

SUMMARY PROCEEDINGS



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

**Funded by:
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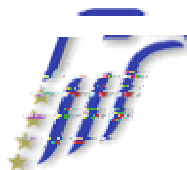


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ACRONYMS

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

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 in the north of Sudan, and its presence has been confirmed through prevalence surveys. However, recent surveys conducted under the OLS/S 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.

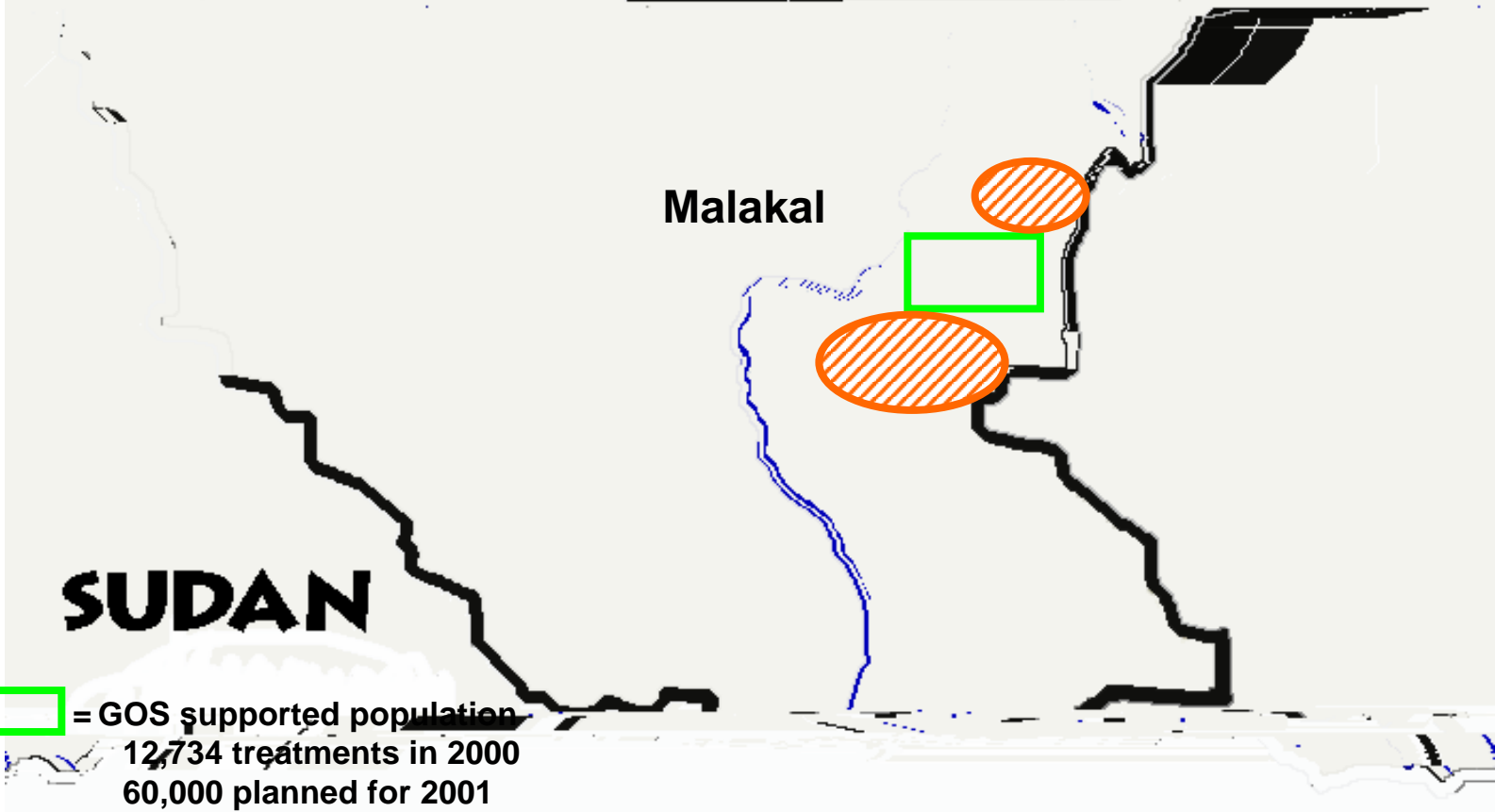
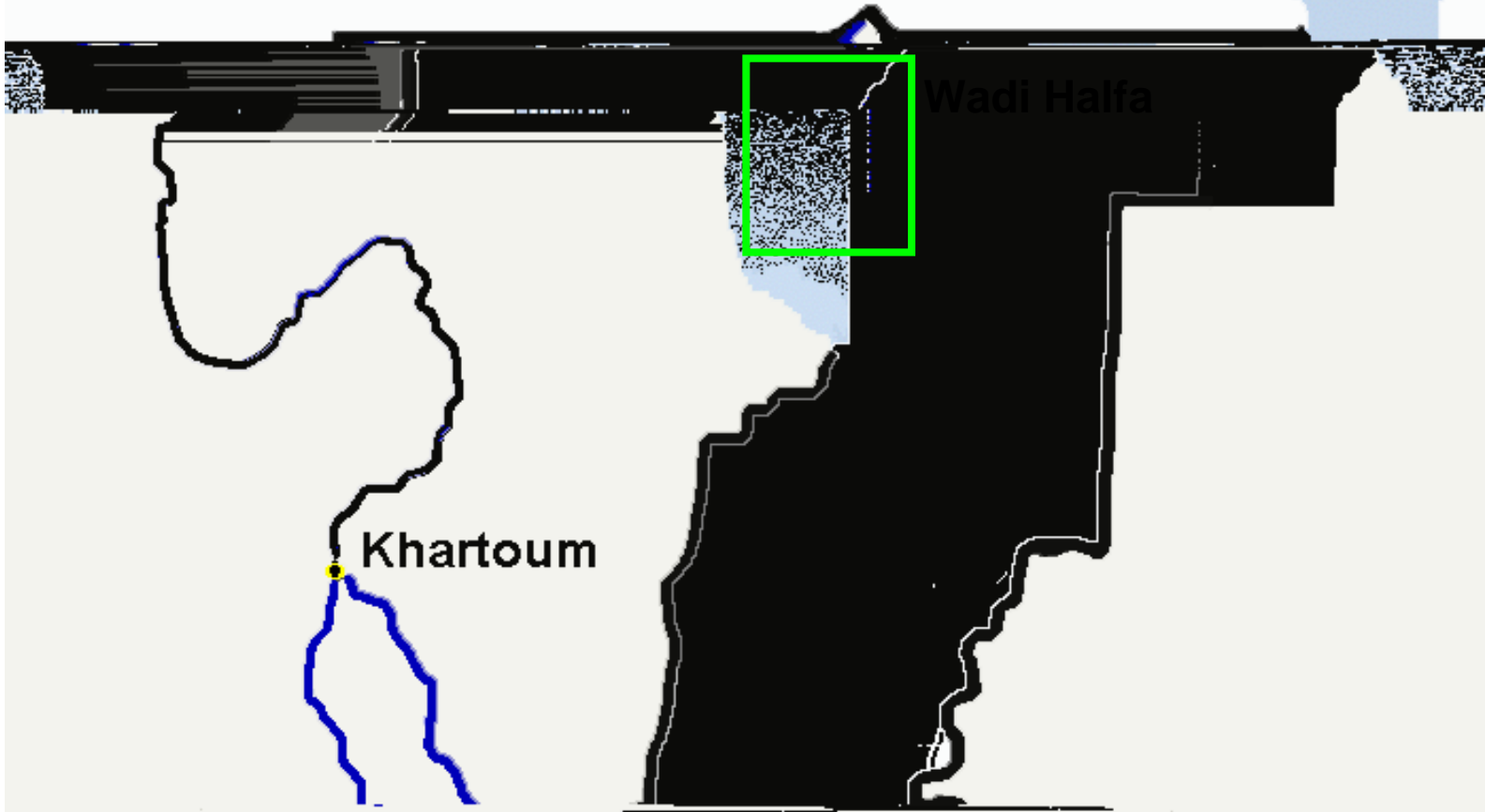
In May-July 1999, trachoma prevalence surveys in two states revealed remarkably high rates of disease in the north and south of Sudan. A survey of the area around Wad Halfa revealed TF/TI rates of 47% in 1-10 year olds, and TT in women 40 years of age and older of 4%. In Malakal, TF/TI in 1-10 year olds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

The program should conduct KAP studies to help refine health education messages and use the results to increase health education activities nationally.

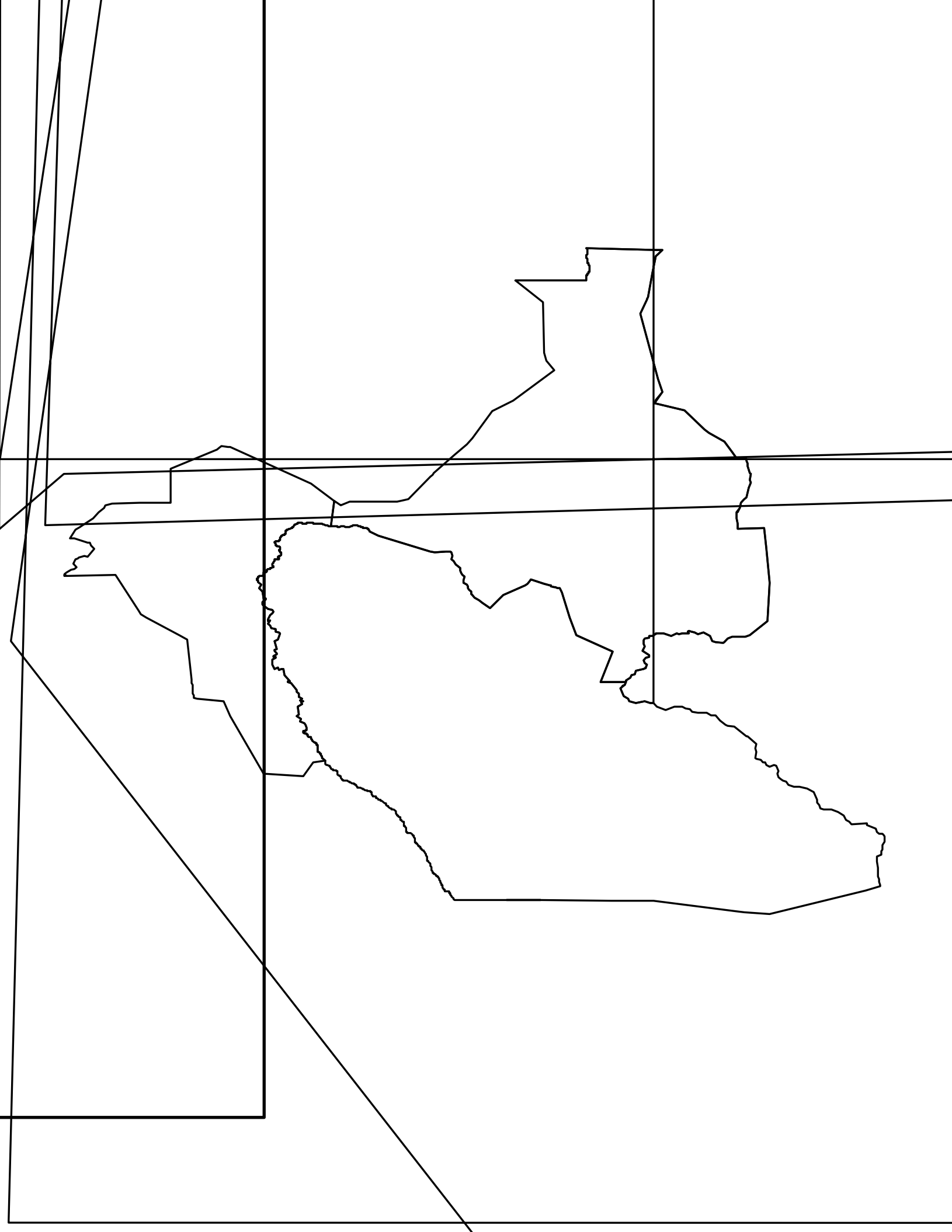
The STCP should expand the extent of Zithromax distribution as quickly as possible.

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

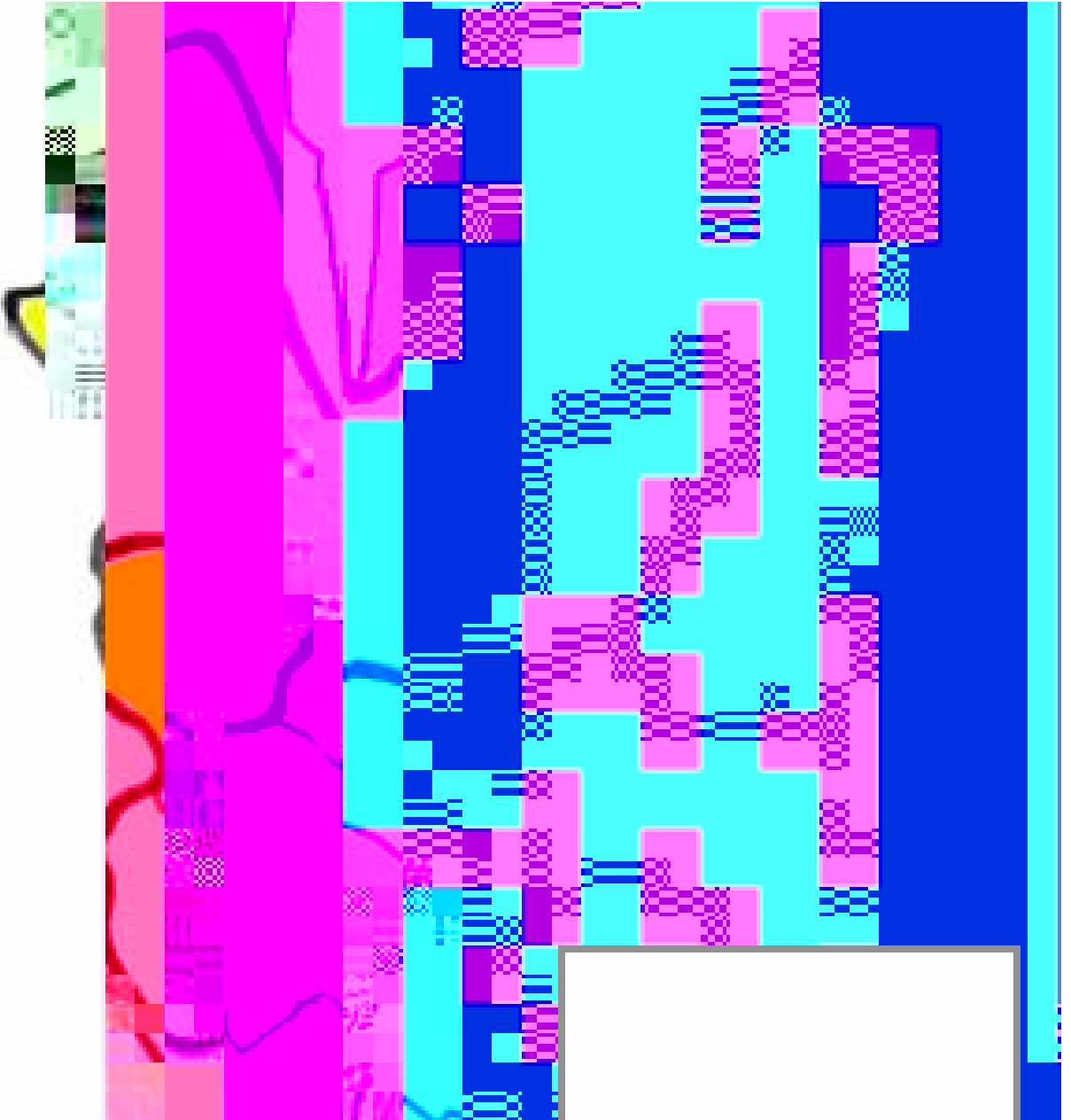


Ethiopia Trachoma Control Program

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



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 v

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

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

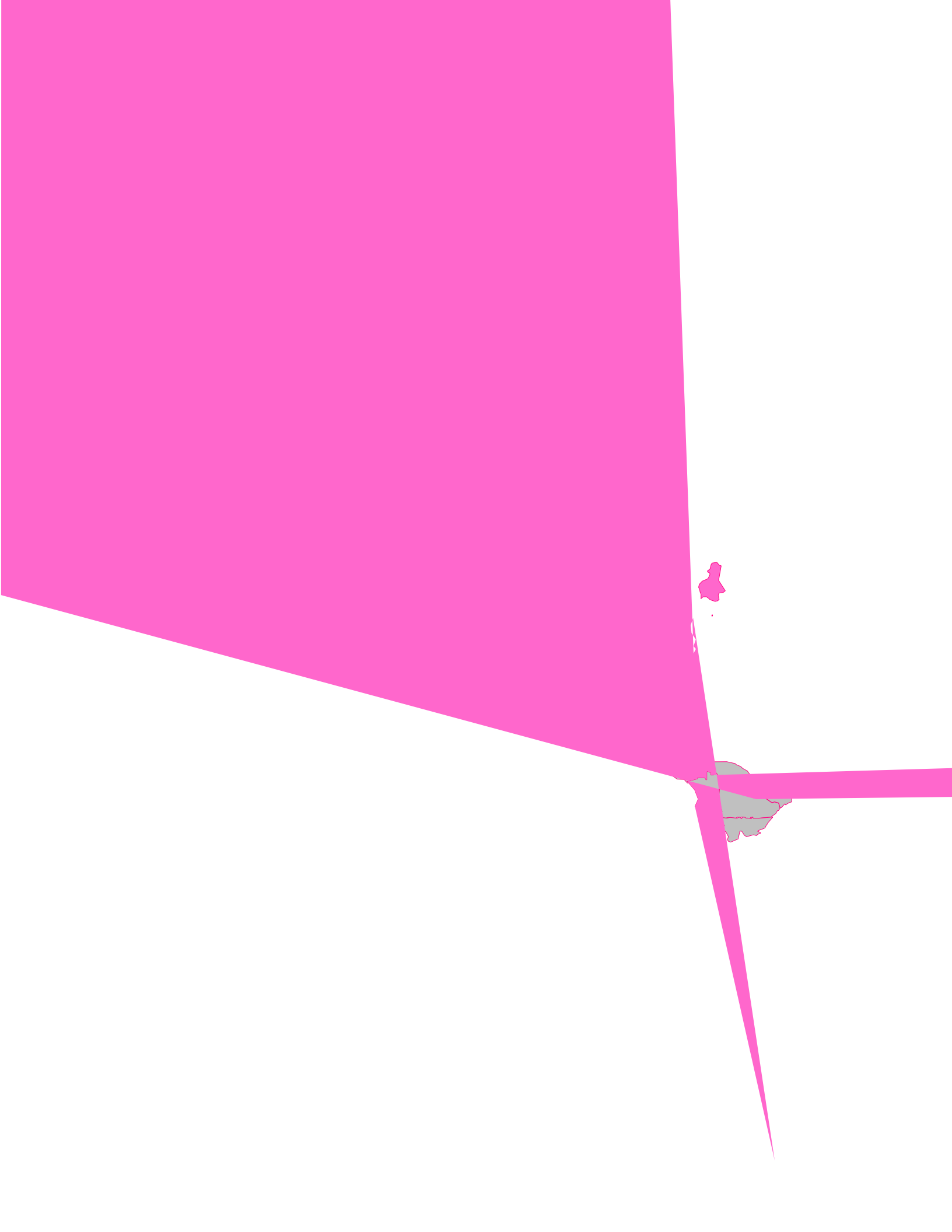
Develop an action plan with targets and benchmarks.

Use findings of the 2000 KAP survey to improve health education materials.

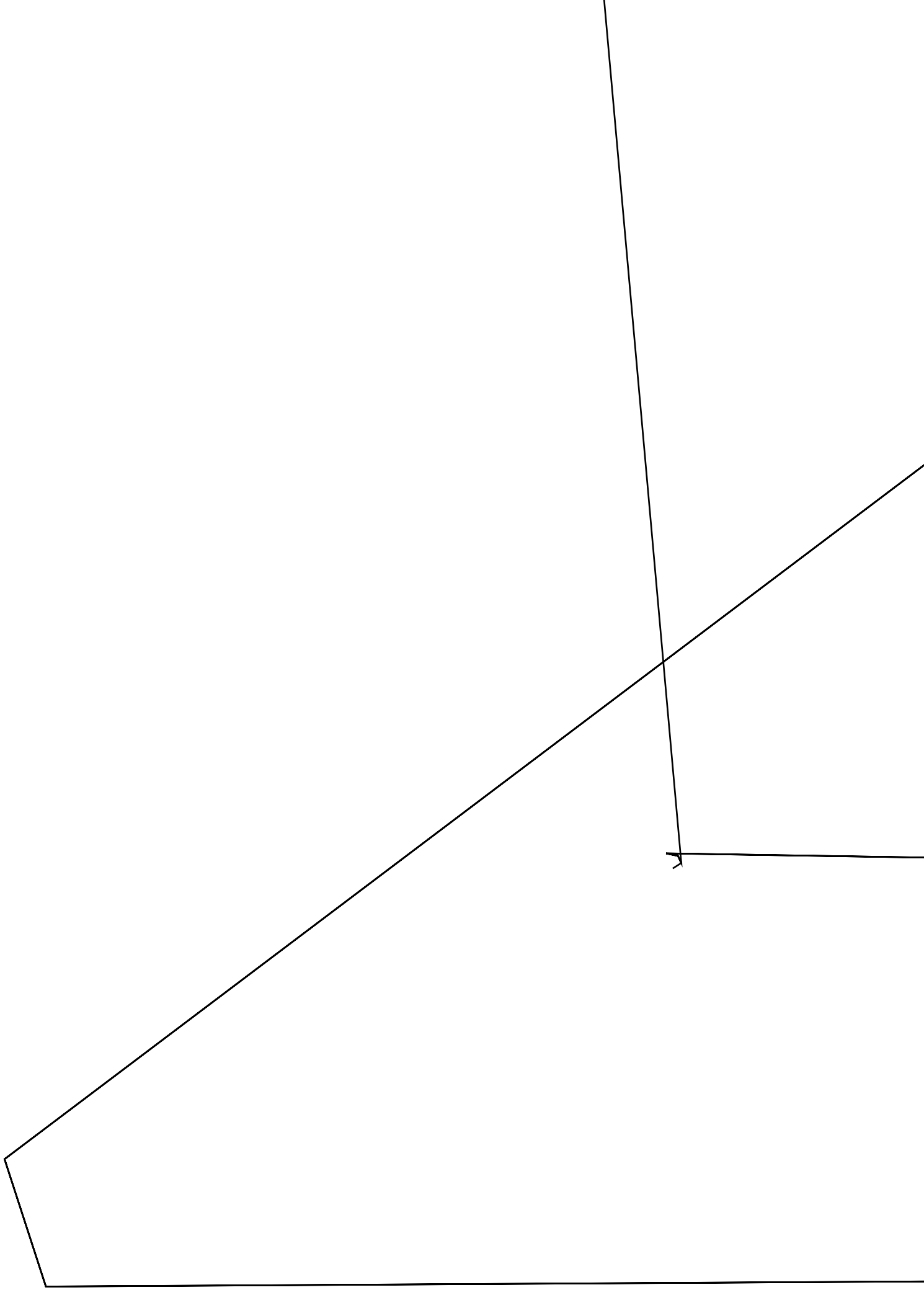
Train additional health care workers.

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.



|



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

NATIONAL	3,611,084	1,321,468	36.6%	257,248	7.1%	

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

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

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 > 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 Progr8(a)-14.f1.2083 .8(a)-14ns

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

**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

										Oc	EYE SURGE RY
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		
PONYAHRH	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 e

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.

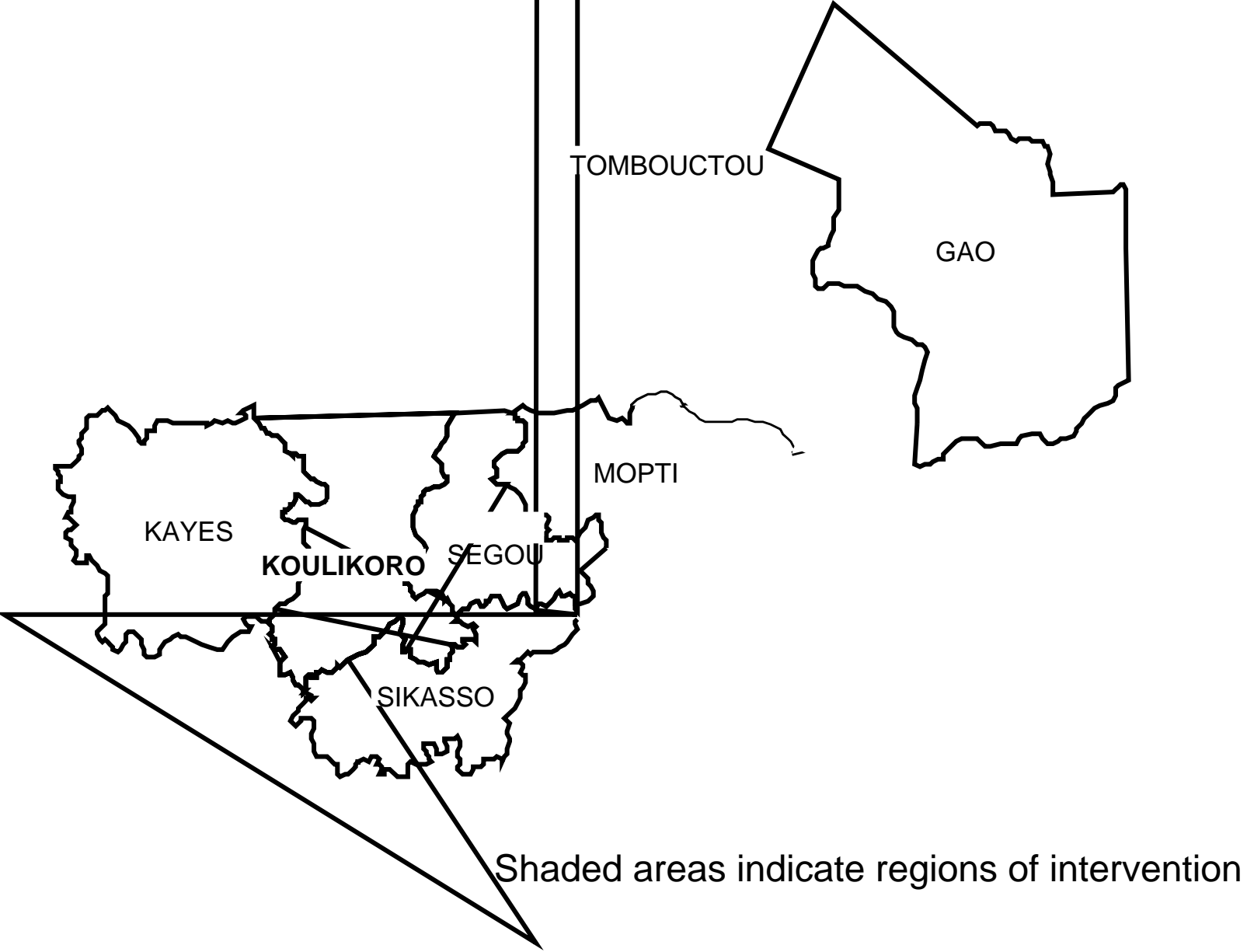
The MOH procured 307,067 tubes of tetracycline ointment from a primary supplier in Mali for ongoing treatment of trachoma patients.

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.

Mali Trachoma Control Program Areas of Program Interventions 2000-2001



	Prevalence of TF/TFI (children 0 -10 years)	Prevalence of TT (women > 15 years)	
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

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

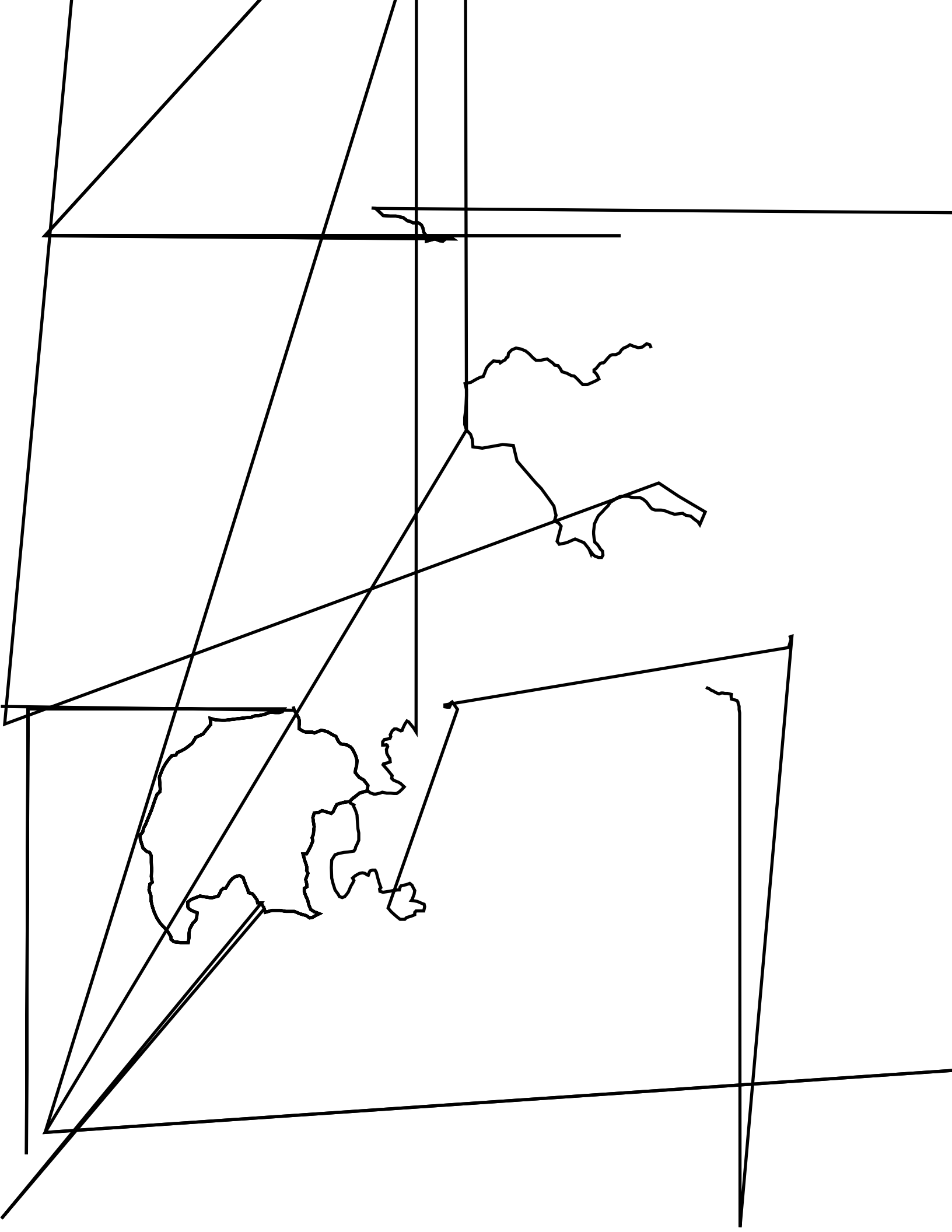
Nigeria Trachoma Control Program

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.

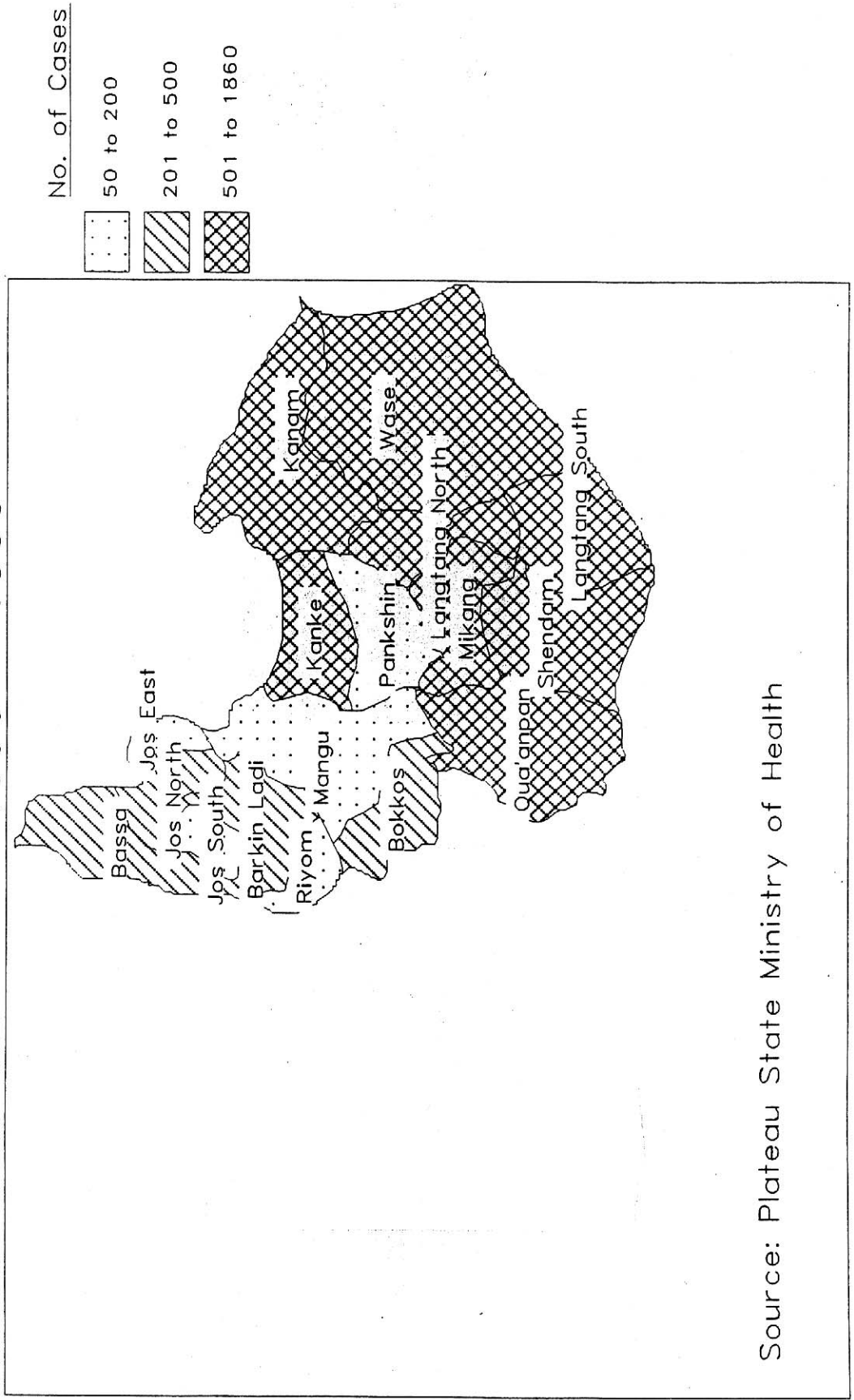
Assessment

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

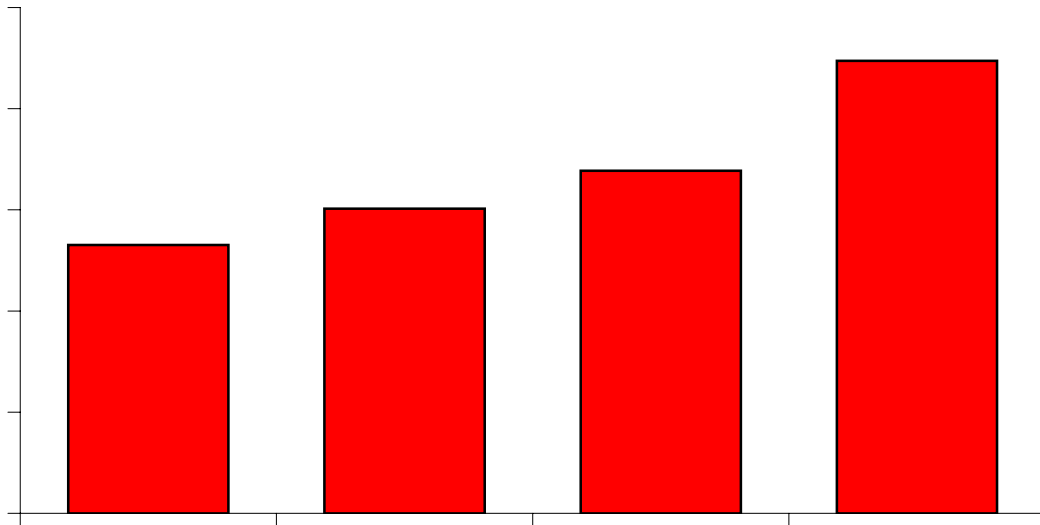


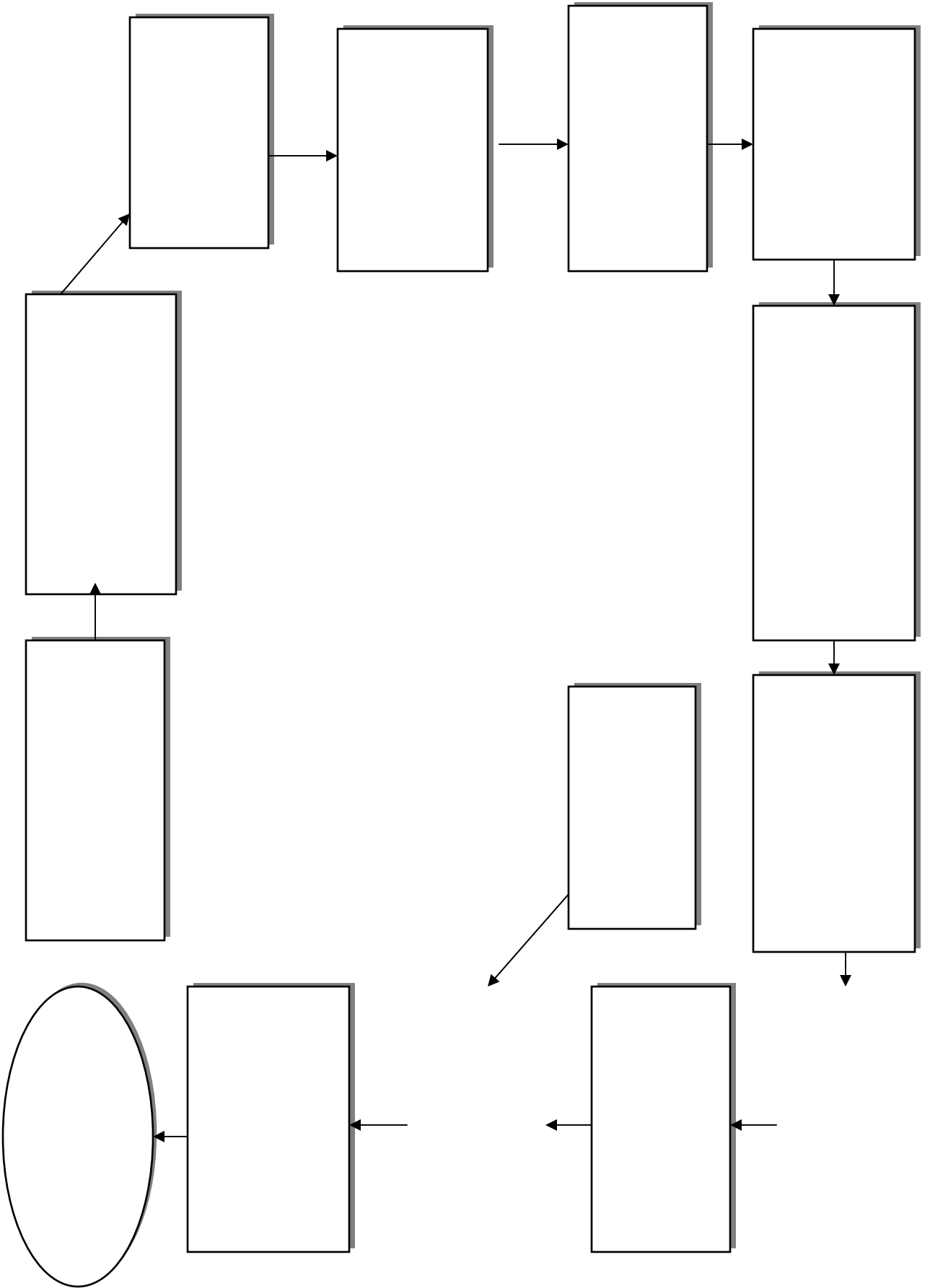
Map of Plateau State Showing The Distribution of
13, 523 Cases of Trachoma Among all the LGAs
1996 - 1999



Source: Plateau State Ministry of Health

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





Reporting of cases

Community mobilization and health education of individuals should emphasize personal

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

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

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 woman >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
					Halfa - 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

Health Education	N	Y	N	Y	0	200,000	0	12,734	-	N	N	-
Availability of latrines	N	Y	N	Y	0	200,000	0	12,734	-	N	N	-
Water Provision	N	Few	N	Y	0	200,000	0	12,734	-	N	N	-
Treatment (2000)	0	0	0	0	0	200,000	0	12,734	-	N	N	-

APPENDIX I: The Disease

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

APPENDIX III: List of Participants

Ethiopia

Dr. Tewodros Assefa

Mr. Teshome Gebre (Carter Center)

Ghana

Dr. Maria Hagan

Dr. Daniel Yayemain

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Mr. John Neatherlin	The Carter Center