN/ANTIBIOTICS

6.1 *Presentation of the conclusions and recommendations of the Trachoma Technical Meeting held at Columbia University (Dr L. D. Pizzarello)*

Dr Pizzarello drew attention to the conclusions and recommendations on community-based distribution of antibiotics which appeared on pages 48-50 of the report of the Trachoma Technical Meeting under the headings: diagnosis; importance of subclinical infection; azithromycin dosing; monitoring and retreatment; and adverse effects and resistance (see section 2.4 above and Annex 3). He hoped that more such meetings would be held, perhaps with input from national coordinators.

6.2 *Resistance*

6.2.1 *Preliminary results of the studies on azithromycin resistance carried out in Tanzania (Dr G. Flouty)*

Tanzania is conducting a large community-based study with expertise on site. Sophisticated molecular characterization of strains is being done in New York. All available data from this and other relevant studies will be reviewed in Spring 2001; the findings will be channelled through WHO.

6.2.2 *Secondary effects of mass chemoprophylaxis with azithromycin to eliminate blindness due to trachoma in Nepal (Dr A. Fry)*

A study is being conducted in western Nepal to determine the secondary effects of mass treatment of children aged <10 years with azithromycin to reduce endemic trachoma, including the emergence of antimicrobial-resistant *Streptococcus pneumoniae* and the frequency of acute respiratory infection (ARI), impetigo and other symptoms. Data were collected for three groups of children examined before azithromycin distribution (day 0), 10 days after treatment (day 10), and six months later (week 26). Interim results for the first two groups are set out in document GET/ALL5/WP5.1E.

In addition to reducing the prevalence of trachoma, azithromycin had several beneficial short-term effects, including a reduction in nasopharyngeal carriage of pneumococcus, diarrhoea and impetigo, though not in ARI. No resistant pneumococcus was detected at day 0 in the first group, while one child (1%) carried resistant organisms 10 days after treatment. Resistant pneumococci were detected in two wards that had received two previous doses of azithromycin. Further studies in communities that will receive more than two doses of azithromycin or with a higher baseline prevalence of macrolide-resistant pneumococci are considered to be warranted.

6.3 Results of a comparative study on three strategies for azithromycin distribution in Mali (Dr J.-F. Schémann)

Preliminary results are available (see document GET/ALL5/WP1.2E) for four villages from a study to measure the clinical and biological impact of three strategies for distributing azithromycin to control trachoma in Mali:

- C Mass distribution to the whole village, to all individuals, both men and women;
- C Distribution in the whole village to all children aged up to 10 years and to women aged 15-50;
- C Distribution to all individuals in households in which at least one child has trachoma.

The study will also cover the clinical and biological manifestations of trachoma before treatment; prevalence among treated and untreated subjects after one year; occurrence of reinfection after treatment; and estimation of the cost of the strategies.

It is too early to exclude any of the strategies. However, the strategies targeting risk groups have resulted in real reductions in clinical and biological (PCR test) prevalence, and merit special attention. It is essential for the five villages still to be studied to have a higher initial prevalence so that the three approaches can be more readily compared. The question of the best season to administer the antibiotic remains to be answered.

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

The International Trachoma Initiative (ITI) was founded in autumn 1998 by the Edna McConnell Clark Foundation and Pfizer Inc. with the mission of advancing the global elimination of blinding trachoma. It initially limited its scope to five of the 16 priority countries identified by WHO, but added Sudan in 2000. It now has programmes in all six countries.

ITI contributes to the support of all four components of SAFE. As far as donated azithromycin is concerned, the position was as follows in November 2000 (see document GET/ALL5/WP5.3E):

Country	Treatments	Shipped	Appropriated	Comment
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Morocco	+1 000 000	1 300 000	1 300 000	Phase II for review in April/May 2001
Tanzania	150 000	350 000	1 250 000	Phase II approved Sept./Oct.2000
Viet Nam	80 000	350 000	1 000 000	Implementation began Oct. 2000
Mali	---	100 000	1 200 000	Delay with shipment embargo
Sudan	11 000	11 000	111 000	Special appropriation
Ghana	--	---	300 000	Scheduled to begin 1st quarter 2001

For the future, ITI will continue its support for at least the next three years, contingent on the programme's success. It will both expand activities within countries and consider extension to new countries. In new countries, it will begin in areas with populations of less than 10 000 to allow success to build on success. Pfizer is committed to continuing to make the drug available as long as the programme is generating measurable improvement in trachoma control.

6.5 Results of a systematic review of the components of the SAFE strategy, including a Cochrane systematic review of the evidence for the use of antibiotics for the treatment of trachoma (Dr Denise Mabey)

Dr Mabey presented the methods use and the results obtained in this review of evidence for the various components of the SAFE strategy. The main aim for the A component was to show the effects of antibiotics on active trachoma and *Chlamydia trachomatis* infection. Trials were included only if they met the strict Cochrane Collaboration criteria.

The review found that there is limited evidence from low-powered randomized controlled trials (RCTs) that antibiotics reduce active trachoma at 3 and 12 months after treatment, compared with no treatment. There is also limited evidence that oral azithromycin may reduce active trachoma more than topical tetracycline after 3 months. The differences between treatments in the trials reviewed disappeared at 12 months.

As reported in document GET/ALL5/WP5.4E, no good evidence was found on the effects of surgery to improve visual acuity in people with scarring trachoma. In trichiasis with six or more lashes in contact with the globe, there was limited evidence from two RCTs that bilamellar tarsal rotation may relieve entropion and trichiasis more often than tarsal advance and rotation. For the F and E components, one RCT found that promotion of face washing compared with no advice significantly reduced the rate of severe trachoma, but found no significant reduction in the overall rate of trachoma. One small RCT found that the number of new cases of trachoma was reduced by fly control using insecticide compared with no intervention.

6.6 Use and validation of height as proxy for weight in the treatment of children with azithromycin (Mr J. Mecaskey)

Mr Mecaskey introduced document GET/ALL5/WP5.5E, which describes an analysis of population-based data to assess the feasibility of using children's height as a proxy for their weight in deciding on the dosage of azithromycin to be given in trachoma treatment. The analysis suggests that height can be used in this way. Height poles, marked at different heights in units of tablets, would provide a simple, direct and accurate way to show what treatment a child should get, as already done in other disease control efforts. Preliminary review of the height-weight treatment cut-off points developed from the data suggests that it may be possible to define regional or even international treatment schedules.

ITI has undertaken an empirical study in Tanzania to assess the method in practice. The data from the study are being analysed and will be available in early 2001. Treatment based on height

is twice as efficient as weight for ease of measurement, so that at least twice as many people can be treated in a given period of time.

7. FACIAL CLEANLINESS AND ENVIRONMENTAL CHANGES

7.1 *Reporting on a community-based media campaign for trachoma control in Tanzania (Ms S. Mackay)*

Following the lunch-hour showing of a film on trachoma shot in Tanzania entitled “To see the sunrise”, Ms Mackey outlined the mission of the BBC World Service Trust and commented on the making of the film. The Trust is a nonprofit charitable trust aimed at the use of the media for development and for the development of capacity for media campaigns. It is funded from sources outside the BBC.

The Trust seeks to strengthen links between ministries and the local media. Its partnerships ensure local ownership, cultural sensitivity, the transfer of skills, and sustainability. It was invited by ITI to design a communications strategy for trachoma, among poor populations where media access may be restricted; TV is not an option in rural areas, though 50% of people can be reached by radio. Because literacy rates vary, the Trust has developed an approach based on radio and an additional community-based strategy using such media as flipcharts, posters, songs and stories, stickers, comic books for schools, and radio spots and jingles, supported by training in the use of the materials.

In communicating the SAFE strategy, the Trust has focused on four key messages:

- C S - safe, simple, short and successful, aimed at overcoming the fear of surgery;
- C A - getting the right treatment on time;
- C F - just a little water is enough to keep face and hands clean and helps to prevent eye disease;
- C E - improve the environment through attention to latrines, cattle pens, tree planting and rubbish.

Evaluation from the first phases of the campaign shows that ignorance of treatment and prevention has declined and face washing has improved. Reservations about surgery remain. Penetration has been about 50%, which is considered good. Theatre shows coupled with discussion about trachoma have proved particularly effective.

The photographer and the actors for the film “To see the sunrise” were Tanzanians. It was designed for video shows in rural areas in Tanzania, using the strong NGO network in the country. It has also been shown at least twice on national TV. It was planned as a 30-minute film, but then grew, at a cost of some UK£175 000. There is no intention of producing a shorter version of the film, though extracts could be used in training or advocacy. It is planned to do further filming in Ghana, with the same photographer.

7.2 *Promoting hygiene behaviour: the WaterAid experience (Ms V. Blagbrough)*

Ms Blagbrough invited the Alliance to read document GET/ALL5/WP6.2E on this subject, together with WaterAid’s Hygiene Promotion Policy, which had been circulated to the Meeting. WaterAid is a development charity based in the United Kingdom and founded in 1981 that

specializes in the provision of safe domestic water, sanitation and hygiene promotion to the world's poorest people. It funds long-term programmes in 12 countries in Africa and Asia, as well as individual projects in Karachi, Nairobi and Buenos Aires. So far 6.5 million people have benefited from WaterAid-funded projects.

An important aspect of WaterAid's work is behaviour change, for which WHO's 1998 *PHAST step-by-step guide* is recommended (PHAST stands for Participatory Hygiene and Sanitation Transformation). To achieve such change, WaterAid and its partners recognize that poor people desire improvements to their living conditions, and the task is to help them achieve those improvements. A first step is to find what people do, want and know in relation to water and sanitation, using participatory methods to encourage free expression of views and ideas. Early in the life of a project, some type of working group is established in the community, e.g. a water and sanitation committee. At least 50% of the members should be women. The committee will help the community to prioritize hygiene risk practices and set targets for behaviour change. Hygiene promotion should come at the beginning; behaviour changes take longer to achieve than an improved water supply.

Next, the demand for change must be unlocked. It is important to find informed and motivated agents for change. Typically these may be women volunteers and children in school. Communication methods vary greatly, but are crucial. Change can be achieved provided that it is:

- C sustainable for the future and does not need too much time, effort or money;
- C possible - for example, water must be available;
- C desirable to people - in the case of trachoma, clean children and freedom from eye disease.

Time, skill and resources are needed, but the outcome is worth it.

7.3 Reporting on the development and implementation of motivating communications strategies to reduce the occurrence of trachoma in Viet Nam (Mr D. Salter)

Mr Salter introduced document GET/ALL5/WP6.1E, which presents the methodology used in Viet Nam by International Development Enterprises (IDE) to develop and implement communications strategies to promote habits that prevent trachoma. The F and E components of the SAFE strategy have a powerful effect in reducing transmission of trachoma and provide the key to the strategy's sustainability. People need both to have the information and to act on it. They can take care of their health, provided they understand how, and want to do it.

The document tabulates the campaign development process and the corresponding output in Viet Nam. It also contains a chart setting out the framework and decision-making process used to develop the campaign in a series of boxes showing interlinked steps headed:

- C What are we promoting?
- C Who are we promoting it to?
- C What positive deviance exists within the community?
- C What motivates the people?
- C What motivating package can we wrap our messages in?
- C Testing (for impact, cost-effectiveness, etc.);

- C How, when and where can we talk to people?
- C Developing the campaign materials;
- C Campaign delivery;
- C Measuring effectiveness.

Many different media channels can be used, and the message differs according to the target and channel. IDE has a system in place to evaluate the different components of the SAFE strategy.

7.4 Results of the field experience of fly control in Kenya (Dr M. Elmore-Meegan)

Dr Elmore-Meegan presented an update on a study on the effect of fly control on the prevalence of trachoma in pastoralist populations in Kenya. Preliminary findings were reported at the Alliance's Fourth Meeting (see document GET/ALL5/WP6.3E). Stage 1 of the study took place in 1999, and stage 2 in five semi-arid areas among five nomadic tribes in March-December 2000.

The study involved:

- C external assessment of trachoma;
- C a study population of 3846 people in stage 1 and 6745 in stage 2;
- C a one-year study time frame;
- C a low-cost, low-maintenance, and locally acceptable method of fly control.

The study used fly traps made from plastic bottles; 46 compounds and mixtures of bait were tested, and fly feeding was recorded by video four times a day at six locations. The baits tested had to be readily available, cost nothing, be in sufficient supply, and be strong enough to attract flies in homesteads with other fly food available. The most successful baits were found to be early-morning infant urine and early-morning child faeces.

Baseline surveys were undertaken in nomadic communities with known high prevalences of trachoma living with their domestic livestock. In stage 1, 63% of adults in 3864 homes showed evidence of trachoma, and 56.4% in stage 2. In stage 1, 678 new cases of trachoma were found in 3864 children aged 8-16 years; in the baseline study for stage 2, 896 new cases were diagnosed in 1246 children aged 8-16.

Fly density was also measured in the five trial areas. There was a mean of 32 000 houseflies per homestead in 126 homesteads studied in Kajiado and Narok districts in the south and 27 000 in Turkana, Pokot and Rendille homesteads in the north. In stage 1, six bottle traps were distributed to each of 226 homesteads, with matched controls in other areas. In stage 2 the same protocol was used in 430 homes. There were four intervention and control groups: (1) fly traps only; (2) fly traps and Ministry of Health public health education; (3) nothing (outside public health areas); and (4) traditional treatment only.

The principal findings were that from June to October 1999 fly density decreased by 42% compared to the baseline level, and new cases of trachoma fell by 36.2% compared to control homesteads. From August to October 1999 new cases of trachoma fell by 34.3% in children. In stage 2 in 2000, interim findings indicate that fly density fell by 53% in homesteads with fly traps and 38% in controls; density fell at all locations because a third of the animal herds died in the drought. New trachoma cases also fell in homesteads with fly traps and those with traditional treatment compared to controls.

Although the WHO document on *Preventing trachoma: a guide for environmental sanitation and improved hygiene* implies that bottle traps are effective, some participants questioned whether that has been demonstrated. It was pointed out that the document mentions that fly traps can catch large numbers of flies, not that they necessarily contribute to trachoma control. While using faeces as a bait might not be culturally appropriate in some areas, it is the choice of the local people in the Kenya study and costs nothing, which was essential.

7.5 Reporting of the results of the study on “Transmission ecology of the fly *Musca sorbens*, a putative vector of trachoma” in the Gambia (Dr P. Emerson)

Dr Emerson presented the findings of studies on flies conducted in the Sanjal region of the Gambia from 1997 to the present (see document GET/ALL5/WP6.4E). Flies have been collected using fish-baited traps, from children’s faces with hand-nets, from sticky targets and in funnel-cage traps placed over potential breeding media.

Chrysomyia albiceps (68.5%), *Musca domestica* (19.3%) and *Musca sorbens* (8.6%) were the species most commonly caught in the fish-baited traps. All flies were more numerous in the wet season. Fly-eye contacts in children aged 2-6 years were frequent (3 contacts per 15 minutes). Children with ocular or nasal discharge had twice as many fly-eye contacts as those without; the number of contacts was similar whether inside or outside a house. Children had fewer fly-eye contacts after having their faces washed. 92 % of fly-eye contacts were made by *M. sorbens*, and the remaining 8% by *M. domestica*; 2.7 times more female *M. sorbens* were caught from the eyes than males. *Chlamydia trachomatis* DNA was found on 2 out of 395 flies tested, both *M. sorbens*.

M. sorbens was highly attracted to faeces. It laid eggs on human, dog and calf faeces within 10 minutes of the faeces being exposed, but not on cow, goat, sheep or horse faeces. Human, dog and calf faeces produced adult flies, with peak production 7.9 days after oviposition.

The data suggest that *M. sorbens* is the most likely potential vector of trachoma in the Gambia. Adult *M. sorbens* have been generated from fresh human faeces laid on soil, but have not been observed emerging from latrines; the faeces in latrines does not appear to be a suitable breeding medium for it. The fly’s preference for fresh human faecal deposits as a breeding site suggests that removal of such breeding sites from the environment - for example, by the use of pit latrines and clearance of toddlers’ faeces near houses - may reduce flies and therefore trachoma.

7.6 Reporting of a study on “Trachoma, flies and environmental factors in Burkina Faso” (Dr L. Ilboudo)

Dr Ilboudo introduced a study of 16 084 children aged under 10 years in eight regions of Burkina Faso in 1997, which showed that trachoma is a major public health problem; 26.8% of the children had TF or TI, with a prevalence above 45% in one region. Among women aged over 14 years, 5.1% had TT and 0.6% had CO, with TT rates rising to >20% and CO rates to 4-5% in women aged over 60.

The study found that 11.2% of the children examined had flies on their faces. Of those, 82.2% had TF (against 19.9% for children without flies), while 19.7% had TI (against 1.2% without flies). 30.2% of the children had dirty faces. Of those, 70% had TF and 10.2% had TI, as against 8.3%

and 0.3% for children with clean faces. The presence of flies was clearly associated with dirty faces. Flies were present on 0.3% of clean faces and absent on 99.7%; in contrast, 36.4% of dirty faces had flies, and 63.6% did not.

When refuse was deposited away from the house, there were flies on 8.2% of children; when it was left near the house, 26.3% had flies. When there was a latrine, 8.32% of children had flies on them, as against 12% with no latrine. Among children from houses with animal pens (usually sheep and goats, but also oxen and cows), 11.0% had flies, as against 10.4% without pens.

Among children from households with latrines, 24.6% had TF, as against 28.2% without latrines. When refuse was kept outside the house area, 26.0% of children had TF, against 31.6% when it was kept near the house. When there were animal pens, 30.5% had TF, against 22.6% without pens.

Flies appear to be a vector of trachoma and their presence is a risk factor. The association with dirty faces is important, since the risk is reduced for children with clean faces. The role of animals is unclear from these data, since pens by the house did not increase the presence of flies on children's faces, but significantly raised the prevalence of trachoma. Among immediate measures, Burkina Faso proposes to treat pre-school children, improve accessibility of water, and introduce latrines to reduce trachoma prevalence.

7.7 Trachoma in children 1-6 years old and knowledge, attitude and behaviour of mothers/care-givers in trachoma, Gurage Zone, Central Ethiopia (Dr M. Melese)

Dr Melese described a study designed by Orbis International and conducted in February 2000 in the Gurage Zone of Ethiopia, with a population of over 1.5 million (see document GET/ALL5/WP6.6E). The main aim was to determine the magnitude of trachoma in children aged 1-6 years and to evaluate the knowledge, attitudes and behaviour of mothers/care-givers with a child with active trachoma. The study covered 2933 children aged 1-6 years and 1166 mothers or care-givers.

The prevalence of TF/TI in the children was 53.7%, with rates as high as 68.7% at altitudes below 1800 metres and as low as 9.7% at altitudes above 2500 metres. The rate was significantly higher in male than in female children. The rate of active trachoma peaked in the 3-year-old age group (62.2%) and declined with increasing age. TF accounted for 64% of the active cases. The large majority (87%) of mothers had no knowledge of trachoma, though 61% reported washing their children's faces regularly. The travel distance to a source of water for 43.3% of households was no more than 15 minutes, but 20 minutes to an hour for 51.4%. Only 6% of households had latrines.

The data are being used to develop sustainable integrated eye care in the region. Programme activities include training of Ministry of Health staff and surgery for trichiasis.

8. MONITORING AND EVALUATION OF ELIMINATION OF BLINDING TRACHOMA

8.1 *Outline of the protocol designed for the Moroccan trachoma elimination project (Dr Y. Chami Khazraji)*

The Moroccan Ministry of Health and ITI are undertaking an evaluation of activities connected with the four elements of the SAFE strategy and conducted in the five-province Trachoma Control Project area between October 1999 and end December 2000. The protocol for the evaluation, to begin in the last quarter of 2000 and continue in 2001, 2002 and 2003, is set out in document GET/ALL5/WP7.1E.

The objectives are to:

- C determine the project's state of progress;
- C provide decision-makers with elements to decide whether to continue with present activities, to redirect or intensify them, or to terminate them;
- C on completion of the evaluation, to formulate approaches more suited to circumstances in the field as well as new objectives based on the findings.

The protocol shows the evaluation team and its responsibilities, the tasks to be carried out, the components of the SAFE elements to be studied, and the indicators to be used.

8.2 *Evaluation of Tanzania National Trachoma Control Programme: example of report at 6 months (Professor S. West)*

The Tanzania National Trachoma Control Programme, in collaboration with a team from the Dana Center for Preventive Ophthalmology, Johns Hopkins School of Hygiene and Public Health, USA, undertook an evaluation of the Programme after 6 months of operation. The objectives were to provide feedback to the implementation teams; collect data for a progress report to donors; and learn from successes and difficulties. Implementation was monitored in 12 villages (6 Programme villages and 6 controls) in 6 districts using percentage of clean faces and percentage of houses with latrines as process indicators. Impact on trachoma was evaluated using the percentages of active and severe trachoma and the percentage of trichiasis in adults as outcome indicators. The findings are set out in document GET/ALL5/WP7.2E.

The 6-month evaluation proved valuable as a learning tool. In general there was evidence that trachoma has declined in the Programme villages, probably because of the treatment programme. Where treatment coverage was sub-optimal, trachoma levels have remained the same or shown a modest seasonal increase.

Recommendations arising from discussions with villagers and the district teams included:

- C Lengthen the treatment period in each village from one day to 2-3 days to allow people more time to come for treatment;
- C Move more resources to districts to enable work to start on the F and E components;
- C Schedule regular meetings of implementation teams to plan and to learn of successes and difficulties in each district;
- C Conduct educational programmes for cattle keepers in the villages;

- C Shorten the data collection forms;
- C Provide refresher training for trichiasis surgeons and trachoma graders to ensure good performance and standardization.

For the future, a one-year evaluation will be carried out, the sampling strategy will be re-evaluated, and indicators will be added for the evaluation of programme management.

8.3 Process for certification of the elimination of blinding trachoma

In accordance with World Health Assembly resolution WHA51.11 on the global elimination of blinding trachoma, WHO is ready to assist in the process of certification of elimination. Dr Maria P. Neira, Director, WHO Division of Communicable Disease Prevention, Control and Eradication, said that WHO is already working on criteria for defining the elimination of leprosy as a public health problem, the eradication of guinea worm, and the elimination of lymphatic filariasis and onchocerciasis. The certification process gives international credibility and consistency of evaluation using a standardized procedure. Requests for certification of elimination need to come from the countries. WHO will ensure coordination, set up an international commission for certification, and mobilize teams of experts to work country by country. A start can be made once countries have controlled the disease and transmission is very low. Proposals for the next steps will be put forward at the appropriate time, in collaboration with the Alliance. First, however, it would be timely to start defining the criteria for achievement of elimination. Once that has been done, all partners will know what the targets are and what funds are needed.

9. UPDATE ON OPERATIONS RESEARCH PROJECTS

The Meeting took note of the two documents before it for this item. The first, by K. D. Frick, E. L. Keuffel and R. J. C. Bowman (“Measuring the economic value of trichiasis surgery in the Gambia”; document GET/ALL5/WP8.1E), outlines a study that characterizes the economic value of trichiasis surgery in the Gambia in three ways: the cost of providing surgery locally; individual patients’ willingness to pay for the surgery; and the value of productivity gained by preventing low vision in individuals with trichiasis.

The second, by K. D. Frick (“Updates on cost-effectiveness analyses of azithromycin distribution methods”; document GET/ALL5/WP8.2E), summarizes two studies on this topic. A study in Nepal compared mass treatment of children aged 1-10 years with targeted treatment of children and their household members. A study in Tanzania compared strategies using recruitment led by village government representatives with strategies using recruitment led by community volunteers.

10. DEVELOPMENT OF WORK PLAN FOR THE COMING YEAR: GLOBAL COORDINATION AND TECHNICAL COOPERATION BETWEEN DEVELOPING COUNTRIES

Under this item, the Alliance discussed (a) ways of enhancing the usefulness of the annual meeting and (b) the work plan for the coming year.

As to (a), it was felt that the annual meeting should be more operational. Individual countries should continue to report on progress and difficulties encountered, with an opportunity for discussion and for donors to provide expertise. The scientific content of meetings should be reduced by omitting unprocessed scientific information and for examining specific technical matters at smaller meetings of experts which would then report back to the Alliance with their recommendations. The definition of indicators for elimination and subsequent certification could be dealt with in this way. Presentations in general could be streamlined. To avoid repetition of old information, new countries could be briefed when they joined. Donors might scale down their presentations, but play a greater part in the discussions of country programmes. Discussions on support to country programmes should be increasingly objective, with an opportunity to gain funding or resources for countries not now supported. All activities in a particular country would be introduced by the country representative, on behalf of both the government and collaborating organizations. Countries would need to have a clear picture of the data donors needed, including information on government input and the likely sustainability of national programmes - a question answered readily when programmes are integrated from the start.

With regard to (b), the Alliance stressed that the objective was to eliminate blinding trachoma in the whole of the world. Of the 46 countries known to have endemic trachoma, 16 were listed as priorities. Countries not yet represented and/or without national programmes should be directly targeted. A plan was needed to build political will in such countries, bring them into the Alliance, assist them to operationalize existing tools in their national trachoma control programmes, and set timelines to achieve the objective nationally within the framework of Vision 2020. A further need was to develop a work plan to improve coordination between groups of countries in the same region, e.g. in North or West Africa. Countries were not all at the same level of progress, and could benefit from the experience of more advanced neighbours. Donors were asked to support meetings and other forms of inter-country cooperation for that purpose. It was also suggested that WHO explore the usefulness of bringing in NGOs in other fields - e.g. women's groups, water resources, and health education - that could offer synergy and positively influence trachoma programme outcomes.

The existing profiles of endemic countries that had joined the Alliance were considered valuable. In addition, similar information is needed on the other endemic countries. A register of all interested organizations should also be prepared, showing what they do and where they work. WHO was encouraged to complete guidelines and other needed tools for trachoma control, with a suitable balance of scientific rigour and ease of use. It was also asked to speed up its part in the translation of recommendations into action; the process from headquarters to regional offices and then to countries was perceived as very slow.

11. OTHER MATTERS

It was noted that important matters had been discussed at the end of the Meeting, when some important participants had left. The Secretariat undertook to bear that in mind when planning for the future. All present were asked to check their personal details in the list of participants, to ensure that it was accurate.

The Meeting was invited to consider how the Alliance might have an input into United Nations conferences on cross-cutting issues such as children, so that trachoma control could be an integral part of the outcome.

12. DATE AND PLACE OF NEXT MEETING

The Alliance discussed the possibility of holding future meetings in endemic developing countries, perhaps in alternate years. As the Alliance grew, that became more difficult, and the logistic problems of longer and costlier travel were likely to deter some participants. The consensus was that big meetings should be held in Geneva, while smaller, technical meetings could be held closer to the problems in endemic countries.

It was agreed that the sixth meeting of the Alliance will be held in Geneva in December 2001, the precise dates to be fixed in the light of other meetings planned.

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

Geneva, Switzerland (5-7 December 2000)

CONCLUSIONS AND RECOMMENDATIONS

1. Progress report on implementation of activities in countries

The WHO Alliance for the Global Elimination of Trachoma (the GET 2020 Alliance) noted with appreciation the increasing participation of endemic countries: 21 countries were represented at the meeting out of the 46 identified as having known areas of blinding trachoma. The activities undertaken and progress made since the Alliance's previous meeting were reported and data on trachoma received from 20 endemic countries through a questionnaire were made available to participants. The Alliance recommended that this important information be compiled and tabulated by the WHO Secretariat in a suitable format for further use by Alliance members.

For the next meeting, the Alliance recommended that countries focus on newly available information and that activity reports be prepared and presented in collaboration with partners in order to facilitate the exchange of information and experiences on progress made, problems encountered, and successes.

2. Coordination

At global level: The importance of the existence and role of the WHO Alliance as a forum for exchange of information and coordination of activities between the participating members (WHO, countries, international non-governmental organizations (INGOs), research institutions and other interested parties) was emphasized by several country representatives. The Alliance recommended the development of a suitable work plan, including targets and indicators.

At regional/subregional level: The Alliance recognized the need for technical cooperation among endemic countries, with increased support from advanced programmes to new/developing programmes, as an important element in promoting the expansion of trachoma elimination activities. It therefore recommended that sub regional consultations/meetings be facilitated for this purpose.

At national level: The Alliance recommended that national programmes or other existing national bodies ensure coordination between the INGOs and other partners involved in trachoma control activities in their countries in order to make best use of the expertise and resources available.

It also recommended the preparation of a directory of all active NGOs, international organizations, donors, etc., active in the field of prevention of blindness indicating their main areas of work and the countries in which they are working, with the aim of improving the response to countries' needs and the coordination of activities. NGOs attending annual meetings of the Alliance for the first time should be asked to present their activities in a standardized format.

3. Reporting on scientific research

In view of the increase in the number of endemic countries represented at Alliance meetings and the importance of their reporting on progress/implementation of activities to the Alliance, it was suggested that scientific reporting and related discussions be dealt with separately and outside the annual meetings of the Alliance. In that respect, the Alliance recommended that working groups be convened before its next annual meeting to address fundamental issues such as health education, facial cleanliness, environmental changes (the F and E components of the SAFE Strategy adopted by GET 2020), and indicators for evaluation and certification. The conclusions and recommendations of those working groups should then be presented to the Alliance for consideration in plenary.

4. Promotion of the expansion of the elimination of trachoma

The Alliance noted that although a few participating countries have made remarkable progress in the control of blinding trachoma, current data suggest that other countries with significant levels of blinding trachoma have little or no national support for trachoma control activities. The Alliance further noted the commitment to the global elimination of blinding trachoma shown by all endemic countries in their adoption of World Health Assembly resolution WHA51.11, and in their support of GET 2020 as a component of “Vision 2020 – The Right to Sight”. The Alliance therefore strongly encouraged the Governments of all countries with blinding trachoma to initiate control programmes where they do not exist and to support ongoing programmes, fostering partnerships and facilitating national activities, with the goal of eliminating all blinding trachoma by the year 2020.

With that in mind, the Alliance recommended that plans be drawn up without further delay for the expansion of activities to all endemic countries and areas in order to achieve the goal of elimination of blinding trachoma by the year 2020. It further recommended that realistic goals and benchmarks be set and that progress be reported and assessed at each Alliance meeting. The subregional cooperation meetings within the TCDC framework recommended above can provide an excellent forum to match and coordinate the plans of neighbouring countries.

5. Expansion of the use of azithromycin

The Alliance recognized that additional national programmes are eager to use azithromycin within the framework of the SAFE strategy. It therefore recommended that feasible plans be drawn up to expand the number of countries and the population at risk that is given the opportunity to benefit from its use.

6. Certification of the elimination of blinding trachoma

The Alliance noted with enthusiasm that the Strategy Development and Monitoring for Eradication and Elimination unit in WHO’s Department of Communicable Disease Prevention and Eradication will initiate the process of certification of elimination of blinding trachoma in partnership with the WHO’s Prevention of Blindness and Deafness team, Department of Management of Non-communicable Diseases. The Alliance recommended that evaluation indicators consistent with those required for the certification process be developed in the near future, together with programme management indicators.

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

Geneva, Switzerland (5-7 December 2000)
Room A, Main Building (First floor)

AGENDA

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

1. Reporting of activities undertaken since the previous meeting
 - C WHO secretariat
 - C Endemic countries (as present)
 - C Participating organizations of the Alliance
 - C New participating organizations
 - C Information concerning the technical meeting on trachoma held at Columbia University, New York, USA (30 September-1 October 2000)
2. Trachoma Rapid Assessment methodology
 - C Presentation of the final version of the WHO methodology
 - C Presentation of the results of the validation of the trachoma rapid assessment methodology and comparison with the results of a prevalence survey
3. Trichiasis surgery
 - C Presentation of the conclusions and recommendations of the trachoma technical meeting held at Columbia University
 - C Clinical findings of the Oman study on recurrence of trichiasis after surgery
 - C Discussion
4. Update on Geographical Information and Management Systems (GIS & MIS) for trachoma control
 - C Technical developments concerning the WHO-designed Health Mapper Data Manager
 - C Lessons learnt from the use of GIS/MIS in The Gambia
 - C Discussion
5. Update on azithromycin/antibiotics
 - C Presentation of the conclusions and recommendations of the trachoma technical meeting held at Columbia University

- C Resistance
 - C Preliminary results of the studies on azithromycin resistance carried out in
 - C Tanzania
 - C Secondary effects of mass chemoprophylaxis with azithromycin to eliminate blindness due to trachoma in Nepal
 - C Results of a comparative study on three strategies for azithromycin distribution in Mali
 - C Reporting on Pfizer-donated azithromycin through ITI
 - C Use and validation of height as proxy for weight in the treatment of children with azithromycin
 - C Results of a systematic review of the components of the SAFE strategy including a Cochrane systematic review of the evidence for the use of antibiotics in the treatment of trachoma
 - C Other developments
 - C Discussion
6. Facial cleanliness and environmental changes
- C Promoting hygiene behaviour change: the WaterAid experience
 - C Reporting on the development, implementation of motivating communication strategies to reduce the occurrence of trachoma in Viet Nam
 - C Reporting on a community-based media campaign for trachoma control in Tanzania
 - C New school health and information technology activities
 - C Results of the field experience of fly control in Kenya
 - C Reporting of the results of the study on “Transmission ecology of the fly *Musca sorbens*, a putative vector of trachoma” in the Gambia
 - C Reporting of a study on “Trachoma, flies and environmental factors in Burkina Faso”
 - C Results of a study on “Trachoma in children 1-6 years old and knowledge, attitude and behaviour of mothers/care givers in trachoma, Gurage Zone, Central Ethiopia”
 - C Discussion
7. Monitoring and evaluation of elimination of blinding trachoma
- C Lessons learnt from trachoma control programme in Bardia District, Nepal
 - C Outline of the protocol designed for the Moroccan trachoma elimination project
 - C Evaluation of Tanzania national trachoma control programme
 - C Process for certification of the elimination of blinding trachoma
 - C Discussion
8. Update on operations research projects
- C Follow-up to cost-effectiveness analyses
 - C Any other projects
 - C Discussion
9. Development of work plan for the coming year: Global coordination and technical cooperation between developing countries
10. Any other matters

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



ANNEX 2

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

**Geneva, Switzerland
(5-7 December 2000)**

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ANNEX 3**CONCLUSIONS AND RECOMMENDATIONS OF
THE TRACHOMA TECHNICAL MEETING
HELD AT COLUMBIA UNIVERSITY***New York, USA**30 September – 1 October 2000***COMMUNITY-BASED DISTRIBUTION OF ANTIBIOTICS****1. DIAGNOSIS**

While there was general agreement that there is no perfect gold standard for the diagnosis of infection or clinically active trachoma, the current WHO grading simplified grading system as well as DNA amplification are the preferred means of establishing a diagnosis.

2. IMPORTANCE OF SUBCLINICAL INFECTION

Studies have found LCR/PCR positive tests in the absence of clinical disease to varying degrees. There is some disagreement about the magnitude of asymptomatic infection. It is anticipated that ongoing studies in Tanzania and the Gambia using quantitative PCR may help resolve the importance of subclinical infection.

3. AZITHROMYCIN DOSING

Height dosing has been done in areas where there are practical problems with weight dosing. Using dosage increments of 125 mg for tablets and 80 mg increments for suspension with no dose to exceed one gram, it is felt that height dosing is acceptable.

The issue of one versus three community doses of azithromycin was discussed. Current studies will document the cure-rates of single dose treatment. Programs giving a single dose are acceptable.

4. MONITORING AND RETREATMENT

Monitoring for infection was deemed to be extremely important to the group. Although DNA amplification tests are expensive and rarely performed locally in areas with trachoma, they are the best tests we have for identifying infection. Even if these are not practical for general use in a control program, the group strongly recommends that clinical trials and operational research programs monitor the return of infection after treatment with LCR/PCR. In the absence of data, current practices of annual retreatment is appropriate, however further research data of retreatment intervals and their relationship with prevalences is indicated. The cost of lab studies could be somewhat reduced by sampling populations, and be pooling of lab specimen (depending on the prevalence in community).

5. ADVERSE EFFECTS AND RESISTANCE

There are differences in the way that adverse events are monitored in clinical trials settings than in actual use in large populations. In the clinical trial setting, the common adverse outcomes are either no different than previously reported or are lower in azithromycin treated subjects compared to topical tetracycline treated subjects.

In populations where morbidity and mortality are high, it is a challenge to associate adverse effects with treatment, particularly retrospectively.

It was felt that the issues of adverse effects and resistance should be continually readdressed, as the perception that these are important to the program is crucial.

The group discussed whether monitoring for adverse effects should be a requirement of the donation program.

The group recommended:

- C Finding how the Ivermectin/Onchocerciasis group dealt with adverse effect reporting
- C Summarizing the adverse effects found during phase IV US studies, and subsequent adverse event monitoring.
- C Challenging the research community to develop appropriate methodology to
- C monitor for adverse effects.
- C The input of experts in the field of adverse-event surveillance should be sought before specific monitoring processes are recommended.

Pneumococcal monitoring studies are underway in Tanzania and Nepal, and will evaluate susceptibility changes over time after mass treatment and, in Tanzania, the impact on invasive pneumococcal disease.

Chlamydial resistance is not considered to be a problem to date. However, the emergence of chlamydial resistance would mandate a change in trachoma treatment strategies and this is under study in Tanzania and the Gambia. The group feels that the impact of pneumococcal resistance should be monitored. There are no existing data that indicate trachoma control programs should not be initiated because of resistance.

6. TO WHAT EXTENT DOES THE ADDITION OF 'F' AND 'E' TO 'A' FURTHER REDUCE PREVALENCE?

There are ongoing studies in the Gambia and Tanzania that will provide some data. The data from the trial on facial cleanliness suggest that facial cleanliness plus antibiotic use provides more benefit than antibiotic use alone.

TRICHIASIS SURGERY

1. WHO SHOULD BE A CANDIDATE FOR TRICHIASIS?

In general, the presence of one or more lashes touching the globe in the presence of entropion should be an indication for surgery.

In situations with mature programs and the opportunity for frequent review it may be reasonable to delay surgery and observe patients with only one or two lashes that do not touch the cornea.

Surgery is also indicated in symptomatic patients who are already blind.

Note: The term TT, or Trachomatous Trichiasis, actually defines the presence of trachomatous entropion with trichiasis. The presence of TS is indicative of previous inflammatory trachoma.

At present, from the range of described surgical procedures, the bilamellar tarsal rotation is the only one established by prospective randomized controlled trials. The Trabut procedure is also widely used and is probably equally effective. However, documentation of the efficacy of the Trabut procedure is needed. Similarly the Cuenod-Nataf procedure or tarsal grooving requires documentation of efficacy.

2. ONGOING SURGICAL AUDIT

This should be an integral component of every trichiasis program. The ongoing evaluation of surgical outcome is of great importance for both the surgical program and the patient. The patients who have had trichiasis surgery should be examined annually to detect recurrence.

Surgeons need to appraise their surgical results and aim for less than 20% recurrences at two-year follow-up. This means one lash touching the globe. If it is greater than this, remedial steps need to be taken.

3. RECORD KEEPING

At a minimum, visual acuity, patient name, village name, age and other relevant tracing data should be recorded before surgery is performed.

4. WHAT NEEDS TO BE DONE PRE- AND POST-OPERATIVELY?

Patient education with regard to likely surgical outcome, the need for ongoing monitoring and postoperative care is essential.

Postoperative topical antibiotics should be used routinely for one week.

5. MANAGEMENT OF LID CLOSURE DEFECTS

Cases with lid shortening should be referred to the appropriate regional center for ophthalmologic assessment and management.

6. MANAGEMENT OF RECURRENCES

These lids can be operated again with the bilamellar tarsal rotation procedure provided there is not a lid closure defect.

7. NEED FOR A NEW PROCEDURE FOR TRICHIASIS

Any variations or new procedures should undergo thorough prospective randomized comparison with the existing techniques. Ongoing research to develop new techniques should in no way detract from large scale intervention programs, using recognized techniques.

8. GRADING SYSTEM

The WHO simplified grading should be used for field work. More detailed studies may wish to use the previous detailed WHO grading system. The presence or absence of lid closure defects should be recorded as well.

TRICHIASIS RESEARCH RECOMMENDATIONS

1. There are at least two other surgical procedures (Trabut, Cuenod-Nataf) commonly practiced around the world. Short and long term outcome (collected in a longitudinal fashion) needs to be generated to determine if outcome meets the standards of bilamillar tarsal rotation procedure.
2. Prospective studies need to adopt standard definitions of recurrence.
3. Evidence from long-term (3-5 years) retrospective audits of the tarsal rotation procedure show recurrence rates between 20 – 50%. Long term prospective assessment of recurrence is needed.
4. The factors that predict development or recurrence need to be identified.
5. Other surgical procedures that show good promise should be tested in controlled clinical trials, Good scientific evidence is needed before considering adding them to the recommended procedures.
6. Natural history studies of existing cohorts should be undertaken to clarify the factors predicting conjunctival scarring, trichiasis and corneal scarring.