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REPORT OF THE

THIRD MEETING OF THE

WHO ALLIANCE FOR THE

GLOBAL ELIMINATION OF TRACHOMA

Ouarzazate, Morocco

19-20 October 1998



PREVENTION OF BLINDNESS AND DEAFNESS
Geneva, Switzerland



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INTRODUCTION

The *Third Meeting of the WHO Alliance for the Global Elimination of Trachoma*, which took place in the beautiful Congress Centre of Ouarzazate in Morocco further to an invitation extended by the Ministry of Health of the Kingdom of Morocco, was opened by the General Secretary of the Province of Ouarzazate. On behalf of the Government of Morocco and on behalf of the Ministry of Health, he welcomed the participants and expressed what a privilege it was for Morocco to be hosting the first non-Geneva held meeting of the Alliance in Ouarzazate, and what outstanding expression of support it was for their trachoma control strategy.

Dr A.-D. Négrel, Secretary of the meeting and ophthalmologist within the Programme for the Prevention of Blindness and Deafness spoke on behalf of Mr M. Zeribi, WHO Representative in Morocco (unable to attend the opening ceremony), and on behalf of Dr B. Thylefors, Director of the above-mentioned Programme. He thanked the Moroccan national and regional authorities for their generous hospitality and cooperation in hosting this meeting, and expressed his gratitude to the personnel of the Ministry of Health, not only for their assistance in the organization of this important gathering, but above all for their continuous support over the last decade in ensuring the success of many prevention of blindness related projects. He also stressed the important role played by the Moroccan National Trachoma Control Programme in sharing its experience and information with the Alliance in the many different domains such as operations research, epidemiological research, randomized clinical trials and field testing of a rapid assessment methodology. After quickly reviewing the work accomplished by the National Trachoma Control Programme, he praised the commitment made by the Moroccan authorities to reach the objective of elimination of blinding trachoma by the year 2000.

Beside the increasing representation of countries, development agencies, nongovernmental organizations, and foundations (see list of participants in Annex 2), he expressed WHO's appreciation before the determination of all the partners in committing themselves to reaching the goal of elimination of trachoma wherever this disease is a burden for the communities.

Dr P. Courtright and Dr L. Schwab were elected co-rapporteurs for this meeting which was chaired between Mr R. Porter and Dr L. Pizzarello (respectively Chairman and Vice-Chairman of the Alliance since November 1996).

His Excellency Dr A. El Fassi, Minister of Health, was able to attend the last session of the meeting and listen to the recommendations. He kindly closed the meeting with an address to the participants in which he stressed the importance given by the Kingdom of Morocco to the national commitment and the means required to combat trachoma (Annex 3).

Upon an invitation conveyed by the Ministry of Health, many participants took part in field visits where they were able to see the activities carried out by the Moroccan Trachoma Control Programme in domains such as trichiasis surgery training, community control of trachoma, and screening and treatment of trachoma in schools.

The draft agenda (Annex 1) was adopted without modification by the participants.

I. ACTIVITIES UNDERTAKEN FOR THE GLOBAL ELIMINATION OF TRACHOMA (GET) FROM 1 JANUARY TO 15 OCTOBER 1998

1.1 Activities reported by the secretariat of the World Health Organization's Alliance for Global Elimination of Trachoma

REPORTED ACTIVITIES FOR THE PERIOD 1 JANUARY - 15 OCTOBER 1998
<p>COUNTRY VISITS FOR NATIONAL PROGRAMME DEVELOPMENT</p> <p># Presentation of the WHO Alliance for GET 2020 and promotion of the SAFE strategy to MOH officials in :</p> <ul style="list-style-type: none"> - Algeria (Visit to WHO/HQ of 3 representatives from MOH & Algiers University for a training seminar) (February 98) - China, Beijing and Guangdong Provinces (Dr A.-D. Négrel) - Ethiopia (Dr S. P. Mariotti) - Sudan (Dr S. P. Mariotti) <p><i>NB: Planned visits to Niger, Mauritania, Senegal and East Africa postponed in view of the non-response, or unavailability of the country national coordinators for the dates proposed or PBD's own timing constraints.</i></p> <p># Technical assistance for implementation of trachoma control activities</p> <ul style="list-style-type: none"> - Oman (Dr A.D. Négrel) - Morocco (Dr A.-D. Négrel) <p># Field testing and initiation of the Trachoma Rapid Assessment methodology (TRA) in Mali and Morocco</p>
<p>PRODUCTION & DISSEMINATION OF DOCUMENTATION</p> <p># Preparation of the draft manual of operations for Trachoma Rapid Assessment (TRA)</p> <p># Development of a GET/SAFE "promotional kit" (English & French) composed of 20 slides to be made available to all interested Alliance members for first contact with potential endemic countries or any partner involved in trachoma control (September 98)</p> <p># Publication of the first issue of the Trachoma Newsletter (June 98)</p> <p># Ongoing collection of information for the second issue of the Trachoma Newsletter (Submissions being requested from Alliance members)</p> <p># Preparation and dissemination of the report of the second meeting of the WHO Alliance for GET (English and French)</p> <p># Preparation of a Trachoma Atlas based on the information available in the trachoma data bank (printing of final version planned during the course of 1999)</p> <p># Preparation of Guidelines for Basic Sanitation at village level in trachoma endemic areas</p> <p># Dissemination of informational material (Alliance reports/ (SAFE manuals/etc) (ongoing activity)</p> <p># Development and updating of a trachoma mailing list for dissemination of documentation</p>

REPORTED ACTIVITIES FOR THE PERIOD 1 JANUARY - 15 OCTOBER 1998

OPERATIONS RESEARCH AND FIELD STUDIES

- # Validation of final TRA methodology with study sites in endemic countries (pending)
- # Completion of the validation of the low-cost trichiasis surgery kit
- # Technical assistance in the community-based trial on the use of azithromycin vs tetracycline in the treatment of trachoma
- # Ongoing development of protocols for:
 - < Preparation of a **Protocol for Monitoring and Surveillance Systems for National Programme for the Elimination of Blinding Trachoma**
 - < Protocol for **Evaluation of National Programme Progress towards Global Elimination of Trachoma**

TRAINING ACTIVITIES

- # Preparation of training modules for Ghana and Cambridge workshop on Assessment and Control of Trachoma (Accra, Ghana : 30 Nov. 1998 - 2 December 1998 & Cambridge, UK: 14-18 Dec. 1998)
- # Joint collaboration with the International Centre for Eye Health for the organization of the Cambridge workshop
- # Preparation of teaching material on Trachoma Rapid Assessment

STRENGTHENING OF INFORMATION COMMUNICATION SYSTEMS

through the following media:

- # Majordomo system ready for subscription (<ftp://majordomo.who.ch>)
- # On-line chat "room" available on the WHO web server (<http://www.who.ch>)
- # Web data retrieval with restricted access (Delayed: firewall changed in WHO informatics system. New policy for data retrieval not yet decided upon. Possible need to set up a PBD server for web-based data system)
- # WHO Alliance/SAFE Strategy slide set at <http://www.who.ch/pbd/trachoma> (English only for the time being)
- # **Trachoma Newsletter** at <http://www.who.ch/pbd/trachoma> (to become available pending the purchase of the needed software)
- # Desktop video conferencing with PBL staff through MS-Netmeeting

INFORMATION & COORDINATION ACTIVITIES THROUGH THE ALLIANCE MEETINGS

- # Preparation and hosting of the 2nd Meeting of the WHO Alliance for GET, Geneva (January 1998)
- # Preparation of the 3rd Meeting of the WHO Alliance for GET, Ouarzazate, Morocco (October 1998)

1.2 ACTIVITIES REPORTED FROM ENDEMIC COUNTRIES PRESENT AT THE MEETING WHERE A TRACHOMA CONTROL PROGRAMME EXISTS

1.2.1 *Burkina Faso (Dr J.-F. Schémann for Dr L. Ilboudo)*

The assessment of the trachoma epidemiological situation in Burkina Faso was made possible through a national prevalence survey undertaken in 1997 by the National Blindness Control Programme (NBCP) and the Institut d'Ophtalmologie tropicale de l'Afrique (IOTA). The data obtained from this survey has shown that trachoma is a public health problem on a national scale. Out of the 8 regions studied, 5 have active trachoma and only one does not present trachomatous complications. 26.8% of children under 10 years have TF with peaks between 43 and 45.5% in the Eastern regions (Regions II and III) where 8.5% of women over 15 years have TT. Overall, 5.1% of adults over 15 have entropion trichiasis, which corresponds to a backlog of 135 000 people in need of surgical treatment.

The prime objective of the National Trachoma Control Programme (NTCP) established as a component of the NBCP is to prevent blindness due to trachoma. Its action is community-based and the strategy applied is SAFE.

Trichiasis surgery which is performed with the Trabut method is carried out at all levels, even by non-ophthalmic nurses trained for this purpose. According to the results from the survey, it is estimated that around 200 000 people (135 000 women and 65 000 men) require trichiasis surgery. At a cost of Ffrs. 46.75/person/surgical intervention, this means a total cost of Ffrs. 9 350 000.

Antibiotics are for prevention and treatment. Cyclines used locally are applied according to WHO's recommendations, i.e., twice a day for 60 days or 5 consecutive days per month during 6 consecutive months. The distribution of antibiotics is community-based. From the results of the survey, it appears that 2 out of 3 villages (5300 villages out of the 8000 nationwide) should be treated, i.e., a total of 2 400 000 children. The cost of such treatment has been estimated to be approx. Ffrs. 20 000 000 (product and distribution included but excluding identification of communities).

Face washing is being promoted through Information, Education and Communication (IEC) campaigns mostly targeted for mothers, village chiefs, religious leaders, teachers and pupils.

Changes in the environment and accommodation are now also perceived as essential for controlling the disease and the country has a Ministry for the Environment and Water and a national policy on this issue. Provision of drinking water for all has been initiated in Banwa, Kossi, Loroum, Nayala, Sourou, Passore, Yatenga, and Zondoma provinces.

Furthermore, a study conducted recently on potential agents, types of support and channels for raising awareness has provided enough information for implementing a social communication strategy.

1.2.2 *The Gambia (Dr H. Faal)*

Since the last meeting, activities have been carried out in the following areas:

C *SAFE strategy*

Surgery: Training was given to 5 trainers in lid surgery and 13 community ophthalmic nurses were trained as lid surgeons. A trainers and trainees manual was developed and 511 community-based lid surgeries were performed.

Antibiotics: 900 community-based workers were trained in the A, F and E components and tetracycline eye ointment which is now available to health facilities will soon be available at community level.

F & E School eye health activity books (for teachers and pupils) have been developed and are being field tested. Contacts with traditional communicators have been established to develop eye health messages in traditional songs.

C Information management and Geographical Information System

Data entry of the mapping of trachoma is ongoing and about 30% of all communities remains to be mapped. The link to the Geographical Information System has been delayed as it is subject to the receipt of the appropriate hardware.

C Surveillance system

A collaborative study with the International Centre for Eye Health is being carried out with support from the Edna McConnell Clark Foundation for the implementation of a surveillance system. All available trachoma information has been identified and possibilities for linkage to the overall health information system and national GIS structure have been explored. Preliminary drafts of surveillance methods for active trachoma and trichiasis have been prepared.

C Operational Research

The completion of a study on "Epidemiology of trachoma in urban and peri-urban areas of the Gambia (prevalence and risk factors)" undertaken in 1996 showed that the prevalence of active infection had only increased in these areas over the last decade. Two peaks of active inflammatory trachoma were identified in children aged 5 to 9 years and adults above 40 years, the latter group having TI. Household risk factors were large families, low level of education of head of household and presence of visitors from the rural communities (possible effect of rural/urban migration).

A study on the transmission of trachoma by synanthropic flies is being planned following the encouraging results obtained from the reduction of active inflammatory trachoma related to the reduction in fly population. More details concerning this study are provided in Section 10.5 on "Operations Research".

A compilation of the history of trachoma and the management of trichiasis surgery in the Gambia carried out by the International Centre for Eye Health has shown that the high uptake of community-based lid surgery (90%) is an appropriate strategy to reduce the number of patients with trichiasis.

A study on the "Effectiveness of azithromycin vs tetracycline eye ointment under operation conditions" has been implemented. Results should become available during the course of 1999. Please refer to Section 10.6 for further details.

An evaluation of the community knowledge of trachoma and intervention-related strategies was carried out. The results showed that:

C Child care is rated as the third most important daily activity by women;

C The role of grandmothers as custodians of social norms and values and hence their impact on decision-making for treatment by other younger age-groups;

- C The role of men was linked to decisions affecting resources within the household, e.g., transportation and cash for seeking treatment;
- C The understanding of chronicity and need to continue using ointment in the absence of symptoms was virtually absent; so was the link between childhood eye infection and adult trichiasis and blindness;
- C Although face washing was linked to a treatment for trichiasis, it was not linked to active infection in children;
- C Surgery for trichiasis was actively taken up if there was "pain";
- C Traditional healers have an important role in decision-making for uptake of treatment.

1.2.3 Kenya (Dr J. Karimurio)

A blindness survey conducted by the International Eye Foundation (IEF) (1981) showed that blindness prevalence in Kenya was 0.7%. The main causes are cataract (43%), trachoma (16%), and glaucoma (14%). The survey also revealed that trachoma in Kenya varies from district to district and that it affects mostly women. It also showed that trachoma is more prevalent in arid areas and that it is influenced by lifestyle.

The existing eye health programme, called the Kenya Ophthalmic Programme (KOP) is becoming more and more involved in trachoma control through its primary eye care network and through a Task Force of interested NGOs (African Medical Research Foundation (AMREF), the local Lions Clubs, and the Kenya Society for the Blind (KSB). Trichiasis cases are presently dealt with by approximately 50 eye units in 18 endemic districts. The methods used are the modified Snellen's operation, the tarsal plate rotation, epilation and, since May 1998, the bilamellar tarsal rotation procedure. This new technique is starting to be adopted in the country following four training workshops held for eye health workers at Kajiado, Meru, Kapanguria and Kabarnet, under the sponsorship of the Edna McConnell Clark Foundation (EMCF) and Helen Keller International and through facilitation from AMREF and KSB. More training workshops are planned in the future and monitoring of trichiasis surgery is on the agenda. The KOP is awaiting the results of the evaluation of AMREF's district pilot project on trachoma control carried out in Kajiado before it decides to use it as a model in other eye units. Full integration of trachoma control in primary eye care is the next step.

1.2.4 Mali (Dr D. Sacko)

In Mali, trachoma is the second leading cause of blindness after cataract. In 1997, a national study was carried out on the prevalence of trachoma and its risk factors. It showed that around 34.6% of children aged 0-10 years suffer from inflammatory trachoma, and 1.5% of women over the age of 15 have trichomatous entropion trichiasis. Further, the backlog of unoperated trichiasis is estimated to be in the order of 85 000 cases.

The results of the national trachoma survey have led to the implementation of a number of activities, all based on the SAFE strategy, as follows:

(a) Strengthening of trichiasis surgery

The trichiasis entropion operation, which used to be carried out only by specialized ophthalmic personnel, has been extended to non-specialists. Fifteen nurses in charge of health centres have been trained to carry out trichiasis surgery. The first 10 nurses to be trained performed about 110 operations. Two evaluations conducted on the work of these nurses showed that:

- C they all performed the Trabut technique safely for the patient, as trained;
- C the low number of patients operated on was explained by:
 - the nurses' lack of self-confidence (their hesitation made them overlook many trichiasis cases);
 - the patient's lack of confidence in the nurses (for they were never known to examine their eyes previously and suddenly decided to operate on them);
 - the lack of awareness among people about trichiasis surgery (some people are still very wary of trichiasis surgery and may even object to it; others think that entropion trichiasis is hereditary).

(b) *Integration of screening and treatment of active trachoma within primary health care systems*

The National Blindness Control Programme (NBCP) has undertaken a large campaign to train non-specialized health personnel and village workers in primary eye care. Around 500 health care staff and 200 village health workers have benefited from this training which began in 1996 and which is still ongoing. The main result has been an improvement in the diagnosis of trachoma and in the notification of cases.

Table 1
Notification of cases of trachoma per area in the Koulikoro region
in 1997 and 1998

Area	1997	1998*
Banamba	410**	28
Dioïla	8	5
Kangaba	8	10
Kati	263	289
Kolokani	143	111
Koulikoro	39	18
Nara	38	16

* First and second quarters

** Banamba is where trichiasis surgery training took place

Training of village health workers has also improved the recruitment of trichiasis cases in the Koulikoro Ophthalmic Unit and at the Institut d'Ophtalmologie tropicale de l'Afrique (IOTA).

Table 2
Number of trichiasis surgery cases performed in Koulikoro
in 1996, 1997 and 1998

1996	1997	1998*
10	161	61 (171**)

* First and second quarters

** (171) = entire region

(c) *Setting-up of an Information, Education and Communication (IEC) campaign on trachoma*

The NBCP has developed an IEC strategy for trachoma control. Educational messages have been drawn up on the basis of a Knowledge, Aptitude and Practice (KAP) survey. An image box and an audio cassette have been put together for the messages which are distributed among the population about the mode of transmission, the prevention and treatment of trachoma, but also on its complications and on trichiasis surgery. The campaign that was launched in Koulikoro in October 1997 was evaluated in January and February 1998. The messages were put across to the population at meetings with projections on screen, radio broadcasting and also at listening sessions based on the audio cassette. External supervision - of the national IEC strategy, or of training in eye treatment in Koulikoro region - showed that IEC on trachoma is put across well by the trained workers and that the messages are well taken by the population.

In February 1998, the NBCP organized an information meeting on trachoma which brought together all those currently taking part or prepared to take part in trachoma control in Mali. Present at this meeting were representatives of the Institut d'Ophtalmologie tropicale de l'Afrique (IOTA), Sight Savers International (SSI), Swiss Red Cross, Organisation pour la Prévention de la Cécité (OPC), Médecins Sans Frontières (MSF Luxembourg). All those present demonstrated that they were

prepared to support national efforts to implement the SAFE strategy. The conclusions and recommendations from this meeting were presented to the national authorities.

In June 1998, the National Blindness Control Programme was visited by representatives from the Edna McConnell Clark Foundation, Pfizer Inc. and the International Trachoma Initiative (ITI) to enquire as to the prospects for future collaboration within the framework of the WHO Alliance and to get an update of the real situation of trachoma control in Mali. The mission was able to meet with the Secretary General for Health and with the National Director for Health and the Head of the Epidemiology Division.

Another meeting was organized with the partners of the NBCP including representatives of WHO, Global 2000/Carter Center, Institut d'Ophtalmologie tropicale de l'Afrique (IOTA), Helen Keller International (HKI), Médecins Sans Frontières (MSF Luxembourg), Organisation pour la Prévention de la Cécité (OPC), Sight Savers International (SSI), Swiss Red Cross and UNICEF. The meeting helped assess the commitment of those involved in supporting national efforts to implement the SAFE strategy.

Plans for the future include the setting-up of a national committee for trachoma control and the drawing-up of a national trachoma control programme based on the SAFE strategy by December 1998.

1.2.5 Morocco (Dr J. Mahjour/Dr Y. Chami Khazraji)

The activities carried out by the NBCP since the last meeting are as follows:

(a) *Community trial on the use of azithromycin in mass treatment campaigns*

The study has been completed and the data reviewed. The results which were presented at the meeting are contained in Section 5 "Update on azithromycin" of this report.

(b) *Training*

Through grants received from EMCF, the following training activities have been made possible:

C *Trichiasis surgery:*

Three training sessions attended by 13 physicians and 14 nurses of the target provinces of Errachidia, Figuig, Ouarzazate, Tata and Zagora were organized. The training was aimed at initiating health workers to the bilamellar tarsal rotation surgical technique. The objective was for each participant to perform at least 15 surgical acts per training session, a number which was exceeded by the majority of the trainees. Post-operative consultations were also carried out in the presence of trainees to make them aware of all the possible complications after surgery.

C *Seminars for health centre head physicians*

Four 3-day seminars involving a total of 49 head physicians from the five target provinces were organized to focus on the following issues: epidemiological

surveillance, new approaches on rapid assessment, SAFE strategy, IEC, and other trachoma-related issues.

C *Geographic Information System (GIS)*

Twelve persons were trained in the use of the GIS by the WHO Health Map team through two sessions of 5 days organized by the MOH in the Division of Communicable Diseases.

C *IEC*

In the five target provinces, 436 health workers and 193 other staff were involved in IEC training sessions.

(b) *Trachoma rapid assessment*

It has been conducted on the basis of the methodology proposed during the first meeting of the Alliance in all the 5 target provinces. The results have been analyzed and have been sent to the WHO HealthMap team for mapping.

(c) *Interventions*

C *Distribution of resources*

Material and supplies for trichiasis surgery and pharmaceutical products for trachoma treatment have been acquired mostly through grants received from EMCF and Pfizer Inc., as well as computer equipment and vehicles for field and central services.

Environmental health material and supplies for promotion of hygiene in 20 pilot communities of the five target provinces were acquired by the MOH's Division of Environmental Health.

C *Trachoma/trichiasis surgery management*

In 1998, trichiasis surgery activities have decreased in favour of other activities such as public awareness, trachoma/trichiasis case detection and management.

In collaboration with WHO/PBD, a protocol for evaluation of the quality of trichiasis surgery was drafted and presented to the Alliance. Details concerning this draft protocol can be found in Section 3 "Trichiasis Surgery" of this report.

C *IEC*

An Information Day on the trachoma control national campaign was organized to enhance public awareness on the environmental factors contributing to the transmission of the disease and to attract decision-makers' attention to the magnitude of the problem in target provinces.

Collaboration between MOH and Peace Corps is being planned and a training programme in trachoma control activities should be organized at the province level for Peace Corps volunteers to work in endemic villages.

Educational sessions of two different types (for the public at large and for health workers) have enabled over 255 000 people to be reached. During these sessions, people were taught how to convey adequate messages to the population. Educational aids such as trachoma brochures, posters, 3 videos (for the general public, the health staff and decision makers) were produced for this purpose. Broadcasting of these videos was facilitated by a cinematographic caravan made available by the Ministry of Communication. This activity had the dual impact of mobilizing decision-makers and enhancing public awareness. Reporting on the results of trachoma control campaigns was prepared and distributed.

C *Intersectoral collaboration*

The Ministry of Health and the Ministry of National Education have agreed to the implementation of a joint activity which consists in a model teaching lesson on trachoma for the schools of the five target provinces.

The Ministry of Health and the National Office for Drinking Water (Office national pour l'Eau Potable, ONEP) have jointly undertaken a campaign to promote trachoma elimination by the year 2000 in 23 pilot communities. The main themes of the campaign are household hygiene, individual and collective hygiene, waste disposal, promotion of the concept "Family/Community", fly control, and promotion of the importance of water in health/hygiene.

1.3 **ACTIVITIES REPORTED FROM ENDEMIC COUNTRIES PRESENT AT THE MEETING WHERE A TRACHOMA CONTROL PROGRAMME IS PLANNED**

1.3.1 *Ethiopia (Dr W. T. Mekuria)*

Trachoma is known to be very endemic in Ethiopia. Out of a population of 60 million, it is estimated that 10 million people have active trachoma (TF/TI) and 1 million have trichiasis. Trichiasis surgery (12 000 cases per year) is being carried out with the country's resources and the support of CBM. Other NGOs, such as Help Age and Orbis International are also present in the country. A national workshop on eye care delivery and prevention of blindness held in July 1998 under the sponsorship of CBM have enabled more information to be obtained on the magnitude and causes of blindness in the country and to define priorities in terms of human resources, infrastructure, cataract services and trachoma control.

1.3.2 *Mauritania (Prof. S. E. Ahmedou)*

Trachoma is considered to be a public health problem in Mauritania. It is supposed to be the second cause of blindness despite the lack of valid data. The establishment of a National Programme for the Prevention of Blindness in 1987 has enabled the implementation of blindness control activities through the setting up of a network of ophthalmic nurses and the creation of eye care centres in 13 Wilayas (regions). Unfortunately, the lack of resources which has affected the Programme from 1991 to 1998 has hampered considerably the implementation of activities. At the moment, the country's resources for eye health staff are five ophthalmologists and 17 eye care nurses of which only four are trained in trichiasis surgery. The main priorities of the NPBP include the:

- (i) setting up of a national blindness survey;
- (ii) assessment/mapping of trachoma; and
- (iii) implementation of the SAFE strategy mainly through:

- training and refresher courses in trichiasis surgery,
- setting-up of partnership with the Ministry of Environment,
- collaboration with the school-health programme.

Financial support and/or technical collaboration to help implement these activities is/are expected from the European Union, the local Lions Clubs and WHO by the end of 1999, and a firm commitment has been made by the national authorities concerning the integration of trachoma control in the existing health system.

1.3.3 Niger (Dr A. Amza)

Two surveys conducted in Niger in 1985 and 1989 have estimated the prevalence of blindness to be 1.2%. Active trachoma (TF and TI) is estimated to represent 2.2 million cases and the backlog of unoperated trichiasis is estimated between 63 000 and 100 000 cases. Although a National Prevention of Blindness Programme exists, no budget has been allocated for blindness yet. Staff resources include eight ophthalmologists and 18 eye care nurses plus four others presently in training and 10 specialized in trichiasis surgery. More staff are presently being trained and a trachoma national survey is ongoing. The main priorities of the NPBP are as follows:

- (i) Finalization of the trachoma prevalence survey;
- (ii) Implementation of the SAFE strategy mainly through:
 - training of eye health staff in trichiasis surgery,
 - uptake of the backlog of unoperated trichiasis cases,
 - distribution of antibiotics,
 - IEC campaigns, and
 - monitoring and evaluation.

1.3.4 Senegal (Dr M. Sall)

Prevalence of blindness in Senegal is estimated to be 1.4%. Unfortunately there has not been any blindness prevalence survey to validate this figure which is based on two district surveys carried out in three areas of the country. The prevalence of trachoma (0.26%) is estimated to be the second leading cause of blindness after cataract.

Present estimates reveal that around 30% of trichiasis cases only are being operated on. In order to better assess the prevalence of trachoma in the country, the National Prevention of Blindness Programme (NPBP), established in 1993, plans to carry out a trachoma national survey during the course of 1999.

Staff resources include 21 ophthalmologists and 21 eye care nurses plus nine nurses presently in training.

So far, the NPBP has organized IEC campaigns through radio broadcasts on trachoma in all the regions. The main priorities of the NPBP are as follows:

- (i) Finalization of the trachoma survey;
- (ii) Implementation of the SAFE strategy mainly through:
 - training of eye health staff in trichiasis surgery,
 - involvement of partners for implementation of the F and E components,
 - IEC campaigns, and
 - Knowledge, Attitude and Practice (KAP) surveys.

1.4 COMMUNICATIONS MADE BY OTHER MEMBERS OF THE ALLIANCE

1.4.1 African Medical and Research Foundation (AMREF) (Mr D. Sokooi)

Support from EMCF facilitated by HKI has enabled AMREF together with the Kenya Ophthalmic Programme (KOP) to train ophthalmic clinical officers from the 18 trachoma endemic districts on the bilamellar tarsal rotation procedure. The method used previously was modified Snellen's operation (MSO) which had a high failure rate. Tarsal plate rotation has a high success rate but some trichiasis do recur. Trichiasis surgery kits were provided to the workshop participants.

An AMREF/Lions Initiative Steering Committee, including representatives from the KOP of the Ministry of Health and the Department of Ophthalmology of the University of Nairobi have mapped out strategies aimed at increasing countrywide control of trachoma in the endemic districts, and a draft proposal has been forwarded to the Lions SightFirst Project through the local Lions Club of Dagoretti.

The District Health Management team from Kajiado has been trained in primary eye care. A district model for trachoma control using the SAFE strategy has been developed and has been incorporated into the existing primary health care project.

Support received from Pfizer Inc. has enabled to continue running the expanded trachoma control project involving a population of 6500 people including the training of 100 and 76 community health motivators. These are key players in the control and monitoring of trachoma activities, particularly concerning the A, F and E components of the SAFE strategy. Training in data collection and health promotion has also been provided to 18 visiting health monitors.

So far the constraints to trachoma control have been reinfection due to nomadism, and lack of means of transportation (for patients and health workers). The plans for the future are therefore to address these issues by expanding the trachoma project and by identifying funding for two new vehicles.

1.4.2 Al-Noor Foundation, Egypt (Dr G. Ezz Al Arab)

The Al-Noor Foundation jointly with the MOH/Egypt is conducting a survey on prevalence and major causes of blindness, low vision, and trachoma in Menofiya Governorate, Nile Delta, in Egypt.

It is hoped that the results of this survey which should become available during the first half of 1999 will give more evidence to the national authorities on the trachoma situation in Egypt and the need for possible intervention.

At the moment, it seems that the majority of the national eye surgeons are applying tarsal grooving techniques for correction of trachomatous trichiasis. As there seems to be a considerable rate of recurrence with this technique, Al-Noor proposes conducting surgical training courses and workshops for eye surgeons to promote and apply the bilamellar tarsal rotation technique.

An analysis of the different barriers to proper management of trachoma as well as an evaluation of the environmental and sociocultural aspects related to the epidemiology of trachoma will be carried out from the results of the data collection.

1.4.3 Carter Center/Global 2000 (Dr J. Zingesser)

Following a grant received from the Conrad Hilton Foundation, the Carter Center has been able to set up a Trachoma Control Programme (1998). It proposes to build on its experiences and

knowledge gained from the Guinea worm eradication and onchocerciasis control programmes to work with governments and partner organizations to achieve control of trachoma through advocacy, community-based interventions and operations research.

National partnerships have been proposed according to the following schedule:

- Phase 1: Ghana and Mali (1998)
- Phase 2: Niger and Yemen (1999)
- Phase 3: Nigeria and Sudan (2000)

Discussions are ongoing with the Ministries of Health of Ghana, Mali and Niger concerning possible technical assistance from the Carter Center to their respective trachoma control programmes.

1.4.4 The Edna McConnell Clark Foundation (EMCF) (Dr J. Cook)

EMCF continues to support trachoma control activities through grants made available to collaborating NGOs, MOHs and WHO in domains such as trachoma assessment, training in trichiasis surgery, GIS, IEC, interventions, operations research and global coordination (WHO). Together with the representatives of the Philanthropic section of Pfizer Inc. , they announced the creation of the International Trachoma Initiative (ITI) which should become effective as of November 1999. More details on the structure of ITI and its mandate can be found in Section 12 of this report.

1.4.5 International Eye Foundation (IEF) (Ms V. Sheffield)

Since the last meeting, the International Eye Foundation (IEF) has worked with the Ministries of Health and local interested NGOs of Guatemala and Nigeria for assessment of the trachoma situation and implementation of trachoma control programmes.

Country profiles have been prepared based on the forms developed by the WHO secretariat and providing both general information (such as the health care and eye care infrastructure) and trachoma-specific information. A detailed report is attached for further information (see Annex 3).

1.4.6 Seva Foundation (Dr P. Courtright)

SEVA is collaborating with the British Columbia Centre for Epidemiologic and International Ophthalmology, the Tibet Development Fund, the Tibet Health Bureau, and other partners to undertake the Tibet Eye Care Assessment (TECA) in 1999 and 2000. As trachoma is reported as a major cause of blindness, it will be part of this assessment.

2. UPDATE ON THE TRACHOMA RAPID ASSESSMENT METHODOLOGY

Since the last meeting, the Trachoma Rapid Assessment methodology has been further refined; in particular, the group noted that the risk factors and outcome measures had been streamlined.

Although the procedures are still subject to further validation, a working draft of the manual is available to all the countries wishing to conduct a rapid assessment. Technical support concerning its use can be provided by WHO on the basis that feedback is reported for refining of the methodology. The present draft which is based on extensive field work conducted in Morocco takes into account both active disease and complications together with a "community profile" of risk factors for trachoma, and the basic needs in health care and environmental/behavioural settings.

It is presently being validated in other countries and it is expected that a finalized methodology be presented at the next Alliance meeting.

3. TRICHIASIS SURGERY

3.1 RESULTS OF THE FIELD TESTING OF THE LOW-COST SURGICAL KITS CARRIED OUT AT THE INSTITUT D'OPHTALMOLOGIE TROPICALE DE L'AFRIQUE (IOTA), BAMAKO, MALI

C Objectives: (i) To assess the quality of the surgical kit in a normal surgical setting, whether hospital or ambulatory;
(ii) To assess its practicality;

C Instruments: 4 sets each containing :
 - 1 sterilization box - 1 stainless steel dish
 - 2 kidney dishes - 1 pair of conjunctival scissors
 - 1 blade holder - 3 haemostatic mosquito forceps

NB: The Trabut plate was not included in the set

C Use:
 - Trichiasis surgery with the Trabut technique
 - 2 boxes used in IOTA's surgical rooms and 2 boxes used for ambulatory surgery
 - Each kit was used independently and marked from 1 to 4
 - The sets were not allocated to any particular surgeon but shared.

Hospital kits	Field kits
Kit 1: 149 operations (237 eyes) Kit 2: 104 operations (171 eyes)	Kit 3: 47 operations (70 eyes) Kit 4: 33 operations (51 eyes)
Total: 253 operations (408 eyes)	Total: 80 operations (121 eyes)
TOTAL: 333 OPERATIONS (529 eyes)	

C Results:
 - Overall good
 - The instruments are good quality and show no sign of wear and tear
 - Smaller scissors and dissection forceps remain to be tested
 - The kit/box was reported to be too cumbersome for transportation on a motorbike
 - The lock of the box was reported to be fragile

C Conclusions: The need for a box including the Trabut plate and a stronger lock has been taken into account and will be requested from the supplier.

The acquisition and distribution mechanisms for this kit which are still subject to an enquiry will be announced to countries and interested NGOs as soon as known.

3.2 MONITORING TRAINING AND QUALITY OF TRICHIASIS SURGERY

3.2.1 Draft guidelines for training in trichiasis surgery

Helen Keller International (HKI), in response to a request from the Edna McConnell Clark Foundation (EMCF), is developing a trainers' manual for community-based bilamellar tarsal rotation procedure (BTRP) surgeons. This manual is designed to be used with the WHO manual entitled *Trichiasis Surgery for Trachoma. The Bilamellar Tarsal Rotation Procedure*. The new manual essentially documents a training programme. A twelve-day training curriculum not only builds skills in BTRP, but also teaches trainees how to bring these services to those in need within their communities, thereby increasing the coverage and reach of health services and reducing blindness caused by trachoma.

This approach was developed because efforts to control trachoma at the community level face many constraints, and there is a need to increase access, and reach more patients locally. Constraints to trichiasis surgery include fear of the operation, not knowing that there is a solution to the problem, lack of access to transport or funds needed to go to the hospital or clinic for surgery, suspicion of the procedure, and lack of satisfaction or confidence in the quality of services and/or patient treatment at hospitals. Bringing surgery to the patients within their own communities effectively addresses many of these concerns. People are able to speak to others who have received the surgery before them (peer counselling) and can have many of their fears allayed; no cost or inconvenience related to travel is incurred by the patients; and people immediately see the benefits of the procedure.

The twelve-day curriculum includes:

- (i) An orientation and exercise on defining primary health care and primary eye care;
- (ii) A clinic-based review and demonstration and practice of the BTRP method (based entirely on the WHO manual);
- (iii) Review of materials, instruments and how to maintain them (including how to procure surgical sets);
- (iv) Practical exercises to master incision and suturing skills;
- (v) How to use village health workers to screen for trichiasis;
- (vi) How to train community-health workers to provide follow-up care to BTRP patients for the week following the surgery;
- (vii) Additional information on training village health workers or their equivalents in primary eye care;
- (viii) How to plan and prepare mobile eye clinics;
- (ix) Implementation of at least three mobile eye clinics, during which each trainee is supervised as he/she performs the trichiasis surgery;
- (x) Follow-up eye clinics to remove sutures;
- (xi) An overview of the SAFE strategy, and exercises for planning how to implement this strategy in order to achieve community control of trachoma;
- (xii) An abbreviated training (2 days) in trachoma grading;

- (xiii) Overview of rapid assessment methodology;
- (xiv) Pre/post test;
- (xv) Forms and record-keeping procedure for programme monitoring.

It is expected that this manual will become available during the course of 1999.

3.2.2 Monitoring the quality of trichiasis surgery

There is a need for surveillance of all patients following trichiasis surgery for two reasons. The first is to identify those people in whom trichiasis has recurred after surgery so that they can be re-treated appropriately. The second is to establish the rate of recurrence and to use it as a measure for monitoring the quality of the trichiasis surgery.

A trichiasis surgeon should aim at obtaining a one-year recurrence rate (i.e., no intumed lashes) of less than 20% whether patients have had minor or major trichiasis. These figures are based on the data obtained by Reacher and co-workers and are comparable to those reported for community-based surgery for trichiasis.

As all patients who have had trichiasis surgery are potentially at risk of recurrence, they should be under continuing follow-up. In general, it is anticipated that patients with trichiasis will be identified by community-based health workers. It is therefore appropriate that the latter be given a list of the people having undergone trichiasis surgery and requiring ongoing re-examination at least annually. The trichiasis surgeon needs to make sure that he/she communicates with the community-based health workers so as to see any recurrent case, and to obtain the results of all follow-up examination.

Any trichiasis surgery programme relies essentially on the following three outcome measures:

- (i) the prevalence of trichiasis in people (both women and men) over 30 years;
- (ii) the percentage of people with trichiasis who have received trichiasis surgery; and
- (iii) the trichiasis recurrence rate in those who have been operated on.

For programmatic reasons, these basic statistics need to be supplemented with information on the total number of people at risk per group (the denominator), and the total number of people actually examined (the rate of ascertainment).

3.3 STUDY ON THE EVALUATION OF THE QUALITY OF TRICHIASIS SURGERY IN MOROCCO

A study on the evaluation of the quality of trichiasis surgery is planned to take place in all the health centres of the Zagora and Errachidia provinces. It is hoped that the results which are due during the course of 1999 will be used as a base for the design of a core protocol on the assessment of the quality of trichiasis surgery.

The aims and hypotheses of the study are as follows:

- (i) Aims:
 - C To assess the quality of the results of trichiasis surgery carried out in the above provinces since 1996 (baseline for training activities) in terms of:

- occurrence of complications during the first six months after the operation;
 - recurrence of the disease after periods of at least 6 months, one year and two years.
- C To assess the functional impact of surgery on the acuity of the eye operated on and the overall eyesight of the patient.
- C To assess his/her level of satisfaction.
- (ii) Hypotheses:
- C Postoperative complications occur in less than 10% of patients six months after the operation.
- C The operation, as it is carried out, leads to less than 10% of recurrent cases (total or partial).
- C More than 90% of the patients are satisfied with the result of the operation.

The study design will be a retrospective study based on three cohorts constituted by random sampling, i.e.:

- (i) a cohort of patients who underwent surgery at least six months before, to assess the occurrence of complications and recurrence;
- (ii) a cohort of patients who underwent surgery at least one year before; and
- (iii) a cohort of patients who underwent surgery at least two years before, to assess recurrence.

To ensure accuracy of +/-4% around an estimated 10% recurrence rate during the first six months, each cohort must comprise approximately 250 individuals. The same number of individuals will be required to estimate recurrence after one or two years, with a similar level of accuracy. A total of 750 persons distributed among the two provinces will be recruited for the study.

The results of the above-mentioned study should be reported at the next Alliance meeting in December 1999, as well as that of a similar study to be carried out in the Sultanate of Oman in early 1999.

3.3.1 Draft checklist for quality assessment of trichiasis surgery

A rapid checklist has been prepared by the secretariat of the WHO Alliance for quality assessment. It is available in Annex 5.

3.4 BARRIERS TO TRICHIASIS SURGERY

3.4.1 Trichiasis surgery acceptance in a cohort of women in Kongwa, Tanzania

In 1989, 205 women identified with trichiasis were counselled for surgery and offered free transportation to the health centre. Two years later a follow-up study found that only 18% of the latter had undergone surgery. Further, an evaluation conducted in the framework of a community-based surgical programme in 1996 showed that, after 7 years, only 27% of the women had actually undergone surgical correction, despite the benefits offered by the programme in terms of reduction of both travel time and length of hospitalization. Among the 135 women re-interviewed, surgical

non-acceptors were asked what actions would enable them to seek treatment. The results were as follows:

Table 3

Reporting of activities that would enable Increased Surgical Acceptance (n=98)	%
Nothing would help	52.0
Need person to accompany him/her	23.5
Need money	15.3
Ready if surgery performed in the village	5.1
Feel surgery is not needed	3.1
Need caretaker for children	1.0

Compliance with recommendation for trichiasis surgery in studies in East Africa is low. Planners implementing the SAFE strategy for trachoma control need to be aware that training trichiasis surgeons is only one component of the surgical intervention. Given the considerable reluctance to access surgery in the above study, more data are urgently needed on how to improve the acceptability and accessibility of trichiasis surgery for persons in trachoma-endemic regions.

4. UPDATE ON GEOGRAPHICAL INFORMATION SYSTEM (GIS) FOR TRACHOMA CONTROL

Further to the development of the existing GIS software, new simplified applications have been developed to ease the management and use of available data. A new software called HealthMapper has been developed in the HealthMap unit of WHO providing not only an easier interface but also simplifying data collection, storage, retrieval, management and analysis of public health data at both local and global level. The version is made of the following components:

- (i) A standardized geographic database (population, villages, health facilities, basic infrastructures);
- (ii) A data manager (easy user interface for data entry, data storage, report creation, and data export for statistical analysis);
- (iii) A mapping interface allowing the creation of an interactive map with graphs of relevant available data by simply selecting a region, district or community within a country.

Some of the features of this new application will be adapted to trachoma control activities in close collaboration with PBD before it is tested and made available to all interested countries and Alliance members. A global repository of trachoma and health systems data by country will be established at WHO/HQ and relevant data will be made available through a world wide web retrieval system and the production and distribution of a CDROM depending on available resources (human and financial).

5. UPDATE ON AZITHROMYCIN

5.1 PRESENTATION OF FINAL ANALYSIS OF FIELD RESULTS IN MOROCCO

The final results of the randomized community trial on the use of azithromycin vs tetracycline 1% in the treatment of trachoma were presented.

This study was conducted in two of the most endemic provinces of Morocco: Ouarzazate and Errachidia. In Ouarzazate, the study looked at the general population (all ages and sexes together), while in Errachidia it focused on schoolchildren under the age of 15 (both boys and girls).

The aims of the study were :

- (i) To compare the efficacy of the following therapeutic protocols:
 - azithromycin in a single dose
 - azithromycin in two doses at six-month intervals
 - 1% tetracycline ointment at the rate of two instillations per day for six weeks
- (ii) To study the emergence of new cases of active trachoma in the study population in order to estimate the incidence of the disease.

5.1.1 Conclusions of the school-population trial

- C A two-dose regimen of azithromycin was significantly more effective in treating trachoma than one dose of azithromycin or tetracycline eye ointment.
- C Within the azithromycin two-dose group, children with severe disease at baseline benefited more from treatment than those with follicular disease at the same stage; 94.6% of children with severe disease at baseline were free from the disease at 12 months compared with 89.5% with follicular disease.

5.1.2 Conclusions of the general population trial

- C Both azithromycin and tetracycline eye ointment are effective in treating trachoma.
- C A second dose of azithromycin at 6 months provides greater protection against trachoma at one year than one dose only, but neither regimen is significantly different from a 6-week course of tetracycline eye ointment.
- C Azithromycin is well accepted by the population and easier to administer than tetracycline eye ointment, especially in small children.
- C Public health policy regarding community-based treatment and prevention of trachoma must take into consideration the cost of the drug and its administration, in addition to effectiveness.

5.2 DEVELOPMENTS OF TOPICAL PREPARATIONS

Little was reported at the meeting in view of the delays in identifying an interested manufacturer to develop and make available a topical preparation of azithromycin. WHO was requested to further investigate that potential.

5.3 RESISTANCE

Pfizer Inc. is continually monitoring the effectiveness of azithromycin, and updates WHO on the emergence of any resistant strains. Ongoing surveillance has shown *S. pneumoniae* resistance to penicillin and macrolide antibiotics in Spain, France, Belgium, Korea, and Japan.

Preliminary research has been conducted on the cost and compliance associated with different azithromycin distribution strategies.

The group recommended that the results of surveillance for azithromycin resistance, particularly in individuals being treated for trachoma, should be reported at regular intervals.

5.4 OTHER DEVELOPMENTS

The philanthropic section of Pfizer Inc. have announced together with the Edna McConnell Clark Foundation that they had formed a new non-profit organization known as the International Trachoma Initiative (ITI) to administer their donation programme of Zithromax® (azithromycin). This 66 million dollars worth donation is intended to treat all the countries where trachoma is prevalent but will be subject to the programme's success in pilot countries. For more information concerning the mission and structure of the ITI, please refer to Section 12 of this report.

6. ENVIRONMENTAL CHANGES

6.1 DRAFT OUTLINE FOR A MANUAL ON FLY CONTROL

The Programme for the Prevention of Blindness and Deafness and the Programme on Water, Sanitation and Health are preparing a document addressing environmental measures and hygiene practices leading to the prevention of trachoma. The document is mainly targeted at village health workers, community leaders and other local actors wishing to play an active role in the community to improve environmental sanitation. The recommended environmental measures address fly control, excreta disposal, domestic waste disposal, food hygiene and the keeping of domestic animals. The document will be completed with other basic hygiene and sanitation measures that are not specifically targeted at the prevention of trachoma.

Once finalized, the manual should be field tested and distributed to the National Programmes and Alliance members.

6.2 REDUCTION OF TRACHOMA BY FLY CONTROL

Domestic flies are frequently cited as vectors of trachoma but their role has never been quantified. A study carried out in Gambian villages evaluated the direct impact of fly control on trachoma. This study was carried out in two pairs of similar rural villages, one pair in the 1997 wet season, the other in the 1998 dry season. Deltamethrin spraying to control flies was carried out for three months in one village whilst the other acted as a control. Fly populations were monitored with traps. Fly-eye contact was measured with hand-net catches of flies attracted to infected children. Trachoma surveys were conducted in all age groups at baseline and at three months. Of flies caught seeking eyes, 92% were *Musca sorbens* and 8% were *Musca domestica*. Fly control resulted in there being 76% fewer of these species in the intervention villages compared to the controls. Eye-fly contact was reduced by 96%. Muscid flies (particularly *M. sorbens*) are important vectors of trachoma in this environment, responsible for 75% of transmission. Removing flies significantly reduces trachoma transmission. Deltamethrin is effective for controlling flies and could be used in elimination programmes. These results should be verified and research targeted at sustainable methods of fly control should be a priority.

7. REPORTING ON DISTRICT CONTROL PROGRAMME MODEL DEVELOPMENTS

The experience of the village committee of Tafergalt, a rural village located 10km from Agdez in the Province of Zagora, Morocco, was reported as (possible) model for trachoma control. Its population of 1766 inhabitants is composed of 240 households who live mostly on agriculture

and stock farming. The selection criteria were (i) the prevalence of trachoma, (ii) the overall poor hygiene standards, and (iii) the willingness of the population to participate in the experience.

The goal was to bring the community to adopt a social behaviour which would prevent the transmission of the disease. To achieve this goal, the committee had received technical support from sanitation teams, mostly on trachoma control information, education and communication (i.e., the disease, its transmission mode, the risk factors and the means for prevention and control) and on the use of fly control material. It had also benefited from a substantial amount of hygienic equipment and products including equipment for drinking water quality conservation.

The activities of the village committee consisted of the following:

- environmental hygiene campaigns,
- construction of latrines,
- separation of stables from human dwellings,
- management of dung heaps,
- chemical fly control,
- awareness campaigns on safe hygienic behaviour,
- participation in the activities of the health services.

Although it is too early to assess the impact of this experience in terms of environmental changes, there seems to be very good collaboration from the population and an awareness that it can play a role by taking care of its own problems. Further developments and results are to be reported at a later stage.

8. MONITORING AND EVALUATION OF ELIMINATION OF BLINDING TRACHOMA

8.1 BACKGROUND

Every trachoma elimination programme, whether large or small, is subject to a periodic review by its managers.

Monitoring, surveillance and **evaluation** are necessary for assessing and demonstrating programme accomplishments and for identifying weaknesses that need to be dealt with in order to strengthen the programme. Proper assessment of the expected effect is essential to demonstrate to key decision-/policy-makers that the programme is achieving its short-, imedium-, long-term goals and objectives. In the absence of systematic monitoring or evaluation, it is generally not possible to address constraints and impediments or to assess, on a regular basis, whether the programme can be carried out more efficiently.

Therefore, practical management tools (and an efficient Management Information System) are essential if countries are to implement and monitor effectively their programmes for elimination of blinding trachoma. Control of trachoma, based on the implementation and generalization of the SAFE strategy, calls for simple, low-cost, field-oriented approaches to monitoring, disease surveillance, and evaluation. Ideally, the trachoma problem should be measured repeatedly in terms of size (number of cases) and intensity (severity: potentially blinding complications), and should refer to population, geographical location, and time.

The only scientific way to approximate the true prevalence is to carry out a sample survey which, unfortunately, for an acceptable degree of precision, requires a large sample size, and which in any case, will bear a number of biases and non-sampling errors. The trachoma "rapid assessment" could, in the future, become an acceptable surrogate to estimate the existence of the disease at a certain given time in a specific place.

Furthermore, in the future (if, as expected, the interventions are successful), the changes in the trend and distribution of trachoma will require special methods to deal, for instance, with smaller rates of disease, to assess the people at risk of developing trichiasis and to face the challenges and constraints of the ultimate phase ("the tail") in order to certify "elimination" in trachoma endemic zones.

Given the epidemiological patterns, the very nature of trachoma and the characteristics of the communities affected, the tools to assist decision-makers in planning, monitoring and evaluating a trachoma elimination programme should be based mainly on all the information that can be collected by health staff under field conditions, such as routine registration of cases diagnosed and/or treated at the health centres (outpatients, trichiasis surgical activities) or patients screened during outreach activities by mobile teams.

However, in special situations, it would be necessary to use more sophisticated methods, such as sentinel systems (for surveillance purposes), or surveys (for a final evaluation of the impact of the project). Assuming that the final aim of the programme is to eliminate blinding trachoma, one should be able to measure this elimination and to attribute it to the programme. This particular type of evaluation is not easy and should be performed through special studies requiring more resources.

The activities of monitoring, surveillance and evaluation are resource-consuming in terms of time, logistics and manpower. Consequently, they have to be included as an integral component at the planning stage of any trachoma elimination programme and adequate resources should be allocated for this purpose.

8.2 DEFINITIONS

C Review: It refers to a systematic process for collecting, presenting and analyzing the various types of information provided by a control programme, including qualitative indicators, and monitoring and/or evaluating indicators (sometimes called epidemiological and operation indicators).

C Monitoring: It is the periodic collection and analysis of selected indicators to enable managers to determine whether key activities are carried out as planned and whether they are having the expected effects on the target population.

"In management, monitoring is the continuous oversight of the implementation of an activity that seeks to ensure that input deliveries, work schedules, targetted outputs, and other required actions are proceeding according to plan."¹

"To some, monitoring implies intervention in the light of observed measurements. Monitoring is not to be confused with surveillance."¹

C Surveillance: *"An ongoing and systematic collection, analysis and interpretation of health data in the process of describing and monitoring health events. This information is used for planning, implementing and evaluating public health intervention programmes. Surveillance data are used to determine both the need for public health action and to assess the effectiveness of programmes."²*

¹ A dictionary of epidemiology, 2nd Edition, edited by J.M. Last, IEA, 1988

² Guidelines for evaluation surveillance systems, CDC Morbidity and monitoring weekly report supplement. Vol. 37, No. S-5, May 6, 1988

C **Evaluation:** “A process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, efficiency and impact of activities in the light of their objectives. (Different types of evaluation can be distinguished, e.g., evaluation of progress, process, outcome, ...).¹”

8.3 ATTRIBUTES OF A MONITORING/EVALUATION SYSTEM

The system should take into account the following criteria:

- C Why is the information needed ?
- C How can it be analysed?
- C How should it be used to improve trachoma control in a given community?

Keeping this in mind, the programme’s reviewers and managers should address the following four questions:

- (i) **What is the magnitude of the trachoma problem and its transmission at the present time?** (This could be assessed through disease-related indicators. The main issue is how to collect and analyze these indicators at low cost and especially for an unevenly distributed disease.)
- (ii) **What kind of activities should be monitored?** (This will depend on activities as defined in the national plan of action. However, there are core activities that exist in all plans such as: case-detection and case management (quantitative and qualitative), including both the acute phase and the late cicatricial phase -disability prevention.)
- (iii) **Are the resources available to address the trachoma problem?** (Operational support systems, monitoring and surveillance systems, coordination and control systems as well as resource allocation systems should be assessed by a comprehensive review.)
- (iv) **What is the impact of the SAFE interventions?**

An effective Management Information System ...

- C identifies and correctly classifies a large proportion of trachoma cases,
- C correctly reflects the distribution of active cases (TF and/or TI) over person, place and time,
- C is uncomplicated,
- C is adaptable and responsive to new demands,
- C engenders a large level of participation,
- C provides information rapidly enough to allow effective action to be taken,
- C requires minimal resources appropriate to the local circumstances.

The prerequisites for its practical application are:

- C adequate knowledge of the population under surveillance;
- C defined and appropriate methods for collection, analysis, interpretation and feedback of information;
- C clear and logical path for data flow from the primary eye care level to the trachoma programme manager;
- C clear definitions of the different forms of trachoma under surveillance (TF, TI, TT, CO, TS, conjunctivitis...).

Surveillance is a labour-intensive activity. It requires much effort to collect the needed data, especially if they are not already being collected as part of a routine recording and reporting system. Tabulation, analysis and interpretation of the data are also time-consuming.

8.4 COMPARISON OF DIFFERENT METHODS OF SAMPLE SELECTION FOR SURVEILLANCE

The opportunity to assess the value of several sampling strategies for detecting change over time in active trachoma has been given as part of the operations research conducted in Tanzania and reported by Professor S. West. The ongoing study already shows that baseline sample comparisons suggest significant variation among the different samples (random³, geographical convenience⁴ and school sample⁵), with the convenience sample given the highest estimate of prevalence, and inconsistent estimates obtained with school-based samples.

9. OUTCOMES AND SPECIFIC BENEFITS OF TRACHOMA CONTROL

Cost-effectiveness analysis can provide information that enters the resource allocation decision-making process. Several perspectives can be taken including a societal perspective, a government perspective, and a treated village perspective. The perspective taken defines the costs and effects to be analyzed. Three important costs from an overall perspective are drug costs, treatment team costs, and villagers "opportunity" costs. Opportunity costs conceptually measure what people are asked to give up to obtain treatment and can be related to compliance. Effects can be translated into Disability-Adjusted Life Years (DALY) or "Quality-Adjusted Life Years (QALY) for comparison of programmes to treat trachoma or comparison of trachoma treatment with treatment of other diseases.

So far, neither the burden of trachoma on the individual, on society, and on economical production has been quantified, nor has the effectiveness of coordinated SAFE strategies within a programme been thoroughly evaluated. It is recommended that a systematic review of the evidence of effectiveness of the combination of the various components of the SAFE strategy should be undertaken. Further research on the cost-effectiveness of different interventions with particular emphasis on the cost of DALY/QALY's averted would provide valuable evidence to persuade policy makers and potential donors to give greater priority to trachoma.

³ Gold standard based on a complete population census and weighted by age and gender

⁴ Sample obtained by survey in a set number of children and adults at different geographical locations throughout the village

⁵ Sample obtained by surveying all children in the lowest grades until a set number are examined

10. UPDATE ON OPERATIONAL RESEARCH PROJECTS

For a complete update on some of the main operational research projects such as trachoma rapid assessment, barriers to trichiasis surgery, fly control, as well as monitoring and evaluation of a trachoma programme, please refer to Sections 2, 3 and 6 respectively.

Other operational projects of interest reported at the meeting concern:

- (i) the strategies for antibiotic distribution, and
- (ii) the Gambia's operational research projects

10.1 STRATEGIES FOR ANTIBIOTIC DISTRIBUTION

The results of the impact at community level of different strategies for distribution of antibiotic treatment for active trachoma tested in Tanzania and Mali were presented.

10.1.1 *Experience of the ACT study in Tanzania*

In Kongwa, Central Tanzania, three strategies for azithromycin distribution were compared, as follows:

- (i) Treating families of all pre-school children;
- (ii) Treating families of all pre-school children with at least one member with active trachoma, and
- (iii) Treating families of school children with active trachoma.

The preliminary results showed that after distribution, trachoma prevalence in young children was still 50-60% and that therefore the school-based strategy was an ineffective mode of distribution.

10.1.2 *Cost assessment model for distribution of antibiotics to children in Mali*

A cost assessment model (hypothesis) taking into account four possible strategies for distributing general or local antibiotics to trachomatous children in Mali was presented. The costs of the four strategies, including product cost, screening, distribution and rapid assessment were worked out according to the strategies and presented in the table shown below. The suggested strategies were as follows:

- (i) Treating only children with active trachoma;
- (ii) Treating all children in compounds where at least one child is clinically affected;
- (iii) Treating all children in villages where the prevalence of trachoma is above 20% among children under 10 years, and
- (iv) Indiscriminately treating all children in every village.

Table 4.
Cost of different distribution strategies (in US\$)*

Strategy	Number of children treated	Tetra-cycline (US\$)	Azithro-mycin (US\$)	Distri-bution (US\$)	Scree-ning (US\$)	TRA** (US\$)	TOTAL COSTS (US\$)	
							Tetracy-cline	Azithro-mycin
TF + Children	1 090 000	617 597	3 154 494	218 543	167 635	-	1 003 765	3 540 672
TF + Com-pounds	2 106 000	1 189 394	6 075 060	420 863	167 635	-	1 777 892	6 663 558
TF>20% Villages	2 382 000	1 346 248	6 876 218	476 365	-	80 000	1 902 613	7 432 583
All villages	3 044 000	1 720 659	8 788 594	608 848	-	-	2 329 507	9 397 442

* Each assessment is based on a single distribution of antibiotics per year

** TRA: Trachoma Rapid Assessment

Whichever antibiotic is used, distributing it only among those affected is the cheapest solution. The next cheapest strategy would be that of administering the antibiotic to all the children in compounds where there is at least one contact with the disease. Despite the lack of screening costs, indiscriminately giving antibiotics to all children is still the most expensive solution even with an antibiotic as cheap as tetracycline ointment.

The adoption of a suitable strategy for trachoma control may vary from region to region depending on the level of endemicity, the health infrastructure, and the resources available.

After discussion, it was recommended that further research on the effectiveness, compliance, and cost-effectiveness of different antibiotics distribution strategies be conducted.

10.2 OPERATIONS RESEARCH IN THE GAMBIA

The National Eye Care Programme (NECP) of the Gambia is conducting a number of operational research projects in conjunction with various collaborators (MRC, Gambia, International Centre for Eye Health and London School of Hygiene and Tropical Medicine). Three cohort studies and two community trials are underway as follows:

10.2.1 Cohort studies

C One-year observation study of 200 unoperated trichiasis patients

The aims of this study are to investigate:

- the attitudes to the disease and the barriers to surgery,
- the progression of conjunctival and corneal scarring in patients refusing surgery,
- the outcomes of epilation for minor and major trichiasis.

The preliminary results show that :

- self-epilation is practised by 85% and that additional hot ash as an aid to epilation is applied by 27%. It is not considered as a barrier to surgery;
- Compliance with surgery is poor even after extensive counselling (16% at 6 months);
- Barriers to compliance seem to include (i) ignorance (two-thirds of the patients who required surgery denied any previous knowledge of it and its cost), (ii) economic factors (husband having dual income), and (iii) fear associated with traditional eye practices and non-Gambian status.

C Study on the progression of the disease in people refusing surgery

A 12-year follow-up of 620 patients identified in 1986 by the national survey with TS, TT and CO has been set up to determine the incidence of trichiasis and visual loss and risk factors for progression of the disease. So far only 50% of the patients have been traced.

C Study on long-term outcomes of lid rotation surgery

In order to obtain more data on the long-term outcomes of lid rotation surgery, 56 patients were identified and a post-operative follow-up mean worked out, i.e., 11.7 years (0.5-50 years). On the basis of this rather heterogenous series of patients, only 25% were found to be completely free of trichiasis.

10.2.2 Community trials

C Community vs health centre based lid surgery

Free lid surgery in the community is being gradually introduced by the NECP to measure the effect on uptake. So far the pilot study has shown compliance rates of 50% for the health centre and 90% for the community.

C Randomized controlled trial of azithromycin vs tetracycline

This study has been conducted to test the hypothesis that azithromycin is more effective than tetracycline ointment when its administration is not supervised. 314 children were recruited for this study and 23 lost to follow-up at three months. The cure rate (still masked) is 56% overall.

11. OUTLINE OF WORK PLAN FOR 1999

WHO ALLIANCE PLANNED ACTIVITIES FOR THE PERIOD 15 October 1998 - 31 December 1999

COUNTRY VISITS FOR NATIONAL PROGRAMME DEVELOPMENT

- # Presentation of the WHO Alliance for GET 2020 and promotion of the SAFE strategy to MOH officials in:
 - East Africa
 - Mauritania
 - Niger
 - Senegal

- # Technical assistance for implementation of trachoma control activities in:
 - Algeria (initiation of rapid assessment of trachoma)
 - China, Beijing and Guangdong Provinces (ditto)
 - Ethiopia (ditto)
 - Morocco (follow-up visit on rapid assessment)
 - Oman (ditto)
 - Sudan (preliminary assessment of trachoma)

PRODUCTION & DISSEMINATION OF DOCUMENTATION

- # Final editing and printing of the **manual of operations for Trachoma Rapid Assessment (TRA)** - French translation to follow around mid 1999
- # Dissemination of a GET/SAFE "promotional kit" (English & French) composed of 20 slides available to all interested Alliance members
- # Publication of the second and third issues of the ***Tracking Trachoma* newsletter**
- # Preparation and dissemination of the report of the third meeting of the WHO Alliance for GET (English and French)
- # Finalization and printing of a **Trachoma Atlas** based on the information available in the trachoma data bank
- # Finalization and printing of **Guidelines for environmental sanitation and improved hygiene** (joint activity with the WHO Office of Global and Integrated Environmental Health)
- # Finalization and dissemination of a flier for health education and awareness entitled **"ABC for a NO-FLY zone"**
- # Ongoing dissemination of informational material (Alliance reports/ (SAFE manuals/etc)
- # Ongoing updating of the trachoma mailing list for dissemination of documentation

**WHO ALLIANCE PLANNED ACTIVITIES FOR THE PERIOD
15 October 1998 - 31 December 1999**

OPERATIONS RESEARCH AND FIELD STUDIES

- # Utilization of the first edition of the Trachoma Rapid Assessment manual (countries to be identified)
- # Reporting of the results of the trial on **Quality Control of Trichiasis Surgery** carried out in Morocco
- # Finalization of a core protocol for **Quality Control of Trichiasis Surgery** based on the results of the Moroccan experience
- # Dissemination of the low-cost trichiasis surgery kit
- # Development of a protocol for **Evaluation of National Programme Progress towards Global Elimination of Trachoma**

TRAINING ACTIVITIES

- # Participation, as part of the faculty, in the Training Workshop in Trachoma Control for National Programme Managers, Accra, Ghana (30 November - 2 December 1998) [course organized jointly between the MOH (Dr M. Hagan) and ICEH (Dr A. Foster)]
- # Organization of the International Workshop on Assessment and Control of Trachoma for National Coordinator, Cambridge, UK (14-18 December 1998) [organized jointly with ICEH (Dr A. Foster)]
- # Finalization and dissemination of teaching material on Trachoma Rapid Assessment (slides and booklet)

STRENGTHENING OF INFORMATION/COMMUNICATION SYSTEMS

Maintenance and updating of information/communication systems developed previously, such as:

- # Majordomo system ready for subscription (<ftp://majordomo.who.ch>)
- # On-line chat "room" available on the WHO web server (<http://www.who.int>)
- # Web data retrieval with restricted access
- # WHO Alliance/SAFE Strategy slide set at <http://www.who.ch/pbd/trachoma>
- # **Trachoma Newsletter** at <http://www.who.ch/pbd/trachoma>

Completion of :

- # Desktop video conferencing with PBL staff through MS-Netmeeting
- # **Trachoma Atlas** at <http://www.who.ch/pbd/trachoma> and on CD-ROM

INFORMATION & COORDINATION ACTIVITIES THROUGH THE ALLIANCE MEETINGS

- # Preparation and hosting of the 4th Meeting of the WHO Alliance for GET, Geneva (dates to be set)

12. CREATION OF THE INTERNATIONAL TRACHOMA INITIATIVE (ITI)

The Edna McConnell Clark Foundation and Pfizer Inc. announced that they had come together to found the International Trachoma Initiative (ITI), an independent effort to promote the global elimination of blinding trachoma. The ITI will support the WHO Alliance for the Global Elimination of Trachoma by the year 2020 (GET 2020) and will work with national programmes in a small group of countries to expand trachoma control through the implementation of the SAFE strategy.

The mission of ITI will be to:

- C promote trachoma control using the SAFE strategy;
- C provide technical assistance to efforts in selected countries to implement the SAFE strategy;
- C distribute and ensure appropriate use of Pfizer-donated Zithromax® (azithromycin);
- C support operational research to refine trachoma control efforts;
- C monitor the progress and evaluate the programme activity of ITI-supported efforts;
- C conduct education, communication, and resource mobilization activities to help eliminate trachoma worldwide.

Participants in the ITI will be drawn from the 16 priority countries identified by WHO in Africa and Asia where trachoma remains a major cause of blindness. A determination has not been made about which countries might participate. This phase of both the ITI and Pfizer's donation programme will run through the end of the year 2000. Future expansion of either will depend on the programme's success in pilot countries.

The ITI will collaborate with international, governmental and nongovernmental organizations in endemic countries. The ITI will also work with other agencies such as the Conrad N. Hilton Foundation, Carter Center, as well as the nongovernmental organization members of the WHO Alliance (such as Helen Keller International, Sight Savers International, Christoffel-Blindenmission e.V., International Eye Foundation, etc.) in their trachoma control efforts.

Trachoma control is Pfizer's largest and most important international philanthropic venture. For the past several years, Pfizer Inc. has supported Morocco's effort to eliminate blindness from trachoma by the end of the year 2000 with funding for health education and an in-kind donation of Zithromax.® In the United States, Pfizer makes available its most advanced pharmaceuticals at no charge through "Sharing the Care", a unique partnership of public and private organizations. Throughout its history, Pfizer Inc. has developed and supported numerous community programmes to promote and ensure health care access for all patients.

The ITI programme and structure will be finalized and announced in November 1998.

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

Ouarzazate, 19-20 October 1998

CONCLUSIONS AND RECOMMENDATIONS

1. National trachoma control programme

The participants were encouraged by the progress of many national trachoma control programmes with the support of involved agencies. There is evidence of further progress in integrating the F & E components in national programmes. Furthermore, there has been increasing support from political and professional communities in affected countries.

The group reiterates the need for strong political and professional support for the development of national trachoma control programmes and the implementation of the SAFE strategy.

2. Trachoma Rapid Assessment (TRA)

The Trachoma Rapid Assessment methodology has been further refined; in particular, the group noted that the risk factors and outcome measures have been streamlined.

It was recommended a working draft of the manual be made available, that the procedures be further validated, and the manual be revised as experience is gained with its use.

3. Cost-effectiveness of the SAFE strategy

The burden of trachoma on the individual, on society, and on economical production has not been quantified. Furthermore, the effectiveness of coordinated SAFE strategies within a programme have not been thoroughly evaluated.

It is recommended that a systematic review be undertaken of the evidence of effectiveness of the combination of the various components of the SAFE strategy. It is then recommended that WHO should coordinate further research on the cost-effectiveness of different interventions with particular emphasis on the cost of DALY's averted. Such evidence would be valuable in persuading policy makers and potential donors to give greater priority to trachoma.

4. Trichiasis surgery

The significant increase in the number of trichiasis surgeries in the past few years and the projected expansion of trichiasis surgery throughout trachoma endemic countries further emphasized the need for creation of standardized training and monitoring programmes. It was noted that guidelines for trichiasis surgery training and monitoring of surgical outcome are under preparation. Furthermore, testing of a low-cost surgical set has been completed.

C It is recommended that the trichiasis surgery training manual be sent for consultation, then finalized, and made available.

- C It is recommended that a mechanism be created for the acquisition and dispersal of low-cost trichiasis surgery sets.
- C It is recommended that a "core" protocol for reporting and monitoring the outcome of trichiasis surgery be created and adopted.

5. Azithromycin

Recent clinical studies in Morocco have shown that tetracycline eye ointment or azithromycin (one or two doses) have one year cure rates of approximately 75%. The two-dose azithromycin regimen for community treatment offers significant benefits over a one-dose regimen. It would appear from laboratory testing that mass treatment with oral azithromycin is much more effective in reducing the prevalence of *C. trachomatis* and in decreasing recurrent infection. There has been little development in producing a topical azithromycin preparation. Ongoing surveillance has shown *S. pneumoniae* resistance to penicillin and macrolide antibiotics in Spain, France, Belgium, Korea, and Japan. Preliminary research has been conducted on the cost and compliance associated with different azithromycin distribution strategies.

It is recommended that:

- C WHO further investigate the potential for developing and producing a "topical" azithromycin preparation;
- C the results of surveillance for azithromycin resistance, particularly in individuals being treated for trachoma, should be reported to the group at regular intervals;
- C further research be conducted on the effectiveness, compliance, and cost-effectiveness of different azithromycin distribution strategies.

6. International Trachoma Initiative (ITI)

Pfizer Inc., together with the Edna McConnell Clark Foundation, have formed an International Trachoma Initiative (ITI); this will provide new resources as part of the Alliance's efforts for the Global Elimination of Trachoma. The five countries to be chosen for the ITI are selected from the 16 priority countries identified by the Scientific Meeting on Future Approaches to Trachoma Control (WHO document WHO/PBD/96.56).

7. Geographic Information System (GIS)

It was noted that GIS has been used in the control of a number of tropical diseases, and is now beginning to be used in trachoma programmes.

The role of GIS in trachoma needs further operational research in order to identify its value in the short and long term of trachoma control.

8. Trachoma education

Trachoma remains the "forgotten" disease at the international, national and community levels, despite long-term programme activities.

It is recommended that information and education efforts be strengthened and Information, Education and Communication (IEC) activities, including training, decentralized to the local level. Current experiences in IEC should be widely disseminated so that countries can benefit from those experiences in the development of their own IEC components. Evaluation of the effectiveness should be included in all IEC efforts.

9. F & E initiatives

The group noted the ongoing work between WHO Programme for the Prevention of Blindness and Deafness and the Urban Environmental Health Unit (Division of Operational Support in Environmental Health) on the development of a practical manual on *Improving the Environment for Trachoma Control*. The participants also welcomed the work on fly control and its potential contribution in reducing the transmission of trachoma in the community.

It was recommended that, after field testing, the manual should be made available to alliance members and national programmes. The group also recommended that operational research be continued to further evaluate the impact of fly control and the development of low-cost sustainable methods to achieve it.

10. Monitoring the elimination of blinding trachoma

The activities of the Programme for the Prevention of Blindness and Deafness on the development of routine indicators for monitoring the elimination of trachoma are encouraging. This document is important for providing essential guidelines for monitoring national programmes.

The group recommended further development and testing of the manual. Following revision, the manual should be published and distributed.

11. Operations research

A number of operations research papers were presented, including several related to participation of the community in trachoma control activities. The Alliance recognizes the need for further operations research to address a number of critical issues in trachoma control.

A technical group should be created to prioritize and address these research issues.

12. Alliance structure

Three meetings of the Alliance have generated considerable momentum toward the goal of eliminating blindness from trachoma. To sustain the energy and move forward, a different meeting format was discussed.

In order to sustain momentum in GET 2020, the Alliance recommends the continuation of periodic large meetings as well as the convening of appropriate regional meetings and the establishment of technical and scientific committees.

ANNEX 1**THIRD MEETING OF THE WHO ALLIANCE FOR
THE GLOBAL ELIMINATION OF TRACHOMA****Ouarzazate, 19-20 October 1998****AGENDA**

Opening ceremony
 Introduction of participants
 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
2. Update on the Trachoma Rapid Assessment Methodology
 - C reporting on further validation carried out in Burkina Faso, Mali, The Gambia, Tanzania and other countries
 - C presentation of the draft manual
 - C planned training opportunities
3. Trichiasis surgery
 - C reporting on the field-testing of the low-cost surgical kit
 - C presentation of draft guidelines for training in trichiasis surgery
 - C outlines for a simple protocol for monitoring the quality of the outcome of trichiasis surgery
4. Update on Geographical Information System (GIS) for trachoma control
5. Update on azithromycin
 - C presentation of final analysis of field results from Morocco
 - C developments on topical preparations
 - C resistance
 - C other developments
6. Environmental changes: presentation of a draft outline for a manual on fly control
7. Reporting on District Control Programme Model developments
8. Monitoring and evaluation of elimination of blinding trachoma
9. Outcomes and specific benefits of trachoma control
10. Operations research projects: update
11. Outline of work plan for 1999
12. Any other matters

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

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

ANNEX 2**Ouarzazate, 19-20 October 1998**

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***Trachoma Assessment and Programme Development
in
GUATEMALA & NIGERIA***

*Excerpted from a report prepared by the
International Eye Foundation (IEF)**

I. GUATEMALA

A. Background

Trachoma exists in the Guatemalan highlands across the border from a similar area in southern Mexico. A National Trachoma Control Program exists which offers clinical and preventive care. Surveys have been conducted since 1989, however, it is difficult to determine from the data whether there has been an impact in the area as the survey sites are not noted.

B. Health care infrastructure

Health care is provided by the Ministry of Health (MOH). The major public hospitals in Guatemala City are the Roosevelt Hospital and the San Juan de Dios General Hospital. These two public hospitals provide general health care to the population. The Roosevelt Hospital however, has an ophthalmology department and eye patients from the San Juan de Dios Hospital are referred to the Roosevelt Hospital for care.

The Rodolfo Robles V. Hospital is a private hospital, but has been charged by the MOH to provide the ophthalmic and otological care for the country. The Committee for the Blind and Deaf in Guatemala (CBDG) provides these services within the Hospital Rodolfo Robles system. Funding for the CBDG comes from a national lottery.

C. Eye care infrastructure

The Committee for the Blind and Deaf in Guatemala, was established on 3 May 1945 and is housed at the Hospital Rodolfo Robles V. in Guatemala City. It is a private, non-profit organization promoting ocular and auditory health, providing curative and preventive services, especially for the poor in rural areas. The Medical Division provides primary, secondary and tertiary care:

1. **Tertiary Care:** Hospital Rodolfo Robles V. - Guatemala City
 - specialist care for eye and ear impairment
 - post-graduate residency training programme in ophthalmology
2. **Secondary Care:** 7 hospitals and clinics in 7 of the country's 22 *Departamentos* (States) (secondary care)
 - ophthalmological and otological services for people with eye and hearing problems (curative)

* Since the last meeting, the International Eye Foundation (IEF) has worked with the MOH and local interested NGOs to assess the trachoma situation and make recommendations for control programmes in Guatemala and Nigeria. Support for these assessments and programme proposal development has been provided by the Edna McConnell Clark Foundation.

3. **Primary Care:** Blindness Prevention Program (BPP)

- primary medical care for people with eye and hearing problems
- training of community health personnel in visual acuity and primary detection of ocular disease (followed by exams by Primary Eye Care (PEC) Technicians of BPP and by ophthalmologists of CBDG)
- National Trachoma Control Program falls under CBDG's BPP

4. **National Trachoma Control Program**

The National Trachoma Control Program was established in 1989. The first two years focused on training and institutional capacity building. The first surveys (school-based) were conducted in 1990 and 1991.

Since 1990, Christoffel-Blindenmission (CBM) has assisted in developing the program training community health personnel (volunteers), GMOH health technicians, and NGOs. CBM also gives 4 tubes of oxytetracycline eye ointment per afflicted person.

The National Trachoma Control Program provides health education in communities on the modes of transmission, prevention, and hygiene (F&E). An estimated 337 health workers have been trained since 1990. Follow-up with health workers is done regularly "when possible." The major problem is personnel retention as health personnel leave service or are posted elsewhere.

D. **Statement of the problem of trachoma**

In the area surrounding Lake Atitlan, Departamento of Sololá, trachoma is highly endemic affecting most of the population studied (southwest Sololá Depto. and Nahualá in Quiché Depto.) Blinding trachoma with corneal scarring has been found in old people.

1. **General health situation in Sololá**

The Guatemalan highlands, especially Sololá, were among the *departamentos* which suffered most during the 35 year internal strife and war, and its general underdevelopment constitutes one of the poorest areas of the country. The people are mostly Mayan descendants (Quiché.) Since the end of the fighting, there has been increased population, migration, poverty, and increased malnutrition (kwashiorkor).

Cholera, dengue fever, and trachoma are endemic in this area, and malaria is also found. There is an increased rate of pneumococcus due to widespread use of antibiotics. Approximately 60% of the people have pumped water (IS, UNICEF, etc.), however, it is not known where those people are located nor the relationship to trachoma prevalence.

There is a low literacy rate and a 21.1/1000 maternal mortality rate. Newborns are delivered by midwives, not doctors, and "outsiders" cannot "touch" babies under age 6 months by tradition. Midwives are controlled by community health centers.

2. **Baseline studies**

All surveys were school-based and "community"-point-prevalence surveys in children aged 7 and older. Children under 7 years of age were not routinely surveyed unless brought for exam by mothers or health workers. All surveys were based on clinical signs/symptoms of ocular trachoma. No smears or cultures have been routinely taken. A validation/reproducibility of clinical diagnosis study was undertaken between observers and WHO picture charts prior to the surveys (see table 1).

3. **Changes over 10 years - incidence, recurrence, dynamics of transmission**

It is difficult to estimate the true prevalence/incidence from the available information, and whether changes, if any, have occurred since the introduction of education/sanitary measures and oxytetracycline

treatment. It appears that trachoma is relatively circumscribed geographically in the Depto. of Sololá, but it affects a large segment of the population, and acute and chronic cases occur.

Only topical oxytetracycline is currently used for mass treatment campaigns. No systemic or oral antibiotics are provided for mass treatment, especially as oral tetracycline is not recommended for children under 7 years of age due to deposits in the teeth, large bone epiphysis, and photosensitive dermatitis. Oral tetracycline is also not recommended for mass treatment due to problems of supervision, distribution, and high cost. In severe and chronic cases, oral or systemic antibiotics such as tetracycline or erythromycin are recommended on a case by case basis.

4. Relations of the introduction of potable water and hygienic conditions to trachoma reduction

No information on "relationship" is available at this time. Approximately 60% of the people in Sololá have pumped water. Apparently there are places with the following situations:

- no water and trachoma (expected)
- water and trachoma (not expected)
- no water and no trachoma (not expected)
- water and no trachoma (expected)

5. Cases of inclusion conjunctivitis in children under age one year

Cases of inclusion conjunctivitis have been reported in Sololá in children under one year of age and the number of cases may be increasing. This situation has not been actively researched by epidemiological or medical authorities. It is not known if the condition is acquired at the time of birth when mothers have genital chlamydia, or acquired actively as trachoma due to poor hygienic conditions. Therefore, it is important to determine the source of infection by examining children for inclusion conjunctivitis and mothers for genital chlamydia. Systemic oral treatment of children and mothers would be warranted and, in these cases, oral erythromycin may be justified in selected cases and administered by medical doctors.

E. Goal and objectives of a proposed expanded program

Proposed scheme of study for mass use of oral erythromycin/azithromycin to control/eliminate trachoma (3-5 years)

Goal: Control/eliminate trachoma as a public health problem in Guatemala.

Rationale:

1. There is an increased rate of reinfection causing increased trachoma prevalence.
2. There is increased population, migration, and poverty causing increased trachoma prevalence.
3. There is no comprehensive understanding of prevalence in order to target treatment, education, and prevention services.

Objectives: Introduce the SAFE. strategy according to WHO guidelines

1. Strengthen the ongoing National Trachoma Control Program by developing adequate community promotion and participation of community health workers; building capacity and strengthening technical capabilities of GMOH personnel.
2. Develop and conduct a prospective study, sample based, for detection/confirmation and geographic extension/elimination of trachoma in the Sololá area and neighbouring areas, for example, Totonicapán, Quetzaltenango, Huehuetenango, San Marcos. Confirm diagnosis of chlamydia by stain or other methods.

3. Introduce or develop potable water systems in the communities and adequate hygienic conditions; jointly promote health education and measure behavioural change in corresponding attitudes and practices.
4. Establish good record keeping and management for tracking and monitoring quality of services, training, etc. which is simple and easy for prospective follow-up, surveillance, and measurement of impact.
5. Introduce oral erythromycin to validate treatment protocols, especially in children and in cases of inclusion conjunctivitis; define or analyse treatment protocols for trachoma.
6. Prepare Trachoma Control Program for the introduction of oral azithromycin.

Table 1. Trachoma Prevalence in major municipalities or districts of the Departamento Sololá

Year	Total Population	Number of people (%)									
		Sur-veyed	Positive	TF	TI	TS	TT	CO	0-14 years	15-44 years	>45 years
				(acute)		(chronic)					
1990-1991	?	?	5 428 (?)	4 854 (89.4)		574 (10.6)			4162 (76.8)	924 (17.1)	330 (6.1)
1995	185 579	28 805 (15.5)	8 712 (30.2)	1 901 (21.8)	1 005 (11.5)	169 (1.9)	29 (3.3)	16 (0.2)	-	-	-
1996	102 319	9 142 (8.9)	2 195 (24)	1 272 (13.9)	552 (6)	314 (3.4)	41 (4.5)	16 (1.8)	-	-	-
1997	?	9 277 (?)	1 410 (15.2)	799 (8.6)	298 (3.2)	285 (3.1)	23 (0.3)	5 (0.05)	-	-	-
1998 1st half	48 616	5 635 (11.6)	1 432 (46.8)	852 (27.8)	367 (12)	200 (6.5)	11 (0.4)	1 (0.03)	-	-	-

II. NIGERIA

A. Background

Trachoma is endemic in Nigeria, particularly in the dry northern states closest to the Sahara Desert. Information therefore, has been gathered from five states, namely Borno, Kaduna, Kano, Katsina, and Niger.

Information was gathered from available data (literature and record reviews,) interviews, completion of questionnaires in 11 hospitals, and visits to 3 communities. Information is directed toward assessing the magnitude of the problem, current program interventions, and available/potentially available resources.

B. Blindness rates

- average blindness prevalence rate is 1.2% in the country
[see table in Annex 3 (p.44) of meeting report WHO/PBD/GET/98.2]
- range of 0.62% in the south and 1.7% in the north
- previous National Eye Centre (NEC) data states a prevalence of blindness rate of 1.4% (range of 0.62% to 3.3%)
- major causes of blindness are:
 - . cataract (40%-60%)
 - . corneal related causes including trauma
 - . glaucoma
 - . onchocerciasis (in areas where it exists)
 - . trachoma (especially in the north)
 - . prevalence of trachoma: 20.2% (range 10.0% to 69.8%) (NEC data)

C. Health care infrastructure

The national health care system is built on the basis of the 3-tiered government responsibility. The apex is the Federal Ministry of Health providing policy direction and maintenance of tertiary institutions. State Ministries of Health formulate policies about health care in their sphere of influence especially about issues/conditions that may be specific to them. Responsibility of the states is for the secondary health care institutions including manpower. The states also have responsibility for registration and supervision of privately/mission owned health care institutions/facilities within their domain.

The lowest level in the health care delivery ladder is the primary health care level, whose responsibility is assumed by the Local Government, that is the level nearest to the people and to which they relate to directly in all matters. The National Primary Health Care Development Agency (NPHCDA) was set up in 1983, and is responsible for administering, and providing financial and technical guidance, including manpower development and implementation of primary health care.

For ease of administration, the country was previously divided into 4 health zones (A, B, C, and D). This has been changed in the past year to 6 zones as some were too large for effective administration from the zonal headquarters. An office of the NPHCDA is located in each zone to facilitate interaction between the Local Government Agencies (LGAs) and NPHCDA on all matters.

The National Health Policy was articulated and launch in 1938. Its goal is for Nigerians to have a level of health that will enable them live socially and economically productive lives. The Nigerian health sector is characterized by wide regional disparities in health status, health service use, and health resource availability, with the population of the Southern States in a considerably more advantageous position than those living in the North. Thus morbidity and mortality figures vary from region to region.

For further information on the various categories of health manpower and their numbers, please see table 1.

D. Eye care infrastructure

- 6 specialized government hospitals providing eye care in Nigeria
- 2 of these are in Kaduna State in the North
- A National Programme on Prevention of Blindness (NPPB), established 1992, is run at the Department of Disease Control and Primary Health Care at the National Eye Centre (NEC), Kaduna.

E. Statement of the problem of trachoma

While the magnitude of trachoma is said to have been reduced over the past 10-15 years as testified by ophthalmologists and ophthalmic nurses in practice for the last 20 years, this reduction appears not to be the result of any planned intervention, but rather the consequence of socio-economic development, specifically, water development in communities. The NEC presents a trachoma prevalence rate of 20.2% (range 10.0% to 69.8%.)

Trachoma is still a major public health problem in three of the five states (Kano, Katsina, and Borno) from which information was gathered. Adequacy of water in quality and quantity appears to be a problem in all five states. State Water Boards are the major water supply source and they are only able to provide water in urban areas.

Kaduna State

- population: 4.8 million, mostly rural
- 23 LGAs
- 600 health facilities of all categories including National Eye Center, Ahmadu Bello University Teaching Hospital (ABUTH), the Army Reference Hospital, and numerous private hospitals.
- 2 specialized in eye health: NEC and Guinness Ophthalmic Unit (GOU) of the ABUTH
- trachoma cases have been reported in the NEC and GOU hospitals (see table 2).

Recently, the GOU has received funds and azithromycin from Pfizer Inc. to carry out research comparing the efficacy of Azithromycin against tetracycline. The first "sensitization" community visits were being organized at the time of this report's interviews.

Kano State

- population: 6.8 million
- busy, hot, arid part of the north
- 44 LGAs
- 40 governments and several missions and private hospitals (most in urban areas)
- 268 doctors employed in Kano State, 2 being ophthalmologists
- trachoma cases have been reported in the four hospitals visited (see table 2)

Katsina State

- boundaries with Niger
- population: 4.7 million
- 34 LGAs
- 2 government and 1 private hospital visited for this assessment
- 2 government hospitals have ophthalmic nurses only
- private hospital is owned by an ophthalmologist who receives referrals
- trachoma cases have been reported in the three hospitals visited (see table 2).

IEF is sponsoring a post-graduate from the NEC to conduct a trachoma prevalence study in Katsina State beginning in early 1999.

Niger State

- middle belt area of Nigeria, agrarian
- population: 3.1 million
- less harsh climate than Kano and Katsina States
- 26 LGAs
- 310 health facilities of various categories
- 4 out of 9 general hospitals have eye units serviced by one ophthalmologist and ophthalmic nurses
- trachoma cases have been reported in the two hospitals visited (see table 2)

Borno State

A visit was not made to Borno State. However, phone, fax and E-mail communications indicate that water development is extremely poor. There is little record keeping in health facilities and no information was available regarding trachoma data.

E. Summary

Trachoma remains an endemic problem in the northern part of Nigeria. Much of the population is rural and the quality and quantity of available water is poor. NGOs and bilateral agencies working with State Water Boards are constructing boreholes and wells, but there is still much to be done. There is outreach and public education on sanitation and hygiene being conducted by NGOs working in Nigeria and by UNICEF, however, there are no community-based trachoma education/treatment campaigns in the central and northern States.

Table 1. Various categories of health manpower and their numbers
(source: *Nigerian Health Profile, FMOH/SS, Lagos (1991)*)

CATEGORY OF HEALTH MANPOWER	NUMBER	NUMBER/100 000
Medical practitioners	20 210	22.8
Dentists	1197	1.35
Veterinary surgeons	2063	2.3
Pharmacists	6060	6.8
Nurses	17712	81
Midwives	58036	65.5
Environmental health officers	6366	7.2
Medical laboratory technologists	3499	3.9
Community health officers (CHO)	2743	3.1
Physiotherapists	N/A	N/A
Radiographers	600	0.7
Dental technologists	430	0.5
Community health supervisors	3974	4.5
Community health extension workers	18287	20.7
Junior community health extension workers	14223	16.1

**Aggregated data from eye hospitals in Kaduna, Kano, Katsina and Niger States
(January 1996-June 1998)**

STATE & NAME OF HOSPITAL or EYE CENTRE	NUMBER OF TRACHOMA CASES			(% OF TRACHOMA CASES AMONG ALL CASES	NUMBER OF TRICHIASIS SURGERY PERFORMED
	Total	Female >30 years	Children <10 years		
Kaduna State (source: in-patient & out-patient hospital records)					
NEC Eye Hospital	58	27	2	0.11	13
Gou Eye Hospital	13	4	6	0.03	7
Total	71	31	8	0.08	20
Kano State (source: hospital records)					
Ecwa Eye Hospital	7271	-	-	15	469
Murtala Mohammed Hospital	Hospital records not up to date nor adequate				256
Al-noury Specialist Hospital Kano	889	N7A	N/A	11.6	56
E-Shaddai Hospital & Eye Centre, Kano	33	6	4	-	4
Total	8193	6	4	11.6*	685
Katsina State (source: hospital records)					
General Hospital, Katsina	4340	1468	40	10.4	N/A
General Hospital, Daura	4814	1704	73	13.9	N/A
IKH-WAAN Eye / Medical Centre, Katsina	89	-	16	2.1	19
Total	9243	3172	129	11.4	19
Niger State (source: hospital records)					
General Hospital, Minna	362	139	22	5.1	47
Federal Medical Centre, Bida	302	125	34	6.3	0
Total	664	264	56	5.56	47

* Average

CHECKLIST FOR QUALITY ASSESSMENT OF TRICHIASIS SURGERY

PROCEDURE: BILAMELLAR TARSAL ROTATION

THIS CHECKLIST IS INTENDED FOR USE IN THE OBSERVATION OF A SURGEON OPERATING A CASE OF TRICHIASIS.

BEFORE USING IT, THE OBSERVER SHOULD REVIEW THE PROCEDURE IN ORDER TO ADAPT THE TOOL TO THE LOCAL SITUATION, IF NECESSARY.

HEALTH FACILITY:

PRIMARY LEVEL* G SECONDARY LEVEL G TERTIARY LEVEL G

NAME OF SURGEON:

NAME OF OBSERVER:

DATE: **££££££**

FACILITY/OPERATING THEATRE

- | | | |
|-------------------------------|-------------------------------|-----------------------------|
| IS THE OPERATING ROOM: CLEAN? | Yes* <input type="checkbox"/> | No <input type="checkbox"/> |
| LARGE ENOUGH? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| WELL LIT? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

PREOPERATIVE PREPARATION

- | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|
| IS THE PATIENT'S FACE WASHED WITH SOAP AND CLEAN BOILED WATER? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| ARE ANAESTHETIC EYE DROPS APPLIED PROPERLY? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| DOES THE SURGEON <u>SCRUB</u> HIS/HER HANDS WITH SOAP AND WATER FOR ABOUT FIVE MINUTES, <u>WASH</u> THEM WITH SKIN ANTISEPTIC SOLUTION AND <u>RINSE</u> THEM WITH STERILE WATER? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| DOES THE SURGEON PUT ON STERILE GLOVES? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| DOES THE SURGEON CHECK PERFECT STERILITY OF THE INSTRUMENTS? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| DOES THE SURGEON CHECK FOR THE COMPLETENESS OF INSTRUMENTS/SUTURES/DISPOSABLES REQUIRED? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| IS THE PATIENT'S FACE CLEANED WITH A SKIN ANTISEPTIC SOLUTION? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| IS THE PATIENT ASKED ABOUT POSSIBLE ALLERGY? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

SURGICAL PROCEDURE

IS THE LIGNOCAINE 2% KEPT IN A STERILE BOTTLE?	YES ___	NO ___
ARE STERILE NEEDLE AND SYRINGE USED TO DRAW UP THE LIGNOCAINE?	YES ___	NO ___
IS THE ANAESTHETIC INJECTED PROPERLY, AT THE PRESCRIBED DOSE?	YES ___	NO ___
DOES THE SURGEON USE A SET OF MAGNIFYING LOUPES?	YES ___	NO ___
IS THE SURGEON HELPED BY AN ASSISTANT?	YES ___	NO ___
ARE THE FOLLOWING STEPS PERFORMED ACCORDING TO GUIDELINES?		
FIXING THE EYELID	YES ___	NO ___
INCISING THE SKIN AND MUSCLE	YES ___	NO ___
INCISING THE CONJUNCTIVA AND TARSAL PLATE	YES ___	NO ___
UNITING THE TWO INCISIONS	YES ___	NO ___
COMPLETING THE INCISIONS MEDIALY AND LATERALLY	YES ___	NO ___

SUTURING THE EYELID

DOES THE SURGEON PLACE THE SUTURES PROPERLY?	YES ___	NO ___
DOES THE SURGEON TIE THE SUTURES PROPERLY?	YES ___	NO ___

SURGICAL DIFFICULTIES

DID THE SURGEON DIAGNOSE AND PROVIDE APPROPRIATE TREATMENT FOR:		
!	BLEEDING?	YES ___ NO ___
!	DIVISION OF THE EYELID MARGIN?	YES ___ NO ___
!	OVERCORRECTION?	YES ___ NO ___
!	UNDER CORRECTION?	YES ___ NO ___

POSTOPERATIVE CARE

DID THE SURGEON/ASSISTANT:		
!	APPLY TETRACYCLINE OINTMENT INTO CONJUNCTIVAL SAC/ TO THE WOUND?	YES ___ NO ___
!	PAD THE EYE?	YES ___ NO ___
!	GIVE THE PATIENT TABLETS FOR PAIN?	YES ___ NO ___
!	ADVISE THE PATIENT TO STAY QUIETLY AT HOME FOR 24 HOURS?	YES ___ NO ___
!	ADVISE THE PATIENT TO COME THE NEXT MORNING TO CHECK THE WOUND?	YES ___ NO ___
!	ADVISE THE PATIENT TO COME ON THE EIGHTH DAY TO HAVE THE SUTURES REMOVED?	YES ___ NO ___

M **PLEASE ADD ANY OTHER COMMENTS:**

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NAME OF RESPONDENT:

DATE:

SIGNATURE:

ANNEX 5

**ALLOCUTION BY
DR ABDELOUAHED EL FASSI
MINISTER OF HEALTH, KINGDOM OF MOROCCO**

Ladies and Gentlemen,

I would like to welcome you on behalf of the Moroccan government and all the staff of the Ministry of Health. For the Moroccan Ministry of Health, it is a privilege that your meeting is being held in Morocco, in Ouarzazate, a province that is engaged in the struggle against trachoma. It is an outstanding expression of support to our control strategy against this disease that has brought us here today and which will bring us together again until the year 2020. It is a privilege because it is the first meeting of our Alliance that has been held outside the premises of WHO, and because it is the first meeting after our important resolution of last May. Finally, it is a privilege because of the outstanding number of representatives of fellow nations that have paid us the compliment of coming to support us in our struggle and to share with us their comments and experiences, here in Ouarzazate, one of the five provinces targeted in our campaign.

It is my hope that the meetings of our Alliance can be held more frequently and can be extended to a larger number of endemic countries, since they keep track, in such a useful way, of the worldwide struggle against trachoma. If I may, I will now describe some of the salient points of the procedures that we used in our strategy for control of blinding trachoma in Morocco, where, let me remind you, two million people are concerned by this disease.

Let me state at the outset that the prerequisite for any control strategy in this domain is strong political will. In Morocco, this political will found ready expression, alongside WHO and in keeping with the targets defined by the international community through that Organization. We would endorse all WHO endeavours that aim to bring countries to a political recognition of the fact that there is a worldwide trachoma problem.

The primary weapon at our disposal is the multi-sectoral approach, which must be given pride of place in strategies and action plans, at the national, regional and local levels. The "SAFE" strategy calls for integrated activities and a coordinated vision bolstered by the technical and scientific support of WHO in the rearguard and, more particularly, it involves a multi-sectoral team fighting in the front line.

Nonetheless, a multi-sectoral campaign can achieve only limited success without the direct involvement of the communities concerned and their representative bodies such as the NGOs, associations and village committees.

In Morocco, we have tried to promote awareness of the community approach among our health personnel and all our partners. Nobody questions the efficiency of this approach; its usefulness is still more evident in the area of collective and preventive health and in the fields of health education and control of the environment. Over the next three days, the blindness control team will be presenting the key players of this community approach - the representatives of the associations and village committees. We will listen carefully to the comments of the many delegates who have come here from countries that have accumulated more experience than Morocco has in exploring the community approach.

I should like to take this opportunity to share a concern that we have here in Morocco to assist in enhancing South/South cooperation in general, and more particularly in respect of trachoma control. We believe that, while availing ourselves of the technical support of specialized international organizations and of the expertise of international NGOs, we need to take advantage of some of the lessons learnt in countries of the South for the benefit of other

countries of the South. I refer to control programme reviews, training exercises, the exchange of national experts or of evaluation protocols, and so forth.

If I might dwell for one moment on the evaluation aspect of the campaign, I would like to say that in the light of our still limited experience in combatting trachoma, during which we have looked closely at people's behaviour patterns, that it is necessary to have a system for regular evaluation that is well-suited to the specific circumstances of the communities in economic, social, health and cultural terms. The campaign itself and its evaluation are therefore set in a given context, which must be respected. To give you one example, in Morocco, we have chosen schools as the strategic focus of our campaign.

It was always obvious to us that public health premises provided a perfect setting for a whole range of activities, from surgery to educational communication. Now, we have decided to use the school as an area where our activities and the dynamics of the multi-sectoral approach will bring together every possible chance of eliminating blinding trachoma for the benefit of future generations. By posting children and pupils to the front lines of the battle, we believe that our control strategies, defined in the "SAFE" strategy, can get the better of trachoma.

We have selected schoolchildren as the standard-bearers of the campaign, for they will bring an understanding of it into their homes and families. They will be our companions in arms, since, from school, the child will be involved in our educational and promotional activities throughout the community.

Ladies and Gentlemen,

I believe that when the political will is clearly expressed, when practical actions are geared to an understanding of the specific circumstances, when the endeavour relies upon an approach that is open to all, including citizens as themselves, the prime beneficiaries of our work, then all health questions coincide with the real issues of development. You will have noted that this is why we believe that this trachoma control strategy keeps us in step with our national agenda which has just pinpointed poverty as the priority around which all the key national figures, in the government and in society at large, must rally.

As Morocco marshals its forces against poverty, and prepares for joint community and multi-sectoral activities for that purpose, I would invite you, when making the planned field visits, to experience the formidable energy and wide-ranging potential that are preparing for the fight against blinding trachoma.

Once again, let me thank you for having chosen Morocco for this important meeting. I would particularly like to welcome our cherished partners, the World Health Organization, Helen Keller International, the Edna McConnell Clark Foundation of the United States and the Philanthropic Section of Pfizer International. Please give them a round of applause.

Thank you.

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