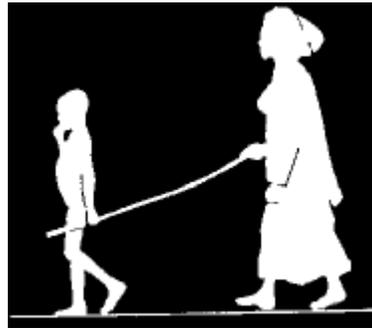


SUMMARY PROCEEDINGS

**SECOND ANNUAL PROGRAM REVIEW OF CARTER CENTER-ASSISTED
TRACHOMA CONTROL PROGRAMS**



**The Carter Center
March 1-2, 2001**

**Funded by:
Conrad N. Hilton Foundation
Lions Clubs International Foundation**

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ACRONYMS

ADRA	Adventist Development and Relief Agency
CBM	Christoffel Blindenmission
CDC	U.S. Centers for Disease Control and Prevention
CMA	Christian Mission Aid
FGD	Focus group discussions
GOS	Government of Sudan
HKW	Helen Keller Worldwide
IOTA	Institut d'Ophtalmologie Tropical d'Afrique
ITI	International Trachoma Initiative
KAP	Knowledge, attitudes, and practices
MOH	Ministry of Health
NGO	Non-Governmental Organization
NPPB	National Program for Prevention of Blindness
NR	Northern Region (Ghana)
OLS	Operation Lifeline Sudan
SAFE	Surgery, Antibiotics, Face Washing & Environmental Improvement
SRC	Swiss Red Cross
SF	SightFirst
SSI	SightSavers International
STCP	Sudan Trachoma Control Program
TCC	The Carter Center
TCP	Trachoma Control Program
TRA	Trachoma Rapid Assessment
UNICEF	United Nations Children's Fund
UWR	Upper West Region (Ghana)
WHO	World Health Organization
WVI	World Vision International

EXECUTIVE SUMMARY

The second annual Program Review for Carter Center-assisted trachoma control programs was held on 1-2 March 2001 at The Carter Center's headquarters in Atlanta. The objectives of the Program Review were to assess the status of each national trachoma control program, identify challenges encountered in creating national trachoma control programs, assess impediments and problems in program implementation and discuss solutions, as well as to promote sharing and standardization of information. This year, special attention was given to health education and surveillance for trachoma control programs. Discussions on the "F" and "E" components of the SAFE strategy¹ were highlighted during this Review.

National and regional trachoma control program coordinators representing the ministries of health of Ethiopia, Ghana, Mali, Sudan and Yemen attended. In addition, The Carter Center's resident technical advisors and country representatives from Ethiopia, Mali, Niger, Nigeria and Sudan participated in the meeting, along with trachoma program coordinators from Ghana and Sudan (OLS/S). Representatives of the Lions Clubs International Foundation (LCIF), Conrad N. Hilton Foundation, Pfizer Inc, the International Trachoma Initiative (ITI), Helen Keller Worldwide (HKW), World Vision International, the U.S. Centers for Disease Control and Prevention (CDC), Michigan State University and Emory University also participated. The ITI team brought together their representatives from Vietnam, Tanzania and Mali, as well as their U.S. headquarters. This year, for the first time, presentations were given on the new trachoma control programs in Yemen, Nigeria, and the OLS/S program of Sudan.

Each country program did a half-hour long presentation on their current status and plans for the next year, followed by one hour of discussion by all participants. While each of these national programs is being assisted by The Carter Center (among other partners), the national coordinators presented information on their entire programs. The presentations included epidemiological data and sociological studies on trachoma in each country, and an update on the status of program interventions being undertaken. Plans for monitoring and evaluation of the programs and program partnerships with other ministries and international development organizations were also presented. Discussions included successes, constraints, and challenges of the country programs as well as program goals and objectives for the year 2001. At the end of the meeting, the participants made recommendations for each of the countries on how to improve their trachoma control efforts and how to strengthen the "F" and "E" components of the SAFE strategy being implemented by the national program. Participation in the second annual Program Review for Carter Center-assisted trachoma control programs was intelligent, lively and enthusiastic, reflecting the progress and optimism of participating trachoma control programs.

¹SAFE is the acronym for:

Surgery to correct trichiasis

Antibiotics to treat inflammatory trachoma (topical tetracycline or oral azithromycin)

Face and hand washing to prevent transmission of chlamydia, and

Environmental activities to improve access to water and household sanitation.

INTRODUCTION

The Carter Center Trachoma Control Program began in 1998 with a grant from the Conrad N. Hilton Foundation. With this support, The Carter Center works in collaboration with national and regional trachoma control programs in Ghana, Mali, Niger, Yemen and Nigeria. In 1999, thanks to the Lions-Carter Center SightFirst Initiative, the Center expanded its trachoma control activities to begin assisting Ethiopia and Sudan. The Carter Center works directly with national and regional governments, local Lions Clubs and other partner organizations to achieve control of trachoma through community-based interventions, operations research, and advocacy. In Mali, Sudan and Ghana, the national trachoma control programs benefit from donations of Zithromax from Pfizer Inc through the International Trachoma Initiative.

Based on experience from the Guinea Worm Eradication and River Blindness Control Programs, The Carter Center maintains an emphasis on health education and community mobilization – enabling and encouraging people to help themselves. To this end, the Center assists national trachoma control programs in conducting epidemiological, sociological and operations research studies. These studies include prevalence surveys, and knowledge, attitudes and practices (KAP) studies to obtain baseline information on trachoma. The Center also assists ministries of health in implementing interventions to control trachoma, with an emphasis on the “F” and “E” components of the SAFE strategy and the use of routine surveillance for program management.

One of the basic principles of all Carter Center is to work **in partnership** to help implement health programs. The Center works closely with ministries of health wherever possible, particularly with regional and national coordinators of trachoma control program. The Center also collaborates with other international organizations working in trachoma control and blindness prevention such as Christoffel Blindenmission (CBM), Sight Savers International (SSI), the World Health Organization (WHO), Swiss Red Cross, Orbis, International Trachoma Initiative (ITI), Helen Keller Worldwide (HKW) and World Vision International (WVI). The Conrad N. Hilton Foundation and Lions Clubs International Foundation (via the Lions-Carter Center SightFirst Initiative) are the primary donors supporting The Carter Center’s trachoma control activities.

Sudan Trachoma Control Program

Presented by Professor Mamoun Homeida, National Coordinator, Sudan Trachoma Control Program, and Ms. Kelly Callahan, Resident Technical Advisor, The Carter Center/Kenya, which serves areas of Sudan supported by the OLS/S consortium. The Carter Center assistance to Sudan is supported by the Lions-Carter Center SF Initiative.

Assessment

Blinding trachoma has traditionally been thought to be mainly a problem of the north of Sudan, and its presence has been confirmed through prevalence surveys. However, recent surveys conducted under this initiative, though still incomplete, have shown trachoma to be a major problem in areas of southern Sudan also. In particular, in the area around Malakal, Upper Nile State. Other evidence suggests that blinding trachoma is also present in areas of western and central Sudan.

In May-July 1999, trachoma prevalence surveys in two states revealed remarkably high rates of disease in the north and south of Sudan. A survey of the area around Wadi Halfa revealed TF/TI rates of 47% in 1-10 year olds, and TT in women 40 years of age and older of 4%. In Malakal, TF/TI in 1-10 year olds averaged 45%, while TT in women 40 and older averaged 25%.

So far, only anecdotal reports are available from areas supported by the OLS/S consortium. One report of an assessment done in 2000 during surgical outreach by Christoffel Blinden Mission (CBM) and Christian Mission Aid (CMA) in Lankien District, Upper Nile State found 29% prevalence of TF/TI and 4% TT (age groups not specified).

A community-based trachoma prevalence survey of nine states and the displaced persons camps near Khartoum will be underway in 2001. This is the first attempt to describe the epidemiology of trachoma nationally. At the same time, The Carter Center will work with partner NGOs in the OLS/S consortium to do community-based prevalence surveys when and where sampling is possible.

Program Structure

The model for the Sudan Trachoma Control Program (STCP) is the Sudan National Onchocerciasis Task Force (NOTF), which itself was modeled after the Sudan Guinea Worm Eradication Program. The Carter Center is a major partner in all three programs. The NOTF is the central coordinating organ for a program that has a single national coordinator, and which includes activities by the Government of Sudan and by many international Non-Governmental Organizations working under the umbrella of Operation Lifeline Sudan/South (OLS/S) in southern parts of the country that are controlled by opponents of the national government. The national Trachoma Technical Consultative Committee includes eight technical specialists of different types and a representative of The Carter Center. In the OLS/S supported areas of southern Sudan, trachoma control activities are coordinated by The Carter Center, and implemented through three NGOs: Christian Mission Aid (CMA), MEDAIR and the Adventist Relief and Development Agency (ADRA). Operational activities began in Government-held areas around Malakal in August 2000, but have not yet begun in OLS/S-assisted areas.

Trachoma control activities in Sudan are supported by the Lions-Carter Center SightFirst Initiative. Pfizer Inc has donated Zithromax® through the ITI to Sudan.

Interventions

The Sudan Trachoma Control Program (STCP) began in four villages around Malakal Town, where, in August 2000, all aspects of the SAFE strategy were launched. Following KAP surveys early in 2000, mobilization and other preparatory work were completed in June-July. This included training of supervisors and village volunteers as well as health workers linked to primary health care units. A total of 115 *surgeries* were done for trichomatous trichiasis (along with an equal number of non-trachoma related eye surgeries), and 12,671 persons were treated with the *antibiotic* Zithromax (78% of the eligible population). Related health education, including *face-washing*, was reinforced during the distribution of the antibiotic. Posters and bull horns were used for the health education in public gathering places. Related GOS and NGO activities in Malakal Town have complemented STCP interventions: the average *water supply* in the town was increased from 11.5 to 47.4 liters per person as a result of a new water plant, and *pit latrines* were increased to 47% of homes in 2000, compared to 37% in 1999.

In OLS/S areas, tetracycline eye ointment is available at some primary health care facilities, but compliance is poor. CBM has supported a limited number of lid surgeries by Christian Mission Aid (CMA) and MEDAIR (254 lid surgeries in 153 patients in 1999). A motivational health education message being used by CMA states, "How will you feed your family if you are blind?" The Carter Center has supported development of standardized health education and hygiene promotional messages and materials in association with Adventist Development and Relief Agency (ADRA), CMA and MEDAIR, beginning in September 2000. TCC will work with the same three NGOs to develop comprehensive interventions in populations totaling about 328,000 in Upper Nile and Jonglei States in 2001.

A total of about 60,000 persons will be treated with Zithromax in GOS areas in 2001, and about 40,000 in OLS/S areas, as a part of comprehensive interventions. OLS/S areas will field test health education materials, train staff, mobilize communities and conduct KAP studies and prevalence surveys. Some of these activities will be conducted in coordination with the Sudan Guinea Worm Eradication Program.

Discussion

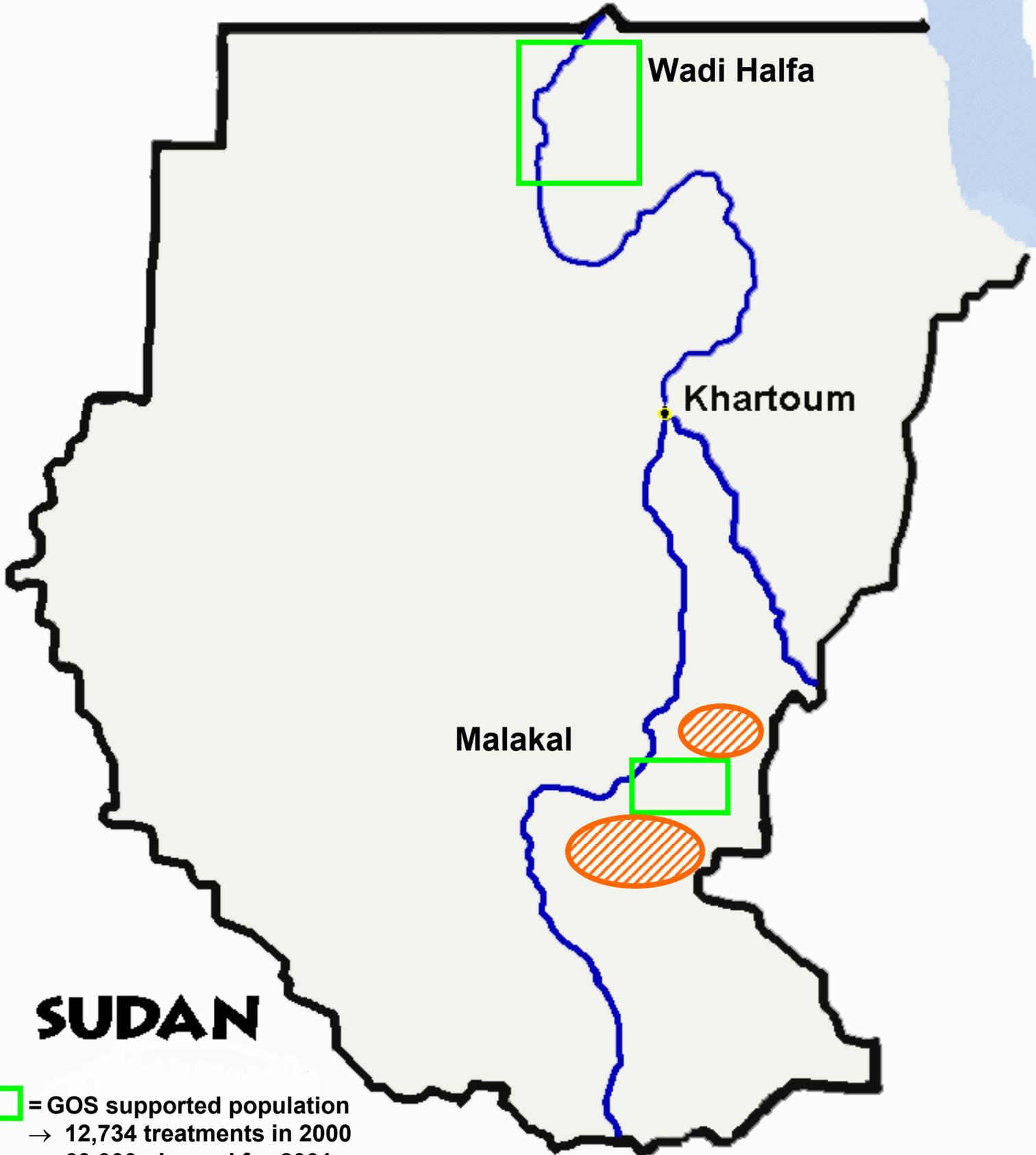
Much discussion centered around the grave difficulties inherent in working in southern Sudan during the civil war. Accurate population figures, even good estimates, are difficult to obtain because of the great mobility of people, both nomads and persons displaced by the war. When asked if Sudanese would change their personal hygienic behavior, Professor Homeida replied that his experience is that people will use latrines if they are available. Presumed cultural impediments relating to reducing flies and increasing face-washing were also discussed. Cost recovery for eyelid surgery is an important issue in OLS/S areas.

Recommendations

- The STCP should finish the prevalence survey in August.
- The program should finish the national trachoma prevalence survey where possible, including displaced person camps around Khartoum, GOS-supported areas and OLS/S supported areas.

- The program should conduct KAP studies to help refine health education messages and use the results to increase health education activities nationally.
- The STCP should expand the extent of Zithromax distribution as quickly as possible.

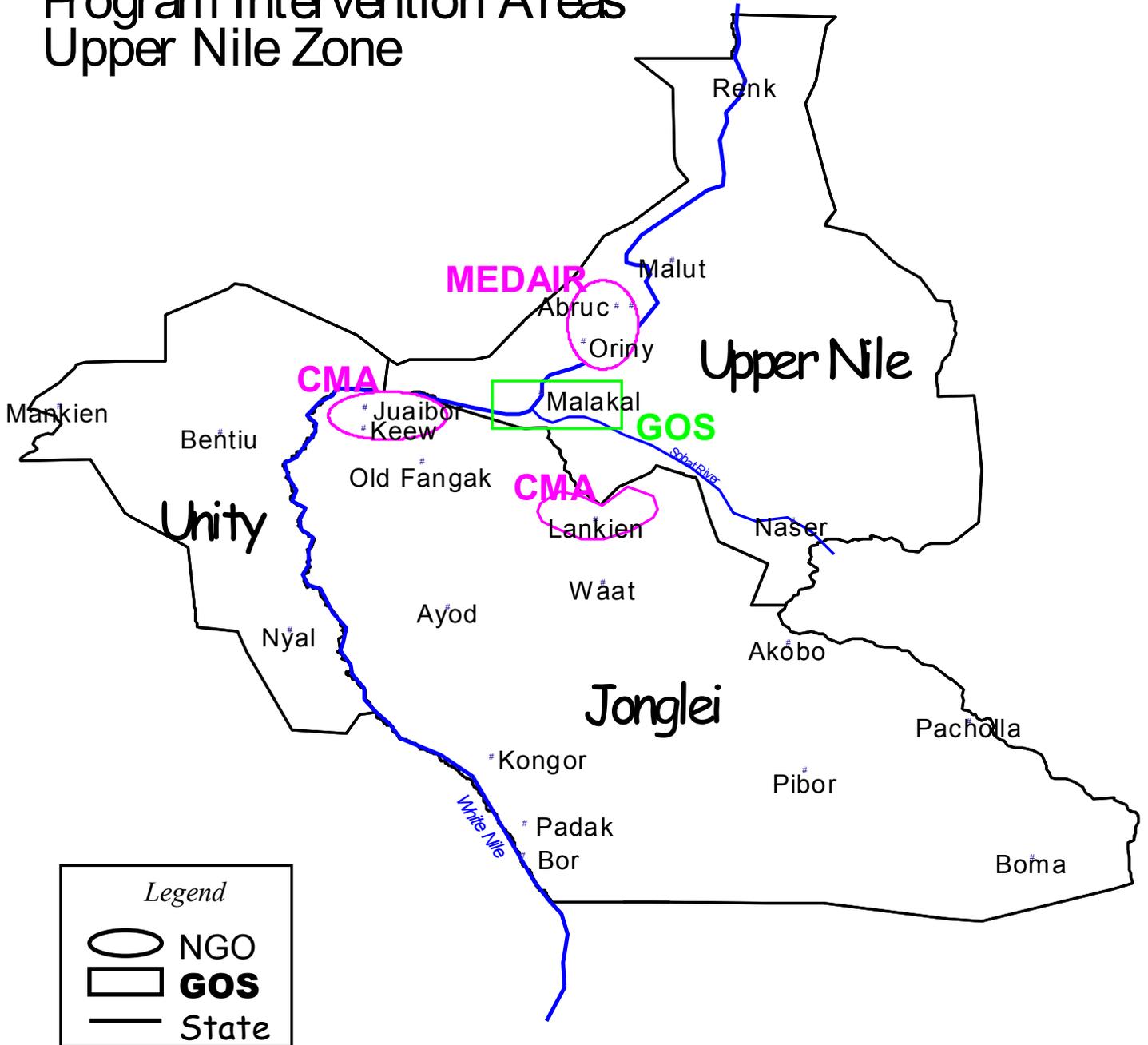
Sudan Trachoma Control Program
Program Intervention Areas
2000-2001



 = GOS supported population
→ 12,734 treatments in 2000
→ 60,000 planned for 2001

 = OLS/S supported population
→ 40,000 treatments planned for 2001

Sudan Trachoma Control Program Program Intervention Areas Upper Nile Zone

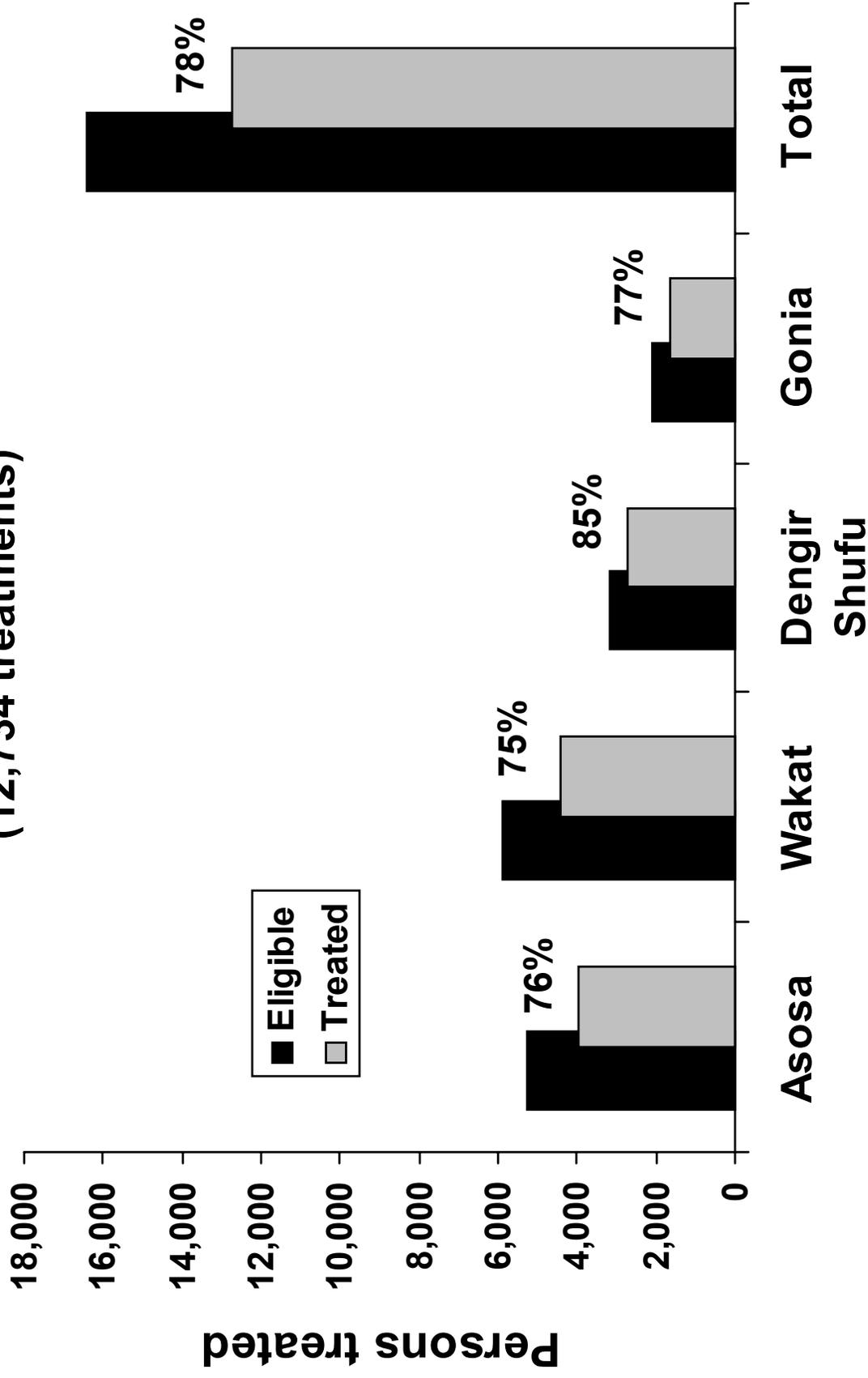


Community Directed Distribution of Zithromax

Percentage of Eligible Population Treated

Malakal, August-November 2000

(12,734 treatments)



Ethiopia Trachoma Control Program

Presented by Dr. Tewodros Assefa, Regional Prevention of Blindness Team Leader for Trachoma Control Program, Amhara Region. The Carter Center assistance to Ethiopia is supported by the Lions-Carter Center SF Initiative.

Assessment

Blindness in Ethiopia (population 64,000,000) is the highest in the world. The prevalence of blindness is estimated to be about 1.5% (> 900,000 persons) and six million Ethiopians have low vision. The two major causes of blindness are cataract (40%) and trachoma (30%). Trachoma is a major public health problem in all regions of the country. Although a nationwide survey has not yet been done, the MOH estimates about one million Ethiopians live with trichiasis (TT) and ten million have active trachoma (TF/TI). In 1981, a WHO-sponsored survey suggested that trachoma was the leading cause of blindness in the country (42% of blindness due to trachoma). Other regional studies have also shown that trachoma is a major health problem in various parts of the country. In January 2000, a study conducted with World Vision International (WVI) in three districts of North Shoa and Oromia, in the Amhara Region, found a TF/TI prevalence of 53.2% in children under 10 years and TT prevalence of 2.3% among those 15 years and older. A similar study conducted in the Gurage Zone with ORBIS International showed a prevalence of TF/TI of 53.3% among children 1-6 years of age and a TT prevalence of 3%. In 2000, the Amhara Regional Health Bureau and the ICEH conducted a trachoma rapid assessment of 11 villages in the South Gondar Zone which identified a prevalence of TF/TI ranging from 34%-58% in Dera and a TT prevalence ranging from 0.9% to 3.9%.

Program Structure

In 1986, the National Program for Prevention of Blindness was created as a centralized and autonomous program with 39 technical and support staff. The program was reorganized in 1993 under the Department of Epidemiology as the Prevention of Blindness Team (PBL) with one team leader and two experts. In 2000, the PBL was again restructured under the Department of Disease Control. The World Health Organization, Lions International, ORBIS, CBM, World Vision International (WVI) and The Carter Center assist eye care programs. An informal trachoma task force including the PBL team leader and representatives of Lions Clubs and partner NGOs was established in 1998. This informal group meets once or twice a year. Within the MOH, the prevention of blindness program is highly decentralized, with each region having direct responsibility for addressing local eye health.

Intervention

In October 2000, The Carter Center, with funding from the Lions-Carter Center SightFirst Initiative, signed an agreement to work on trachoma control in the Amhara Region. As a result of discussions with the National Prevention of Blindness Team leader and staff from the Amhara Regional Health Bureau, four districts (Simada, Dera, Estie and Ebinate) in the South Gondar Zone were selected as project sites (see map). The program area includes 157 sub-districts with a total population of 1,009,327.

In December 2000, The Carter Center assisted the Amhara Health Bureau to conduct a trachoma prevalence survey covering the four selected districts. Preliminary data analysis suggests very

high prevalence of trachoma in the communities. Prevalence of TF/TI was greater than 50% in children under 10 years of age and prevalence of TT greater than 15% in women 40 years and older. Following the trachoma prevalence survey, a qualitative Knowledge, Attitudes and Practices (KAP) study was done in the same four districts of South Gondar Zone. In-depth interviews with key informants and focus group discussions (FGD) with men, women, women with trichiasis, and school children were conducted in addition to environmental observations. Knowledge of trachoma was also assessed for health workers and schoolteachers. The results of the prevalence and KAP studies will be used in a program planning meeting, scheduled for April 2001 in Bahir Dar. In addition, in response to having identified many TT cases during the prevalence and KAP studies, trichiasis surgery training and campaigns are planned to begin in April.

Discussion

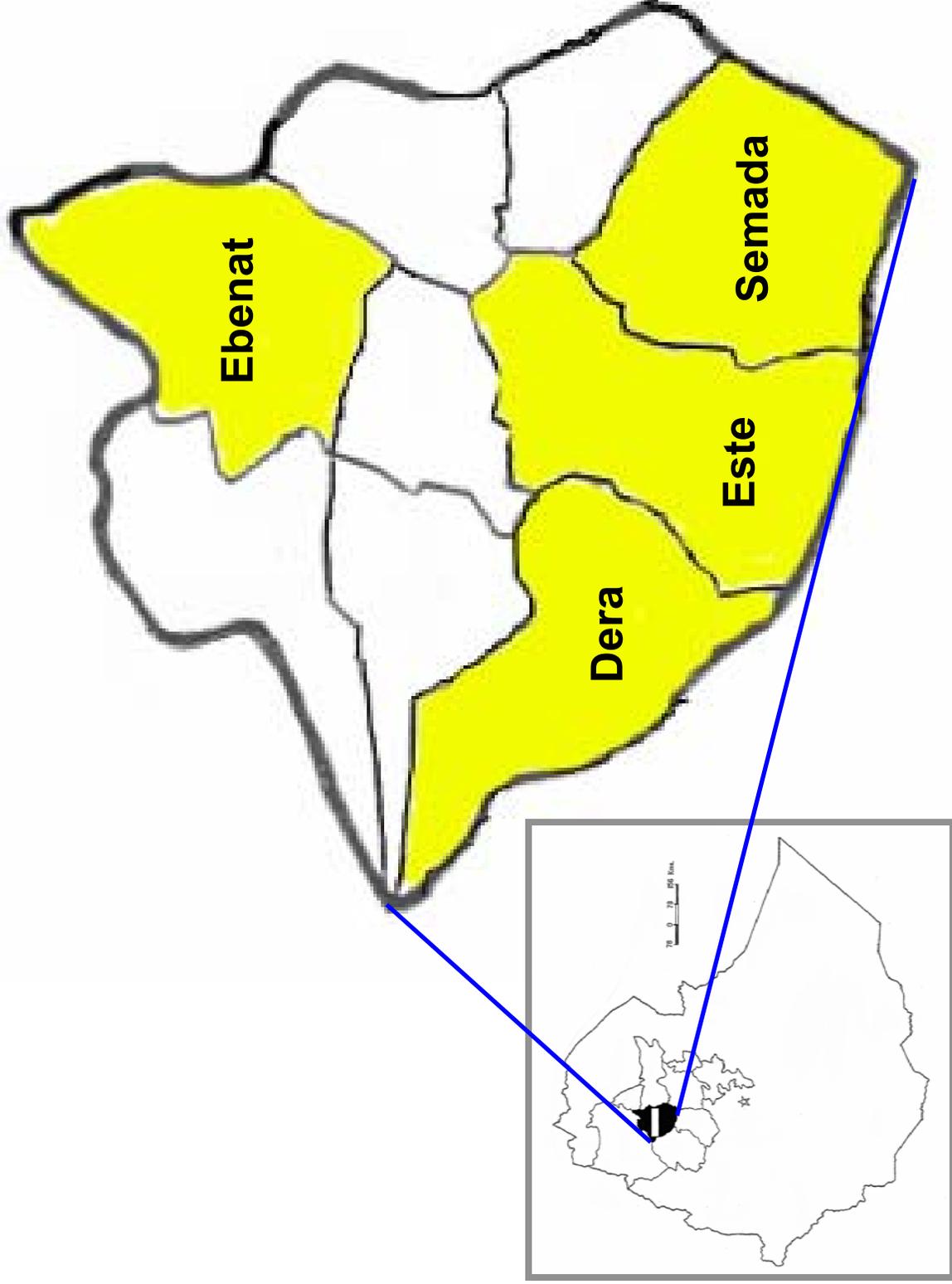
The following points summarize the discussions of the Ethiopia Trachoma Control Program.

- The momentum for prevention of blindness in Ethiopia resulting from the PBL workshop in Addis Ababa in February 2001 should be used to initiate trachoma control activities nationwide. A first step would be to collect prevalence data throughout the country and develop action plans.
- After conducting the prevalence study in the four woredas, it was found difficult to conduct a risk factor analysis since the disease affected most of the community members; thus no control group was available for comparison.
- Dirty faces using WHO's standard definition enables programs from different countries to compare their data. In the case of the Amhara Region, the high percent of dirty faces that could be linked to the high number of TF/TI in the intervention areas represent challenges to the program in terms of trying to increase the number of clean faces.
- An ITI-sponsored meeting is planned for the first week of June 2001. The purpose of the meeting is to convene the three NGOs working in the Gurage Zone and Amhara Region, and to plan how to implement SAFE with Zithromax.

Recommendations

- The national program should advocate for the NGO informal task force to become officially recognized by the MOH and conduct meetings regularly.
- The year 2020 is coming soon, and to achieve the goals of the WHO GET2020 Alliance, of which Ethiopia is a member, the MOH should be encouraged to sponsor a national trachoma prevalence survey to establish the true extent and severity of the disease in Ethiopia.
- The regional program needs to finalize the South Gondar Zone prevalence data entry and analysis and use findings from the KAP study to develop health education messages and materials.
- The regional program needs to hold a planning workshop to prepare a plan of action with all partners and apply to the ITI for a donation of Zithromax.

Ethiopia Trachoma Control Program South Gondar Zone, Amhara Region



Niger Trachoma Control Program

Presented by Mr. Salissou Kane, Resident Technical Advisor, The Carter Center/Global 2000, Niger. The Carter Center assistance to Niger is funded by the Conrad N. Hilton Foundation.

Assessment

National surveys in 1985 and 1989 found an overall prevalence of blindness of 2.2% in Niger. The major causes of blindness were cataract (45%), trachoma (25%), and glaucoma (22%). From 1997-1999, a national trachoma prevalence survey was conducted in eight departments, including the capital, Niamey. Findings indicated that 43.7% of children under 10 years old had TF/TI and 1.7% of women over 15 years old had trichiasis. The highest prevalences of trachoma were identified in the Zinder (TFTI 63%, TT 4%), Diffa (TFTI 55%, TT 1%), and Maradi (TFTI 46%, TT 3%) Departments (see map). Nationwide, an estimated 68,300 men and women are in need of trichiasis surgery.

A KAP survey was done in 1997, however it mainly focused on the S&A components of the SAFE strategy. A second KAP survey, focusing on the F&E components, was conducted in 2000.

Program Structure

Niger's National Blindness Prevention Program was established in 1987. A Trachoma Task Force was formed in 1999 by the Ministries of Health, Education, and Water & Social Developments. Representatives of nongovernmental partners, including The Carter Center, local Lions Clubs, Helen Keller Worldwide (HKW), Christoffel Blindenmission, the Niger Association for the Blind, African Muslim Agency, and WHO are also members of the committee.

Interventions

The national TCP initially has targeted 3 departments for trachoma control activities: Zinder, Diffa, and Maradi. Pilot trachoma control programs have begun in two districts of Zinder: Magaria (in 31 of approximately 400 villages) and Matameye (in 20 of approximately 400 villages). In addition, limited trachoma control activities have also begun in the Mirriah, Tanout, Goure, and Zinder Commune Districts of Zinder.

Hygiene Education, Face washing and Environmental Sanitation

Based on the results of the KAP surveys, flip-charts were created covering all aspects of the SAFE strategy. Following the development of these materials, 416 trachoma volunteers were trained and provided with the necessary support to conduct health education activities in 226 villages. In addition to these trachoma volunteers there are 258 integrated village-based health volunteers, in 258 villages, trained in integrated health activities throughout the country. These integrated health activities include health education on trachoma, malnutrition, diarrhea, and Schistosomiasis.

The national school health program, initiated with the support of HKW, has contributed to the national trachoma control effort by training schoolteachers about trachoma control. In Niger, there are 140 schools with at least one teacher trained in health education for trachoma. Because more than 90% of Nigeriens are Muslim, 110 traditional koranic teachers have also

been trained in trachoma control education, expanding the current outreach efforts of the national TCP.

Beginning in October 2000, record books, which can be used by literate and non-literate village-based health volunteers, were distributed to aid in supervision. However, a routine method of supervision by district level health educators, has yet to be established. Along with supervision, the program would like to establish routine trachoma surveillance. Under considerable debate are the methods and frequencies of disease surveillance.

Antibiotics

The proper use of topical antibiotic ointment to treat cases of active trachoma is encouraged and illustrated through the use of the IEC materials and information given by village-based health volunteers.

Surgery

There are only nine ophthalmologists in Niger, including six in Niamey, and one in each department of Zinder, Maradi, and Tahoua. In addition, the TCP has now trained 117 physicians and health center nurses to conduct trichiasis surgeries. In 1998 and 1999, 707 and 704 trichiasis surgeries were done, respectively. The number of surgeries by the rural health clinic nurses is reported quarterly through the MOH health information system. The departmental ophthalmologist in Zinder supervises trichiasis operators.

Monitoring and Evaluation

The national TCP is evaluating the usefulness of a line-listing proposed by The Carter Center. This line-listing will be continuously improved upon as the program develops.

Constraints

- Lack of access to health facilities and health personnel in rural areas.
- Lack of access to, or unreliable supply of ocular tetracycline ointment. Village volunteers report that this impedes their health education efforts.
- Poor monitoring and supervision of health education activities.
- Low access to clean water in rural areas, compounding poor hygienic and sanitary behaviors.

Goals for 2001

- Increase water/sanitation coverage in rural areas.
- Intensify IEC campaign.
- Increase availability of antibiotic products, including applying to the ITI for a donation of Zithromax.
- Determine what cost of surgery will make trichiasis operations accessible to the poor, and identify opportunities for increasing uptake of surgery.
- Implement monitoring and surveillance systems and improve supervision at all levels.

Discussion

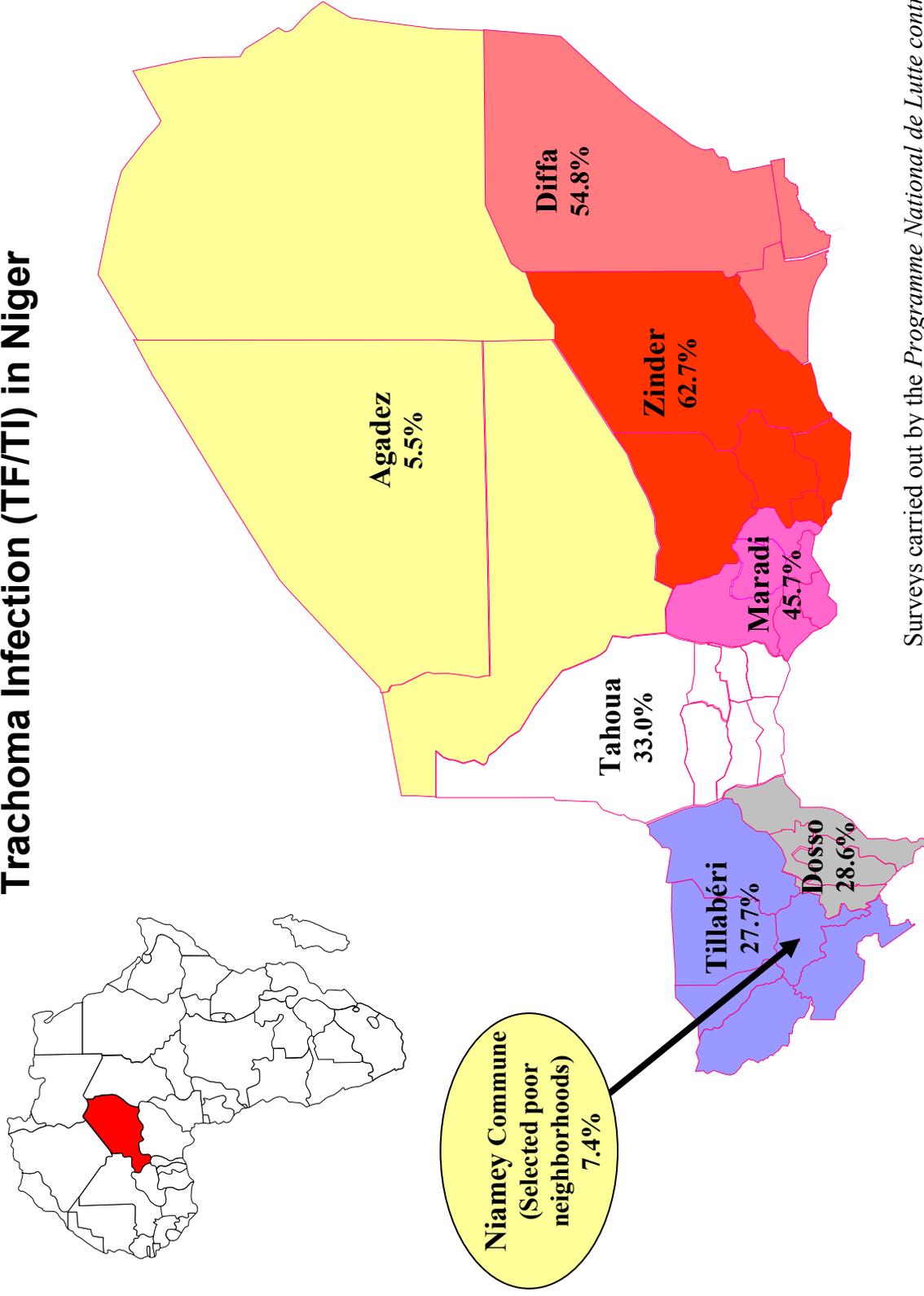
Both the nature of the trachoma village line-listing and supervision were discussed. Some indicators, such as “number of health education sessions,” were criticized as vague and imprecise. It was noted that knowing the quantity of health education sessions per month tells us nothing

about the quality of those sessions, or what the audience learned. In response, we were all reminded that we have trade-offs between the quality of data and the time and energy required to collect those data. It is very important to avoid a situation in which a program spends all of its time and resources collecting high quality data rather than actually intervening. The indicators which were proposed at the 2000 program review (Proceedings, page 27) are intentionally simple, but are adequate for programmatic decision-making. The population will benefit more if TCPs intervene now and work at getting better, and more accurate, over time.

Recommendations

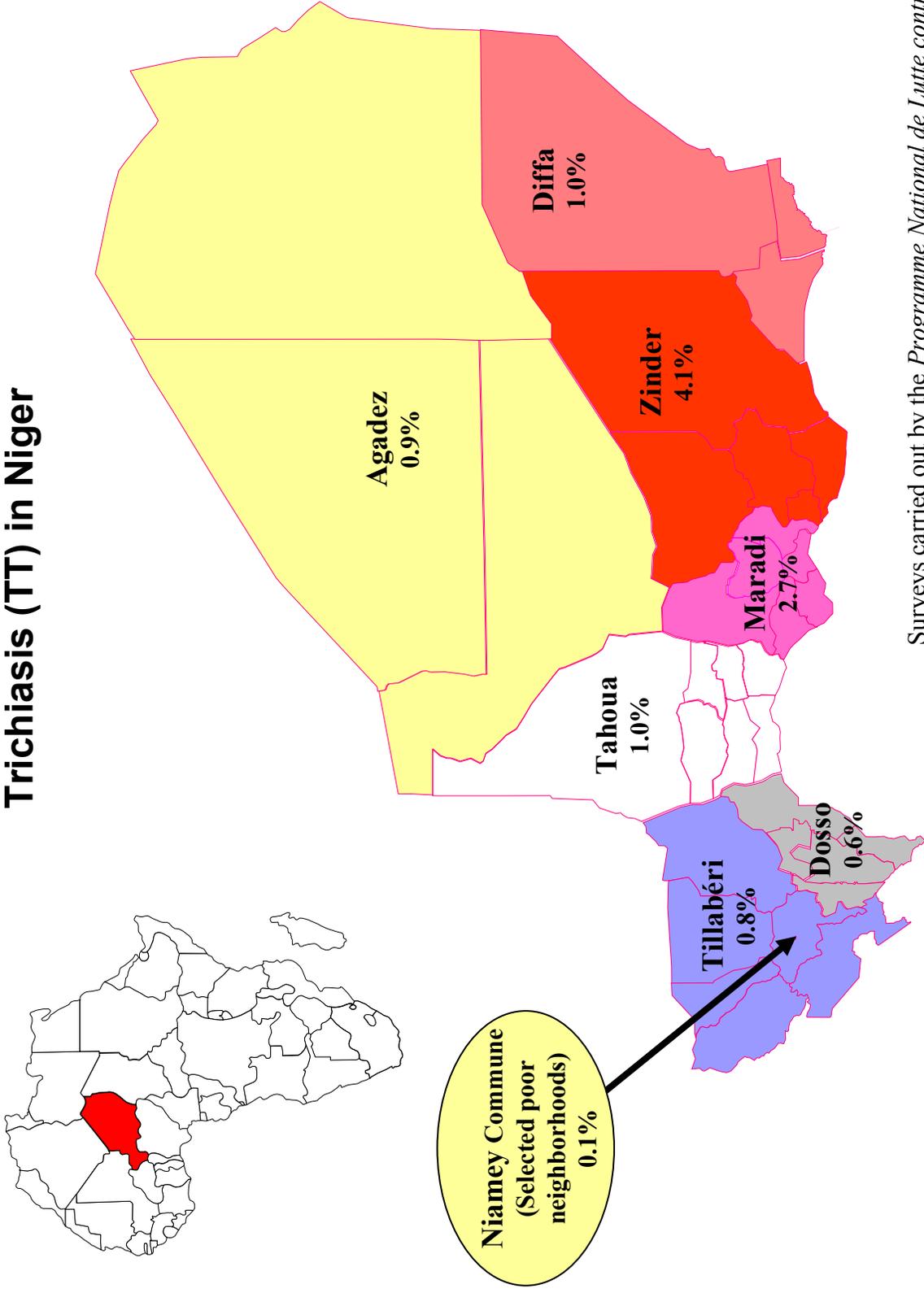
- Develop an action plan with targets and benchmarks.
- Use findings of the 2000 KAP survey to improve health education materials.
- Train additional health care workers.
- The Niger National Trachoma Task Force should agree upon a comprehensive and effective strategy for monitoring and evaluation.
- Establish monitoring and surveillance systems for the program.

Percentage of Children ≤ 10 years with Active Trachoma Infection (TF/TI) in Niger



Surveys carried out by the *Programme National de Lutte contre la Cécité* in 1997, 1998 and 1999 with support from the European Union and The Carter Center.

Percentage of Women ≥ 15 years with Trichiasis (TT) in Niger



Surveys carried out by the *Programme National de Lutte contre la Cécité* in 1997, 1998 and 1999 with support from the European Union and The Carter Center.

Results National Trachoma Survey, Niger
Table 1: Results for TF and TI for children of 10 years of age and below

	Total Population less than 11 Years	TF	TF (%)	TI	TI (%)
Agadez	113,734	6,255	5.5	455	0.4
Diffa	62,854	34,444	54.8	19,988	31.8
Dosso	508,953	145,560	28.6	20,867	4.1
Maradi	691,020	315,796	45.7	94,670	13.7
Tillabery	811,187	224,699	27.7	27,580	3.4
Tahoua	589,775	194,626	33.0	1,844	4.1
Zinder	611,942	383,688	62.7	91,179	14.9
Niamey	221,618	16,400	7.4	665	0.3
NATIONAL	3,611,084	1,321,468	36.6%	257,248	7.1%

* Population figures are taken from:

Projections Démographiques 1994-2025; Ministère du Développement Social, de la Population, de la Promotion de la Femme et de la Protection de l'enfant; République du Niger
 Surveys based on a representative sample of rural areas in all regions. In Niamey City, sample based on selected poor neighborhoods.

Results National Trachoma Survey, Niger

Table 2: Results for Trichiasis (TT) for Women 15 Years and Older, and Estimations for All Adults 15 Years and Older

	Women 15+	Men 15+	Total	TT (%) among Women	TT (#) Women and Men*
Agadez	92,949	90,638	183,587	0.9%	1,108
Diffa	61,364	63,973	125,337	1.0%	827
Dosso	377,037	383,304	760,341	0.6%	3,029
Maradi	557,875	507,918	1,065,793	2.7%	19,634
Tahoua	472,825	435,748	908,573	1.0%	6,181
Tillabery	671,934	660,568	1,332,502	0.8%	7,137
Zinder	548,775	559,741	1,108,516	4.1%	30,150
Niamey	170,865	187,771	358,636	0.1%	233
NATIONAL	2,953,624	2,889,661	5,843,285	1.7%	68,299

* It is estimated that prevalence of trichiasis in men is 1/3 of the prevalence in women. It is assumed that there is no trichiasis in children under 15, however, clinically, trichiasis has been observed in children as young as 8 years in Niger. Population figures are taken from:

Projections Démographiques 1994-2025; Ministère du Développement Social, de la Population, de la Promotion de la Femme et de la Protection de l'enfant; République du Niger
 Surveys based on a representative sample of rural areas in all regions. In Niamey City, sample based on selected poor neighborhoods.

TABLE 3

Line listing of selected communities in Matamaye districts

Village	Sub district	District	TF%	%TI	%TT ^b	Pop/ Household	Trachoma Health Education	% Clean Faces ^c	# of houses with toilets/latri nes	Clean Water Source	Ocular tetracyclin e available	Eye surgery available
Agangaro	Kantche	Matameye				306	3	95	2	2 f, 1 p	manque	4
Takara	Kantche	Matameye				737	8	97	4	3f, 1p	manque	0
Daouche	Kantche	Matameye				1000	4	90	15	2f, 3p	manque	0
El Dawa	Kantche	Matameye				400	15	97	12	2f-, 9p	manque	0
Ganoua	Kantche	Matameye	45.9	11.8	3.8	200	33	90	2	1f, 1p	manque	0
Daratchima	Kantche	Matameye	48*	8*	3.34*	123	90	74*(30)**	8	1f+, 1f-, 2p	disponible	10
Ganawa	Kantche	Matameye				120	95	70	5	3p, 2f-	disponible	1
Garin Gao	Kantche	Matameye	62*	20*	0*	130	30	70(50)**	0	2p, 1f+, 1f-	manque	1
Kawari												
Sofoua	Kantche	Matameye				91	38	96	3	1p, 1f+, 1f-	manque	4

a: TTTI reported in children age 1-10

b: TT in women age 40 and above

c: Clean faces in children age 1-10

d: p=puits,, f=forage, pe=puits ciment, pt=puits traditionnel, ft=forage fonctionel, f-=forage non fonctionel

* Data collected during a Rapid Assessment

** Number under parenthesis represents the % of clean face for the first 10 children

Ghana Trachoma Control Program

Presented by Dr. Maria Hagan, Head of Eye Care Secretariat & Dr. Daniel Yayemain, Trachoma Program Manager, Ghana. The Carter Center assistance to Ghana is funded by the Conrad N. Hilton Foundation.

Assessment

Cataract and glaucoma are the major eye problems in Ghana, followed by trachoma. Blinding trachoma is most prevalent in the hot and dry areas of the northern part of the country, especially in the Northern and Upper West Regions (NR and UWR). It is interesting to note that the Upper East Region, located next to the two trachoma-endemic regions, is relatively free of trachoma (and Guinea Worm), resulting probably from its geological configuration (increased water supply). A trachoma rapid assessment (TRA), using a modified WHO-methodology, conducted in the Northern and Upper West regions in July 1999, identified cases of active trachoma and trichiasis and helped to prioritize trachoma-endemic villages. In March 2000, The Carter Center assisted the Trachoma Control Program to conduct a prevalence study following WHO guidelines in both the UWR and NR, in areas identified by the TRA. The results of this study are summarized in Table 1.

In addition to the prevalence study, The Carter Center provided technical and financial support to conduct knowledge, attitudes and practices studies in the UWR (November-December 1999) and NR (July 2000) through household surveys, focus group discussions and community observations. The results of these studies were used during The Carter Center and ITI-sponsored program planning workshop in the NR in October 2000 and the training and health education workshops held in both regions in January 2001, in which district and regional plans for trachoma control were established.

Program Structure

The National Eye Care Program started in 1991 with the establishment of an Eye Care Secretariat and the appointment of a national coordinator. The Secretariat is responsible for all national prevention of blindness programs and reports to both the Institutional Care, and Public Health Directorates in the Ministry of Health. The broad objective of the program is to provide a comprehensive package of eye care services and increase delivery from 40% to 60% of the population by 2001. Currently, there are 75 eye care centers throughout the country, 40 ophthalmologists, and 190 ophthalmic nurses. There are also trained health and non-health workers (general medical practitioners, community nurses, community-based volunteers) in primary or basic eye health. In January 2001, a new national trachoma program manager, Dr. Daniel Yayemain, was appointed to oversee all trachoma activities in the country.

Interventions

The Ghanaian Trachoma Control Program is making improvements in implementing each component of the SAFE strategy.

Hygiene Education, Face Washing and Environment

Based on the results of the Training and Health Education Messages Development Workshop in January 2001, health messages for all components of the SAFE strategy are being developed

and pre-tested in the field with the assistance of The Carter Center and the BBC World Service. The health education campaign will be launched in March 2001 in conjunction with the antibiotic distribution campaign.

Antibiotics

In April 2000, the Ghanaian application to the International Trachoma Initiative was approved, providing the country with 100,000 tablets of Zithromax and additional financial support for other components of the SAFE strategy and administrative support of the Eye Care Secretariat. A trial run of Zithromax was conducted in the UWR in February 2000 and the expected date for actual mass drug distribution is planned for March 2001. A training of Zithromax distributors is also planned for March.

Surgery

Currently, the program has trained 10 ophthalmic nurses and community-based TT surgeons. Trichiasis surgery instruments were donated by Christoffel Blindenmission (CBM) and the Swiss Red Cross (SRC). One hundred fifty trichiasis surgeries were performed in 2000. The program plans to increase the number of surgeries done in the next year.

Monitoring and Evaluation

In terms of monitoring and evaluation indicators, the program has selected the following indices to use in its program:

- % TF/TF (1-10 years)
- % TT (women \geq 40 years)
- % TT (women < 40 years)
- % Endemic population treated with antibiotic
- % TT having received surgery
- % Communities with household toilets or covered latrines
- % Communities with household water source within 1 km

Objectives for 2001

Specific objectives include reducing TFTI by 50% and TT by 25% (i.e., perform 1000 TT surgeries). Other objectives are to strengthen technical and administrative capacity for Zithromax distribution and treat 100,000 people with Zithromax.

Discussion

The following points summarize the discussions of the Ghana Trachoma Control Program.

- Even though the current approach to health education is linked to Zithromax distribution, an ongoing health education strategy will be integrated into routine health outreach activities of community-based health workers and teachers. In addition, BBC World Service has been building capacity of staff, mostly those of Radio stations.
- Lions Clubs International may be good partners for purchasing trichiasis kits.

Recommendations

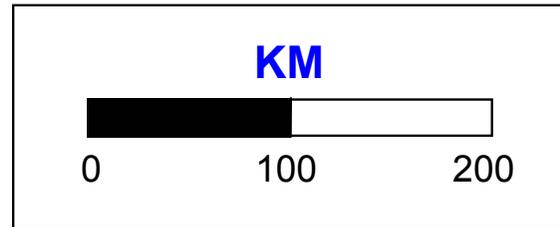
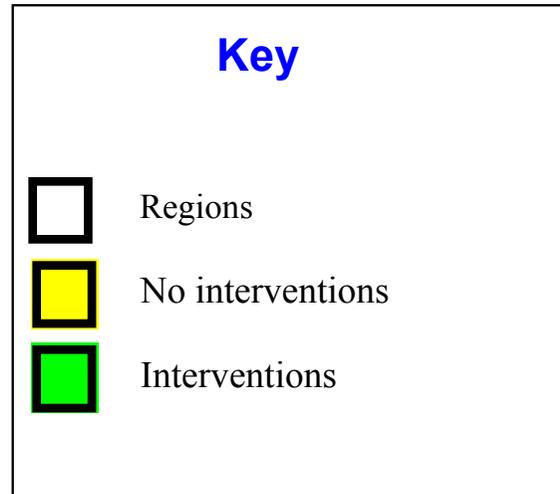
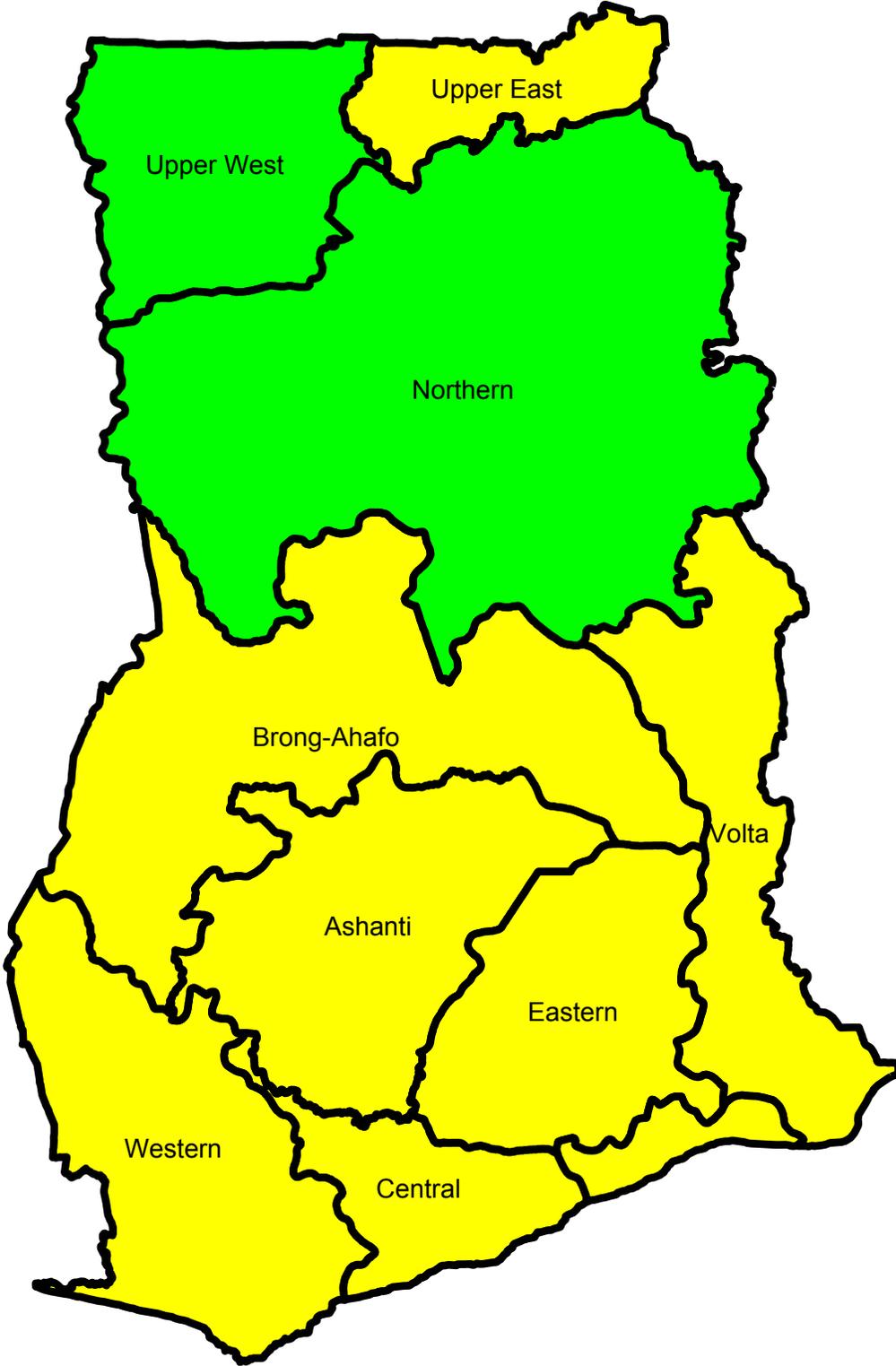
The Ghanaian TCP should:

- Finalize health education materials for both trachoma-endemic regions and in all local languages, and field test them as quickly as possible
- Begin program interventions in the UWR as soon as possible in all endemic areas, even in areas without Zithromax distribution
- Develop a plan of action for the Northern Region
- Develop line-listing of trachoma endemic villages in the UWR and NR
- Provide NR line-listing to World Vision/Ghana to identify and prioritize villages to target for water supply improvement
- Develop program objectives for the F and E component of the SAFE strategy
- The year 2020 is not far away, therefore the program should increase its capacity to do TT surgeries as quickly as possible.

Partner NGOs should assist in developing and supporting training for data entry and analysis in country, in addition to the technical and financial support provided.

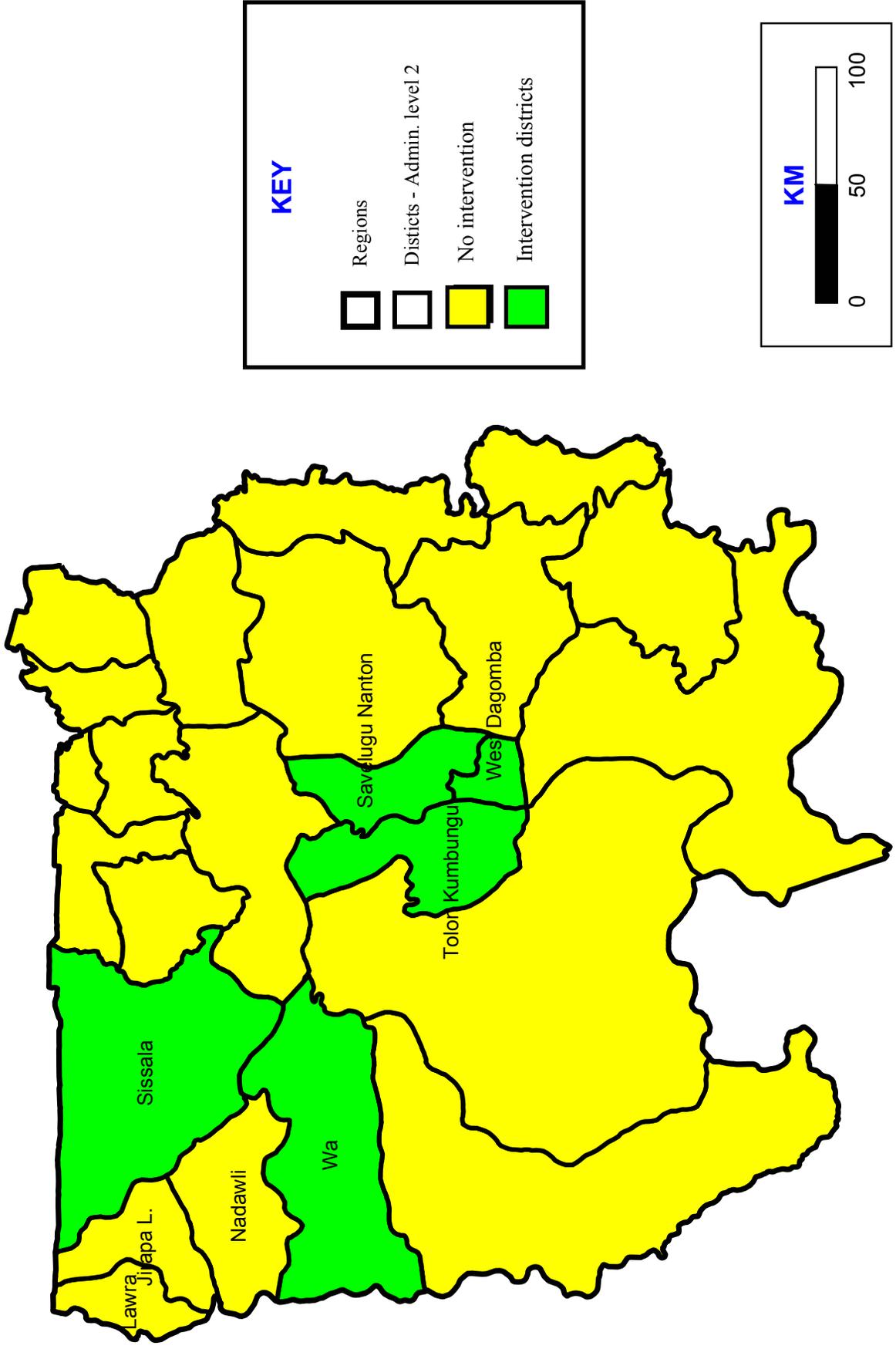
MAP OF GHANA

SHOWING TRACHOMA CONTROL REGIONS



MAP OF NORTHERN GHANA

SHOWING THE DISTRICTS WITH TRACHOMA CONTROL ACTIVITIES



**Summary of Ghana Prevalence Study Conducted in the
Upper West Region (UWR) and the Northern Region (NR)**

PREVALENCE OF TFTI & TT – NR

DISTRICT (TOTAL POP.)	% TFTI (1 – 10 YEARS)	% TT >40 YEARS
SAVELUGO (112,200)	9.7	4.5
TAMALE (456,000)	4.7	4.9
TOLON/KUMBUNGU (221,700)	12.4	8.4

Source: Prevalence Study, 1999

PREVALENCE OF TFTI & TT – UWR

DISTRICT (TOTAL POP.)	% TFTI (1 – 10 YEARS)	% TT >40 YEARS
SISSALA (127,000)	11.5	1.6
WA (173,000)	16.1	2.6

Source: Prevalence Study, 1999

**Line listing of selected communities with known active trachoma in Wa
and Sissala districts (Upper West Region) in descending order of
prevalence of infection**

VILLAGE	SUB-DISTRICT	DISTRICT	%TFT	%TT	POPULATION	HEALTH EDUC.	%CLEAN FACES	#COMM. TOILETS/LATRINES	CLEAN WATER	Oc TETRACYCLINE	EYE SURGERY
TUOLE	WECHIAU	WA	64.4	0	405	N	50.9	0	Y		
ANYORAYI	GURUNGU	WA	42.9	0	258	N	83.3	0	Y		
DARIGUOYIRI	WECHIAU	WA	32.5	0	974	N	48.3	0	Y		
PONYAHIRH	WECHIAU	WA	31.4	7.4	1,097	N	73.3	0	Y		
TENDOMO	POYENTA	WA	30.5	4.5	255	N	86.1	0	Y		
TINABELLE	FUNSI	WA	25	7.7		N	75	0	Y		
MOTORI	GURUNGU	WA	23.5	0	1,007	N	35.5	0	Y		
GURUNGU	GURUNGU	WA	22.5	0	2,009	N	65	0	Y		
DU	NABULO	SISSALA	22.2	0	506	N	80.6	0	Y		
KANTU	WECHIAU	WA	21.7	0	759	N	58.7	0	Y		
BULEZU	LOGGU	WA	20.8	0	120	N	77.1	0	Y		
BAWAJON	GURUNGU	WA	20.5	0	313	N	30.8	0	Y		
GRUNBELLE	HOLUMUN	WA	19.5	0	467	N	88.6	0	N		

TF and TI reported in children age <10 years
 TT reported in women age 15 years and above
 Health education for the past three months
 Clean children <10 years
 Y: Working safe water source

Mali Trachoma Control Program

Presented by Dr. Sidi Mohammed Coulibaly, Regional Ophthalmologist, for Dr. Doulaye Sacko, National Coordinator, Mali. The Carter Center assistance to Mali is funded by the Conrad N. Hilton Foundation.

Assessment

Blindness is a major public health problem in Mali. Blindness surveys conducted between 1980 and 1990 found the major causes of blindness to be cataract (45%), trachoma (25%), and glaucoma (9%). A nationwide trachoma prevalence survey (February 1996- May 1997) found the disease to be endemic in every region of Mali. The overall prevalence of TFTI in children ≤ 10 years of age was 35%, and 2.5% TT in females > 15 years of age (see map). An estimated 85,000 persons need trichiasis surgery.

Knowledge, Attitudes, and Practices (KAP) surveys conducted in 1996 and 2000 in Koulikoro Region revealed that persons in trachoma-endemic areas did not understand the causal association between active trachoma, trichiasis, and blindness. These studies also found that people suffering from trichiasis generally sought relief from discomfort by plucking their eyelashes using metal tweezers, or from traditional healers. Traditional treatments involve introducing organic matter or the healer's tongue into the eye. Questions about the use of topical tetracycline ointment found that the cost of a tube of ointment (approximately 30 cents) is reasonable, given the ointment's effectiveness, however, it was rarely available in the village and when used, it was often incorrectly applied.

Concerning the F&E components of the SAFE strategy, the KAP surveys found that mothers wash their children's faces until approximately the age of seven, after which the children become responsible for their own personal hygiene. Face washing frequency was found to decrease in cooler weather, more so than with decreasing water supply. Concerning environmental factors, most latrines were uncovered pits, and generally, domestic solid waste was found in and around living quarters.

Program Structure

The National Trachoma Control Program and the National Committee Against Trachoma have been active since 1996 and 1998, respectively. Members of the National Committee include representatives from the ministries of education, environment, rural development, and water. Other partners include NGOs such as Helen Keller Worldwide (HKW), The Carter Center, the Institut d'Ophtalmologie Tropicale de l'Afrique (IOTA), SightSavers International (SSI) and the World Health Organization (WHO). This committee works closely with UNICEF, the International Trachoma Initiative (ITI), and the Edna McConnell Clark Foundation.

Interventions

Based on data collected in the national trachoma prevalence survey, the Koulikoro Region was chosen as the initial area for intervening to control trachoma in Mali.

Face Washing and Environment

Based on the results of the 1996 KAP survey conducted in the Koulikoro Region, health education materials (flip chart and audiocassette) were developed for all aspects of SAFE. The second KAP survey, done with support from The Carter Center in 2000, focused on hygiene and health seeking behaviors, as well as environmental sanitation practices. This survey was followed by a national IEC planning workshop in December 2000 that produced a conceptual framework for new IEC material development. The national TCP also included a trachoma component in the national school health program developed with support from HKW, the Gates Foundation, and Save the Children.

Surgery

The number of trichiasis surgeries in Mali has increased from 1,500 operations in 1999 to 2,500 operations in 2000. The Malian Ministry of Health staff performed 2,000 of the operations, while IOTA performed the additional 500 surgeries. The team responsible for conducting the operations consisted of 16 specialized nurses and 4 regional ophthalmologists. An additional 22 trichiasis operators were trained in 2000, but are not yet participating in a functional capacity. There are now some 100 regular nurses with training in TT surgery who are expected to do far less eye surgery than the specialized nurses. Twenty additional surgical kits were purchased and distributed last year.

Antibiotics

The national TCP proposed an antibiotic distribution strategy for the Koulikoro Region. Based on epidemiological, political, cultural, and logistical factors 200,000 women and children were targeted to receive oral antibiotic treatment in order to reduce the prevalence of active trachoma in the area. From January 15 through February 28, 2001, approximately 200,000 doses of Zithromax and 25,000 tubes of tetracycline ointment were distributed in 401 villages in Koulikoro. Contributing to the success of the distribution campaign was the national program's ability to establish a community-based distribution system using the pre-existing network of ivermectin community-based distributors for onchocerciasis control.

The MOH procured 307,067 tubes of tetracycline ointment from a primary supplier in Mali for ongoing treatment of trachoma patients.

Monitoring and Evaluation

Essential to the monitoring of program activities was the finalization of an action plan including benchmarks. This occurred during a national TCP monitoring and evaluation workshop that took place in July 2000 with the support of The Carter Center. Comparison of this action plan with collected field data and activities accomplished will be the backbone of the monitoring and evaluation conceptual framework. Quarterly collection of the number of trichiasis operations performed; tubes of tetracycline purchased; and the number of village- and health center-level persons trained in the SAFE strategy will serve as monitoring indicators.

The national TCP's ability to promote healthy behavior and reduce the prevalence of trachoma in the population will be evaluated through annual surveys. The annual evaluation will measure trachoma prevalence, behavior change (through KAP surveys), and changes in the environment.

Operations Research

A study to investigate the cost-effectiveness of different azithromycin distribution strategies is underway with support from IOTA and the ITI. Adjusting for different levels of endemicity, the study aims to compare strategies using different target populations, those being:

- Mass distribution of entire population in a target area
- Targeted mass distribution for women and children only
- Targeting all households with a person diagnosed with TF/TI
- Targeted diagnosed TF/TI patients only

Program Constraints

- Poor political support for the TCP
- Lack of qualified personnel to execute the SAFE strategy effectively
- Financial and logistic limitations preventing optimal use of currently available staff
- Inhibitory effect of integration policy on so-called vertical programs

Goals for 2001

Face Washing and Environmental Change

- Conduct workshop for consensus on environmental policy and desired environmental hygiene behaviors to develop messages for advocacy and IEC campaign.
- Finalize and implement IEC campaign.
- Involve Peace Corps volunteers in trachoma control efforts.

Antibiotics

- Distribute Zithromax a second time to initial 401 villages.
- Complete study to determine most cost-effective strategy for targeting distribution of azithromycin for given prevalence levels, and modify distribution strategy accordingly.
- Expand azithromycin distribution in collaboration with TCP partners.
- Make eye ointment more accessible, and increase its proper use through IEC.

Surgery

- Perform approximately 6,000 eyelid surgeries through four approaches (district level health centers, community health centers, village level mobile clinic with one operator, and village level mobile clinic with multiple operators). This objective is to be accomplished by increased utilization of the existing 16 eye care nurses. The program plans to greatly increase the number of surgeries done in 2003 and 2004.
- Conduct non-acceptance study.
- Promote surgery through IEC.

Monitoring and Evaluation

Put into action the conceptual design developed in 2000.

Discussion

The Malian presentation sparked a very lively debate about the merits and ethics of various mass azithromycin treatment strategies, research issues and questions about how to approach

environmental hygiene improvement. It was very significant to note that members of all of the national trachoma control programs entered into the discussion of these issues in the context of how they will achieve the goals of the GET2020 Alliance. It was recognized that the Malian team has a distinct advantage in addressing complex programmatic questions because they not only have well trained ophthalmologists, but IOTA is located in Bamako, and the partner NGOs have a keen interest in answering these questions. This ongoing research will benefit all of the TCPs, as we all learn from each other through parallel experiments in the field as the programs develop. The Malian team promised to return to the next program review with more information about their experiences in trachoma control.

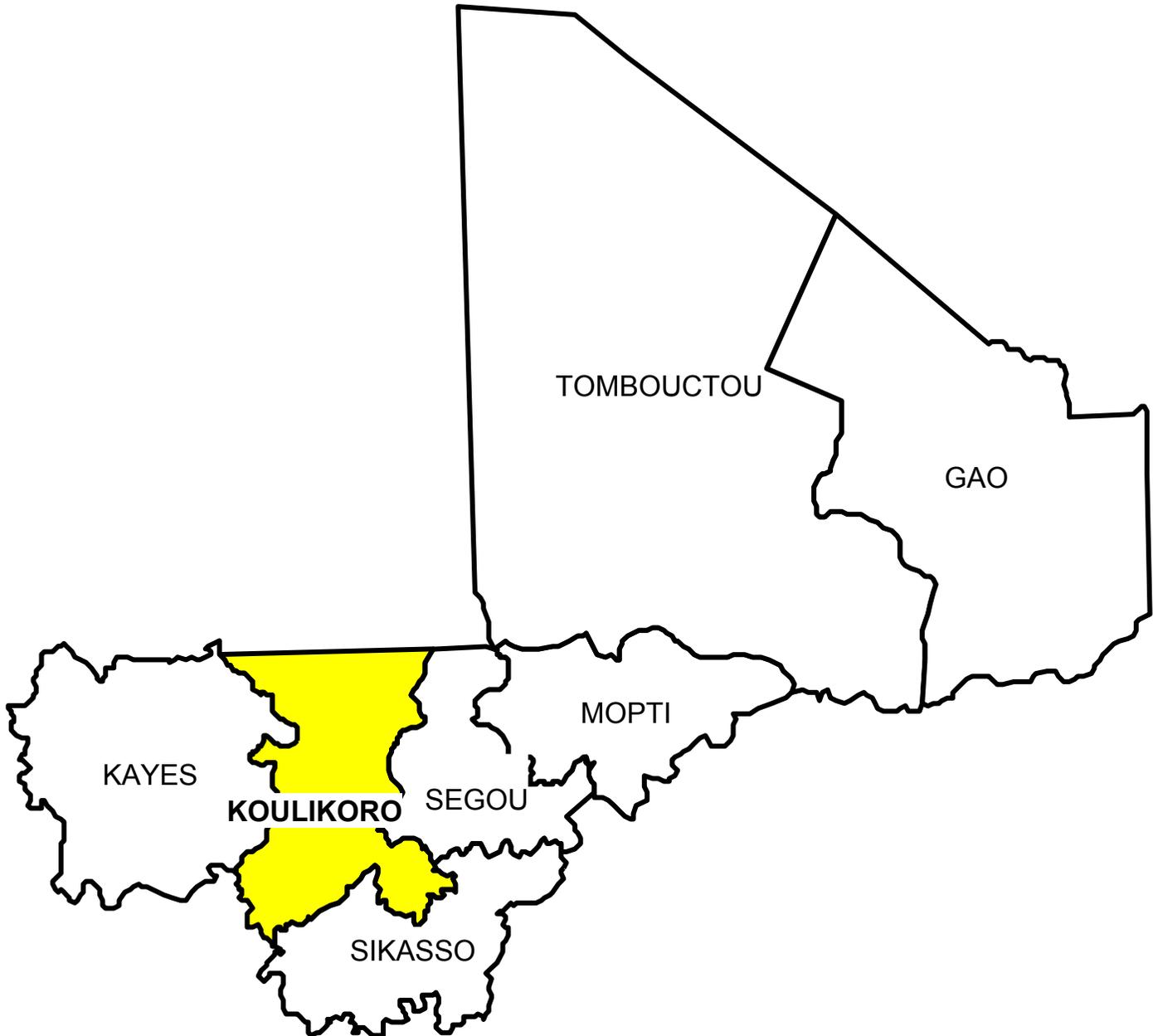
Important points of discussion were:

- The Malian team explained the rationale for choosing an azithromycin treatment campaign which excluded men. Prevalence surveys suggest that infection rates among men are low, and they do not have the risk factors of child care givers. It was further hypothesized from an epidemiological point of view that treatment of women and children will reduce the prevalence of *Chlamydia trachomatis* in the environment, and that this will protect men indirectly by reducing their exposure to the causative agent. Nonetheless, any man who shows signs of active trachoma, or who presents himself for treatment, will be treated. Other program coordinators argued that men should be treated for ethical reasons; that anyone at risk for disease should be included in the mass treatment campaign. Still others argued that if this is an elimination campaign, the program should treat all potential carriers of *C. trachomatis*.
- Adverse events after mass azithromycin treatment campaigns are not being monitored due to lack of logistical support. The representative of Pfizer Inc said that safety is Pfizer's primary concern, and that the ACT Trials did a very good job of documenting how safe Zithromax is in mass treatment campaigns. Nonetheless, each national program is responsible for the safety of their citizens, and should monitor the safety of their treatment campaign.

Recommendations

- Identify when it would be most appropriate to conduct annual evaluations (prevalence and KAP study).
- In addition to the proposed annual evaluation of "E" component indicators, identification of an indicator(s) used for monthly or quarterly monitoring of the 'E' component is necessary, otherwise it will be neglected relative to the "S" and "A" activities.
- Determine and document the basis for excluding men from antibiotic distribution campaigns.
- Monitor and document adverse reactions after treatment with azithromycin.
- Develop health education messages based on 2000 KAP findings.
- Conduct operations research examining surveillance systems, indicators, and seasonality.

Mali Trachoma Control Program Areas of Program Interventions 2000-2001



Shaded areas indicate regions of intervention

**Summary of Trachoma Prevalence Data
Mali Trachoma Control Program**

Regions	Prevalence of TF/TFI (children 0 -10 years)	Prevalence of TT (women > 15 years)	Estimated number of cases of trichiasis (*)
Kayes	42.50%	3.30%	17,500
Koulikoro	33.50%	3.90%	23,000
Sikasso	31.70%	2.90%	19,000
Ségou	23.10%	1.80%	12,000
Mopti	44.10%	1.70%	10,500
Tombouctou	31.70%	1.20%	2,500
Gao-Kidal	46.20%	0.70%	1,200
Total	34.90%	2.50%	85,700

Source: preliminary results of the national trachoma survey, February 1996-May 1997, National Blindness Prevention Program and IOTA Presented February 26, 1998

* Based on the estimate that prevalence of TT men is 50% of that in women.

Yemen Trachoma Control Program

This brief report was presented by Dr. Abdul-Hakeem Al Kohlani, General Director, National Center for Epidemiology and Disease Surveillance, Ministry of Health, Yemen. The Carter Center assistance to Yemen is funded by the Conrad N. Hilton Foundation.

Assessment

The prevalence of blindness in Yemen is estimated to be 1.5-2.0%, based on the results of six WHO consultancies conducted between 1972 and 1997. Trachoma is known to be a major cause of blindness, but a comprehensive national survey has not yet been conducted. In a partial survey conducted in 1996, trachoma ranked #3 (15%) as a cause of blindness, after cataract (19%) and glaucoma (17%). Another limited study in 1999 found that 12.2% of children less than five years old had TF/TI.

Program Structure

The Yemeni Trachoma Control Program began in 1999 with the support of The Carter Center and the Conrad N. Hilton Foundation. The national coordinator is the general director of the National Blindness Control Program (NBCP), who is assisted by the general director, National Center for Epidemiology and Disease Surveillance.

The program constraints include the fact that blindness is not recognized as a health priority in Yemen, and the NBCP has no budget. In addition, health education coverage is generally low.

In November 2000, the deputy coordinator of the Sudan Trachoma Control Program helped develop the plan for an integrated survey with the support of The Carter Center and WHO that was approved by the MOH. The survey of the first four governorates has started, and will be completed in March 2001. After the data are analyzed, a workshop will be held later in 2001 to present the findings and decide on strategies for controlling trachoma in Yemen.

Nigeria Trachoma Control Program

Presented by Dr. Emmanuel Miri, Country Representative, The Carter Center, Nigeria. The Carter Center assistance to Nigeria for trachoma is supported by the Conrad N. Hilton Foundation.

Assessment

A national trachoma prevalence survey has not yet been done in Nigeria. So far, the only known state-wide trachoma prevalence survey was conducted in 2000 by Helen Keller International and Borno state authorities, with the support of Dr. Abdou Amza, national coordinator from Niger. The Carter Center assisted by doing the data entry and analysis. This survey was restricted to Borno State only.

Program Structure

Nigeria does not yet have a national trachoma control program. At the moment trachoma control is under the auspices of the National Blindness Prevention Committee. The National Coordinator of the National Blindness Prevention Committee is the coordinator for trachoma control programs.

International NGOs interested in trachoma control in Nigeria are Helen Keller International, Christoffel Blindenmission (CBM), SightSavers International (SSI) and now The Carter Center (Global 2000). CBM has worked for several years in the northeastern part of the country but their emphasis has been mainly in surgery, while SSI support to the National Eye Center in Kaduna has been in training ophthalmic surgeons in triachiasis repairs, health education materials and in support of the Blindness Prevention Committee whose meetings they have always hosted.

Interventions

The Carter Center plans to commence assisting state ministries of health in trachoma control activities in Plateau and Nasarawa States where Global 2000 is already assisting well-established onchocerciasis, lymphatic filariasis and schistosomiasis programs. In December 2000, Dr. James Zingeser visited Nigeria. He met with health and research officials who have in one way or the other been involved in trachoma control, including commissioners for health and chairpersons of Blindness Prevention Committees in Plateau and Nasarawa States, and sought their cooperation for the new Carter Center-assisted trachoma control programs in their domains. He also visited the SightSavers International and National Chairperson of Blindness Prevention Committee in Kaduna for similar consultations.

Discussion

It was noted that trachoma data from the monthly surveillance form do not distinguish if the data collected refer to active trachoma or trichiasis. This is a common problem found in large national surveillance systems. Because of the lack of specificity, the data are difficult to interpret.

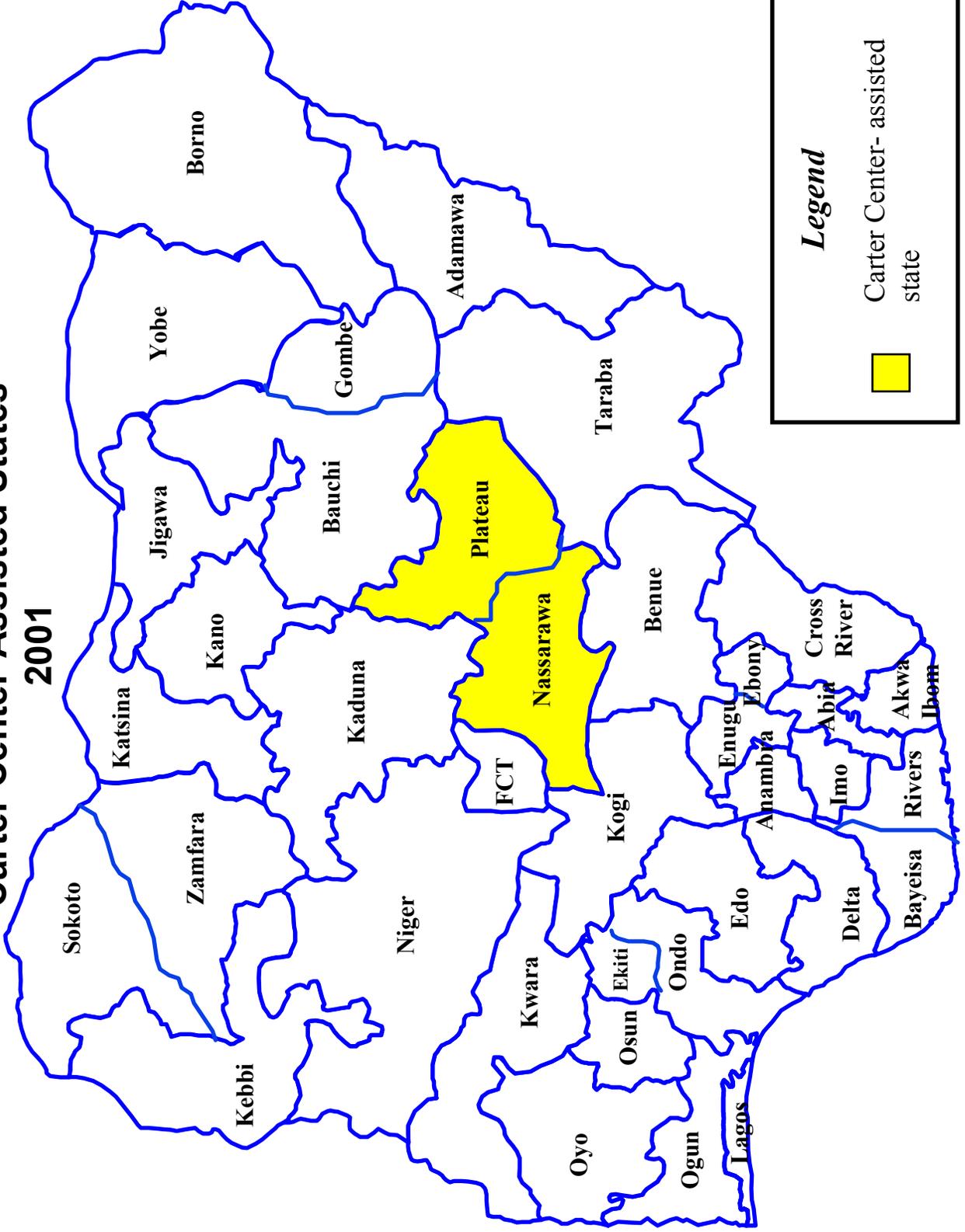
Recommendations

The Carter Center assisted trachoma control program should start by assisting in

- establishing a national trachoma task force, and
- conducting prevalence surveys in Plateau and Nasarawa States.

Nigeria Trachoma Control Program Carter Center-Assisted States

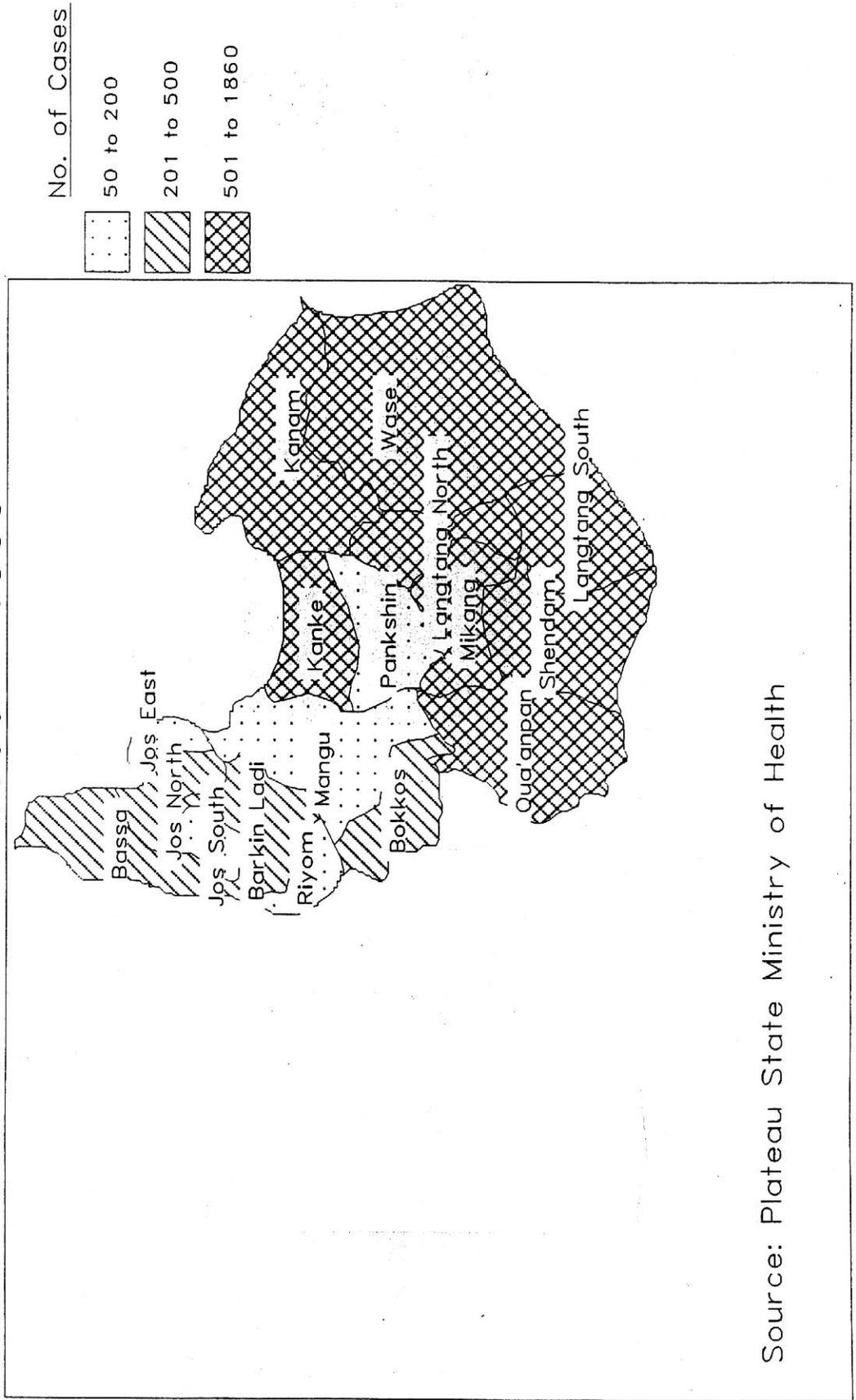
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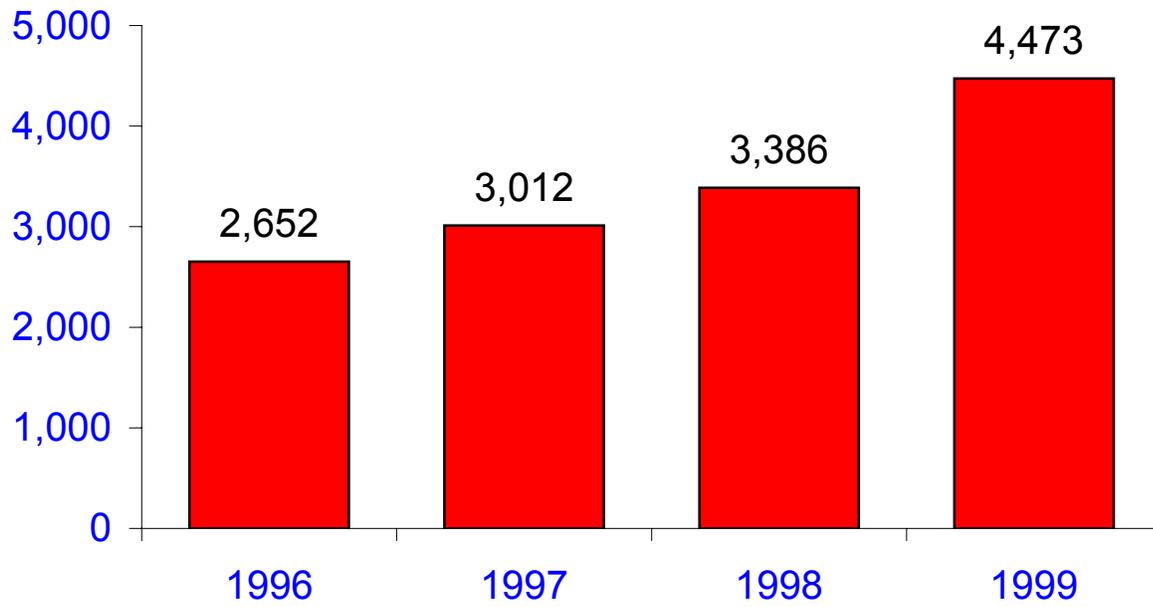
■ Carter Center-assisted state

Map of Plateau State Showing The Distribution of
13, 523 Cases of Trachoma Among all the LGAs
1996 - 1999

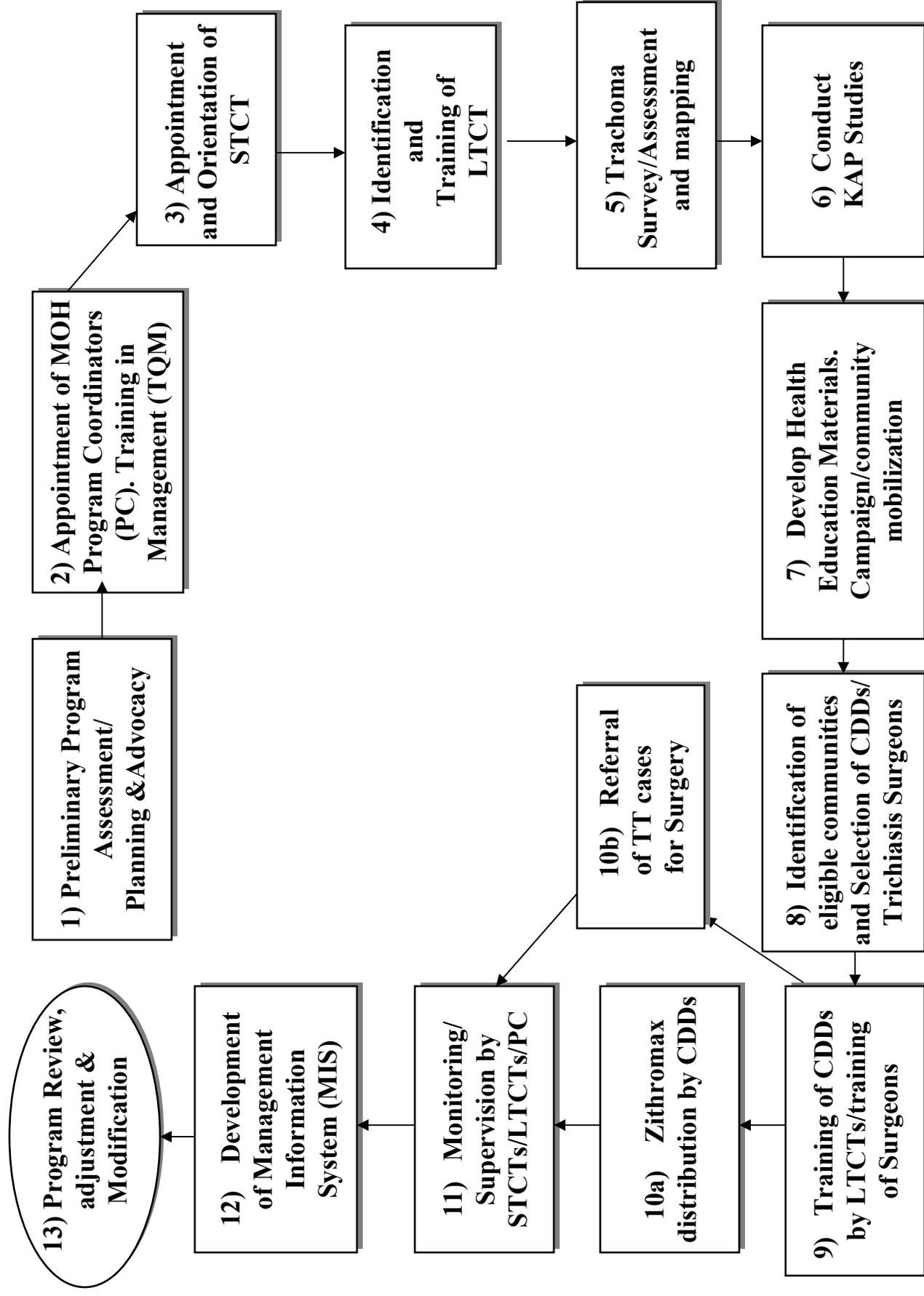


Source: Plateau State Ministry of Health

Number of Reported Cases of Trachoma in Plateau State, 1996 - 1999



KEY STATE LEVEL PROGRAM STEPS



Health Education

Presented by Ms Misrak Makonnen, Trachoma Program Officer, and Dr. Donald Hopkins, Associate Executive Director, The Carter Center

Introduction

All trachoma control programs face daunting challenges in developing health education campaigns. Blinding trachoma results from a complex mix of social, environmental and medical circumstances. The disease and its control are complicated, but TCP health education messages should be simple. The SAFE strategy can be used as a framework to provide basic messages to target audiences, using appropriate channels of communication. In addition to these key messages, background information on trachoma and cultural beliefs related to trachoma should be addressed. Research is important in developing, pre-testing and evaluating strategies and tools. Also, as messages are disseminated through various channels, it is important to deliver on the promises conveyed in them (e.g., making surgical or medical treatment available).

Most national programs represented at this meeting had already initiated health education activities for their programs by conducting KAP studies and developing health messages and targeting audiences. TCPs in Ghana and Ethiopia are currently developing and pre-testing health education materials and TCPs in Sudan and Niger are already using finished materials in the field. Other participants in the program review had rich experiences in developing health education campaigns in Africa and Asia, both in ministries of health and in NGOs. The moderator of the session therefore encouraged all participants to join in the discussion so that everyone could benefit from a variety of experiences. The discussion was framed by questions about message development and effective channels to use in delivering the messages.

What are the key messages that communities need to know for trachoma control?

General knowledge of active trachoma and trichiasis

KAP studies have shown that most communities do not have a basic understanding of active trachoma and trichiasis. Most importantly, the relationship of these two stages and the gradual progression to blindness is not understood. HKW indicated that, in their experience, no endemic communities recognize the connection between active trachoma and eventual blindness. Cultural perceptions and beliefs on the cause of disease may be barriers to adopting preventive behaviors, and thus need to be addressed through messages addressing general knowledge of active trachoma and trichiasis.

Face washing

Messages on face washing need to reinforce knowledge and beliefs of the benefits of improved personal hygiene to the individual and their children. If there are any beliefs and attitudes that contravene that, those need to be countered.

Reduce breeding of Musca sorbens

Recent research in the Gambia suggests that the filth fly, *Musca sorbens*, is important in the transmission of trachoma, and that when this fly population is reduced, the prevalence of active trachoma is reduced. Therefore, control of these flies is an urgent concern of trachoma control

programs. *M. sorbens* breeds primarily in human feces, and although there are interesting strategies for catching flies, preventing them from breeding is a much more efficient method. Even though animal feces leave communities untidy and unpleasant, the primary target needs to be proper disposal of human feces. Adopting a clean environment by ridding the community of animal feces and trash could be used to mobilize communities, but human feces is the most important focus for trachoma control, and the use of latrines is key to ridding the environment of human feces. Programs should therefore advocate for latrines and encourage their use.

Advocacy for water supply

Advocacy for water supply is crucial. One of the most difficult and expensive interventions for trachoma control is providing an adequate water supply. This task is very challenging as it involves the collaboration between ministries of health and ministries of water, two entities that are not necessarily accustomed to working together. However, it is very clear that improving the quantity and quality of water accessible communities has a powerful positive impact by reducing trachoma and other diseases. In addition, it is important to recognize the impact water supply has in terms of the amount of time women and girls spend gathering water for the household regardless of water quality. Therefore, efforts should be made by each national program to use data collected on trachoma as an advocacy tool to help convince partner ministries and NGOs of this urgent necessity.

Acceptance of antibiotic treatment

In areas where azithromycin is made available, messages should focus on increasing communities' understanding of the benefits of taking azithromycin, and countering any myths or negative beliefs people have which would inhibit them from complying with treatment. When the recommended treatment of patients is ocular tetracycline ointment, messages need to convey the importance of compliance with the treatment regimen. When messages about antibiotic treatment are communicated, the program needs to assure the availability of antibiotics.

Acceptance of surgery

Where trichiasis surgery is available, health education campaigns are key to encouraging patients to be treated. Community mobilization campaigns are also very useful in encouraging persons with trichiasis to present themselves for surgery. When promoting trichiasis surgery, it is important for the messages to clearly state where to get this service and tell of any associated costs. Where and when promoted, the service must be available.

Community knowledge, attitudes and practices

Cultural and social barriers to adopting preventive behaviors can be identified through qualitative and/or quantitative KAP studies. Messages addressing social and cultural barriers to trachoma control should be incorporated in the health education initiative. KAP studies should also be used as a program evaluation tool to assess the impact of health education activities by measuring changes in beliefs, perceptions and behavior over time. This method will enable programs to measure impact indicators, rather than only focusing on process indicators, such as the numbers or types of channels used for communicating messages.

Reporting of cases

Community mobilization and health education of individuals should emphasize personal responsibility and the importance of reporting active trachoma or trichiasis patients for treatment. To accomplish this, national programs need to establish simple and clear case definition for active trachoma and trichiasis. Messages given to communities should outline these case definitions and encourage individuals to report. Once reported, the programs are obliged to provide treatment for trachoma patients.

Which channels should be used to communicate messages to the communities?

A variety of channels are used in health education, including flip charts, T-shirts, durbars (traditional Ghanaian gatherings), posters, discussions with local chiefs or other political/traditional leaders, market strategies (use of megaphones, banners and giant flipcharts in markets), theater, radio, video or slide shows. However, it is very important to first identify which channels are appropriate by understanding the community's background (e.g., literacy rate) through research (e.g., KAP studies). Through research, the most appropriate and effective channels may be identified to convey messages to different target audiences. Optimal communication may be reached if the health education strategy is well developed and implemented.

Discussion

Additional comments by Ms Kirsten Laursen, HKW:

- Health education needs to be interesting and needs to target carefully chosen entry points into the community (e.g., in communities where children with dirty faces cannot talk to village elders, the TCP may target that social custom to change parental behavior).
- Building on what is already in the culture is more effective than introducing a new culture.
- KAP survey results in most countries in which HKW works have shown that people are not yet aware that there is a connection between active trachoma and trichiasis. The challenge is therefore to make that connection in the minds of the target audience. This is very similar to the challenge faced by the Guinea Worm Eradication Program –helping people understand that drinking dirty water this year can cause a worm to emerge from your leg next year. The transmission of Guinea worm is pretty difficult to understand, yet the GWEP has succeeded in linking that behavior (drinking dirty water) with the disease, and it has succeeded in changing behavior.

Other important points of discussion were:

- Health education messages should be simple, local and community-owned.
- Community confidence and participation in health education are very key aspects of successful health education programs. Taking the community into confidence can help the TCP learn how to change behavior.
- The number of messages being delivered to a community at any time should be small (i.e., choose 2-3 essential messages and hammer away at them).
- Women are an especially important target group for trachoma health education.
- Communities' perceptions, beliefs, and attitudes need to be assessed before health education activities are implemented, in order to determine the appropriateness of the messages. All health education messages should be pre-tested.

- Programs should share experiences in health education for trachoma, especially school health programs. HKW has found that even in communities in which only 30% of children attend school, school children are an important channel.
- Messages on reporting of active trachoma and trichiasis cases should focus on provision of services, not surveillance (i.e., the purpose is to encourage patients to receive treatment, not only to be reported).
- Clearly, we do not know as much as we would *like* to know about trachoma and its control, but we know enough to *act now* to make a significant impact on blinding trachoma.

Recommendations

- National programs need to simplify health education messages and include all key health messages in their campaigns.
- National programs need to identify ways of making health education messages for trachoma interesting, involving and entertaining to the audience.
- National programs need to come to a consensus on which behaviors to promote for the E component of the SAFE strategy. These messages may vary depending on the community's cultural beliefs and customs.
- National programs need to ensure that messages given are appropriate to the target community. Programs need to conduct preliminary research such as KAP studies and pre-test their messages with the target populations, then evaluate the impact on the population over time.
- Because increased knowledge does not necessarily result in behavioral change, programs need to identify cultural and social barriers to change and address them in health education campaigns.

Surveillance

Presented by Dr. James Zingeser, trachoma program technical director, The Carter Center.

Introduction

In 1988, Drs. Steven Thacker and Ruth Berkelman of the CDC defined surveillance in the following concise statement:

Public health surveillance is the ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation, and evaluation of public health practice.

Surveillance, in this discussion, is not limited to monthly disease incidence reports. The CDC model of surveillance includes all sources of reliable outcome-specific data which can be used systematically to *plan, implement and evaluate* a program. For trachoma control programs, these data sources include annual evaluations, special investigations and long term studies, in addition to routine trachoma disease data. The CDC model also makes it clear that public health surveillance is done for *decision-making*, i.e., it is data for *action*. Surveillance data analysis gives managers the information they need to make informed and intelligent decisions on how to run health programs. The response to surveillance data may be rapid (e.g., in case of an explosive epidemic), or long term (e.g., studying seasonal increases in TF/TI cases). Ongoing routine surveillance data are invaluable for helping health care professionals to understand trachoma better, as the environment and population change over time.

When surveillance information is used to help others understand trachoma control better, it becomes an invaluable tool for advocacy. Medical directors, governmental ministers and even heads of state are impressed by well organized and clearly presented epidemiological information. A powerful form of public health advocacy begins with data which documents high rates of trachoma and blindness in a population. Surveillance will also be useful in documenting and explaining the success of (or challenges to) the national program by tracking decreases in blinding trachoma. Compelling advocacy of this type requires a surveillance system with a reputation for integrity, accuracy and reliability.

Surveillance systems should be accurate and reliable, but they do not need to be extremely complicated to be useful. In fact, striving to be too precise or detailed may handicap a surveillance system by placing unrealistic and frustrating demands on data collectors and analysts. Experience has also shown that surveillance systems work much better when they are supported by good, routine supervision and feedback. The Guinea Worm Eradication Program (GWEP) has received a great deal of favorable attention for showing how a simple village-based surveillance system can work. For example, the Guinea worm surveillance system in Niger works very well because it is simple and has institutionalized routine supervision and feedback as part of the system. Niger's GWEP collects data on four basic disease incidence indicators each month. In addition, seven other indicators are measured on a quarterly basis which may be of interest in managing trachoma control activities:

1. Villages with trained village-based health workers
2. Villages with volunteers trained in case containment

3. Villages having health education sessions
4. Villages with complete filter coverage
5. Villages having regular vector control
6. Villages with safe water supply
7. Villages with integrated disease control activities

Every month, trained supervisors visit villages to collect data and work with Guinea worm volunteers. A good monthly visit includes data verification, observation of health education sessions, filter distribution, and feedback. This system is deceptively simple, because in reality, it takes a great deal of time and care to maintain reliable data collection. This has been recognized at all levels of the health system, and the GWEP has received praise from regional health directors, secretary generals and several ministers of health for having Niger's "only program with reliable data every month." Surveillance information has also proved to be very useful in advocating for funding in Niger, because donors are impressed by the carefully measured outcomes of the program. For example, when the Ministry of Water was asked by the Japanese Government to propose areas for drilling new borehole wells, they used GWEP data to identify villages in need of safe water. Surveillance data not only convinced the Japanese to fund the project, but provided reliable documentation of the impact of the project by showing the decrease in Guinea worm cases after safe water was provided.

Can trachoma control programs achieve similar success? Yes, and our challenge now is to identify simple, reliable indicators for all aspects of the SAFE strategy and begin using them on a large enough scale that they can be evaluated and improved upon with time. Diagnosis of active trachoma (TF/TI) has posed a challenge to several programs. Concerned with the difficulties of training village volunteers to flip eyelids to diagnose TF/TI, and the possibility of accidental transmission of trachoma by non-medical workers, the trachoma control programs of Mali and Niger are considering surrogate indicators for active trachoma which do not rely on direct contact with infected eyes. Some surrogate indicators being considered are:

- Conjunctivitis
- Scleritis (red eye)
- Swelling of eyelids
- Tubes of tetracycline dispensed
- Ocular and/or nasal discharge

In a recent study in Niger, only ocular and/or nasal discharge correlated with TF/TI diagnosed by an ophthalmologist. More study and experience are needed to clarify which indicators work best.

Possible surveillance models being considered by programs include:

- Village-based
- Facility-based
- Sentinel surveillance (sentinel villages or health facilities)
- Semiannual or annual prevalence surveys

Because we believe that most trachoma patients do not go to health facilities for treatment, facility-based surveillance may underestimate the prevalence of the disease. The observation that trachoma is not evenly distributed geographically suggests that the choice of representative sentinel sites will be difficult. This quick analysis suggests that we may need to develop village-based surveillance or periodic prevalence surveys. Either of these models can be augmented by complementary data collected by sentinel surveillance in carefully chosen sites. The choice of

surveillance model for each national program will be based on the resources and data needs of that program. As Dr. Peter Kilima said recently in Addis Ababa, “implementation brings about the best opportunity for learning.” We look forward to learning from the experiences of national TCPs at the next program review.

Discussion

Dr. Hopkins summarized the challenge of trachoma surveillance as “**the need to get useful information early.**” He suggested that we may need to back off on our impulse to be precise scientifically and look at broader indicators. This may mean having non-medical personnel report cases of conjunctivitis (broadly defined) monthly, perhaps with complementary data collected by trained personnel using a more specific case definitions (i.e., WHO grading scale) in semiannual or annual evaluations.

Some participants expressed concern that indicators such as *villages having health education sessions* would yield insufficient information for program decision-making because the data tell us nothing about quality. In response, Dr. Zingesser noted that this type of management indicator becomes very useful when it is linked to good supervision and feedback. Evaluation of the quality of village-based activities should be done in the village as part of face-to-face supervision (sending detailed data all the way to the central-level for decision-making is too slow and inefficient). In the GWEP, trained supervisors observe health education sessions and question villagers to evaluate the quality of health education activities in the village. Supervisors are then able to take steps to correct problems at the source, and to give positive reinforcement for work well done. In addition, requiring collection and reporting of data on health education sessions keeps supervisors focused on health education, and gives good coverage data for the regional and national program managers.

Seasonality of active trachoma was identified by several participants as potentially important information for program planning, particularly for timing mass antibiotic treatment and health education campaigns. Problems were identified in the methodology for determining seasonality, such as cost and lack of personnel. It was therefore suggested that programs select a few areas to look at seasonality as a one-time study, done as quickly and inexpensively as possible.

Niger – John Neatherlin reported on research done in Niger with the regional ophthalmologist of Zinder. They found that health care workers who had been trained in trachoma control but did not regularly diagnose or treat trachoma had lost these skills. It is important for health personnel at all levels of the program to use their knowledge and skills frequently and receive regular training updates.

Mali – The MOH is implementing a 15-disease surveillance system which includes trachoma reporting. In addition to these data, Mali’s Trachoma Control Program will do an annual evaluation which will include a survey for TF/TI and TT.

Ghana – Dr. Hagan reported that village volunteers in the Guinea worm eradication program have been trained to flip eyelids to diagnose trachoma. However, this was a special study done in one sub-district only. Ghana’s Eye Care Unit has a monthly reporting form for health centers, and as of 2001, medical staff will report TT separate from TF/TI.

Recommendations

- Mali's Trachoma Control Program should conduct research on seasonality and surrogate measures for active trachoma to be reported at the next program review.
- Ghana's Trachoma Control Program should use health center data to determine seasonal patterns of trachoma in northern Ghana, and evaluate the effectiveness and practicality of training Guinea worm eradication program volunteers to report monthly trachoma data on a large scale.
- The Trachoma Control Program in the Amhara Region of Ethiopia should evaluate the possibility of using students from local schools of public health to do research into surveillance.
- All programs should exploit opportunities to study surveillance methods for TT, TF/TI, and personal and environmental hygiene to be reported at the 2002 program review.

Summary Tables
Trachoma Control Program Status

**Trachoma Control Program Review 2001
Prevalence Data of Trachoma**

Country	Total Population	Population of Area of Intervention	National Prevalence		District Prevalence		Notes
			TF/TFI	TT	TF/TFI	TT	
Mali	10,000,000		35% (1,350,000)	2.50% (85,700)	-	-	TF/TFI for < 10yrs TT for women >15yrs
Ethiopia	61,000,000	1,009,327	-	-	-	-	Prevalence Data collected in four districts and analysis is underway TRA in one district
Ghana	18,000,000	1,089,900	-	-	Sissala - 11.5%	1.6%	TRA in two regions
					Wa - 16.1%	2.6%	
					Savelugu - 9.7%	4.5%	
					Tamale - 4.7%	4.9%	
					Tolon - 12.4%	8.7%	
Sudan	30,000,000		-	-	Malakal - 45%	10%	TF/TFI for 1-10yrs; TT for women > 30yrs National prevalence is underway
					Halifa - 47%	2.40%	
Niger	10,000,000		38% (1,321,468)	1.40% (68,299)	-	-	TT for women >=15yrs
Nigeria			-	-	-	-	Study planned in 2002
Yemen			-	-	-	-	National Prevalence Data collection and analysis is underway

- No Data

Summary of Trachoma Control Interventions - SAFE strategy

F & E	Ghana	Mali	Niger	Sudan (GOS)	Sudan (OLS)	Ethiopia	Nigeria	Yemen
Health Education	N		Y	Y	N	N	N	N
Availability of latrines			Few	Y	N	N		
Water Provision	N		Few	Y	N	N	N	N

Antibiotics

Azithromycin								
Treatment (2000)	0	200,000	0	12,734	-	-	-	-
Target Population	-	800,000[1]	-	16,326	-	-	-	-
Percentage Coverage	-	-	-	78	-	-	-	-

Tetracycline Ointment

Treatment (2000)	Y	307,067	Y					
Target Population	-	-	-					
Percentage Coverage	-	-	-					

Surgery

Surgeries in 2000[2]	150	2,500	4,172					
Target Population		85,700	68,299					
Percentage Coverage		-	-					

¹ for Koulikoro Region (year 2000)
550,000 <10% in Koulikoro Region

² Program Estimate

APPENDIX I: The Disease

Trachoma is the world's leading cause of preventable blindness. The World Health Organization estimates that 6 million people are blind due to trachoma, most of whom are women, and another 540 million – almost 10 percent of the world's population – are at risk of blindness or severe visual impairment. Trachoma is caused by repeated infections of the eyelids by the bacterium *Chlamydia trachomatis*, and can be prevented through simple hygiene. Most cases occur in rural, arid areas of developing countries, such as the Sahelian region of Africa, where access to clean water is limited.

The early, acute stage of the disease is called *inflammatory trachoma*, and is most common among children. Women are repeatedly exposed to inflammatory trachoma in their role as primary caretakers of children. It is therefore not surprising to find that women develop chronic trachoma two to three times more often than men. Trachoma is transmitted through discharge from the eyes and nose of infected individuals which may be passed to others on hands, towels and clothing, or by flies which are attracted to ocular and nasal discharges. As a trachoma patient's eyelids are repeatedly infected with chlamydia, subsequent scarring of the conjunctiva deforms the eyelid margin, resulting in eyelashes turning inward and rubbing against the cornea. This condition, called *trichiasis*, causes pain and scarring of the cornea, which eventually leads to blindness.

Recent developments have brought new hope that we can effectively control this disease. In 1987, eye care experts and the World Health Organization (WHO) developed a simplified trachoma grading scale, which facilitated and standardized the diagnosis and identification of all stages of trachoma. In 1996, WHO established the GET2020 Alliance, which brings international non-governmental development organizations, donors and researchers together to work collectively in controlling trachoma. In addition, with support from the Edna McConnell Clark Foundation (EMCF) and WHO, the *SAFE strategy* was created to control trachoma through community-based interventions.

Another important development was the finding that the oral antibiotic *azithromycin*, taken once or twice annually, is as effective in preventing chronic trachoma as six weeks of daily treatment with tetracycline eye ointment, the previously recommended therapy. To assist ministries of health in implementing the "A" component of the SAFE strategy, the International Trachoma Initiative (ITI), formed through the collaboration of EMCF and Pfizer Inc, is managing a significant donation of Zithromax, Pfizer's brand of azithromycin, for treatment of trachoma in selected developing countries.

APPENDIX II: Program Review Agenda

Thursday, March 1, 2001

8:00 - 8:30 Welcome and introductory remarks Dr. Donald Hopkins
Dr. James Zingeser

Sudan

8:30 - 9:15 Sudan Presentation Prof. M. Homeida
Ms. Kelly Callahan
9:15 - 10:15 Discussion/recommendations Dr. James Zingeser
10:15 - 10:30 *Coffee Break/Ivan Allen Foyer*

Ethiopia

10:30 - 11:00 Ethiopia Presentation Dr. Tewodros Assefa
11:00 - 12:00 Discussion/recommendations Dr. James Zingeser
12:00 - 1:00 *Lunch in Ivan Allen Foyer (Group photo)*

Niger

1:00 - 1:30 Niger presentation Mr. Salissou Kane
1:30 - 2:30 Discussion/recommendations Dr. James Zingeser
2:30 - 3:00 *Coffee Break/Ivan Allen Foyer*

Health Education

3:00 - 5:00 Discussion: Health Education Ms. Misrak Makonnen

Friday, March 2, 2001

Ghana

8:00 - 8:30 Ghana presentation Dr. Maria Hagan
8:30 - 9:45 Discussion/recommendations Dr. James Zingeser

Mali

9:45 - 10:15 Mali presentation Dr. Sidi M. Coulibaly
10:15 - 10:45 *Coffee Break/Ivan Allen Foyer*
10:45 - 12:00 Discussion/recommendations Dr. James Zingeser
12:00 - 1:00 *Lunch in Ivan Allen Foyer*

Yemen

1:00 - 1:15 Yemen presentation Dr. Abdul Al-Kohlani
1:15 - 1:45 Discussions/recommendations Dr. James Zingeser

Nigeria

1:45 - 2:00 Nigeria presentation Dr. Emmanuel Miri
2:00 - 2:30 Discussions/recommendations Dr. James Zingeser

Other Items

2:30 - 4:00 Discussion: Surveillance Dr. James Zingeser
4:00 - 4:15 *Coffee Break/Ivan Allen Foyer*
4:15 - 5:45 General conclusions/reflections Dr. Donald Hopkins

APPENDIX III: List of Participants

Ethiopia

Dr. Tewodros Assefa
Mr. Teshome Gebre (Carter Center)

Ghana

Dr. Maria Hagan
Dr. Daniel Yayemain
Mr. Eric Dumakor (Carter Center)

Mali

Dr. Sidi Mohammed Coulibaly
Dr. Mamadou Bathily
Mr. Brad Barker (Carter Center)

Niger

Mr. Salissou Kane (Carter Center)

Nigeria

Dr. Emmanuel Miri (Carter Center)

Sudan

Prof. Mamoun Homeida
Mr. Elvin Hilyer (Carter Center)
Ms. Kelly Callahan (Carter Center)
Dr. Jeremiah Ngondi (Carter Center)

Yemen

Dr. Abdul Hakeem Al Kohlani

The Carter Center

Dr. Donald Hopkins
Dr. James Zingeser
Ms. Misrak Makonnen
Dr. Rachel S. Barwick
Ms. Emily Howard
Ms. Dana Latimer
Ms. Wanjira Mathai
Mr. John Neatherlin
Mrs. Megan Reif
Dr. Frank Richards, Jr.
Mr. Richard Robinson
Ms. Lisa Rotondo
Ms. Shandal Sullivan
Mr. Craig Withers

Conrad N. Hilton Foundation

Ms. Dyanne Hayes

Lions Clubs International Foundation

Mr. Peter Lynch

U. S Centers for Disease Control and Prevention

Dr. Stephen Blount
Mr. Ross Cox

Emory University

Dr. Deborah McFarland
Dr. Josef Amann

Helen Keller Worldwide

Ms. Lisa Tapert
Ms. Kirsten Laursen

International Trachoma Initiative

Dr. Peter Kilima
Dr. Nguyen Phuong Mai
Mr. Christian Stengel
Ms. Shoshanah Falek

Michigan State University

Dr. Charles Mackenzie

Pfizer, Inc.

Dr. George Flouty

World Vision International

Dr. Joseph Riverson

ACKNOWLEDGEMENTS

The individuals below assisted with the preparation of these proceedings. Their contribution and support are gratefully acknowledged.

Ms. Dana Latimer	The Carter Center
Ms. Misrak Makonnen	The Carter Center
Mr. John Neatherlin	The Carter Center