



Eye of the Eagle



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THE CARTER CENTER

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Center Assists Nearly 9 Million Onchocerciasis Treatments in 2002 Hosts Seventh Annual Review Meeting

The Carter Center assisted in providing 8,964,429 treatments with Mectizan® in 11 countries in 2002; this was 96 percent of the annual treatment objective. Table 1 provides a summary of the 2002 treatment activities. (See page 2.) The 2002 accomplishments represented an increase of 12 percent over treatments assisted in 2001. Of the treatments assisted in 2002, 97 percent were

accomplished in partnership with the Lions Clubs International Foundation (LCIF) and with the help of local Lions. Most treatments in Africa were in collaboration with the African Program for Onchocerciasis Control (APOC).

Hosting the seventh annual review meeting for its Global 2000 River Blindness Program in Atlanta from Feb. 26-28, 2003, local and field staff of The Carter Center focused on the status of each program and analyzed impediments to program implemen-

tation. This year, the African programs also took an extensive look at prospects for post-APOC funding and activities. Other topics included 2002 treatment returns, training activities, 2003 annual treatment objectives, ultimate treatment goals, sustainability issues, Mectizan logistics, epidemiological assessment activities, operations research, and administrative issues. (See Figure 1, page 3.)

In attendance this year were River Blindness Program country representatives Dr. Albert Eyamba, Cameroon; Mr. Teshome Gebre, Ethiopia; Dr. Moses Katarawa, Uganda; Dr. Emmanuel Miri, Nigeria; and resident technical advisers in

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Waging Peace. Fighting Disease. Building Hope.

Trachoma Control Programs Conduct Fourth Annual Review

The fourth annual Carter Center-assisted Trachoma Control Program Review was held on Feb. 24-25 at Carter Center headquarters. Fifty-two persons from eight countries attended the meeting, representing all six Carter Center-supported trachoma control programs, the Conrad N. Hilton Foundation, Lions International, and Pfizer Inc.

Other partner organizations represented include Centers for Disease Control and Prevention, Helen Keller Worldwide, World Vision International, the International Trachoma Initiative, Durham

University, and the London School of Hygiene and Tropical Medicine (LSHTM).

National and regional Trachoma Control Programs were represented by Drs. Maria Hagan and Daniel Yayemain, Ghana; Dr. Doulaye Sacko, Mali; Dr. Kadri Boubacar, Niger; Professor Mamoun Homeida, Dr. Samson Paul Baba, and Dr. Magdi Ali, Sudan; and Mr. Zelalem Abera, Ethiopia. Carter Center Trachoma Control Program officers Dr. Nimzing Jip and Dr. Jeremiah Ngondi represented the programs with which they

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Center Assists

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Sudan, Mr. Mark Pelletier in Khartoum and Ms. Kelly Callahan in Nairobi. Dr. Mauricio Sauerbrey presented progress made in the six programs in the Americas served by the Onchocerciasis Elimination Program for the Americas. Other participants included Drs. Jeremiah Ngondi, Nairobi; Abel Eigege, Nigeria; and Assefa Worku, Ethiopia.

Special guests included Professor Mamoun Homeida, chairman, National Onchocerciasis Task Force, Sudan; Ms. Rebecca Teel Daou, Lions Clubs International Foundation; Dr. Magdi Ali, deputy national coordinator of Onchocerciasis and Trachoma programs, Khartoum; Dr. Samson Paul Baba, South Sudan Onchocerciasis Task Force, Sudan; Dr. Steve Blount and Mr. Ross Cox, Office of Global Health, CDC; Drs. Bjorn Thylefors, Mary Alleman, Nana Twum-Danso, and Tim Dondero, Mectizan Donation Program; Drs. Jamie Maguire, Mark Eberhard, David Addiss, Ali Khan,

Pat Lammie, and Frank Richards, Division of Parasitic Diseases, CDC; and other distinguished observers. The meeting was chaired by Dr. Donald Hopkins, associate executive director, The Carter Center.

A summary of treatment reports from the different program areas follows:

■ Nigeria

The River Blindness Program, in collaboration with Lions Clubs International Foundation and African Program for Onchocerciasis Control, assisted in treating 5,087,438 persons with Mectizan in 2002. This was 102 percent of the annual treatment objective and a 6 percent increase from the 4.8 million treatments in 2001. Treatment activities in Plateau and Nasarawa states continued to show the advantages of integrating onchocerciasis, lymphatic filariasis, and schistosomiasis treatment programs.

■ Uganda

The program in Uganda treated 951,618 people with Mectizan in 2002 in collaboration with Lions Clubs International Foundation. This was

98 percent of their ultimate treatment goal, a 2 percent increase over 2001 treatments.

■ Cameroon

A total of 1,134,712 persons were treated in Cameroon with River Blindness Program/Lions Clubs International Foundation assistance in 2002. This was 92 percent of the annual treatment objective and a 22 percent increase in treatments compared to 2001. Of the 2002 treatments, 78 percent (888,030) were achieved in collaboration with the Lions Clubs International Foundation in the West province, and the other 246,682 in the North province project were APOC-supported.

■ Ethiopia

In its second year of mass Mectizan distribution, a total of 516,077 persons were treated with River Blindness Program/LCIF assistance in Ethiopia. This represents a 121 percent increase over 2001. The Ethiopian program will continue to expand rapidly in 2003, with an annual treatment objective of 1,119,063. Proposals for expansion into

Table 1

Onchocerciasis: 2002 Mectizan treatment figures for Global 2000 River Blindness Program (GRBP)-assisted areas in Nigeria, Cameroon, Uganda, Ethiopia, Latin America (OEPA) and Sudan

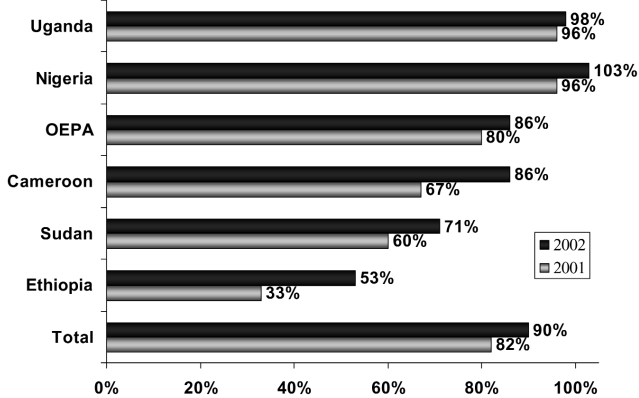
Country/Tx Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL	% ATO	% ALL GRBP TX
NIGERIA	UTG= 5,000,000		ATO(arv)= 7,971												
TX(earp)	86	59,224	151,343	457,660	650,790	1,000,142	753,468	1,009,111	501,458	193,020	265,388	45,748	5,087,438	102%	57%
TX(arv)	0	69	243	638	990	1,996	1,437	1,400	468	351	354	30	7,976	100%	43%
UGANDA	UTG= 974,900		ATO(arv)= 2,351												
TX(earp)	0	166,678	176,292	56,406	54,706	45,220	173,144	88,003	42,043	9,136	30,155	109,835	951,618	98%	11%
TX(arv)	0	329	698	561	535	105	634	484	403	307	65	184	2,351	100%	13%
CAMEROON	ATO(earp)= 1,239,592		ATO(arv)= 2,708												
TX(earp)	0	0	0	0	0	136,641	398,536	599,535	0	0	0	0	1,134,712	92%	13%
TX(arv)	0	0	0	0	0	430	974	1,522	0	0	0	0	2,926	108%	16%
OEPA**	**UTG(2)= 879,774		ATO(arv)= 1,934												
TX(earp)	0	0	0	0	0	372,601	0	0	0	0	0	376,581	749,182	85%	8%
TX(arv)	0	0	0	0	0	1,693	0	0	0	0	0	1,653	3,346	88%	18%
ETHIOPIA	ATO(earp)= 548,437		ATO(arv)= 2,155												
TX(earp)	0	0	28,136	57,970	121,866	236,676	63,460	4,900	3,069	0	0	0	516,077	94%	6%
TX(arv)	0	0	0	0	0	2,086	0	0	0	0	0	0	2,086	97%	11%
SUDAN	ATO(earp)= 649,949		ATO(arv)= 17,119												
TX(earp)	6,537	4,123	61,385	32,072	46,076	129,288	29,805	14,203	25,294	51,787	32,611	92,221	525,402	81%	6%
TX(arv)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	ATO(earp)= 9,292,652		ATO(arv)= 17,119												
TX(earp)	4,209	287,287	387,843	618,112	956,650	1,821,085	1,413,902	1,753,336	579,181	294,377	387,764	624,385	8,964,429	96%	100%
TX(arv)	0	398	941	1,199	1,525	2,531	3,045	3,406	871	658	419	1,867	18,685	109%	100%
GRBP Cumulative totals=	45,435,581														

ATO: Annual Treatment Objective, TX: Number Treated, earp: Eligible At Risk Population, arv: At Risk Villages (mass Mectizan treatment is provided)
UTG: Ultimate Treatment Goal

River Blindness

Figure 1

GRBP-assisted Programs: Percent of Ultimate Treatment Goals reached in 2001 and 2002



other areas are being modified for APOC approval. (See page 4.)

■ Sudan

Despite the ongoing war, the Sudan program increased treatments in 2002 (525,402) by 19 percent over 2001. Sudan's annual treatment objective for 2003 is 837,339. Due to an expected settlement of the civil war in the near future, the program is beginning to strategize for a much more accessible population at risk.

■ The Americas

In OEPA, the strategy is to provide two Mectizan treatment rounds per year in all endemic communities so as to interrupt transmission of *Onchocerca volvulus* as well as stop morbidity from river blindness. In the six countries endemic for river blindness in the Americas, 749,182 treatments were assisted in 2002, 85 percent of their ultimate treatment goal(2). (See *Eye of the Eagle*, July 2002.) Overall, the regional coverage increased to 86 percent compared to 80 percent in 2001. (See Figure 2.) Colombia, Brazil, Ecuador, Guatemala, and Mexico's programs achieved 97

percent in 2002. This is the first time that five of the six endemic countries exceeded the minimal goal of 85 percent coverage.

■ Outcomes of the Meeting

In 2003, the Carter Center's River Blindness Program is looking harder for evidence of sustainability in certain project areas of Cameroon, Ethiopia, Nigeria, northern Sudan, and Uganda. It is clear, however, that African onchocerciasis programs and their allies will need to continue to seek innovative solutions and advocate strongly for additional sustained support from their own governments, development agencies, and nongovernmental development organizations. Other potential complementary options include strengthening health care systems and infrastructure, and/or showing

onchocerciasis to be eradicable in Africa (and thus programs would not have to be sustained indefinitely).

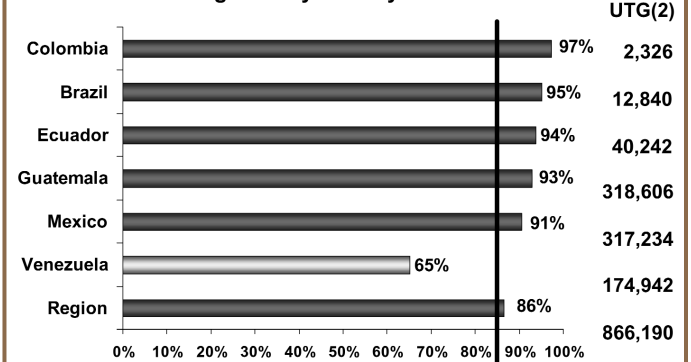
It was recommended that The Carter Center, in cooperation with other nongovernmental development organization partners and individually, advocate strongly for long-term support of onchocerciasis control activities in Onchocerciasis Control Program and APOC-assisted endemic areas after those regional programs have ceased operations. Such advocacy efforts should be directed or raised at meetings of donors, APOC leadership, Joint Action Forum, Committee of Sponsoring Agencies, Mectizan Executive Committee, The World Bank, nongovernmental development organizations, and the respective national governments.

onchocerciasis to be eradicable in Africa (and thus programs would not have to be sustained indefinitely).

All Carter Center-assisted river blindness programs in Africa and in the Americas were urged to seize every opportunity to document the impact of current interventions against onchocerciasis (health education and annual or semiannual mass administration of Mectizan) on transmission of onchocerciasis and on clinical manifestations of the disease. ★

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Figure 2
Percentage of the Ultimate Treatment Goal(2)* attained during 2002 by country in the Americas



*UTG(2): UTG multiplied by two.

River Blindness

Ethiopia River Blindness Program Plans for Growth

Launched in 2001 as part of a National Plan of Action that includes many partners, the Ethiopian program is the newest of river blindness programs assisted by The Carter Center. Ethiopia has more than 60 million people and an area of 435,000 square miles. Rapid epidemiological mapping of onchocerciasis (REMO) was completed in 2001 with support from the African Program for Onchocerciasis Control (APOC). The results indicated that out of six regions surveyed, all regions were endemic for onchocerciasis, and four out of the six had areas that were meso- or hyper-endemic. Currently, it is estimated that 7.3 million Ethiopians are at risk of onchocerciasis and 1.4 million are infected.

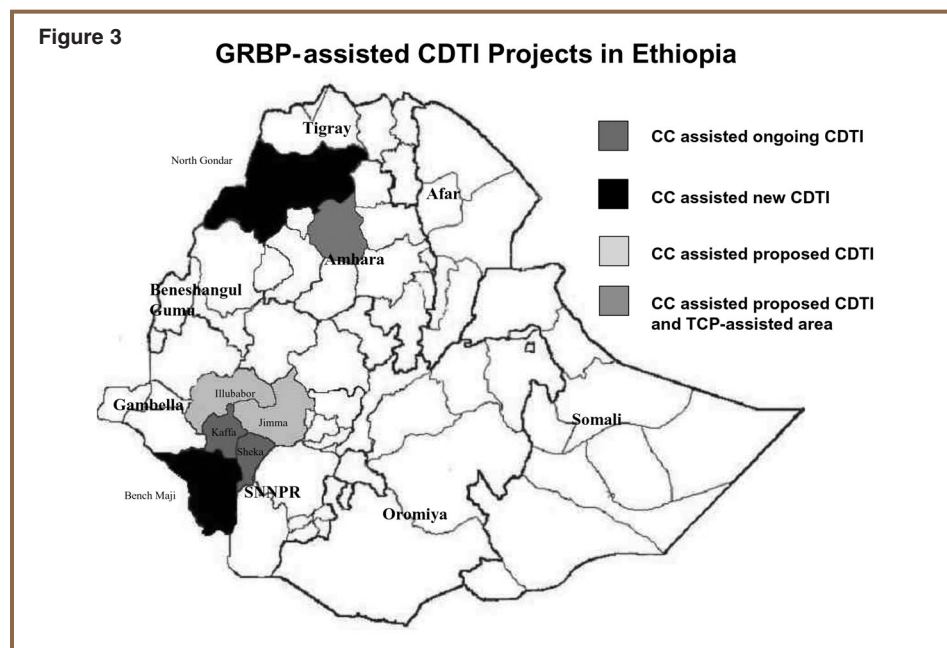
The National Plan proposed phasing the delivery of Mectizan tablets and health education into

onchocerciasis-endemic areas identified during an initial REMO exercise in Ethiopia in 1997. In December 1999, the Ethiopian Ministry of Health invited The Carter Center to be its partner in an application to APOC for support of treatment activities in Kaffa-Sheka zones of the Southern Nations Nationalities and Peoples region (SNNPR). The proposal, which was approved in 2000, targeted 25 percent of the eligible at-risk population in the zone (209,512) for 2001, with expansion to the ultimate treatment goal (773,604) by year 2003. Mobilization and training of distributors to carry out treatment activities using the community-directed treatment with ivermectin (CDTI) strategy began in 2000, and treatment began in 2001.

CDTI implementation in Ethiopia first began in the Carter Center-assisted Kaffa-Sheka zone of the

SNNPR in 2001. The program provided health education and Mectizan to 233,309 persons, which represented 111 percent of its annual treatment objective for 2001. Kaffa-Sheka zone was later divided into two separate zones, Kaffa and Sheka, which contained two and three woredas (districts) under treatment, respectively.

During 2002, activities in Kaffa zone expanded to include four additional woredas, for a total of six, while Sheka zone conducted CDTI activities in the same three woredas for a second time. Kaffa zone treated 358,996 persons (95 percent of its annual treatment objective), and Sheka zone treated 157,081 (92 percent of its annual treatment objective) in 2002. Thus, the program-assisted areas treated a total of 516,077 persons in 2002, or 94 percent of the annual treatment objective and 67 percent of the ultimate treatment goal for Kaffa-Sheka. River Blindness Program activities will expand in 2003 to Bench Maji zone (adjoining Kaffa and Sheka zones) in the SNNPR and to North Gondar zone in the Amhara region. Proposals have been submitted to APOC which would allow the program to begin assisting CDTI activities in Illubabor and Jimma zones, which also adjoin Kaffa and Sheka zones but are administratively part of Oromiya region. (See Figure 3.) The 2002 annual treatment objective in Ethiopia was 548,437, but due to the expansion, the annual treatment objective for 2003 is about 1.1 million. The Carter Center River Blindness Program is still the only nongovernmental development organization assisting onchocerciasis control efforts in Ethiopia, but Africare plans to begin assisting projects in Gambella region in 2003. ★



Trachoma

Lions Expand Trachoma Control in Ethiopia

The South Gondar zone of Ethiopia has an extremely high prevalence of blinding trachoma. Anecdotal reports from regional health care workers suggest that this is true in all 10 districts of the zone. In 2000, the Amhara Regional Health Bureau and South Gondar Trachoma Control Program began implementing the SAFE strategy in four districts of South Gondar with support from the Lions-Carter Center SightFirst Initiative. (See Figure 3, page 4.) With additional support from local Lions Clubs in 2002, surgical kits were purchased and surgeons were trained to do corrective eyelid surgery on persons suffering from trichiasis. (See *Eye of the Eagle*, January 2003.) That initiative successfully provided sight-saving surgery to more than 4,000 persons in 2002. This year, between Jan. 1 and May 1, the program trained 15 new trichiasis surgeons, and 1,901 patients have received trichiasis surgery. Now the South Gondar Trachoma Control Program is expanding its efforts to include an additional three districts.

The expanded program was launched with a weeklong campaign in Libo Kemkem district on April 14. South Gondar Trachoma Control Program personnel ran the surgical camp, assisted by Lions from

the Addis Ababa Cosmopolitan Club and staff from The Carter Center/Ethiopia. Lion Marco Vigano, president of the Addis Ababa Cosmopolitan Club; Lion Francesco Giuseppina, activity director of Lions Club District 411; Lion Pina Sieg; and Lion Teshome Gebre, country representative of The Carter Center, were present for the launch. Funding was provided by Ethiopian Lions Clubs and the Lions Clubs International Foundation. During this initial campaign, more than 700 trichiasis surgeries were done. Simultaneously, the Ethiopian program conducted health education activities for trachoma control at the Addis Zemen Health Center, reaching



more than 3,000 people.

Of Ethiopia's five Lions Clubs, the Addis Ababa Cosmopolitan Club has taken on the challenge of trachoma prevention and control, including production of the video documentary, "Let's Prevent Trachoma," used during community mobilization and training sessions. Club president, Lion Marco Vigano, applauded the South Gondar zone's expanded program, saying that "our team of visitors, which included Lion Pina Sieg, founder of Cosmopolitan Club and the first dedicated promoter of large-scale trachoma operations in Ethiopia, felt greatly relieved by noting that something can and indeed is being done for these needy people by the Lions-Carter Center SightFirst Initiative." ★



Mr. Zelalem Abera, regional trachoma coordinator, examines the eyes of a local man infected with trachoma.

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work in Nigeria and Sudan, respectively.

Each presenter reported on their program's progress, challenges in 2002, and targets for 2003. As in the past, country presentations were structured around the SAFE strategy, with Facial cleanliness and Environmental changes presentations on the first day and Surgery and Antibiotics presentations on the second. (See *Eye of the Eagle*, January 2003.) The excellent presentations on F and E made it clear that impressive progress had been made by each program in promoting personal hygiene and environmental improvement over the past year. This progress was in keeping with the theme of the

program review, which, as in 2002, was *Increase clean faces, decrease flies!*

Special presentations each day highlighted important aspects of trachoma control and allowed the group to brainstorm and challenge one another. The special presentations this year included: School Health Programs in Ethiopia, Ms. Misrak Makonnen; Latrine Promotion in Niger, Mr. Salissou Kane; and Ghana's Data Collection System, Dr. Yayemain. Overall, there was a remarkable improvement in the quality of data presented for 2002 and targets set for interventions in 2003. (See Table 2.) There were also remarkable discussions of program activities and scientific issues.

Ms. Rebecca Daou of Lions

International reported on the Lions' midterm evaluation of their grant for trachoma control in Ethiopia. Dr. Frank Richards of the Centers for Disease Control and Prevention spoke about the evolution of indices for measuring program activities, including ultimate intervention goals. Dr. Anthony Solomon of the LSHTM gave an update on the Trachoma Initiative in Monitoring and Evaluation (TIME) study. The penultimate discussion of the meeting focused on the participants' recognition that standardization of reporting Trachoma Control Program data would be an important step forward for this group and for all of the GET 2020 Alliance. Each of the national program coordinators

Table 2

Carter Center-assisted Trachoma Control Programs
Summary of Trachoma Control Interventions (January- April 2003)

	Ghana	Mali	Niger	Sudan	Ethiopia S. Gondar ^a	Nigeria ^b 2 States ^c
F & E						
Number of villages with hygiene education	383	0	70	220	155	0
Number of villages targeted for hygiene education	391	581	976	2,413	155	180
Percent coverage - Hygiene education	98%	0%	7%	9%	100%	0%
Number of latrines constructed	350	-	253	-	949	0
Targeted number of latrines	700	N/A	3,100	N/A	2,500	200
Percent coverage - latrine constructed	50%	-	8%	-	38%	0%
Number of water sources provided	10	0	0	91	-	-
Targeted number of water sources	30	150	25	N/A	-	-
Percent coverage - water sources	33%	0%	0%	-	-	-
Antibiotics						
Azithromycin intervention villages:	-	670	800	108	18	N/A
Treatments (2002)	77,575	49,008	0	59,113	0	-
Target Population	140,000	1,200,000	784,000	600,000	100,000	N/A
Coverage (%)	55%	4%	0%	10%	0%	-
Tetracycline Oint. intervention villages:	0	17 HC^d	0	102^e	0	0
Treatments (2002)	0	-	0	7,857	8,092	0
Target Population	14,000	-	N/A	N/A	N/A	240,000
Coverage (%)	0%	-	-	-	-	-
Surgery intervention villages:	0	17 HC^d	0	N/A	155	40
Surgeries (2002)	56	308	0	324	1,901	0
Target Population	1,100	5,000	7,500	9,350	11,280	400
Coverage (%)	5%	6%	0%	3%	17%	0%

a. South Gondar Zone is one of three areas beginning interventions in Ethiopia

b. Interventions have not yet begun

c. Plateau and Nasarawa States

d. Health center-based activities offering services to villages within 50 km

e. Nomadic areas of intervention, interventions not defined by "village"

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in the meeting agreed to attempt to standardize reporting of their national data and to develop ultimate intervention goals in 2003.

Some highlights of the accomplishments in 2002 by country were:

Ghana

- **Knowledge, Attitudes, and Practices (KAP) survey.** This survey, done with support from The Carter Center, of five districts and 50 communities showed that health education programs have made significant progress in the Northern and Upper West regions in increasing the knowledge and attitudes about trachoma control. The study indicated specific areas to target as the programs evolve.
- **Evaluation of mass media campaign.** This KAP survey, done with support from the BBC World Service Trust, found that 88 percent of villagers in target areas have heard about trachoma, and most have heard trachoma jingles and radio spots. Overall, the Trachoma Control Program concluded that dissemination of health messages through mass media communication is effective and acceptable.
- **TIME survey.** The LSHTM team evaluated the Ghana Trachoma Control Program. Their comments and recommendations will be useful in planning the next phase of the program.
- **Zithromax® treatments.** More than 104,000 persons were treated in 2002 with Pfizer-donated Zithromax.

Mali

- **Assessment of Trachoma Control Program activities in Ségou.** This assessment focused on health education and environmental

improvement activities in villages and showed high potential for implementing F and E activities in the near future.

- **KAP survey.** This survey of the Kayes and Koulikoro regions was conducted by researchers from Johns Hopkins University in December 2002 to focus on the F and E of SAFE. The results will be used to develop health education campaigns for the Mali Trachoma Control Program.
- **Zithromax treatments.** In 2002, 750,000 persons were treated. In 2003, the program has targeted 1,200,000 persons for Zithromax treatment.

Niger

- **Latrines.** The Niger program led the way in environmental improvement with the construction of 1,282 latrines in the Zinder region, with assistance from The Carter Center and the International Trachoma Initiative. They have set a target of 3,100 new latrines to be constructed in 2003.
- **Zithromax distribution.** In 2002, Niger did its first mass distribution of Pfizer-donated Zithromax. In 2003, they plan to treat 784,000 persons.
- **Surgery.** 4,592 trichiasis patients were operated on in 2002.

Sudan

- **Expanding program areas.** The Sudan Trachoma Control Program expanded hygiene education activities from 905 to 1,552 villages.
- **Zithromax distribution.** 189,223 persons were treated with Zithromax in mass distribution campaigns.
- **Surgery.** Christoffel Blindenmission joined the Sudan Trachoma Control Program in 2002 and will collaborate on numerous activities, particularly

on surgical training and assisting corrective surgeries for trichiasis patients.

Ethiopia (S. Gondar zone)

- **Hygiene education.** In 2002, the South Gondar Trachoma Control Program trained health workers in over 89 percent of their target villages to do hygiene education. Activities are ongoing in 138 villages, including monthly reporting to the program.
- **School health.** The school-based program of the Trachoma Control Program was launched in 2002 with baseline surveys for monitoring and evaluation.
- **Surgery.** With support from The Carter Center and local Lions Clubs, 19 trichiasis surgeons were trained and health centers were equipped. More than 4,000 trichiasis patients had corrective surgery in 2002. In 2003, the program has targeted 11,280 persons for corrective surgery.

Nigeria (Plateau and Nasarawa states)

- **Prevalence survey.** In 2002, the Trachoma Control Program did baseline prevalence surveys in both Plateau and Nasarawa states. More than 12,000 persons were examined, and a map of trachoma distribution was created. This information was used in choosing four local government areas (districts) in which the state programs will launch pilot programs in 2003, with support from The Carter Center.
- **KAP survey.** A KAP survey was conducted in the pilot program areas in 2002 to help create health education and community mobilization campaigns in the pilot program areas. ★

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Trachoma Control Activities in Segou Region of Mali Assessed

In October 2002, Mali's National Program for the Prevention of Blindness (NPPB) and the Ségou Regional Health Bureau did an important assessment of trachoma control activities in the Ségou region with financial and technical support from The Carter Center. The assessment consisted of a survey of 381 villages and 34 health centers in two health districts. In each village, the assessment teams met with village leaders and, whenever possible, with village health committees and health workers. An environmental assessment was done concurrently in each village. The survey teams focused primarily on the availability of health and hygiene education and human resources for trachoma control activities. The environmental assessment focused on community access to safe water and sanitation. Dr. Doulaye Sacko, director of the NPPB, presented the assessment report in a meeting of the Ségou Regional Health Bureau, chaired by Dr. Nouhoum Kone, regional medical director.

The assessment found that trachoma control activities need to be accelerated in each district and identified significant resources and opportunities for improving personal and environmental hygiene, the F and E of the SAFE strategy. The S and A aspects of SAFE are yet to be fully implemented in the two districts. Trichiasis surgery is only available in two of the health centers, and tetracycline ophthalmic ointment is currently

for sale as a treatment for active trachoma in only 9 percent of the health centers. To assess trachoma health education activities, the teams visited 34 health centers and interviewed health workers. Although 62 percent of the health workers reported having received trachoma health education materials in 2001, none used those materials routinely.

About 25 percent of the villages reported that they do not have a source of water which functions year-round.

Opportunities for implementing health and hygiene education for trachoma control were identified. Each village has a local health committee, which is responsible for monitoring ongoing health activities and serves as a bridge between villagers and the government health system. More than half (55 percent) of the villages have a primary school, which may facilitate school-based health education programs. This is important because active trachoma is a disease of young children, some of whom can be effectively targeted in schools by emphasizing daily hand and face washing to improve hygiene. The teams also found that one of the best channels for health

education is radio. In all of the villages, radio is very popular and villagers have access to both national and local broadcasts. Ninety-nine percent of the villages have access to at least two radio stations, and 72 percent have access to three stations or more. Villagers in 98 percent of the communities surveyed reported having heard general health education messages during the preceding 12 months. Trachoma-specific messages were heard in 34 percent of the villages during the same period.

Latrine use and access to water are important aspects of the F and E of SAFE. The survey teams found that communities are very interested in both. Use of latrines is common in this part of Mali, and 95 percent of the villages had traditional latrines. In 85 percent of the survey villages, community leaders reported that each home has at least one latrine. Polygamous families often have a separate latrine for each wife. However, most latrines were made in the traditional style, with mud or clay walls, which are more likely to collapse in heavy rains and are more difficult to maintain than modern latrines with cement walls. However, 232 (61 percent) of the villages have masons who may be trained to construct modern latrines.

Villages use a variety of water sources. Almost all (97 percent) have traditional wells, and many (60 percent) have boreholes and modern wells. Seven percent of the villages reported using surface water. About

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25 percent of the villages reported that they do not have a source of water which functions year-round. Maintenance of boreholes was also found to be a problem. In one district, most of the boreholes inspected were not functional. Villagers reported that new boreholes last only one-two years before starting to have problems, mostly caused by the breakdown of pumps. The causes of pump breakdown were not assessed.

In summary, the NPPB study concluded that there is both an expectation and need for trachoma control activities in rural villages in Ségou. The NPPB can count on village health committees and district and regional health authorities to assist in implementing and monitoring activities. Both schools and radio stations were

In one district, most of the boreholes inspected were not functional. Villagers reported that new boreholes last only one-two years before starting to have problems.

found to be important channels for health education and community mobilization. There is a need to improve both latrines and water supplies in villages. Villagers and local masons would be able to help implement both of these environmental changes with support from the Ministry of Health, The Carter Center, and other partner organizations. ★

Making Traditional Soap to Fight Trachoma in Niger

In addition to water, soap plays a key role in improving personal hygiene. This message was emphasized by the Niger Trachoma Control Program in hygiene education sessions in rural Zinder. Zinder is the most highly trachoma-endemic region of Niger, and rural villages there are among the poorest in the world. Inadequate personal and environmental hygiene puts the population at risk for blinding trachoma and many other diseases. Niger's Trachoma Control Program launched a successful latrine and hygiene program in Zinder in 2002 which includes community-based hygiene education to promote regular face washing, hand washing (before each meal and after using the toilet), and increased washing of clothes and towels. (See *Eye of the Eagle*, January 2003.) As a result, the demand for soap grew, but commercial soaps in Zinder are expensive in village markets, if available at all, so asking village women to purchase soap was not practical. The solution to this problem was to revive the neglected craft of traditional soap making.

Early in 2003, the first group of 30 women from 10 villages in rural Zinder were trained in traditional soap production in a two-day training session. The participants learned that soap could be prepared from readily available local materials: soda (made by filtering ashes through water), animal or plant oil, and water. The mixture is heated over a low fire, then formed into shape and cooled. Soap

made in this way is affordable in the poorest of villages and can even be used to generate income.

The soap and hygiene training was done by sanitation technical officers from the Zinder Regional Health Bureau, led by Mr. Ali Amadou of The Carter Center. Ali Amadou is the Carter Center's technical consultant for trachoma control activities in Zinder region. Before joining the Center's Niger team, he taught hygiene

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and sanitation and led the highly successful Guinea Worm Eradication Program in Dosso region of Niger.

The Niger program hopes to expand hygiene training in 2003 to include at least 90 more women in 30 more villages in Zinder. Sanitation technical officers will follow up with the participants throughout the year to monitor progress and improve their hygiene project. If this pilot project is successful, the program may expand to reach rural women throughout Niger. In this way, sustainable better hygiene and the end of blinding trachoma in the future may have been found, in part, by looking to the past for traditional solutions. ★

Trachoma

Moving From Hearing to Understanding: Trachoma Radio Listening Clubs in Ghana

The goal of health education is action, not words. If the audience knows jingles by heart but does not adopt improved behaviors, the program needs to assess the situation and find a way to move from hearing the message to understanding it. As they say in the advertising business, “you have to get the audience to walk the walk, not just talk the talk.” This is the essence of what the Ghana Trachoma Control Program is doing to implement F and E in the Upper West region. They are finding creative ways to get villagers at risk for blinding trachoma to move from jingles to actions that will control blinding trachoma.

F and E refer to the last two components of the SAFE strategy: Facial cleanliness and Environmental improvements. These are the sustainable changes in personal and environmental hygiene that help to prevent blinding trachoma. The SAFE strategy has been the cornerstone of the Ghana Trachoma Control Program since 1998.

Hygiene improvement activities are ongoing in 383 villages in the Northern and Upper West regions of Ghana, including regular community discussions, durbars, dramas, and video shows. These activities are done by local communities with the support of regional and national health bureaus, local government, and

nongovernmental organizations such as The Carter Center, with support from the Conrad N. Hilton Foundation and the International Trachoma Initiative (ITI).

The BBC-World Service Trust, with support from the ITI, has assisted the Ghana Broadcasting Company and local radio stations to produce and broadcast health educational jingles and messages. In 2002, a BBC-WST evaluation of the Ghana program’s

The facilitator’s role is to lead the group from singing jingles to discussing what community members can do to control trachoma in their own environment. This activity will enable community members to translate their knowledge of trachoma into sustainable community changes.

mass media campaign found that almost 80 percent of respondents had heard jingles on trachoma control and almost 70 percent of respondents had heard program-sponsored radio spots. However, program supervisors reported that in their community discussions, people who had heard the jingles and radio spots frequently did not understand the content of the messages. These observations led to the creation of trachoma radio listening clubs.

The first trachoma radio listening clubs were formed in 20 highly trachoma-endemic communities of the Upper West region in January 2003 with technical and financial assistance from The Carter Center. Training for front-line health workers, radio producers, and community health volunteers was done first; then each community formed a radio listening club with an average of 25 people. Community volunteers were trained to facilitate the club activities, and The Carter Center gave one Freeplay wind-up radio to each community. Two local radio stations began to air 15-minute programs twice a week in Dagaare and Sissala, the most common languages of the Upper West region.

Club members gather around the radio to hear each transmission with their facilitator. After the broadcast, they discuss the key messages from the broadcast aided by printed Trachoma Control Program materials. The facilitator’s role is to lead the group from singing jingles to discussing what community members can do to control trachoma in their own environment. This activity is very important, as

it will enable community members to translate their knowledge of trachoma into sustainable community changes.

Initial reports from the Ghana program suggest that the radio listening clubs have been successful in all the pilot villages. The program plans to evaluate the radio listening clubs to help improve and expand the program to other trachoma-endemic communities in the near future. ★

Lymphatic Filariasis Elimination Program Expands

In 1998, the Carter Center's Global River Blindness Program in Nigeria began integrating control measures for lymphatic filariasis and schistosomiasis in Plateau and Nasarawa states. Plateau and Nasarawa states were mapped for lymphatic filariasis in 2000, and it was determined that mass treatment and health education for lymphatic filariasis were required in all cities and villages in the 30 local government areas of the two states (estimated population: 4 million). The intention of this preliminary program is twofold: to demonstrate the ease with which other diseases can be treated in tandem with onchocerciasis and to prove that lymphatic filariasis transmission can be interrupted on a large scale in Africa.

With financial support provided since 1998 from GlaxoSmithKline, the manufacturer of albendazole, River Blindness Program Nigeria has worked with the federal Ministry of Health of Nigeria and with the state governments of Plateau and Nasarawa states to provide annual combination

Mectizan/albendazole mass treatment for lymphatic filariasis. Health education is an integral part of the initiative. In 2001, The Carter Center also received funding from the Bill and Melinda Gates Foundation for support of lymphatic filariasis activities.

Since the program began, it has expanded each year to encompass more local government areas in Plateau and Nasarawa: from about 160,000 treatments in 2000 to about 675,000 in 2001 to about 2.17 million in 2002 (60 percent coverage of the eligible population). Full geographic coverage of all 30 local government areas of Plateau and Nasarawa—approximately 3.6 million treatments—is the aim of the program in 2003. No distribution strategy has yet been devised for endemic urban areas, but The Carter Center has plans to help assess these areas in the upcoming months.

In 2002, the program documented evidence that dual Mectizan/albendazole mass treatments are having a significant impact on lymphatic infections in mosquitoes and on mosquito

infectivity rates, compared to baseline levels. (See Figure 4.) Nineteen sentinel villages also have been designated for special monitoring, to get a closer look at the impact of treatment activities.

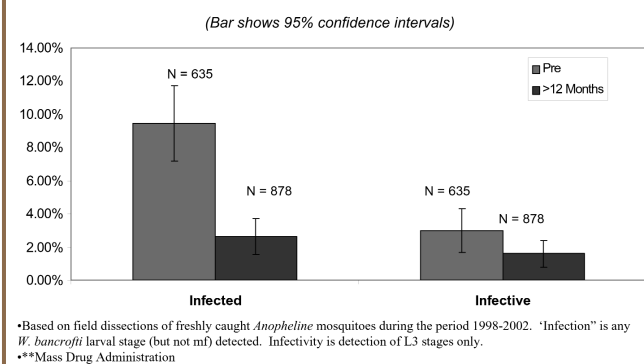
During 2002, the program distributed more than 15,000 health education

materials, aired radio messages in Hausa and English, and developed and aired a television documentary as part of its efforts to educate the population about the disease. It also mobilized 1,695 endemic villages and trained 3,013 community-based distributors in the lymphatic filariasis-only, non-APOC areas. (These activities were implemented in conjunction with the onchocerciasis activities in APOC-assisted areas.) In the lymphatic filariasis-only areas, villagers provided an average of U.S. \$6-7 (equivalent) per treatment round in support of each of their community-based distributors during 2002.

Several evaluations will take place in 2003, including coverage surveys and KAP studies to determine the effectiveness of the program, continued collection of entomological data from sentinel villages, and analysis of blood slides. These activities will help gauge the impact of the program and thus contribute to the longevity and growth of the Program to Eliminate Lymphatic Filariasis.

The Carter Center and the federal Ministry of Health officials must continue to push international authorities to assist complete nationwide mapping, a treatment strategy for areas that are coendemic for *Loa loa*, and to verify the safety of simultaneous administration of Mectizan, albendazole, and praziquantel. Once these items have been achieved, the program will be able to expand. The Carter Center believes that interventions against lymphatic filariasis, schistosomiasis, and onchocerciasis can be combined efficiently where the areas of endemicity overlap. This would have multiple health benefits and would improve sustainment of all three. ★

Figure 4
Lymphatic Filariasis
Mosquito infection and infectivity rates* in Plateau and Nasarawa states, Nigeria: Baseline and after 12 months of MDA with Ivermectin and Albendazole Treatment**



Global Health News

2002 Nobel Peace Prize

“The Carter Center also reports considerable progress in the fight against river blindness in Africa and Latin America. More than 15 million [treatments] have been carried out. The aim is to eliminate the disease on both continents by 2007....,” statement by Gunnar Berge, chairman of the Norwegian Nobel Committee in introducing former U.S. President Jimmy Carter, winner of the Nobel Peace Prize for 2002, at the Nobel award ceremony in Oslo, Norway, on Dec. 10, 2002. ★

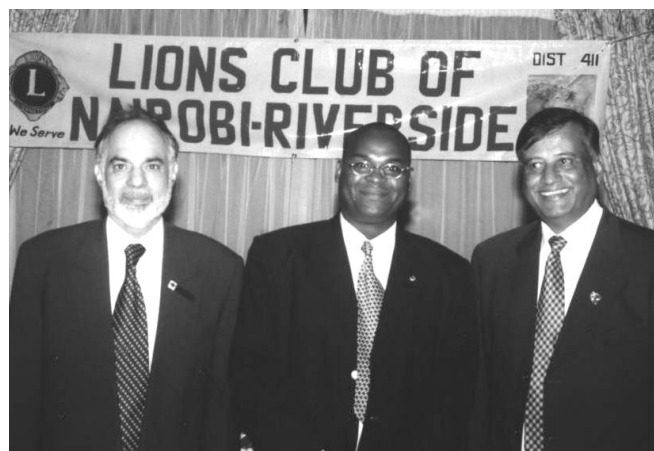


Milestones

On Friday, April 25, 2003, Dr. Jeremiah Ngondi, trachoma control program officer for The Carter Center/Nairobi, joined the Lions Club in Kenya. Dr. Ngondi is now a member of Lions Club of Nairobi Riverside, District 411. He joined the Lions for several reasons: to live in compassion and integrity, to work within Kenya on

issues of sight, and, most importantly, to be a part of a wonderful organization and a fantastic partner.

Congratulations Lion Dr. Ngondi! ★



Pictured (left to right): Lion Iqbal Allawala, club chairman; Lion Jeremiah Ngondi; and PDG Lion Amu Shah.

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