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REPORT OF THE

FIRST MEETING OF THE

WHO ALLIANCE FOR THE

GLOBAL ELIMINATION OF TRACHOMA

Geneva, Switzerland
30 June - 1 July 1997



PROGRAMME FOR THE PREVENTION OF BLINDNESS AND DEAFNESS
WHO Alliance for the Global Elimination of Trachoma



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TABLE OF CONTENTS

INTRODUCTION	3
I. REVIEW OF FOLLOW-UP ACTION	3
1.1 Activities of the World Health Organization	3
1.2 Activities of the Alliance Members	4
1.2.1 Al-Noor Foundation	4
1.2.2 African Medical and Research Foundation (AMREF)	4
1.2.3 Christoffel-Blindenmission e.V. (CBM)	4
1.2.4 The Edna McConnell Clark Foundation (EMCF)	5
1.2.5 French Ministry of Cooperation	5
1.2.6 Helen Keller International (HKI)	5
1.2.7 The International Agency for the Prevention of Blindness (IAPB)	6
1.2.8 International Eye Foundation (IEF)	6
1.2.9 Organisation pour la Prévention de la Cécité (OPC)	7
1.2.10 Sight Savers International (SSI)	8
1.2.11 Swiss Red Cross	8
1.2.12 The University of Rome/Italian Ministry of Cooperation	9
1.2.13 The World Bank	9
II. UPDATE ON AZITHROMYCIN	9
2.1 Resistance	9
2.2 Field trial in Morocco	10
2.3 Partnership formula in Morocco	10
2.4 Community intervention: experience from Tanzania	10
2.5 Use of azithromycin in Australia	11
III. RAPID ASSESSMENT OF TRACHOMA	11
3.1 What is Trachoma Rapid Assessment (TRA)?	11
3.2 The preliminary assessment	12
3.3 The rapid survey	12
3.4 Validation	12
3.5 Manual	12
IV. GEOGRAPHIC INFORMATION SYSTEM (GIS)	13

V.	INFORMATION FROM ENDEMIC COUNTRIES	13
5.1	Reporting forms	13
5.2	The Gambia	14
5.3	Guinea-Bissau	14
5.4	Mali	15
5.5	Nepal	15
5.6	Oman	15
5.7	Other countries	16
VI.	TRICHIASIS SURGERY KIT	16
VII.	DISTRICT PROGRAMME DEVELOPMENT MODEL	17
VIII.	STATUS OF TOPICAL TREATMENT DEVELOPMENTS	17
8.1	Reasons for topical trachoma treatment, including possible use of azithromycin. . .	18
8.2	Objections to topical azithromycin for trachoma treatment	18
8.3	Alternative vehicles for ocular delivery of topical azithromycin	18
8.4	Product development issues	19
8.5	Comments	20
IX.	UPDATE ON OPERATIONAL RESEARCH ISSUES	20
X.	TRACHOMA NEWSLETTER	20
XI.	OUTLINE OF WORK PLAN	20
XII.	NEXT MEETING	22
	CONCLUSIONS AND RECOMMENDATIONS	23
	ANNEX 1: Agenda	25
	ANNEX 2: Final list of participants	27
	ANNEX 3: Country Profile form	32
	ANNEX 4: NGDO Trachoma Project Reporting form	34

INTRODUCTION

The *First Meeting of the WHO Alliance for the Global Elimination of Trachoma* was opened by Dr R. H. Henderson, Assistant Director-General. He reviewed the events leading to the creation

of the Trachoma Alliance. In July 1996, WHO hosted a *Global Scientific Meeting on Future Approaches to Trachoma Control* which had proposed the integrated **SAFE** strategy for trachoma control (**S** for **S**urgery, **A** for **A**ntibiotic treatment, **F** for **F**acial cleanliness, **E** for **E**nvironmental improvement).

A *Planning Meeting of Interested Parties* held in November 1996 had taken further the formation of the Trachoma Alliance. The challenge now before the new group is to obtain the necessary data from countries with endemic trachoma, to coordinate activities and to mobilize resources to assist national governments with trachoma control programmes as part of primary health care.

Mr R. Porter, Executive Director of Sight Savers International, and Dr L. Pizzarello, Medical Director of Helen Keller International, served as Chairman and Vice-Chairman respectively with Dr A. Foster, Medical Director of Christoffel-Blindenmission e.V., as Rapporteur. The draft agenda (Annex 1) was adopted without modification; the list of participants is included in Annex 2.

I. REVIEW OF FOLLOW-UP ACTION

The participating agencies and organizations briefly reviewed the work they had carried out since the previous Planning Meeting held in November 1996.

1.1 ACTIVITIES OF THE WORLD HEALTH ORGANIZATION

- (a) Promotion of the SAFE strategy with Member States through:
 - dissemination of information to all WHO Regional Offices, by means of the report on *Future Approaches to Trachoma Control* (English, French and Spanish) and the report of the *Planning Meeting of Interested Parties* (English and French);
 - development of a country questionnaire with regard to available data on trachoma and its severity;
 - country visits initiated in China, Morocco and Oman.
- (b) Development of Geographic Information System (GIS) for trachoma mapping, in collaboration with the Health Map unit in the Division of Control of Tropical Diseases. Data have been obtained for Morocco, and are being forwarded for The Gambia and Mali.
- (c) Development of a Trachoma Rapid Assessment methodology based on the outline given by the Global Scientific Meeting held in June 1996, but modifying the methodology in using trichiasis (TT) instead of scarring (TS) as indicator. The reason for this was the experience gained in field-testing in Morocco. A draft paper had been prepared for discussion at the present meeting.
- (d) Development of a Trichiasis Surgery Kit through a search and bidding process arriving at competitive prices. In fact, a kit of good quality could be obtained for approximately US\$100, with further possible reductions for bulk purchase. This alternative should be further considered by the Alliance.
- (e) Setting-up of a data base of country profiles for trachoma through the development of forms circulated for that purpose. These should now be used and later on modified, if necessary.

- (f) Provision of technical assistance to the “*Randomized community trial on azithromycin versus tetracycline (1%) treatment for trachoma control, Morocco*”. A visit paid during April 1997 had allowed for detailed discussions of the ongoing trial.
- (g) Preliminary work on a trachoma newsletter was carried out through the preparation of a draft model in collaboration with Dr L. Schwab, volunteer editor. It was envisaged to have two issues per year.
- (h) Development of an information mechanism for exchange and meeting with the media, including a World Wide Web page and E-mail letter box. It was proposed to make use of E-mail and a Trachoma Alliance information page with a password, giving up-to-date information from country visits by Alliance members.

1.2 ACTIVITIES OF THE ALLIANCE MEMBERS

1.2.1 *Al-Noor Foundation*

The Al-Noor Foundation is establishing a new eye hospital in Cairo and wishes to support a study on the prevalence of eye diseases in Egypt, which would include trachoma. The Foundation will be involved in training programmes, including trichiasis surgery.

1.2.2 *African Medical and Research Foundation (AMREF)*

AMREF has been involved in a trachoma control programme in south-west Kenya which covers a nomadic population of 3 500 people at a cost of US\$10/person/treatment. The control of the disease has proven difficult due to reinfection from outside the control area, and the nomadic nature of the population.

1.2.3 *Christoffel-Blindenmission e.V. (CBM)*

CBM is supporting approximately 1000 projects in over 100 countries of which 165 are trachoma control-related. A full report of CBM's trachoma control activities with country profiles was presented at the meeting, as summarized below:

- C 97% of CBM-supported trachoma control activities are carried out in 14 countries, involving 121 projects. Divided by region, these countries are:
 - WEPR (Western Pacific): China and Viet Nam
 - EMR (Eastern Mediterranean): Afghanistan and Pakistan
 - SEAR (South-East Asia): India and Myanmar
 - AFR (Africa): Burkina Faso, Ethiopia, Ghana, Kenya, Niger, Nigeria, Tanzania and Uganda
- C Out of the 165 CBM-supported projects, approximately:
 - 41 000 eyelid surgeries are performed/year
 - 311 000 tubes of tetracycline eye ointment are purchased/year (this estimate does not include ointments that are locally purchased)

CBM supports projects in 13 of the 16 countries identified as “priority settings for national programme control activities” listed in the report on *Future Approaches to Trachoma Control* (WHO/PBL/96.56).

1.2.4 The Edna McConnell Clark Foundation (EMCF)

The Trustees of the Foundation have agreed on an initial five-year commitment and US\$ 15 million towards the implementation of trachoma control activities. The Foundation wishes to be involved in:

- coordination
- country programmes
- operational research
- communications

1.2.5 French Ministry of Cooperation

The French Ministry of Cooperation is interested in supporting prevention of blindness programmes. It has supported onchocerciasis control and the training centre of the Institute of Tropical Ophthalmology in Africa (IOTA). In 1997/1999, it plans to support trachoma control activities in 8 francophone West African countries.

1.2.6 Helen Keller International (HKI)

The Trachoma Task Force, which is hosted by HKI, has expanded with both personnel and activities. The Morocco programme has continued to develop and there are new initiatives in Tanzania and West Africa. Consideration is being given to future work in South-East Asia. A major issue for the future is validation of the rapid assessment of trachoma.

An important initiative has been the micro-credit programme for women in areas with endemic trachoma.

1.2.7 International Agency for the Prevention of Blindness (IAPB)

The global elimination of trachoma as a blinding disease requires the wholehearted commitment and support of the governments and specifically the ministries of health of countries where blinding trachoma is endemic. A good example is the report from Morocco, where government commitment at the highest level has facilitated the building of partnerships under the WHO Alliance to launch a pilot and, hopefully, a national elimination of trachoma programme.

IAPB plays a major role in advocacy to engender such political commitment to blindness prevention, including the Global Elimination of Trachoma by the Year 2020 (GET 2020). Through meetings with decision-makers at the national level, and addressing professional leaders at national and supranational ophthalmic meetings and congresses, policy-makers and ophthalmic professionals have respectively been sensitized by IAPB about the global and their own national dimensions of the problem of blindness from trachoma.

In dealing with trichiasis surgery, we need to move beyond more numbers of surgeries performed to look at outcomes of such surgery. The report from Oman is disconcerting concerning the number of recurrences after surgery, as identified in the recent survey. There is an urgent need to look at the outcomes of surgery in the short and medium terms, to ensure that the surgical procedure recommended is carried out in an acceptable manner, that guarantees a minimal level of recurrences. Such self- and external evaluations need to be built into trichiasis surgery interventions in GET 2020.

1.2.8 *International Eye Foundation (IEF)*

IEF is involved in trachoma assessment in Guatemala, Guinea-Bissau, Malawi and Mozambique. The Foundation is investigating the role of traditional healers in the control of trachoma.

C *Guatemala (Dr F. Beltranena)*

NCBD clinical statistics in endemic areas:

- Recent figures for attendance at an eye clinic in Solola, a rural area west of Guatemala City, showed 24% of patients having some sign(s) of trachoma infection. 1.75 of those patients per 1000 were blind from the disease. All grades of trachoma were reported.
- Information was obtained from a comparison trial of a new trachoma classification system which will be tested in the areas of Huehuetenango, Chimaltenango and Naguala in the coming year (same areas as for onchocerciasis).

C *Guinea-Bissau (Dr J. Fadia, Dr P. Courtright)*

- Population: 1.12 million
- Prevalence of blindness: 1% (11 000 people)
- Estimated trachoma blind: 1800-2000
- Estimated population affected/at risk: 282 000

North:

- Population is 200 000/savannah
- Active trachoma
- Some wells, some community health workers

Islands:

- Population is 13 000-15 000/60 islands/all savannah
- Trachoma is present on 18 islands (inhabited)
- No wells, no community health workers

C *Malawi (Dr M. Chirambo)*

The prevalence of blindness is estimated at 1% of which approximately 20% is due to trachoma.

C *Mozambique (Dr Harjinder Chana)*

Trachoma is endemic in many areas of Mozambique.

- Population: 16 million
- Prevalence of blindness (less than 3/60): 1% (160 000 people)
- Visual impairment (less than 6/18): 3.7% (592 000 people)
- Corneal disease (including trachoma but not nutritional): approx. 30% of total blindness (48 000 people)

- Estimated active disease: 1 296 000 (this figure is based on the WHO worldwide formula of 5.5 million blind/150 million active disease). It would not be unreasonable to expect this percentage of the general population, given the high level of poverty (70% "in absolute poverty" as defined by UNICEF) and the lack of water.

1.2.9 Organisation pour la Prévention de la Cécité (OPC)

OPC is working in 10 countries of Africa and several others in South-East Asia. Its trachoma-related activities have focused on:

- involvement in trichiasis surgery by supplies of surgical kits in the following countries: Central African Republic (1 site), Chad (2 sites), Congo (1 site), Djibouti (1 site), Guinea (1 site), Mali (5 sites), Niger (1 site), Senegal (2 sites);
- joint action with Médecins du Monde in Cambodia in an area of more than 450 000 inhabitants around Sihanoukville consisting of a primary eye care programme which should open to a secondary level programme soon. The trachoma control component of this activity will be reported in 1998.

1.2.10 Sight Savers International (SSI)

SSI are particularly involved in Mali and in The Gambia. They are supporting operational research through the International Centre for Eye Health (ICEH), London.

C Mali

The cadre of community-based distributors used in the onchocerciasis programme is being trained in trachoma control. Training of a cataract/trichiasis surgeon, who will be posted to a secondary health centre, is taking place now (see also page 14).

C The Gambia

There is a Trachoma Task Force with the Government to coordinate trachoma activities using data from the 1996 survey to target communities for interventions (see also page 14).

C Pakistan

SSI is working with Professor M. Daud Khan to do initial exploration into the trachoma situation. Some data are available from previous blindness surveys undertaken in Pakistan.

C Kenya

Collaboration through the National Prevention of Blindness Committee involving various NGOs such as: SSI, HKI, CBM, AMREF and the Kenya Society for the Blind (KSB). A planning meeting scheduled for 18 July 1997 will bring together the various players to discuss future developments.

C Research

Development of an operational research project with ICEH with regard to trachoma in The Gambia.

1.2.11 Swiss Red Cross

One component of the Swiss Red Cross International Cooperation is its 15-year involvement in eye care services in some countries of Africa and Asia, particularly Nepal, Tibet, Ghana, Mali and Burkina Faso (planned).

Priority is given to remote rural areas with poor health care. Appropriate techniques and medical expertise are combined with experience of voluntary work and primary health care.

High priority is given to the institutional development of the local partners. The existence of a widespread Red Cross network with volunteers is a potential which can be utilized for community-based services.

1.2.12 The University of Rome/Italian Ministry of Cooperation

The University of Rome was previously involved in trachoma surveys and control in Ethiopia. They support the formation of the Alliance and hope to be involved in the development of programmes in the future.

1.2.13 The World Bank

By attending this meeting, the World Bank anticipated being informed about efforts and activities undertaken to tackle a major disease of public health importance in many developing countries. Trachoma has for some time been considered as a proxy indicator of poverty and misery.

The World Bank is financially supporting various regional initiatives and national projects of which components aim at controlling blindness, such as the African Programme for Onchocerciasis Control (APOC) and OCP, the National Cataract Project in India, and the trachoma control activities in Morocco.

II. UPDATE ON AZITHROMYCIN

2.1 RESISTANCE

The indiscriminate use of antibiotics is one of the important causes of antimicrobial resistance. The ARTEMIS project was installed in 1994 to monitor continuously the global activity of antimicrobials and map out emerging foci of antimicrobial resistance. More than 50 countries are currently involved in the ARTEMIS project.

A recent study has monitored the macrolides (including azithromycin) in 12 countries with 20 000 organisms, using the E-test methodology. Generally, there is very little resistance from *Streptococcus pyogenes* and *S. pneumoniae* to azithromycin, although France and Spain have reported approximately 40% of strains of *S. pneumoniae* as showing resistance. There is no documented resistance from *H. influenzae* to azithromycin.

The long action of azithromycin which enables short-course regimens facilitates good compliance with treatment, which is an important factor in reducing the emergence of resistant strains.

During the discussion, Pfizer Inc. confirmed that they have 3 sites in Morocco and 3 sites in Australia which are being used to monitor resistance of *Chlamydia trachomatis* to azithromycin. It was pointed out that, despite decades of using tetracycline and erythromycin for treating chlamydial diseases, there is no well-documented evidence of resistance.

It was agreed that Pfizer Inc. will keep the Alliance regularly informed of the results of their surveillance for resistance to azithromycin and that all documentation of relevance will be made available.

2.2 FIELD TRIAL IN MOROCCO

Trachoma is endemic in Southern Morocco. A clinical trial has been undertaken to compare the cure rates with 3 different regimens in 2 study populations, the general population of Ouarzazate and the schoolchildren of Errachidia. The regimens were:

- T = Tetracycline eye ointment (1%) twice a day for 6 weeks
- A1 = 1 dose of azithromycin + placebo at 6 months
- A2 = 1 dose of azithromycin + repeat same dose at 6 months

The cure rates for the general population were:

<u>At 4 months:</u>	<u>At 6 months:</u>
- T = 79.2%	- T = 77.9 %
- A1 = 78.9%	- A1 = 75.1%
- A2 = 87.0%	- A2 = 82.4%

The cure rates in the schoolchildren population (who also had all their family members treated) were:

<u>At 4 months:</u>	<u>At 6 months:</u>
- T = 80.5 %	- T = 71.7%
- A1 = 86.2%	- A1 = 61.0%
- A2 = 85.8%	- A2 = 79.9%

The 12-month follow-up examination will take place in October 1997. It is expected that the full results of the trial will become available in early 1998.

2.3 PARTNERSHIP FORMULA IN MOROCCO

A partnership has been established between the Government of Morocco, The Edna McConnell Clark Foundation, Pfizer Inc. and Helen Keller International. The public-private partnership has been of value in mobilizing resources and implementing a national programme for trachoma control in Morocco, which has included the clinical trial to evaluate azithromycin.

2.4 COMMUNITY INTERVENTION: EXPERIENCE FROM TANZANIA

A report on the community intervention trial which had been carried out in Tanzania was presented. It compared matched villages for LCR positivity to *C. trachomatis* at 10 months between 6 weeks of daily tetracycline (1%) eye ointment against a single dose of oral azithromycin (20mg/kg) once weekly for 3 weeks. The conclusions suggest that the main reservoir of infection is in children, although in some communities older women also represent a significant reservoir of infection. The community treatment will need to include more than just one village if villages are situated close to each other, in view of the migration patterns of the population. LCR positivity for *Chlamydia* at 10 months was greater in individuals with poor compliance. It was possible to achieve good compliance in both treatment groups, but this required a great deal of effort and energy in the 6-week tetracycline eye ointment group.

2.5 USE OF AZITHROMYCIN IN AUSTRALIA

There is some evidence that, overall, the prevalence of active disease in the Aboriginal population has fallen during the last 20 years. However, there are still communities with 60-70% of active disease in children. Reports on the use of azithromycin in 3 different areas have shown that it is effective, with no reports of serious adverse effects.

The following issues are raised by the studies:

- (a) What are the appropriate endemicity levels for active disease with regard to selective or mass treatment with azithromycin?
- (b) Is the community or the family the best unit for treatment?
- (c) Should the frequency of re-treatment be annual, semestrial or more frequent?
- (d) How can the cost of the drug be reduced?
- (e) How can the logistics of delivery systems and high compliance to treatment be developed for rural isolated communities?

It is envisaged that further studies will be undertaken on these issues.

III. RAPID ASSESSMENT OF TRACHOMA

A working paper, which had been prepared by the WHO/PBD secretariat, was presented and debated. A model for rapid assessment, proposed by the Global Scientific Meeting in 1996, had been slightly modified in that trichiasis (TT) had been chosen as indicator instead of scarring (TS). This was due to the experience gained in Morocco in field-testing, when it appeared that TS assessment was subject to great observer variation and thus did not truly reflect a blinding disease situation. Furthermore, it was felt that the age-limit of ≤ 30 years was difficult to apply, and the direct enquiry and search for TT made more sense to health care personnel and the local population; it also gave an immediate positive result of the assessment, namely a list of persons in need of surgery, and thus a beneficiary service could be offered.

3.1 WHAT IS TRACHOMA RAPID ASSESSMENT (TRA)?

- C It is an **operational** tool
- C It is a way to determine **where** there is blinding trachoma
- C It is a way of ranking communities in order of **priority** for intervention

There are **two phases** in the application of TRA:

- (i) A preliminary assessment
- (ii) A rapid survey

3.2 THE PRELIMINARY ASSESSMENT

- C The goal is to collect all available information
- C The information may be documented or anecdotal
- C It can be collected and analysed at national, regional and district levels

3.3 THE RAPID SURVEY

- C Communities are chosen according to where blinding trachoma is likely to be present (**no** random selection)
- C It should include 2 or 3 communities for each district.
- C The rapid survey will require a national or regional TRA coordinator as trainer for the survey team.
- C The rapid survey will assess trichiasis in the adult population and active infection in children.
- C Trichiasis will be assessed through a series of direct questions, using a specially designed recognition card; people with suspected trichiasis will be examined and the diagnosis will be confirmed.
- C Active infection (TF +/- TI) will be assessed in children.
- C The community will be ranked according to the number of persons with trichiasis (recorded by name) and according to the prevalence of TF and/or TI in children aged 1-9 years.

3.4 VALIDATION

There is a need to validate the methodology for different populations and to work out the practical working procedures, which will optimize rapid assessment for trachoma in endemic communities.

3.5 MANUAL

A manual for TRA will be developed for use by countries. Work on this will be initiated as soon as the validation process has been completed.

In the resulting discussion, it was suggested that emphasis be placed on examining children aged between 4 and 7 years for active disease.

It was also emphasized that the rapid assessment is **not** an epidemiological survey and that it does **not** provide baseline data for a control programme, nor does it provide data to monitor a programme.

A presentation followed by a discussion on the rapid assessment of trachoma in a country allowed to conclude the following:

- (a) There are 3 levels of **preliminary** assessment:
 - (i) Identification of a zone(s), or region(s) in a country likely to have blinding trachoma
 - (ii) Identification of districts within a zone or region likely to have blinding trachoma
 - (iii) Identification of 2-3 communities within a district likely to have blinding trachoma
- (b) The rapid survey will then identify households within a community likely to have blinding trachoma. A defined set of risk factors/indicators can be used for each level

of assessment. The aim is to focus on the households most likely to be affected by the disease.

In undertaking a rapid assessment for active disease, children aged 4-7 years should be targeted including children from high-risk households.

It was agreed to apply the following criteria for selection of children:

- C If scholarization (regular attendance at primary school) is $\geq 80\%$ in the area, then all children can be recruited from the school(s), giving preference to first grades; both sexes should be approximately equally represented.
- C If scholarization is $< 80\%$, then only 50% of children can be recruited from the local school(s), preference being given to first graders, as above. The other 50% of children should be taken from the local, deprived (identified as furthest from regular water supply, and/or with poor housing) community sector, at **same** or **lower** age, both sexes equally represented.

IV. GEOGRAPHIC INFORMATION SYSTEM (GIS)

The requirements for GIS are a computer and latitude and longitude coordinates collected by GPS (Global Positioning System). This will produce detailed maps. Data can then be added for each of the coordinates and presented on the map, e.g., presence of health centres, water supplies, population, etc.

GIS has been used for guinea worm and onchocerciasis control, and preliminary data on trachoma are now becoming available for a few countries. This is being applied in mapping through the collaboration with the Health Map unit of the Division of Control of Tropical Diseases within WHO.

V. INFORMATION FROM ENDEMIC COUNTRIES

5.1 REPORTING FORMS

Two different forms, a "Country Profile form" and "The Nongovernmental Development Organizations (NGDOs) Trachoma Project Reporting form", were prepared and presented by the WHO/PBD secretariat (see Annexes 3 & 4).

The first form is designed for collecting information at country level on prevalence of trachoma and current trachoma control activities. The other is destined to the presentation and budget of current activities by NGDOs. It was agreed to use these forms over the coming year and then to evaluate the experience gained, before making any modifications.

5.2 THE GAMBIA

The result of the 1996 survey revealed that trachoma accounted for 5.5% of blindness. The national prevalence of TF/TI was 4.9% and that of TT was 3.3%. It was estimated that 10 000 people have trichiasis of whom 2000 will require eyelid surgery. Although the overall prevalence of active disease is low, there are marginalized communities with high prevalence of disease. It was found that the prevalence of trachoma was greater in minority ethnic groups and in smaller communities.

It was noted that the uptake for trichiasis surgery is relatively low (approximately 200/annum). The programme has adopted a strategy of providing eyelid surgery for those individuals with 4 or more inturned lashes. A National Trachoma Task Force has been established within the country.

5.3 GUINEA-BISSAU

Guinea-Bissau (population 1.1 million) is located in West Africa, bordering Senegal (to the North). The population comprises a number of different tribal groups (Balanta, Mandika, Fulani, Papel).

Currently, eye care is only available at the tertiary hospital in Bissau where there is one ophthalmologist. Trichiasis surgery can be performed by three eye health professionals at the unit. The national blindness prevalence rate is estimated to be 1%.

It is estimated that approximately 40 000 people have TF/TI and 10 000 people have TT. There are between 1800-2000 people blind from trachoma. The northern provinces (Cacheu & Oio) and the Bijagos Islands are the most severely affected.

The health infrastructure includes small hospitals or clinics in most sectors although with few community health workers. At present, the Evangelical Mission is the only nongovernmental group with a potential for providing both surgical and community-based activities.

There is a commitment from the Ministry of Health as well as by the large donors such as UNICEF, WHO and international NGOs (Gulbenkian Foundation, IEF), to undertake trachoma control.

It is expected that the proposed national trachoma control programme will include the following elements:

- (i) The development of a National Trachoma Control Committee to help guide project activities.
- (ii) Sector Trachoma Control Committees (STCC) will be established. The STCC, with supervision from Bissau, will initiate SAFE strategy interventions.
- (iii) Implementation of a trachoma service with sentinel site evaluation in targeted sectors.
- (iv) Creation of educational messages for schoolchildren and for trichiasis motivators.
- (v) Operational research will focus on the best approaches to intervention and evaluation.

5.4 MALI

The Institute of Tropical Ophthalmology in Africa (IOTA), Bamako, has been involved in trachoma control for nearly 40 years. The centre trains 25 nurses per year in the Trabut method for trichiasis surgery. In the future, IOTA will continue to be involved in operational research, training, and service delivery for trachoma control.

A recent survey of 210 villages showed a prevalence of TF/TI in children to be between 23% and 47% depending on the regions. In Gao and Kayes provinces, more than 90% of villages had a prevalence of TT greater than 20%. The most severe disease was seen in the eastern provinces. It is estimated that approximately 1 million children require treatment. The prevalence of trichiasis

in women ranged from 0.7% to 3.9%. It is estimated that approximately 86 000 individuals have trichiasis. There was a poor correlation between the prevalence of TF/TI and TT.

The overall national prevalence is 35% of children with TF/TI and nearly 2% of adults with TT.

5.5 NEPAL

It is estimated that 90% of trachoma cases live within 200 km of Nepalganj in the West of Nepal. Different strategies were used to provide trichiasis services in Bardia (community-based), Banka and Kailali (hospital-based) areas. Subsequently, all components of **SAFE** have been implemented through community health workers. A survey carried out in 1996 showed a reduction in the prevalence of TF/TI from around 30% in 1989 to 7-10% in Bardia and Banke. However, the prevalence remains high in Kailali where it is 36.9%. The prevalence of TT is 0.6-0.8%.

The community directed control programme has been carried out at low cost and has proved effective.

5.6 OMAN

The population is 2.1 million, with 600 000 being expatriates. A population-based study of 12 439 individuals was undertaken in 1996 with a 92% coverage rate. The results showed that the prevalence of active disease was 2.1%, and that of trichiasis 1.5% for the total population.

Trachoma and corneal opacities accounted for 24% of all blindness. TT was approximately 3 times more common in women. There were marked regional variations, with TF/TI and TT being more prevalent in the northern third of the country.

A national prevention of blindness programme including trachoma control activities already exists. A register has been established to record trichiasis cases, but the uptake of surgical services is low.

In summary, there are an estimated 33 000 cases of active disease and 23 500 cases of trichiasis. It is envisaged to strengthen the ongoing efforts for trachoma control in Oman.

5.7 OTHER COUNTRIES

Brief reports were also given on other countries by the NGDOs present:

- C Trichiasis is still common in areas of China; the issue of trachoma has been included in the agenda of the forthcoming meeting for coordination between WHO, the Ministry of Health and the NGDOs in early 1998.
- C Active disease and trichiasis are reported to be common and widespread throughout Ethiopia.
- C Active trachoma are reported from the Lower Shire Valley of Malawi, but the blinding severity of the disease remains to be assessed.
- C In Morocco, the prevalence of TF/TI varies from 7.8% to 20%, and that of TT from 0.3% to 22% in the different provinces with endemic trachoma.

VI. TRICHIASIS SURGERY KIT

A surgical kit for trichiasis surgery has been developed. The cost per kit is estimated at US\$78 with a further US\$24 for packing, freight and insurance, thus giving a total cost of approximately US\$100 per kit.

The low cost of this kit has been obtained on an international bidding basis by WHO; further reduced prices can be obtained through bulk purchase. This is an option of interest to countries and NGOs for the future provision of these kits at optimal prices.

Sterilization can be performed by heat or chemical methods.

The consumables include medicines, sutures, gloves, dressings, etc. Their cost is estimated to be approximately US\$3.30 per surgical case.

In the discussion which followed, it was pointed out that the bilamellar tarsal rotation technique has a good success rate and is the recommended procedure for trichiasis.

VII. DISTRICT PROGRAMME DEVELOPMENT MODEL

The model of the trachoma control programme integrated within the district health care system in Daboya Sub-district of West Gonja, in Northern Ghana, was presented.

Reports documenting the presence of trachoma and trichiasis in the northern region of Ghana exist. It is an area of low rainfall and lack of surface water.

After a preliminary assessment of available data, a rapid assessment was made in 3 villages which revealed a prevalence of 25% for TF/TI in children and approximately 3% for TT in adults.

A district trachoma control programme implementing the SAFE strategy was elaborated. Two trained ophthalmic nurses provide trichiasis surgery and 20 village health volunteers were trained:

- (i) to examine the population compound by compound,
- (ii) to refer cases for trichiasis surgery to the health centre (monthly clinic),
- (iii) to treat cases of TF/TI with topical tetracycline, and
- (iv) to promote facial cleanliness and environmental improvement.

An incentive system including recognition and remuneration for service delivery was developed in order to encourage the village "volunteers" to continue their trachoma control work.

It is planned to expand this pilot programme into a full-district control programme taking into account the lessons learnt from the pilot study.

VIII. STATUS OF TOPICAL TREATMENT DEVELOPMENTS

A working paper on this item was presented, as summarized below:

Oral azithromycin has been successful in clinical trials for trachoma, but a topical azithromycin preparation to treat the eye directly is not available. Even a single dose of oral azithromycin is as effective as 30 to 40 days of topical tetracycline ointment, but several problems may be anticipated with the regular use of oral azithromycin for trachoma control, such as:

- C the emergence of resistant bacteria following community-wide (mass) treatment for trachoma;
- C the limited availability of oral azithromycin depending on its cost;
- C the possible necessity to administer oral azithromycin by direct observation of treatment which implies high personnel and organizational costs;
- C the need for a careful control of oral azithromycin distribution.

For trachoma control, oral azithromycin is justified for treatment of children with severe inflammatory disease (TI) but a topical preparation may be as effective for children with milder disease or household contacts.

8.1 REASONS FOR TOPICAL TRACHOMA TREATMENT, INCLUDING POSSIBLE USE OF AZITHROMYCIN

- C Appropriate for treatment by family members
- C Possible effective local dosing of the eye with one daily treatment or less
- C Avoids systemic treatment of large numbers of children with mild or inactive trachoma
- C Reduces the rate of induced resistance in other bacteria
- C Could possibly decrease the cost of azithromycin

8.2 OBJECTIONS TO TOPICAL AZITHROMYCIN FOR TRACHOMA TREATMENT

- C No product is available for this purpose
- C An ointment preparation would be difficult to apply
- C Topical treatment will not affect extraocular chlamydial infection
- C Efficacy and dosing schedule of topical azithromycin will need to be determined
- C Topical application will not have the effective increased level of drug brought to inflamed tissues by macrophages and polymorphonuclear leucocytes
- C Possible expense of drug in large-scale distribution schemes

After the Planning Meeting on Global Elimination of Trachoma held in November 1996, the possible use of azithromycin for topical application to the eye was proposed to Pfizer International. While Pfizer does not have the technical capabilities or interest to develop a topical ophthalmic form of azithromycin, the company would consider licensing agreements with other companies for this purpose.

8.3 ALTERNATIVE VEHICLES FOR OCULAR DELIVERY OF TOPICAL AZITHROMYCIN

With aqueous eye drops, 90% of the dose is lost during the first 15 to 30 seconds after instillation. However, there are now several vehicles that are administered as a drop and persist in the eye, releasing the drug over a long period of time (Table 1). The advantage of such a preparation is that azithromycin would be in contact with the conjunctiva for a prolonged period of time, allowing the drug to be absorbed by tissues, particularly the conjunctival epithelial cells where

chlamydial growth takes place. In other tissues, azithromycin has a half-life of 68 to 72 hours, and a similar persistence of the drug may occur in the external eye with adequate topical delivery.

For use in trachoma control, azithromycin eye drops should have the following characteristics:

- C Have long-term stability ("shelf-life") in tropical and subtropical climates
- C Be well tolerated
- C Be effective in the treatment of bacterial conjunctivitis and trachoma
- C Be easily available and have a low cost for trachoma control programmes

Table 1. Topical drug delivery to the eye

Gels and macroadhesives (eye drops)	Inserts
Gelrite (polysaccharide polymer/timoptic-XE/Merck)	Ocusert (plastic "sandwich" /ocusert pilo-20/Alza)
Iron exchange resin (betoptic-s/Alcon)	Collagen corneal shields (animal collagen/As needed/" Home Brew")
Durasite (acrylic acid polymers/Aquasite/Ciba /Pilosite/B&L)	

8.4 PRODUCT DEVELOPMENT ISSUES

Once a product has been developed, it must first be tested for pharmacological characteristics (tissue levels and persistence of drug in conjunctiva) and toxicity in the eye. In the US, the product would have to follow the steps required by the Food and Drug Administration (FDA), which include :

- Phase I Safety testing in normal volunteers
- Phase II Open trials to show efficacy in treatment of diseases to be covered by the drug licence (possibly purulent conjunctivitis and blepharitis)
- Phase III Controlled trials, comparing the new product with preparations already available
- Phase IV Post-marketing surveillance

Fortunately, the pharmacological properties of systemic azithromycin are known and it appears to be a safe drug.

Although there are important ethical issues about testing new drugs in developing countries, parallel testing for efficacy on chlamydial infection in trachoma might be carried out in trachoma-endemic areas once safety considerations have been addressed (i.e., starting with Phase II trials). In such settings, it should be possible rapidly to evaluate topical azithromycin for purulent bacterial conjunctivitis and trachoma. Such trials will need to be carried out with appropriate consultation and ethical reviews by national authorities.

8.5 COMMENTS

If topical azithromycin becomes available, can it have a role in trachoma control programmes? Oral azithromycin will still be needed to treat children with severe inflammatory

trachoma. However, a topical preparation may have an important role in mass treatment and household treatment. The use of topical azithromycin will evolve with its use in field studies.

The availability of topical azithromycin for trachoma control activities may depend on its success from sales in industrialized countries. It may be possible to structure a licensing agreement to provide low-cost or donated eye drops to WHO and NGOs for trachoma control.

IX. UPDATE ON OPERATIONAL RESEARCH ISSUES

The major issues discussed for future operational research were:

- (i) the validation of the rapid assessment methodology,
- (ii) the identification of the barriers for trichiasis surgery,
- (iii) the further development of topical antibiotic treatment,
- (iv) the methods for monitoring and evaluating the SAFE strategy in trachoma control programmes.

It was stressed that research must be accompanied by service delivery. It was agreed that the issue of operational research should be the subject of a working group at the next meeting of the Alliance.

X. TRACHOMA NEWSLETTER

It was proposed to have a 4-page newsletter in English and French. The cost is estimated to be between US\$1.50 and US\$1.75 per copy for a print run of 500 to 800 copies. It would be distributed to the Alliance members, to countries with endemic trachoma and to all interested NGOs.

It was suggested that the newsletter be made available on the WHO/PBD web-site reserved for trachoma.

XI. OUTLINE OF WORK PLAN

The work plan for 1997, as developed at the November 1996 meeting, was reviewed and progress discussed.

A revised work plan for the remainder of the year was debated and agreed upon, and the WHO/PBD secretariat presented its planned activities, as follows:

**WORK PLAN FOR THE WHO/PBD SECRETARIAT
(Period July-December 1997)**

COUNTRY VISITS FOR NATIONAL PROGRAMME DEVELOPMENT

Rationale

- < Presentation of the WHO Alliance's framework and long-term objectives
- < Promotion of the SAFE strategy:
 - C presentation to the MOH authorities
 - C presentation to the ophthalmic community
 - C presentation to any other concerned party
- < Preparation of a plan of work in accordance with the National Coordinator

Countries

Mali	Niger	(Chad)
Burkina Faso	Oman	(Guinea-Bissau)

DOCUMENTATION

- # Finalization of a Manual of Operations for Trachoma Rapid Assessment including preparation of recognition cards to be used for that purpose (TT; TF, TI)
- # Preparation of "teaching material" or "demo package" in order to present and promote:
 - < the WHO Alliance for the Global Elimination of Trachoma
 - < the SAFE strategy
 - < the Trachoma Rapid Assessment procedures/methodology
 - < the Geographic Information System (GIS)
- # Data Bank activities: update and dissemination of the epidemiological information of concerned countries (including epidemiological maps)
- # Initiate preparation of " Guidelines for Basic Sanitation at Village Level in Trachoma-Endemic Areas" (consultant)
- # (Preparation of " Guidelines for Quality Control of Trichiasis Surgery")
- # Publication of the first issue of the WHO Alliance's newsletter

OPERATIONAL RESEARCH AND FIELD STUDIES

- # Validation of Trachoma Rapid Assessment methodology and procedures in 3 countries, if possible:

(The Gambia)	Mali	(Morocco)
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- # Initiate protocols for:
 - < Monitoring and surveillance system for elimination of blinding trachoma national programmes
 - < Evaluation of national programme progress towards elimination

STRENGTHENING OF INFORMATICS COMMUNICATION SYSTEM

- < Initiate E-mail discussion groups
- < Develop "on-line chat" (Internet Relay Chat)
- < Organize WWW- posted GIS data retrieval (restricted access)

XII. NEXT MEETING

It was initially proposed to hold the Second Meeting of the Alliance for the Global Elimination of Trachoma in Geneva from 13 to 15 January 1998. For organizational reasons, these dates have been changed and the meeting is now scheduled from 12 to 14 January 1998. This 3-day meeting should allow one day for 3 or 4 working groups to discuss in more detail issues such as:

- operational research
- implementation/experience of SAFE
- intersectoral collaboration for F & E
- resource mobilization

CONCLUSIONS AND RECOMMENDATIONS

Azithromycin

The group welcomed reports on the surveillance for resistance to azithromycin and on the clinical studies in Morocco, Tanzania, and Australia.

The group was encouraged by the further evidence of the effectiveness and safety of the drug in treating trachoma and by the lack of any significant resistance problem.

The group requests that it be kept informed by Pfizer Inc. of the results of the expanded surveillance for resistance to azithromycin and that it receive final reports of the clinical trials in Morocco, Tanzania, The Gambia and Egypt, when available.

Besides the surveillance for resistance, the major issues to be addressed in the future are the frequency of treatment, the development of specific treatment strategies, and the future availability and cost of this antibiotic treatment.

Meanwhile, the use of tetracycline eye ointment is still recommended for treatment of active disease.

Trachoma Rapid Assessment

A methodology for Trachoma Rapid Assessment was presented to the group. It was agreed, after discussion, that a modified methodology should now be tested and validated in field conditions and the results reported back at a future meeting. The WHO/PBD secretariat is requested to coordinate these studies.

Trichiasis Surgery

The group received various reports from members demonstrating that at least 50 000 trichiasis surgeries are performed each year in more than 15 endemic countries.

Compliance with surgery is a problem which can be overcome, in part, by community-based surgery.

Studies have shown that the recommended bilamellar tarsal rotation procedure gives good success rates and is the procedure of choice. However, it is recognized that there is a need to monitor the quality of training and surgery.

A trichiasis surgical kit is being developed at a cost of approximately US\$100. The group endorsed the further development of this initiative and the possible inclusion of a common purchasing facility.

District Models for Integrated Trachoma Control

The development of community-based models for implementation of the SAFE strategy at the district level is of utmost importance, and the group took note of encouraging pilot projects in some countries. It was recommended that this item be regularly included in the agenda of forthcoming Alliance meetings, to allow for sharing of experience and interactions between interested organizations and countries.

Status of Topical Treatment Developments

The group received a preliminary report on the possibility of developing a topical application of azithromycin. The group recommended that Professor C. R. Dawson continue to work with The Edna McConnell Clark Foundation and Pfizer Inc. to develop a topical application and report back at the next meeting.

Operational research

The group recommended that operational research be undertaken in the following areas:

- (a) Validation of a rapid assessment methodology
- (b) Identification of barriers to trichiasis surgery
- (c) Development of a cost-effective antibiotic regimen and sustainable distribution mechanisms
- (d) Estimation of the cost-effectiveness of implementing different approaches for the **SAFE** strategy
- (e) Methods for monitoring and evaluating programmes

Progress and achievements in these areas should be reported back to the Alliance on a regular basis for coordination and information exchange.

Although the need for operational research is clearly recognized, the Alliance emphasized the importance to maintain a philosophy of service delivery with the necessary ongoing research work.

Trachoma Newsletter

The group welcomed the report that a newsletter on trachoma is planned to be produced regularly to give information, particularly for field programmes, on trachoma control activities. The group endorsed this initiative, and asked the WHO/PBD secretariat and the Editor, Dr L. Schwab, to start producing the first newsletter.

F and E components of SAFE

The group re-emphasized the importance of intersectoral collaboration at international and national levels in order to develop the **F** and **E** components of the **SAFE** strategy. The group recommended further efforts to collaborate with other agencies involved in this work.

**FIRST MEETING OF THE WHO ALLIANCE FOR
THE GLOBAL ELIMINATION OF TRACHOMA****ANNEX 1****Geneva, 30 June - 1 July 1997****AGENDA**

Opening of the meeting
Introduction of new participants
Administrative announcements
Adoption of Agenda

1. Review of follow-up action after the formation of the Alliance for the Global Elimination of Trachoma:
 - Activities of WHO
 - Activities of the Alliance members
 - Brief presentation of new participating agencies/organizations
 - Discussion
2. Update on azithromycin:
 - Resistance
 - Field trial in Morocco (progress and partnership formula)
 - Experience from Tanzania
 - Use in Australia
3. Rapid Assessment of Trachoma
4. Geographic Information System (GIS) update; resources required and coordination issues
5. Information from endemic countries:
 - Presentation of the "Trachoma Country Profiles" draft form
 - Epidemiological data (The Gambia, Guinea-Bissau, Mali, Nepal, Oman, others)
6. Trichiasis Surgery Kit
7. District Programme Development Model: experience from Ghana
8. Status of topical treatment developments
9. Update on operational research issues

10. Trachoma Newsletter (editorial board, title, dissemination means, format and languages)
11. Outline of work plan for the coming 6 months
12. Any other matters

Conclusions and recommendations
Date and place of next meeting

ANNEX 2

**FIRST MEETING OF THE WHO ALLIANCE FOR
THE GLOBAL ELIMINATION OF TRACHOMA****Geneva, 30 June - 1 July 1997****FINAL LIST OF PARTICIPANTS****INVITED NATIONAL COORDINATORS**

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ANNEX 3

Annex 3

ANNEX 4

Annex 4