

SUMMARY PROCEEDINGS  
SIXTH ANNUAL TRACHOMA CONTROL PROGRAM REVIEW

*Strategies for Scaling Up*

THE  
CARTER CENTER



*Waging Peace. Fighting Disease. Building Hope.*

The Carter Center, Atlanta, GA  
February 28 - March 2, 2005

Funded by:  
Conrad N. Hilton Foundation  
Lions Clubs International Foundation  
International Trachoma Initiative

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## ACKNOWLEDGEMENTS

The Carter Center's Trachoma Control Program is funded through generous grants from the Conrad N. Hilton Foundation and the Lions Clubs International Foundation (LCIF). The sixth annual Program Review for Carter Center-assisted trachoma control programs was made possible through the generosity of the Hilton Foundation, LCIF and the International Trachoma Initiative.

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

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***Note:***

Inclusion of information in the Trachoma Program Review Proceedings does not constitute "publication" of that information.

## EXECUTIVE SUMMARY

The sixth annual Program Review of Carter Center-assisted trachoma control programs was held in conjunction with the International Trachoma Initiative (ITI) between February 28 and March 2, 2005 at The Carter Center in Atlanta. Welcoming two of the ITI-assisted countries for the first time expanded the scope and scale of the program review to cover three packed days. The theme of the meeting was *Strategies for Scaling Up*.

As in previous years, the primary objectives of the Program Review were to assess the status of the national trachoma control programs that are in part supported by The Carter Center, identify challenges encountered in planning and implementing the national trachoma control programs, discuss solutions and shared experience, as well as to promote sharing and standardization of information. We were particularly pleased to host the ITI country program managers from Ethiopia, Tanzania, Morocco, Ghana, Mali, and Niger in addition to the regional directors for francophone and anglophone Africa, six staff from ITI New York and two from Pfizer. This expanded scope added to the depth of experience shared, whilst keeping the intimate and supportive atmosphere so much valued in the past.

In keeping with the theme of Strategies for Scaling Up special presentations were given on the extraordinary accomplishment of the Amhara Regional Health Bureau in Ethiopia on latrine provision, the importance of data when promoting F and E, alternative methods of reaching large numbers of people with trachoma health education, and the use of kinship groups for mass drug administration and health promotion. Other special presentations included updates from the International Trachoma Initiative head office and the World Health Organization.

National and regional trachoma control program (TCP) coordinators representing the ministries of health of Ethiopia, Mali, Ghana, Niger, Nigeria, Morocco, Tanzania, and Sudan attended. For the first year there were presentations from country programs in Tanzania and Morocco, in which The Carter Center plays no active role. In addition, The Carter Center's resident technical advisors and country representatives from Ghana, Ethiopia, Mali, Niger, Nigeria and Sudan participated in the meeting. Representatives of the Conrad N. Hilton Foundation, Lions Clubs International Foundation (LCIF), Helen Keller International (HKI), Sight Savers International, World Vision International, the U.S. Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO) and the London School of Hygiene and Tropical Medicine were also key participants.

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## ACRONYMS

ATO	Annual Treatment Objective
CBM	Christoffel Blindenmission
CDC	U.S. Centers for Disease Control and Prevention
CMA	Christian Mission Aid
FAR	Fellowship for African Relief
FGD	Focus group discussions
FMOH	Federal Ministry of Health
GOS	Government of Sudan
GOSS	Government of South Sudan
GRBP	Global 2000 River Blindness Program
HKI	Helen Keller International
ITI	International Trachoma Initiative
KAP	Knowledge, Attitudes, and Practices
LGA	Local Government Area
MOH	Ministry of Health
NGO	Non-Governmental Organization
NPPB	National Program for the Prevention of Blindness
NR	Northern Region (Ghana)
OLS	Operation Lifeline Sudan
PHC	Public Health Centers
SAFE	Surgery, Antibiotics, Face Cleansing & Environmental Improvement
SF	SightFirst
TCP	Trachoma Control Program
TRA	Trachoma Rapid Assessment
TF/TI	Trachomatous inflammation-Follicular/Intense
TT	Trachomatous Trichiasis
UIG/UTG	Ultimate Intervention/Treatment Goal
UWR	Upper West Region (Ghana)
WHO	World Health Organization
WVI	World Vision International

## INTRODUCTION

### *Strategies for Scaling up*

These proceedings reflect the thoughts, discussions and proposals made during the sixth annual Program Review of Carter Center-Assisted Trachoma Control Programs. These program review meetings offer a unique forum for trachoma control program (TCP) managers and Carter Center resident technical advisors to work face-to-face with their peers to review the previous year and plan for the future. The addition of a large contingent from the International Trachoma Initiative enhanced the breadth of experience on offer and took the program review to a new level. The expanded group, representing eight country and regional programs, is the first and only assembly of national and regional TCP coordinators and experts to meet regularly to discuss practical application of the SAFE strategy with an emphasis on F&E. We welcome the additional experience added by the ITI and look forward to increased levels of collaboration in future years. Discussions during the program review meetings are country-specific, but the impact is global. The achievements, challenges, solutions and lessons learned here have helped to guide the evolution of the GET 2020 Alliance, particularly with respect to F&E. At this year's review the notion of scaling up program delivery was brought into the open, with a realization that if the target of global elimination of blinding trachoma by 2020 is to be met then there is an urgent need to increase program output tremendously, whilst staying within finite budgets.

*Why can we discuss scaling up now?* Because we now have the support, tools and expertise to do it. With seven years of practical experience in implementing the full SAFE strategy in the group, we have built up substantial political, technical and donor support; developed tools for planning and implementation; supported local trachoma control program teams; and received further support from Pfizer who are generously increasing the donation of azithromycin to over 135 million doses.

*Why should we discuss scaling up now?* Because the prospects for the type of economic development that could lead to the sudden disappearance of blinding trachoma remain bleak. The underlying causes of trachoma: poverty, and poor access to water and sanitation will plague most trachoma-endemic countries for many years to come. But through the application of the full SAFE strategy for trachoma control we can break the cycle of poverty and empower people to take control of their own health and futures. In November 2003, a decisive step was taken to expand the A of SAFE when Pfizer announced that it would increase donations of azithromycin to 135 million treatment doses over the next five years, and their actions in 2004 suggest that even this is just the start. However, drugs will not distribute themselves and A cannot stand alone from SAFE. The challenge for us all is develop plans and policies for scaling up delivery whilst ensuring that all aspects of SAFE are delivered and that there is equality of access to the strategy.

## **Nigeria Trachoma Control Program**

*Presented by Dr. Dienne Iyalla Apiafi, National Coordinator, National Program for Prevention of Blindness. Carter Center data were presented by Dr. Nimzing Jip, Desk Officer for Trachoma, The Carter Center, Nigeria.*

*Carter Center assistance to Nigeria is supported by the Conrad N. Hilton Foundation.*

### **Background**

Trachoma control in Nigeria is done under the auspices of the National Program for the Prevention of Blindness (NPPB); the NPPB national coordinator directs trachoma control activities through the coalition of the Ministry of Health, NGOs, and UN agencies. Past review of existing hospital data, university dissertations, and anecdotal reports have suggested that trachoma is a significant cause of blindness in the Northeastern and Northwestern Zones of Nigeria. Since October 2000, prevention of blindness partners have conducted trachoma prevalence surveys in four states and trachoma rapid assessments in five other states. A national survey for blindness and low vision supported by Sight Savers International has now begun in the North East zone in February 2005.

In 2000, The Carter Center Nigeria began working with state and local health authorities to help establish trachoma control programs in Plateau and Nasarawa States. The Ministries of Health for these states did their first population-based trachoma prevalence surveys in April 2002. Survey results suggested that there are moderate levels of trachoma in both states, with pockets of intense trachoma in some local government areas (LGAs). The survey also showed that access to household latrines varied from 21% in parts of Plateau to 69% in parts of Nasarawa.

The first trachoma knowledge, attitudes and practices (KAP) survey was done in 2002. The results of the survey were used in developing health education and social mobilization strategies in a workshop held in 2003. Interventions focusing on the F&E components of the SAFE strategy were then launched in Plateau and Nasarawa States with the distribution of health education materials including flipcharts, posters, and informational brochures. A latrine promotion project was launched with Carter Center support in Plateau and Nasarawa in 2003. The program trained 108 village masons to build inexpensive SanPlat latrines for rural households.

### **Program Achievements in 2004**

#### *Facial Cleanliness and Hygiene Education (F)*

In Nigeria, health education for trachoma control occurs in a variety of locations and situations: markets, churches, mosques, schools, and during public gatherings such as naming ceremonies and community meetings. The program promotes the strategy of passing health education messages from person-to-person and from house-to-house. Since the program's inception, the number of IEC materials distributed has quadrupled; by the end of 2004, 172 villages are reached with ongoing health education. Likewise, 1,047 health educators have been trained and the number of health educators and primary eye care workers now reaches 5,700.



### *Environmental Improvement (E)*

In Carter Center-supported areas, latrine construction has taken place in 120 villages, for a total of 1,871 household latrines built in 2004. This more than quadrupled the number of household latrines built the previous year. The estimated total cost per latrine is \$45.70, \$28 of which is contributed by the household.

### *Surgery (S)*

The national program undertakes routine cataract camps during the year and has incorporated trichiasis surgeries into these camps. Cristoffel Blindenmission, Sight Savers International, and Helen Keller International also use eye camps as opportunities to carry out trichiasis surgeries. In 2004, 3,830 trichiasis surgeries were conducted in Nigeria, a 38% increase from 2003. The program has supported training of 30 trichiasis surgeons (ophthalmic nurses) during eye camps where they work as apprentices for trained surgeons who work in the same zone.

### *Antibiotics (A)*

The Carter Center supports distribution of ocular tetracycline; in 2004, 45,582 tubes were distributed. In December 2004, Sight Savers International began distribution of azithromycin, reaching 2,428 people. The program found that a single-dose treatment with azithromycin was more accepted by communities than use of tetracycline eye ointment and is thus continuing to solicit support for azithromycin distribution.

## **Targets for 2005**

### *Health Education and Facial Cleanliness*

- To continue ongoing hygiene education in 200 villages by 344 trachoma volunteers and 62 primary health care workers
- To conduct at least 2 sessions of hygiene education per month
- To promote at least twice daily face washing of children 1-9 years old

### *Antibiotics*

- 5,493,301 people targeted for azithromycin distribution

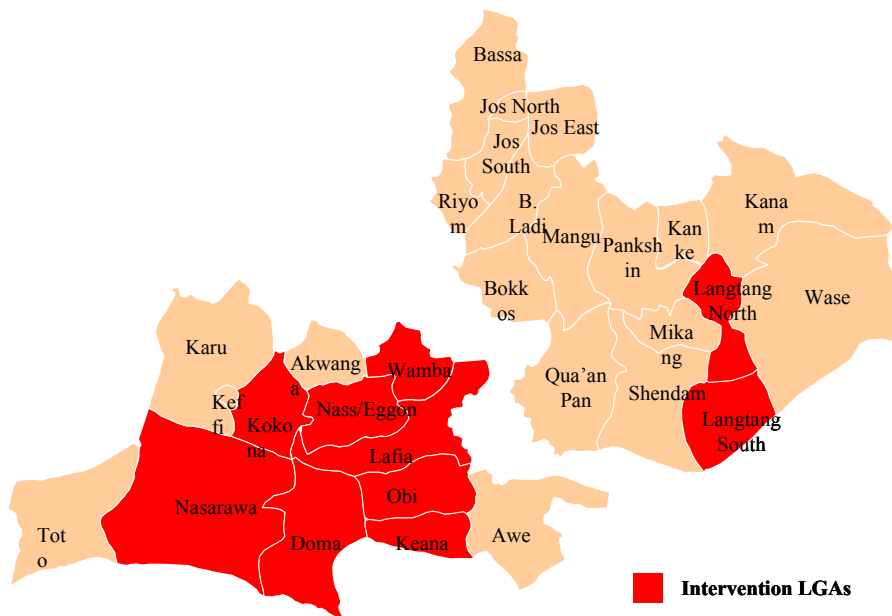
### *Surgery*

- Conduct 37,187 trichiasis surgeries

### *Other*

- Conduct national blindness and low vision survey

# Carter Center-Assisted States, 2004 Nigeria Trachoma Control Program



**Nasarawa and Plateau States, with intervention LGAs**

## **Ethiopia Trachoma Control Program**

*Presented by Mr. Teshome Gebre, Carter Center Resident Technical Advisor and Dr. Anteneh Woldetensay, Carter Center program officer Ethiopia.*

*Carter Center assistance to Ethiopia is supported by the Lions-Carter Center SightFirst Initiative.*

### **Background**

The prevalence of blindness in Ethiopia, estimated at 1.25%, is thought to be the highest in the world. In addition, six million Ethiopians are believed to suffer from low vision. The two major causes of blindness are believed to be cataract (40%) and trachoma (30%). The National Committee for the Prevention of Blindness (NCPB) of the Federal Ministry of Health estimates about one million Ethiopians live with trachomatous trichiasis and ten million more suffer from active trachoma (TF or TI). A population of 50-60 million are at risk of blindness from trachoma.

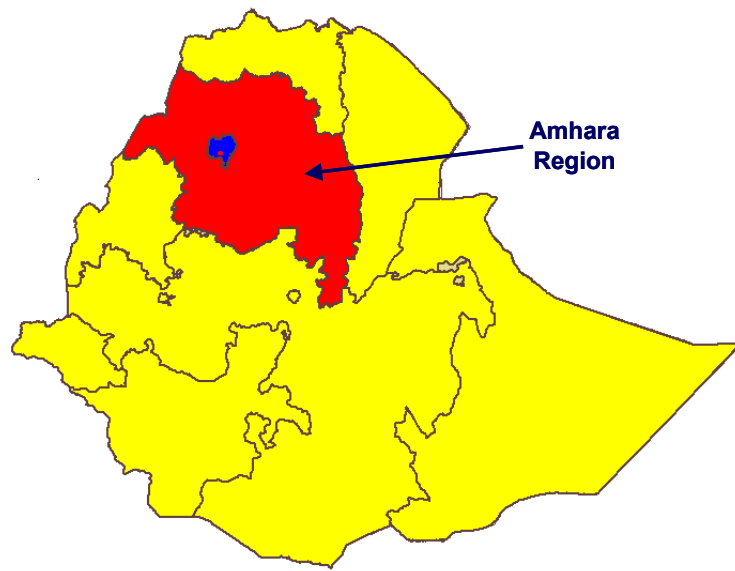
In October 2000, The Carter Center began assisting the Amhara Regional Health Bureau (RHB) in trachoma control with funding from the Lions-Carter Center SightFirst Initiative. Four districts in the South Gondar Zone (Dera, Ebinat, Estie and Simada) were selected to launch activities (see map). The initial program area comprised 155 villages with a total population of over one million persons.

In December 2000, the Amhara RHB, the Prevention of Blindness Team of the Federal Ministry of Health, and The Carter Center conducted a community-based trachoma prevalence survey in the four pilot districts. The survey data were consistent with reports that Ethiopia has extremely high prevalence of blinding trachoma. The Amhara RHB estimated that there were 36,000 trichiasis patients in need of surgery and almost 300,000 children with inflammatory trachoma in need of antibiotic treatment in the four districts.

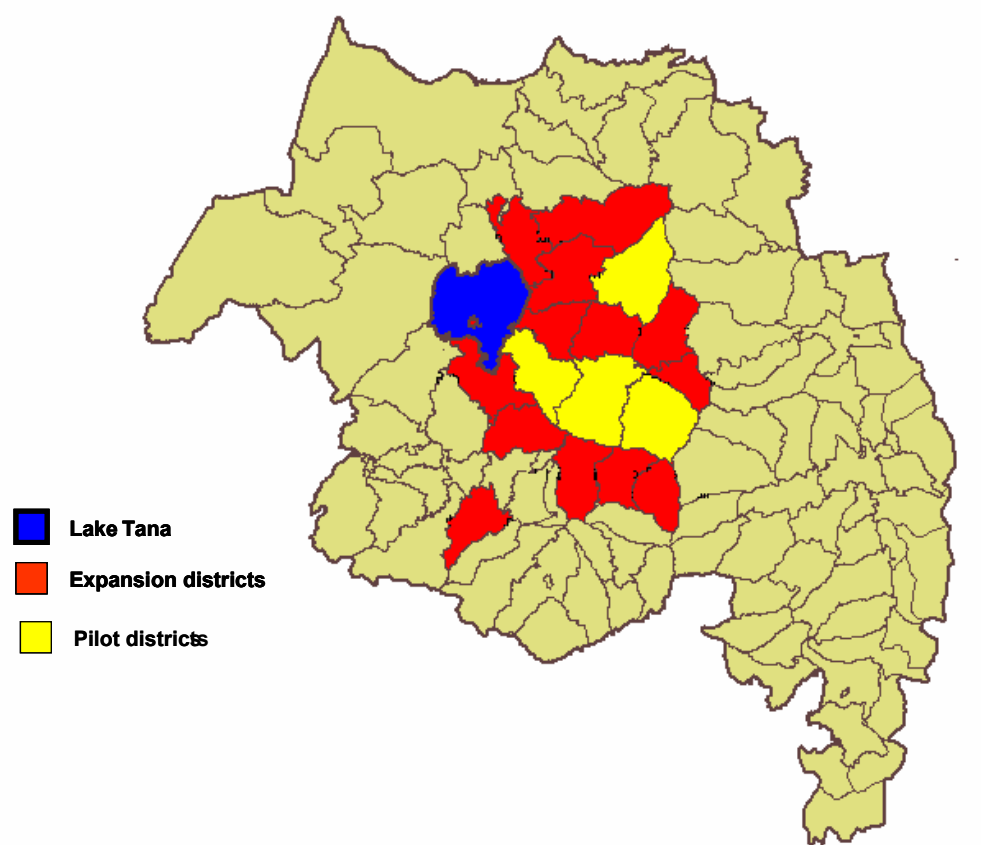
A knowledge, attitudes and practices (KAP) survey was done in the same four districts one month later. The KAP survey was both qualitative and quantitative, including focus group discussions, informal interviews and a household survey. The findings were used to develop a school health curriculum and health education materials such as posters, flip charts, pamphlets, and a training manual for community workers.

A five-year (2001-2005) plan of action for the South Gondar Zonal TCP was drafted in a workshop in 2000 that brought together staff from the regional, zonal and district health bureaus, as well as partners including Ethiopian Lions Clubs, The Carter Center, ORBIS, World Vision and Christoffel Blindenmission.

Based on the successful first three years of the South Gondar TCP, The Carter Center agreed to assist in expansion to include an additional 15 trachoma-endemic districts (see map). These new districts are comprised of 497 villages, with a total population of 3 million persons. Baseline trachoma prevalence and KAP studies were done in 2003-2004 and a plan of action developed for 2004-2005. With the expansion, Lions-Carter Center assisted trachoma control activities now comprise 19 districts in four zones of the Amhara Region and a total population of about 4 million persons (22% of Amhara Regional state).



Map of Ethiopia



Map of Amhara Region with TCP districts, 2003

## **Program Achievements in 2004**

### *Facial Cleanliness and Hygiene Education (F)*

During 2004, 654 TCP target villages in the Amhara Region received ongoing health education. All villages (kebeles) conduct health education at public gatherings and during regular household visits. A total of 6,021 different groups were trained in the four intervention zones for mobilization techniques for trachoma control activities. Trachoma volunteers report monthly on health education activities in the villages using a standardized report form. They also assess clean faces in children 1-9 years old and the status of latrine construction while visiting households.

### *Environmental Improvement (E)*

Fly control and environmental improvement are very important aspects of the Amhara TCP. In 2004, a total of 89,096 latrines were built. This incredible achievement was possible due to the community members' conviction, the community leaders' vision, and the commitment of all parties at all levels. Their motto became, "Think big, start small, act now!" During the promotion period model latrines were then built in each kebele in the intervention area in public gathering places. The gender aspects of latrine promotion were also emphasized, as women activists fueled the drive to dig and use latrines.

### *Training activities:*

The school health curriculum was translated into Amharic with support from local Lions and a training of trainers has been conducted for 38 teachers from program districts. It is anticipated that one teacher from every primary school will be trained on how to use the curriculum, including formal education on trachoma in the classroom, and drama and games outside the classroom. A trainer's guide entitled "The Leading Role of Women in Trachoma Control" has been produced and distributed for training of women at various levels. As the gender aspect of trachoma control is now better appreciated, 38 representatives from program districts, 4 zonal heads of women's affairs, and 2 women's group leaders from the regional administration council were trained on trachoma control activities.

Training on behavioral change communication and community mobilization for trachoma control was also organized by The Carter Center in collaboration with the Amhara Regional Health Bureau. A communication consultant conducted the training of district focal persons and zonal coordinators. Likewise, staff from the Regional Health Bureau have received training on behavioral change communication techniques.

### Summary achievements of F & E activities from 2001 – 2004

	2001	2002	2003	2004	Total
Training of groups for trachoma control mobilization	0	1,080	138	6,021	7,239
Villages implementing health education strategies regularly	0	138	155	654	N/A
Latrines constructed	0	1,333	2,151	89,096	92,580

#### *Surgery and Antibiotics (S&A)*

In 2004, 67 individuals were trained in trichiasis surgery in the 4 intervention zones. A total of 23,676 people received trichiasis surgery. Two specific surgery camps were conducted during which 2,385 persons received surgery as a donation from the Ethiopian Lions Clubs in honor of President Carter's 80<sup>th</sup> birthday.

The TCP treated 125,208 persons for active trachoma in 2004 with tetracycline ophthalmic ointment purchased by The Carter Center. Patients were treated during health center visits, outreach surgical campaigns, and outreach vaccination campaigns. In South Gondar and East Gojam zones, a total of 625,422 people received mass treatment with azithromycin.

### Summary achievements of S & A activities from 2001 – 2004

	2001	2002	2003	2004	Total
Trained TT surgeons	8	11	19	67	105
Number of TT patients operated	815	4,019	6,840	23,676	35,350*
Treatment of trachoma cases with tetracycline	1,042	7,964	35,106	125,208	169,320
Mass treatment with azithromycin	0	0	100,256	625,422	725,768

\*31% of surgical backlog

#### **Targets for 2005**

During the annual Amhara Region trachoma program review meeting, each woreda set its own targets for 2005.

#### *Hygiene Education, Facial Cleanliness (F)*

- Train 10,344 TCP cadres in all program areas for mobilization in trachoma control
- Intensify health education strategies in all 654 kebeles
- Implement the TCP school health curriculum in all primary schools of the program woredas
- Work closely with women groups in the 19 woredas to heighten awareness on trachoma and latrine use

#### *Environmental Improvement (E)*

- Build 278,966 household latrines with available local materials
- Construct about 120 small scale water schemes in collaboration with CBM and ORDA

*Surgery (S)*

- Train 57 new trichiasis surgeons
- Perform surgery on 57,194 individuals with trichiasis
- Conduct at least 1 trichiasis recurrence study per program zone
- Supervise trichiasis surgeons by ophthalmic surgeons at least once per quarter

*Antibiotics (A)*

- Treat 265,970 cases of trachoma with 1% tetracycline eye ointment
- Mass treatment of 3,061,419 individuals with azithromycin (The priority woredas for treatment are: Ebinat, Estie, Hulet Eju Enessi, Enebsie Sarmidir, Simada, Dera Yilmanadensa and Gonchasiso Enesie—1.9 million.

**Summary of Amhara Region Trachoma Control Interventions in 2004**

**The Carter Center-assisted Trachoma Control Program - Four Zones**

	South Gondar	North Gondar	East Gojam	West Gojam	Summary
<b>Population</b>	<b>2,095,374</b>	<b>510,771</b>	<b>554,433</b>	<b>887,372</b>	<b>4,047,950</b>
<b>Number of villages</b>	<b>311</b>	<b>97</b>	<b>117</b>	<b>129</b>	<b>654</b>
<b>Baseline prevalence (2000/2003)</b>					
% TF (children 1 to 9 yrs)	<b>66.6</b>	<b>71.6</b>	<b>80.8</b>	<b>67.3</b>	
% all active trachoma (children 1 to 9 yrs)	<b>77.6</b>	<b>81.0</b>	<b>88.3</b>	<b>81.0</b>	
% TT persons >15 yrs	<b>4.3</b>	<b>7.5</b>	<b>4.5</b>	<b>5.5</b>	
% of children with clean faces (children 1-9 yrs)	<b>35.1</b>	<b>35.1</b>	<b>11.6</b>	<b>53.7</b>	
<b>Baseline KAP (2001/2004)</b>					
<b>F &amp; E</b> intervention targeted villages:	<b>311</b>	<b>97</b>	<b>117</b>	<b>129</b>	<b>654</b>
Number of villages with Health education	<b>311</b>	<b>97</b>	<b>117</b>	<b>129</b>	<b>654</b>
% Coverage (villages with Health education)	100%	100%	100%	100%	100%
Number of trained volunteers	843	259	687	868	<b>2,657</b>
Number of trained health workers	272	88	118	173	<b>651</b>
Number of trained community leaders	377	166	406	608	<b>1,557</b>
Number of trained school teachers	390	237	298	231	<b>1,156</b>
Health education materials available	Yes	Yes	Yes	Yes	<b>Yes</b>
Latrine constructed in 2004	14,815	1,206	38,765	34,310	<b>89,096</b>
Targeted for latrine construction in 2004	5,997	1,033	1,350	1,750	<b>10,130</b>
% Coverage (# of constructed latrines)	247%	117%	2871%	1961%	880%
# of villages with water supply	4	29	313	49	<b>395</b>
# children 1-9 years examined for clean face	224,529	68,024	215,565	78,568	<b>586,686</b>
# children 1-9 years with clean face	142,865	42,898	114,960	54,270	<b>354,993</b>
% of children 1-9 years with clean faces	64%	63%	53%	69%	61%
<b>Antibiotics:</b>					
Treatments	286,942	0	338,480	0	<b>625,422</b>
Target Population	550,000	N/A	N/A	N/A	<b>550,000</b>
% Coverage of persons receiving Zithromax	<b>52%</b>				<b>114%</b>
<b>Tetracycline Ointment:</b>					
Treatments	69,649	14,922	15,957	24,680	<b>125,208</b>
<b>Surgery</b> intervention villages:					
Surgeries	7,810	2,790	4,697	8,379	<b>23,676</b>
Target Population	21,261	9,370	6,556	11,694	<b>48,881</b>
Coverage (%)	37%	30%	72%	72%	48%
Number of trichiasis surgeons trained	30	12	13	12	<b>67</b>
Targeted number of trichiasis surgeons	29	13	13	12	<b>67</b>
Coverage (%)	103%	92%	100%	100%	100%



## **Niger Trachoma Control Program**

*Presented by Dr. Boubacar Kadri, Deputy Director, National Prevention of Blindness Program, Ministry of Health of Niger.*

*The Carter Center assistance to Niger is funded by the Conrad N. Hilton Foundation.*

### **Background**

Niger's National Prevention of Blindness Program (NPBP) was established in 1987. The Ministries of Health, Education, and Water & Social Development formed a National Trachoma Task Force in 1999. Representatives of partner health organizations including The Carter Center, local Lions Clubs, Helen Keller International, Christoffel Blindenmission, The Niger Association for the Blind, the African Muslim Agency, and the World Health Organization are also Task Force members.

Trachoma prevalence surveys conducted in 1997-1999, with financial assistance from the European Union and The Carter Center, found that an average of 44% of children under 10 years old had active trachoma (TF/TI), and 1.7% of women over 15 years old had trichiasis. Nationwide, an estimated 68,300 men and women needed trichiasis surgery. The highest prevalence of trachoma was identified in the regions of Zinder, Diffa and Maradi. The baseline assessment showed that about 50% of households had access to clean water within 1 km, and about 14% of households had access to a latrine. The national baseline prevalence of clean faces in children aged 1-10 years was 52%.

### **Program achievements in 2004**

#### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

A total of 4,438 villages in three target regions (Zinder, Maradi and Diffa) received regular health education sessions for trachoma prevention in 2004. To carry out community health education, 140 volunteers, including community health workers and teachers were trained in trachoma prevention. From 1999 through 2004, there has been a steady increase in the number of villages reached by the program with health education, as reported by the national coordinator (see graph, page 12).

To broaden the reach of the program's educational campaign throughout Niger, health education messages were produced and broadcast on local radio stations. Radio listening groups gathered in 50 villages to hear some of the 12,058 broadcasts that took place during the year. To reach persons without access to radio, artists and health educators performed theatrical dramas in large villages and weekly markets. The average percentage of children aged 1-9 years with clean face was 80.1%.

The hallmark of the Niger F&E campaign has been the latrine promotion project, begun in 2002 to reduce populations of *Musca sorbens* in trachoma-endemic villages and to improve general hygiene. Latrine promotion is supported by the NPBP, The Carter Center, local Lions clubs, the International Trachoma Initiative (ITI) and other local NGOs. In 2004, the project assisted villagers to build 5,355 household latrines, achieving nearly 200% of the year's target. The previous year, the project assisted 1,750 households to construct latrines.

In addition, a total of 213 women were trained in traditional soap preparation and 150 masons were trained in latrine construction. The Niger program also benefited from the construction of 10 new water points in 2004.

#### *Surgery (S)*

In 2004, the program trained 10 new trichiasis surgeons based in integrated rural health clinics and distributed new trichiasis surgical kits to 75 rural clinics. Overall, 5,286 individuals received corrective surgery for trichiasis in 2004. From 1999 through 2004, a total of 20,766 people have received corrective surgery for trichiasis (see graph, page 12). Challenges to the delivery of surgical activities included the demands of cost-recovery for health clinic activities; competing, non-trachoma related activities such as national polio immunization days; as well as the irregular supervision of the trichiasis surgeons.

#### *Antibiotics (A)*

With support from ITI, the Niger program conducted its third annual mass antibiotic distribution in 2004, reaching 4,438 villages with azithromycin and ocular tetracycline. A total of 1,915,456 persons in highly trachoma-endemic villages received azithromycin during mass distribution campaigns. In addition, 48,886 persons were treated with ophthalmic tetracycline ointment in 2004.

### **Targets for 2005**

#### *Facial Cleanliness and Hygiene Education (F)*

- Achieve 80% of children with clean face
- Train 252 women in traditional soap-making and 30 village hygiene committees

#### *Environmental Improvement (E)*

- Train 250 village masons and 30 ‘artisans reparateurs’
- Build 8,400 household latrines and 60 blocks of school latrines
- Build 43 new water points and repair 70 water points

#### *Antibiotics*

- Treat 3,296,280 persons with azithromycin in mass treatment campaigns

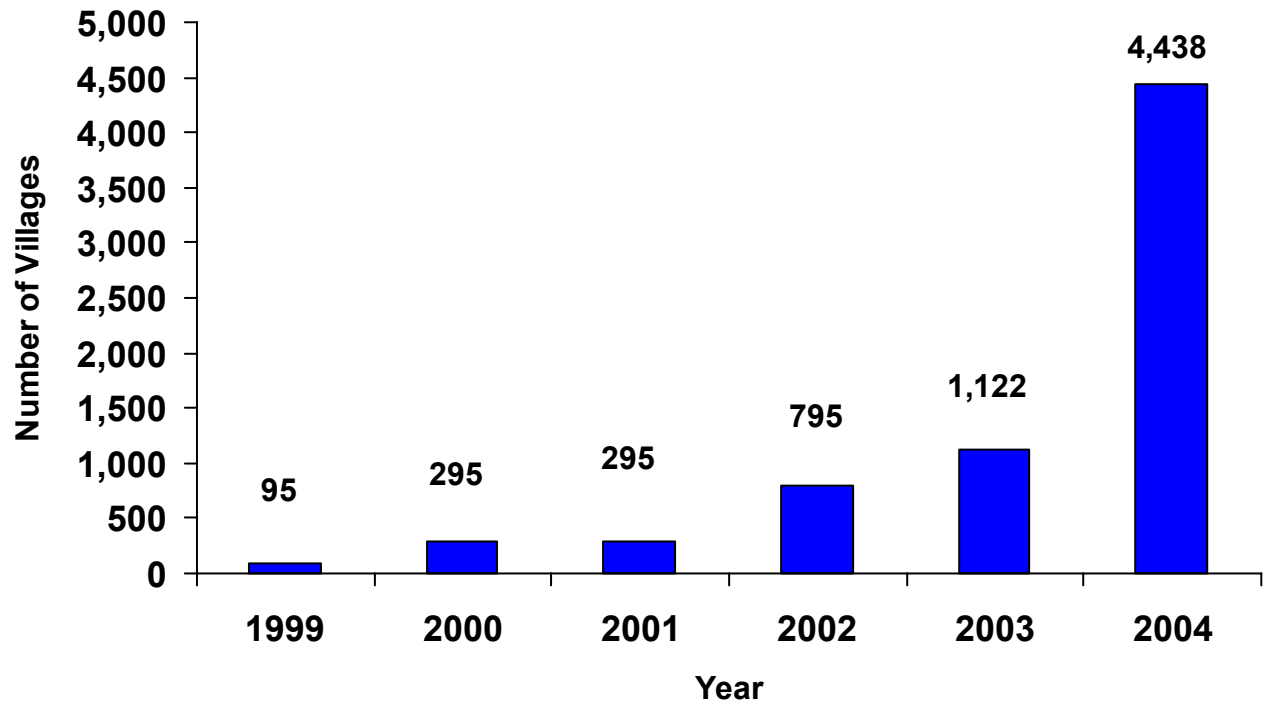
#### *Surgery*

- Train 20 additional trichiasis surgeons
- Do corrective eyelid surgery on 7,560 individuals

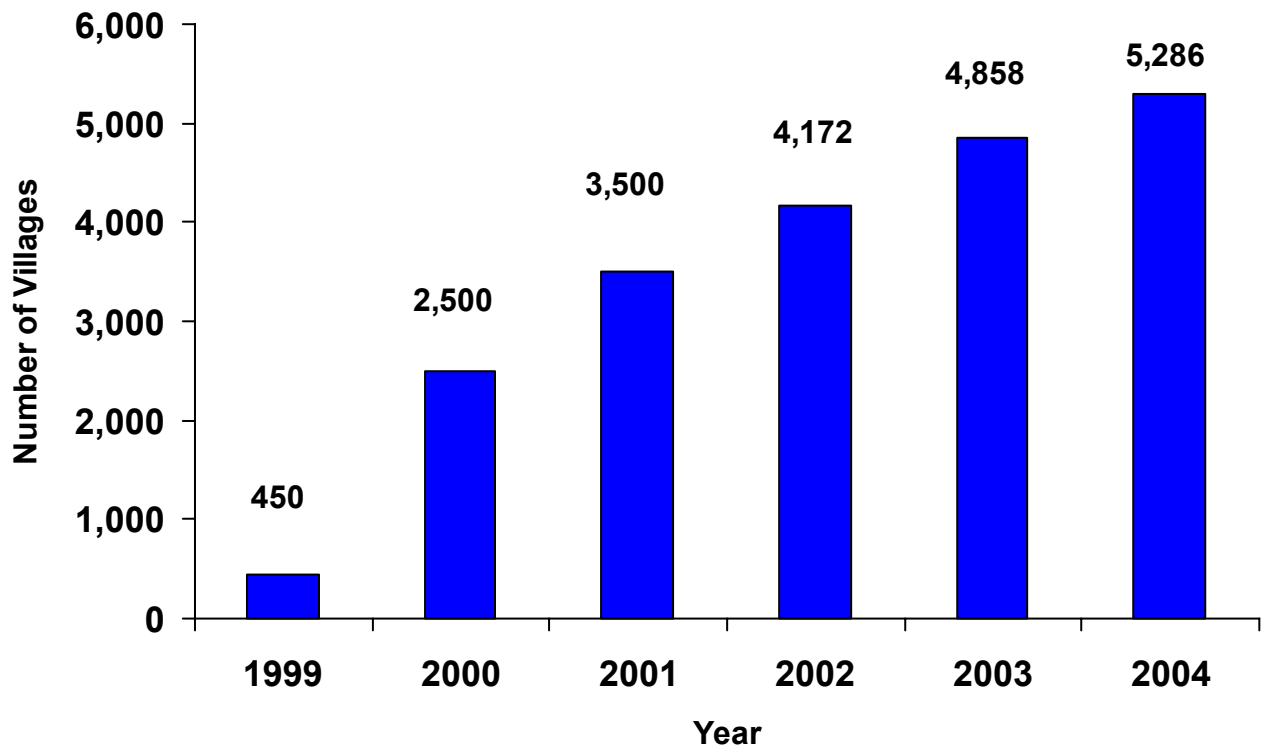
#### *General Targets*

- Conduct a study on the quality of trichiasis surgery
- Expand trachoma control activities to 3 new districts: Aguié and Tessaoua (Maradi region) and Diffa (Diffa region)

### Villages Receiving Health Education, Niger



### Individuals Receiving Trichiasis Surgery, Niger



## **Sudan Trachoma Control Program**

*Presented by Mr. Raymond Stewart, Resident Technical Advisor, The Carter Center/Sudan (Khartoum), and Ms. Alice Onsarigo, Trachoma Program Officer, The Carter Center/Nairobi. The Sudan program was also represented by Dr. Bellario Ahoy Ngong, Director General, Sudan People's Liberation Movement Secretariat of Health.*

*Carter Center assistance to Sudan is funded by the Lions-Carter Center SightFirst Initiative.*

### **Background**

Sudan is the largest country in Africa and one of the poorest in per capita income. Its vast territory, poor infrastructure, and insecurity, especially in the south, are major challenges to all public health work. Sudan has a population of about 30 million persons, of which at least 22 million live in the northern states. Sudan has been affected by civil war for 37 of the 49 years since it gained independence in 1956, but on January 9<sup>th</sup>, 2005, a peace agreement was signed, ending the 21-year civil war, which had been the longest lasting war in Africa. Since 1989, humanitarian aid to southern Sudan has been carried out under the aegis of Operation Lifeline Sudan, a consortium of United Nations agencies and over 40 non-governmental organizations. There were no local Lions Clubs in Sudan before 2005.

Trachoma has long been thought to be an important disease in Sudan, but little data were available until May 1999. At that time, a team from the Sudanese Federal Ministry of Health (FMOH) completed the first population-based trachoma prevalence surveys in two areas of the country, with financial assistance from the Conrad N. Hilton Foundation and technical support from The Carter Center. One survey was done in Wadi Halfa, in the north, and the other in Malakal, in the south (see Map 1). Trachoma was previously believed to be a significant problem only in the north, but the surveys confirmed that trachoma is a cause of severe disability and significant blindness in southern as well as northern Sudan.

The survey results, in part, led to the signing later that year of an agreement for the Lions-Carter Center SightFirst Initiative. The three initial partners (FMOH, Lions Clubs International Foundation, and The Carter Center) then began working with two nongovernmental organizations (Christian Mission Aid and MEDAIR) in the Operation Lifeline Sudan (OLS) consortium to plan a broad trachoma control effort based on the SAFE strategy. Pfizer, Inc. began to donate azithromycin (Zithromax®) to Sudan through the International Trachoma Initiative in August 2000.

In March 2005, the Federal Minister of Health signed a resolution stating that the Trachoma Control Program has officially joined the National Program for Prevention of Blindness (NPPB), and is under the responsibility of its coordinator, Dr. Kamal Hashim. Activities in Government of Sudan (GOS)-controlled areas will continue to be coordinated and monitored from Khartoum with Carter Center assistance.

In 2000, The Carter Center began collaboration with NGOs to help implement the SAFE strategy in OLS-supported areas. Activities in these areas are coordinated and monitored

from Nairobi by The Carter Center with assistance from partner NGOs and humanitarian units. Trachoma prevalence surveys were done in four locations in 2001 and an additional three in 2002. By 2004, The Carter Center was coordinating the activities of 6 NGOs based in 12 different locations in south Sudan. The total population of all the OLS-supported areas served by the Sudan TCP is over 600,000 persons.

### **Program Achievements in 2004 in Government of Sudan (GOS)-supported areas**

#### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

Health education in GOS-supported areas is conducted through a variety of channels. Village health educators use flipcharts to teach about trachoma prevention during house-to-house visits and during azithromycin distribution. Trachoma clubs are active in schools, and health education messages are broadcast through local media including songs and plays on radio and television. Through 2004, there were 10 active trachoma clubs reaching 40,143 persons with health education.

Latrine construction continued in 2004, with 70 latrines built in trachoma-endemic areas. The greatest challenges in implementing F&E interventions were related to the distrust of latrines in some areas, and the disruption of health services due to insecurity in several states.

#### *Surgery (S)*

In GOS-supported program areas of Sudan, routine trichiasis surgery is performed by ophthalmologists and trained ophthalmic medical assistants at central and state hospitals. During eye camps in rural areas, ophthalmologists conduct trichiasis surgery in addition to routine cataract surgeries. Including surgeries during these eye camps, a total of 276 trichiasis surgeries were conducted in 2004. Trichiasis surgeons were also trained during eye camps and outreach; a total of 83 new surgeons were trained last year.

#### *Antibiotics (A)*

In 2004, the GOS-supported program distributed azithromycin to 266,630 persons. Treatments covered eligible populations in five major areas (see Map 1). In each area, selected community members were trained in drug distribution and their work was supervised by national program personnel. These supervisors and distributors are selected by the communities and are given incentives for their work. The communities establish the dates for distribution and raise public awareness before house-to-house distribution is done. The program expressed obstacles to distribution related to the centralized program structure and the limited community involvement and ownership. In 2005, the program plans to decentralize implementation to the state ministries of health and localities.

### **GOS-supported areas' 2005 targets:**

- Analyze prevalence survey data, conduct rapid trachoma assessment for priority areas
- Develop comprehensive plan to implement the full SAFE strategy in all endemic and at-risk communities
- Conduct a training of trainers for health education on trachoma
- Encourage community leaders to play a greater supporting role in F&E implementation

- Increase school-based health education in collaboration with Ministry of Education and UNICEF
- Conduct a triennial survey to see program impact in selected areas
- Continue monitoring and supervisory visits
- Coordinate with NGOs working in the program areas
- Integrate F&E health education into primary health care programs

### **Program Achievements in 2004 in Operation Lifeline Sudan (OLS)-supported areas**

The OLS-supported Sudan Trachoma Control Program operates in areas with high prevalence of blinding trachoma, where trichiasis is found in children as young as 5 years old. The Carter Center supports work in 12 locations that have an estimated total population of about 1 million persons. In addition, it is difficult for the program to gain access to those most at risk because of the insecurity in many areas. This situation is complicated by a poor health infrastructure, minimal physical infrastructure, and strong cultural beliefs and practices that inhibit behavior change. There are many mobile nomadic populations and a large number of internally displaced persons who are hard to reach and at-risk for infection and eventual blindness.

#### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

In 2004, the program delivered health education on trachoma to 1,346 villages reaching a total population of 581,000. Village volunteers, community leaders, trachoma supervisors, and school teachers are trained by NGO staff during a 3-day period.

Health and hygiene education strategies vary according to the location and NGO partners involved. In Padak, for example, youth groups delivered trachoma control messages in churches, schools and markets. These groups competed in competitions with other school groups by singing songs and performing dramas about trachoma and the SAFE strategy.

Latrine coverage and usage remain very low in southern Sudan due to strong traditional beliefs and practices. Nevertheless, 980 household latrines were built in OLS-supported program areas in 2004, more than doubling latrine construction achievements from the previous three years. The program has decided to refrain from providing plastic slabs for latrines, as communities have begun to believe that latrines must have a plastic slab in order to be functional. These slabs are not cost-efficient and are not readily available in southern Sudan.

#### *Surgery (S)*

In 2003, The Carter Center's Nairobi office calculated the ultimate intervention goal for trichiasis (UIGs), and estimated that there are 35,952 patients suffering from uncorrected trichiasis in the OLS areas. In 2004, the program facilitated 1,481 corrective eyelid surgeries. Christoffel Blindenmission, the coordinating NGO partner for trichiasis surgery, was supported by The Carter Center to conduct 234 trichiasis surgeries in four locations in 2004.

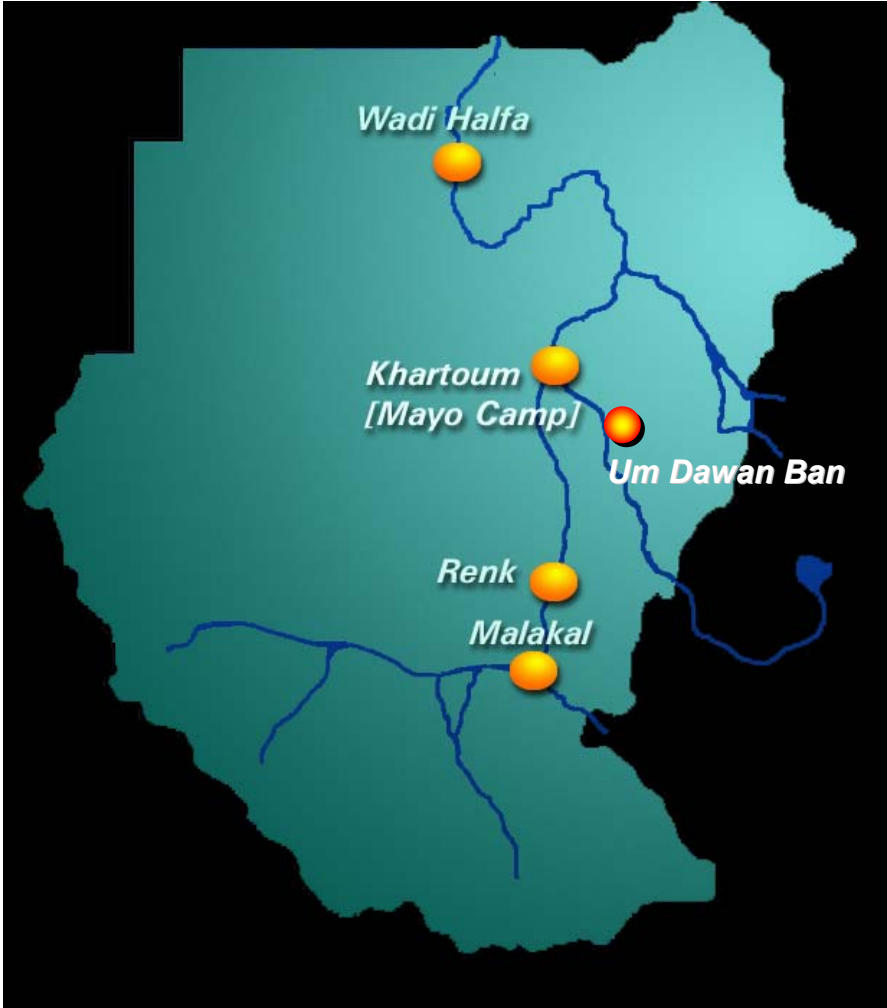
*Antibiotics (A)*

In 2004, the OLS-supported program treated 180,317 persons with azithromycin (Zithromax®) donated by Pfizer. An additional 43,105 persons received tetracycline ophthalmic ointment. The program has decided to stop using individual azithromycin cards, as they are often lost and follow-up is difficult. An azithromycin distribution register has been developed and will be distributed to trachoma focal persons.

**Operation Lifeline Sudan-supported areas' 2005 targets:**

- Reach 1,596 villages (802,552 people) with health education
- Train 593 health educators in all locations
- Construct 800 household latrines
- Conduct 6,160 trichiasis surgeries
- Distribute azithromycin to 247,000 people
- Conduct a triennial impact assessment

Map 1. Sudan Trachoma Control Program, Government of Sudan-assisted Areas of Intervention, 2004





## **Mali Trachoma Control Program**

*Presented by Dr. Bamani Sanoussi, National Coordinator, National Prevention of Blindness Program, Mali Ministry of Health.*

*Carter Center assistance to Mali is funded by the Conrad N. Hilton Foundation.*

### **Background**

Blindness is an important public health problem in Mali. Surveys of blindness between 1980 and 1990 showed the major causes of blindness to be cataract (45%), trachoma (25%), and glaucoma (9%). The National Prevention of Blindness Program was established in 1994 and a trachoma component was added two years later. The first national trachoma prevalence survey, done in 1996-1997, found that trachoma is endemic in every region of Mali. The overall prevalence of active trachoma (TF and/or TI) in children under 10 years of age was 35% and the prevalence of trichiasis among women over 15 years of age was 2.5%.

In October 1999, the Mali Trachoma Control Program was launched in Koulikoro in an official ceremony with the former U.S. President Jimmy Carter, former head of state General Amadou Toumani Touré (now president of Mali) and then Lions International President, Jim Ervin. Trachoma knowledge, attitudes, and practices (KAP) surveys were done in the Koulikoro Region in 1996 and 2000. They provided the national program with baseline sociological data for the development of health education strategies and materials. Trachoma control program field assessments done in 2002 helped strengthen F&E activities in Ségou. The Program is currently operating in four regions of the country: Kayes, Koulikoro, Ségou and Mopti (see map). (The Carter Center is assisting mainly in Segou.)

In 2003, new trachoma control health education strategies and materials (documentary film, video, radio tapes and a comic book) were developed with support from Johns Hopkins University, including a logo and slogan for the educational campaign and a training manual. In order to reach large numbers of persons at risk for trachoma, the Mali program also developed radio and television campaigns to broadcast information about trachoma and its prevention.

In 2003, the Mali National Division of Hygiene and Trachoma Control Program began household latrine promotion in the Kayes and Ségou regions with assistance from International Trachoma Initiative and The Carter Center. In the first year of latrine promotion, the program trained 254 village masons and built 1,577 household SanPlat latrines. Other partners, including World Vision International and UNICEF, have joined the Mali trachoma control program in promoting latrine use in rural communities.

A 1997 estimate showed the backlog for trichiasis surgery to be 85,700 persons. Since 1999, 15,150 persons have been operated (18% of backlog). Trichiasis surgery is conducted in 5 fixed locations throughout Mali, as well as during routine rural outreach and rural trichiasis surgery campaigns.

Since 2000, the Malian program has distributed azithromycin donated by Pfizer in annual mass treatment campaigns targeting children from six months to 15 years of age and women over 14 years old living in rural villages. In 2003, about 1,150,000 persons received azithromycin in Koulikoro and Kayes Regions, distributed by 7,000 trained community workers. In addition, tetracycline ophthalmic ointment was available to trachoma patients during the year through primary health care clinics.

#### **Program achievements in 2004**

##### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

In Mali, health education activities are carried out through multiple channels: by rural radios, primary schoolteachers, environmental health agents, village educators, NGO supervisors and field officers, and during village gatherings such as baptisms and weddings. The Carter Center supports ongoing health education in 277 villages (national data were not available on villages reached with health education). Four local rural radios were involved in broadcasting trachoma health education messages in local languages. In 2004, the program supported health education in 100 primary schools in Ségou, Mopti and Gao regions. Trachoma education has also been included in primary school curricula in Mali. To strengthen routine hygiene education, a clean village competition took place among 26 target villages.

The Mali program also trained a variety of people in trachoma health education and community mobilization techniques including: 427 village educators (45% of which are women); 113 trachoma supervisors and trainers; 19 health agents; and 3 rural radio broadcasters. The second year of household latrine promotion was successful, as 3,327 SanPlat latrines were constructed along with 2 blocks of public latrines in Baroueli market. To increase local capacity, 437 village masons were trained in latrine construction and equipped with proper tools. No reports on water sources were presented during the program review.

##### *Surgery (S)*

In 2004, the Mali trachoma control program trained 20 trichiasis surgeons and distributed 5 kits of surgical material for their use. A total of 2,758 persons were operated, which represents a decrease from 2003 (4,500). The program cited difficulties with a lack of human resources to carry out surgery outreach in communities.

##### *Antibiotics (A)*

Community-based distribution of azithromycin in 2004 reached 5,484 villages in the Kayes and Koulikoro regions and a total of 2,688,061 persons. This marks a considerable increase from previous years, more than doubling the population reached in 2003. For 2005, the program plans to expand distribution to the Mopti region, and to train 2,668 additional antibiotic distributors. Distribution of ocular tetracycline was not reported.

#### **Targets for 2005**

##### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

- Train 230 village volunteers, 100 teachers, and 15 radio broadcasters in IEC
- Assist 20 women's groups in social mobilization
- Organize a trachoma week competition

- Organize a village clean-up competition
- Train 230 village masons in SanPlat slab construction
- Construct 5,000 household latrines in Ségou Region
- Build 2 blocks of public latrines
- Build 509 new water points and repair 810 old water points
- Train 247 artisans in building modern water points

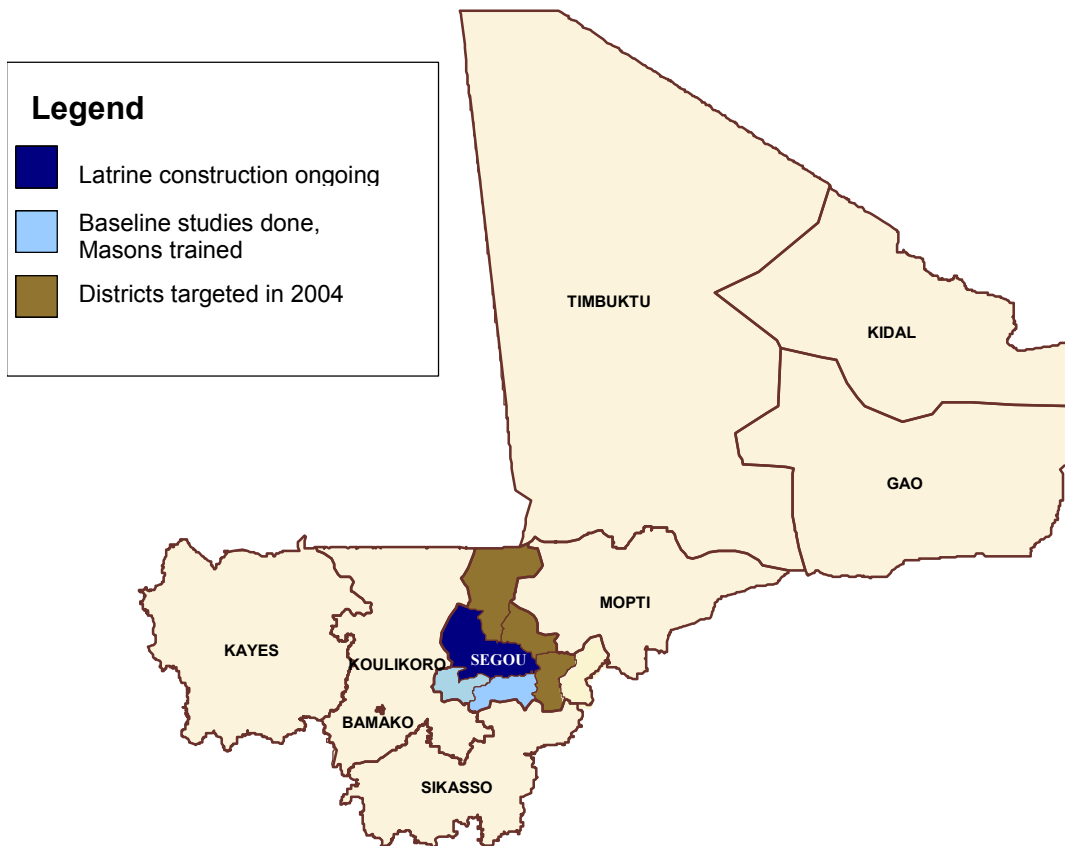
*Antibiotics*

- Treat 3,789,360 people with azithromycin in Kayes, Koulikoro and Mopti regions
- Treat 77,334 children from 0-6 months with tetracycline eye ointment
- Train 2,668 antibiotic distributors

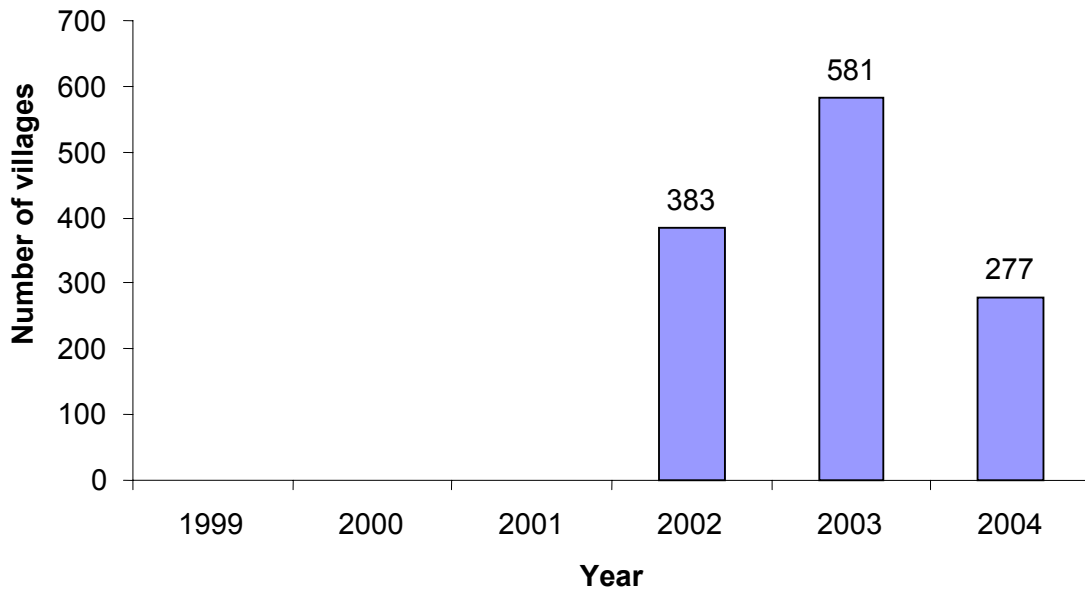
*Surgery*

- Operate 10,511 persons with trichiasis
- Train 200 trichiasis case finders
- Train 50 trichiasis surgeons

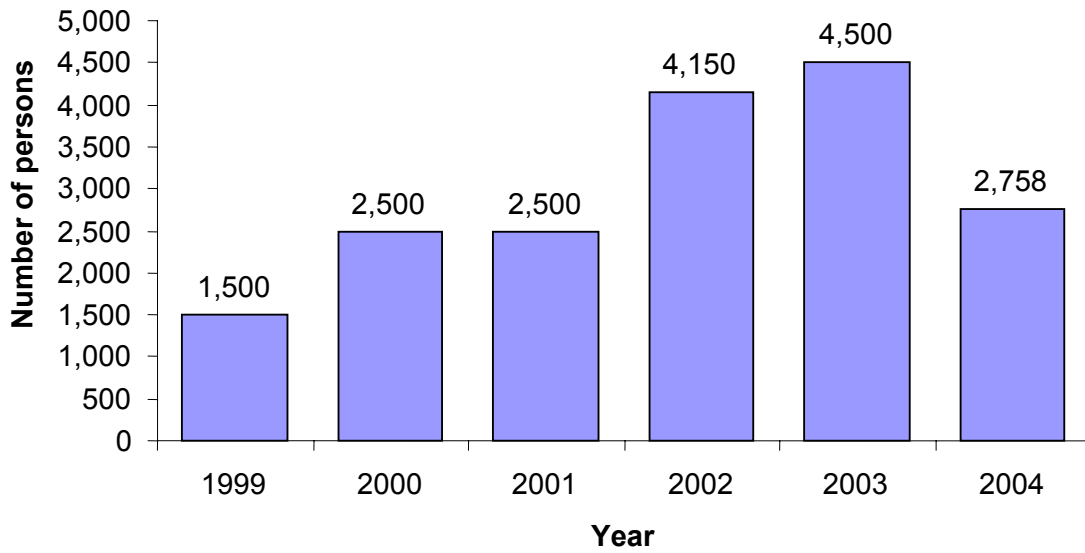
### Latrine Promotion in Mali



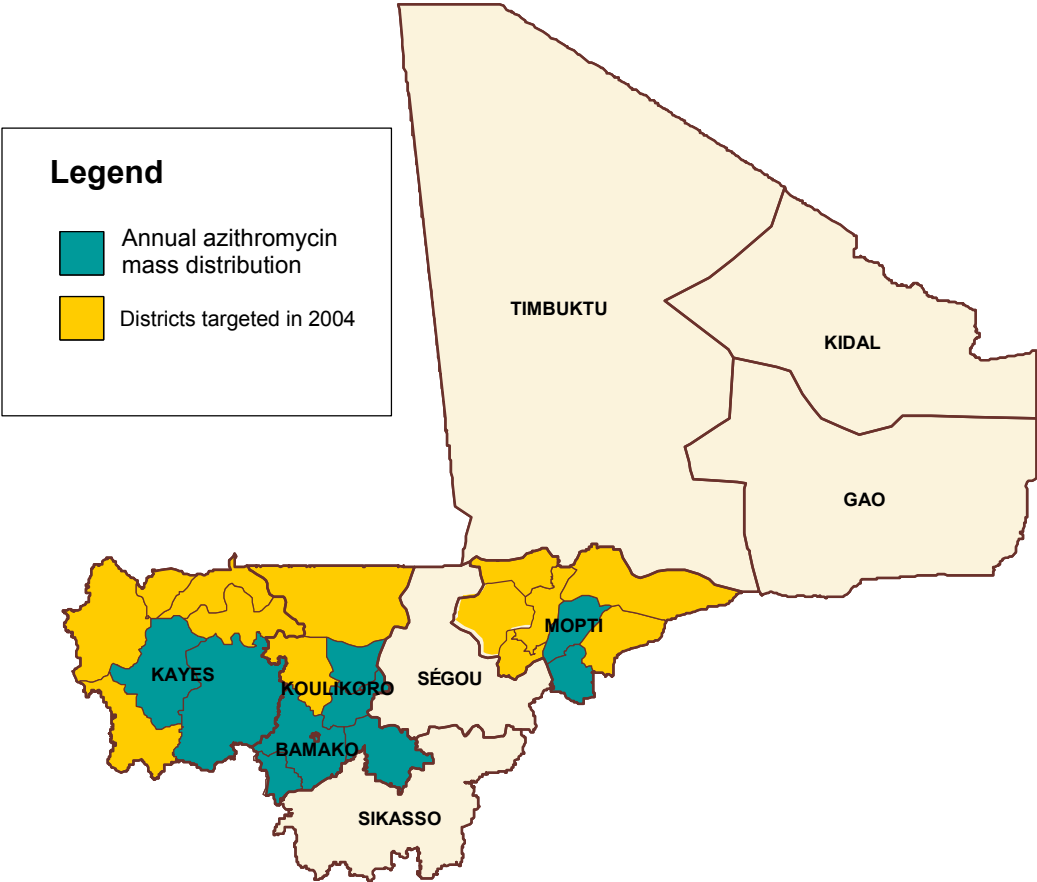
**Villages Receiving Health Education, by year, Mali, 1999-2004**



**Number of Persons Receiving Trichiasis Surgery, by year, Mali, 1999-2004**



# Azithromycin Mass Distribution Campaigns, Mali, 2003-2004



## **Ghana Trachoma Control Program**

*Presented by Dr. Maria Hagan, National Eye Care Coordinator & Dr. Daniel Yayemain, Trachoma Program Manager, Ghana.*

*Carter Center assistance to Ghana is funded by the Conrad N. Hilton Foundation.*

### **Background**

Trachoma is the third leading cause of blindness in Ghana, following cataract and glaucoma. Blinding trachoma is most prevalent in the hot and dry areas of the north, especially in the Northern and Upper West Regions (NR and UWR). A trachoma rapid assessment (TRA3) done in July 1999 established that blinding trachoma exists in the Northern and Upper West Regions and helped to prioritize trachoma-endemic villages for treatment and prevention activities. In March 2000, The Carter Center helped the National Trachoma Control Program to do the first population-based trachoma prevalence survey in the Upper West and Northern Regions. Other subsequent prevalence surveys and rapid assessments have been done by the Ghana trachoma control program to map trachoma in these regions.

The Carter Center also provided technical and financial support for Ghana's first knowledge, attitudes and practices (KAP) studies in the UWR (December 1999) and NR (July 2000) utilizing household surveys, focus group discussions, and direct community observations. The results of these studies were used during program planning workshops in October 2000 and January 2001 during which district and regional plans for trachoma control were established.

The Ghana trachoma control program began implementation of the SAFE strategy in 5 districts from 2000-2002 and expanded to a sixth district in 2003. To facilitate expansion of the program to include all trachoma-endemic sub-districts in 2004, the program did a trachoma prevalence survey of 551 communities in the Northern and Upper West Regions. Based on these findings, the program planned expansion in 2004 to 681 communities, covering all trachoma-endemic districts in the country.

The National Trachoma Control Task Force, which includes both governmental and non-governmental organizations, oversees trachoma control activities at the national level. In each trachoma-endemic region, a regional task force plans and monitors trachoma control activities. It reports to the National Task Force and provides feedback to the districts and other partners. A similar structure exists at the district level, which works closely with frontline workers to implement the SAFE strategy in target communities.

### *Background on Intervention Activities*

In 2001, the Ghana program launched hygiene improvement campaigns in trachoma-endemic communities, training frontline workers including teachers, environmental health officers, community health workers and village volunteers. Social mobilization activities included one-on-one and group health education presentations and discussions, radio spots and programs, mobile video shows, community theater, and durbars. A total of 2,657 frontline workers have been trained to do education activities in trachoma-endemic

communities. Health education materials, such as flipcharts, picture books for radio learning groups and posters, have been developed with the assistance of The Carter Center.

In 2002, The Carter Center supported the launching of radio learning groups in 20 pilot communities in the Wa District of the Upper West Region. The radio learning groups were well accepted by the target communities who organized to discuss hygiene and health issues after listening to health broadcasts. They were given Freeplay windup radios to be able to listen to educational broadcasts on trachoma and hygiene.

In 2003, latrine construction and installation of water points were also done in some trachoma-endemic villages with support from International Trachoma Initiative, The Carter Center and other partner organizations. In all, 735 latrines were constructed and 141 water points were installed in 2003.

In recent years, frontline workers have been taught to identify and refer trichiasis patients for surgery to increase trichiasis surgery uptake. Health education, including radio broadcasts, is done in endemic communities to increase awareness of trichiasis surgery. Surgery is offered free of charge in health centers. From 2001 to 2003, 1,113 persons have received corrective eyelid surgery and in 2003, six ophthalmic nurses were trained to do trichiasis surgery.

Mass azithromycin distribution began in 2001, with 175,808 persons receiving Pfizer-donated Zithromax® from 2001-2002. The Ghana TCP distributed azithromycin to another 163,931 persons in 2003. Another 9,785 persons were treated with tetracycline ophthalmic ointment in 2003. The program has found that the appropriate time for azithromycin distribution is the first quarter of the year, during the dry season, as most communities are accessible and farmers are inactive during that season.

#### **Program Achievements in 2004**

##### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

In 2004, 2,358 household education sessions and 2,204 community education sessions were conducted by frontline trachoma control program workers. Radio listening groups are still active and functioning well; 41 new groups were formed in 2004. The Ghana program describes a high awareness of trachoma and its control by community members and school children.

In 2004, 1,102 safe water sources were provided; the program cited 'giant strides' in the provision of safe water to endemic communities. Most water sources are provided by district assemblies for the Guinea worm eradication and trachoma control programs. Provision of water is supported by WaterAid, World Vision Ghana, Unicef, West African Water Initiative, USAID, and the Church of Christ.

Unfortunately, the provision of household latrines does not yet match the provision of safe water. In 2004 1,813 household latrines were constructed. The program describes a high community demand for latrines, but latrine provision is hindered by the high cost of the model currently promoted. Key lessons learnt for the Ghana program is that informing communities of the multiple health benefits of latrine use increases latrine uptake and that

provision of household latrines to some households increases demand from neighboring households, although the scale of these reported effects have not been investigated.

### *Surgery (S)*

The key activities for trichiasis surgery in Ghana include: creating awareness; case identification and registration during systematic active case searching and passive case identification; community- and facility-based surgery; and follow-up on operated persons. In 2004, 951 persons received trichiasis surgery and 22 trichiasis surgeons were trained. The Ghana program has found that systematic house-to-house case searching improves case detection and registration. Surgery acceptance is high when performed in the individual's own community and satisfied 'clients' testimony increases acceptance by nearby communities.

### **Antibiotics (A)**

In 2004, 292,560 individuals were reached with mass azithromycin distribution, nearly doubling the number of people reached in the three previous years. The Ghana trachoma control program has found that community recognition of azithromycin as a safe and effective drug increases its acceptance.

### **Targets for 2005**

- Pilot the integration of lymphatic filariasis and trachoma control programs in 2 districts

### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

- Provide health education to residents of 2,010 communities
- Construct 200 potable water sources
- Construct 5,000 household latrines

### **Surgery**

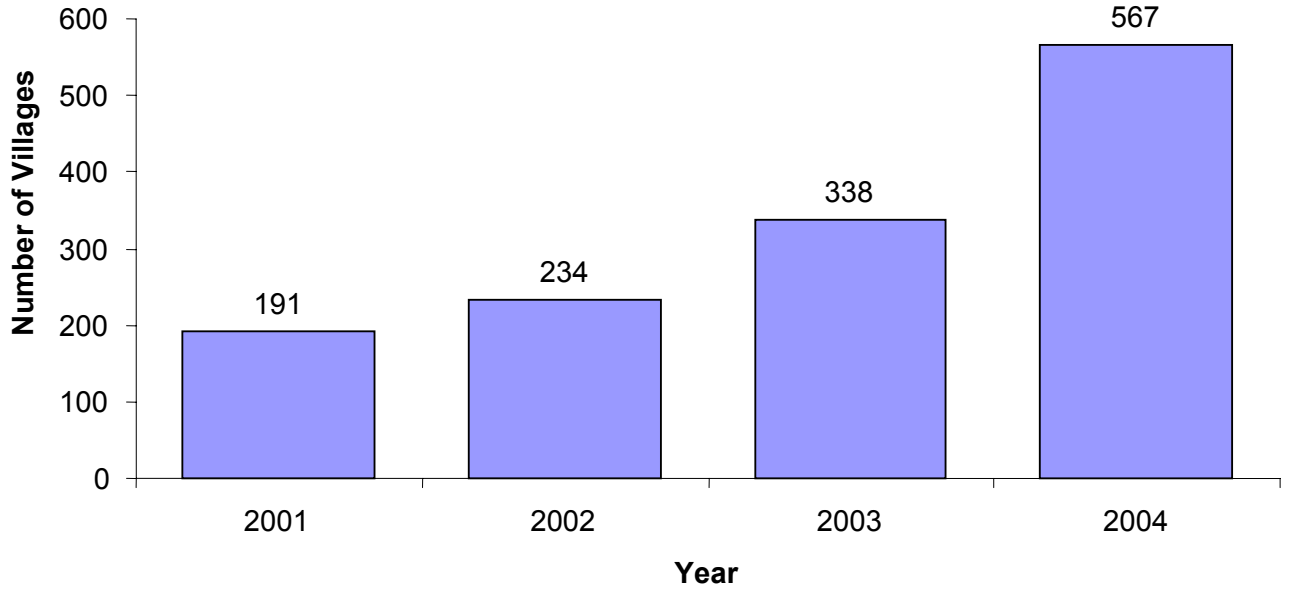
- Identify and operate 1,500 people with trichiasis

### *Antibiotics*

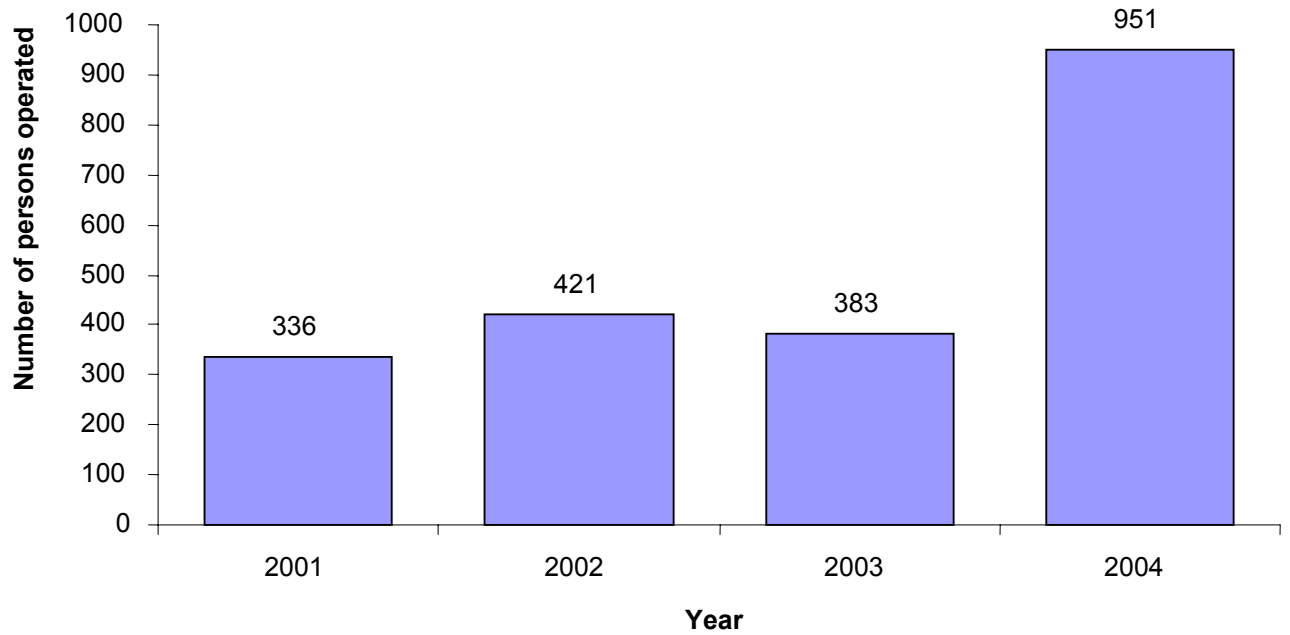
- Distribute antibiotic to 1,138,000 people in 2,010 communities:
  - 1,122,000 with azithromycin
  - 16,000 with tetracycline eye ointment



### Villages Receiving Regular Trachoma Health Education, Northern and Upper West Regions, Ghana



### Persons Operated for Trichiasis, by year, Ghana



## **Tanzania Trachoma Control Program**

*Presented by Dr. Grace Saguti, National Coordinator, National Eye Care Program,  
Ministry of Health*

### **Background**

According to the 2002 census, Tanzania has a population of approximately 35 million persons. The country is divided into 21 administrative regions and 119 districts. In the 1980s and 1990s, Tanzania was one of the countries which hosted the research leading to the conception and implementation of the SAFE strategy. In 1999, the Public Private Partnership (PPP) began between Pfizer, the International Trachoma Initiative and the Tanzania Ministry of Health and distribution of Pfizer-donated azithromycin began in 6 districts. In 2003, The National Trachoma Control Program expanded considerably, as the SAFE strategy was integrated into 20 health district action plans. In 2004, implementation of the SAFE components was expanded to a total of 30 districts, reaching a projected 8 million people.

In Tanzania, 50 districts are known to be trachoma-endemic. Two million children under 10 years old are suspected to have active disease and 12 million persons are at-risk of being infected. The backlog of adults over 40 years old needing surgery for trichiasis is estimated at 54,000. In 26 districts, the prevalence of TF is greater than 10 percent, indicating that they need the full SAFE strategy including azithromycin distribution. National trachoma baseline surveys that will examine all components of the SAFE strategy are taking place in 2005 in 30 districts.

The National Trachoma Task Force is made up of: the Ministry of Health Director of Preventive Services, the National Eye Care Program Coordinator, representatives from the Ministries of Education and Culture, Community Development, Gender and Children, Water and Livestock Development, Muhimbili University College of Health Sciences, Kilimanjaro Christian Medical Center/Tumaini University Eye Department, International Trachoma Initiative, Sight Savers International, Christoffel Blindenmission, and Helen Keller International. Additional partners involved in supporting the Tanzania Trachoma Control Program include: the Centre for Educational Development in Health Arusha, and the Kongwa Trachoma Project.

### **Program achievements in 2004**

World Sight Day in 2004 was launched by the Tanzanian Vice-President with the theme, "Multisectoral Collaboration is key for the control of trachoma". The National Trachoma Control Program's five-year strategic plan for 2004-2008 was also launched and disseminated on that day, as well as the launching of a new approach for district-wide azithromycin distribution. The chairman and CEO of Pfizer, Inc., Hank McKinnel, visited Tanzania and observed the new approach with mass antibiotic distribution.

The program also expanded to include a multisectorial membership of the national and district trachoma task forces this year.

*Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

The Tanzanian Trachoma Control Program aims to reach a target population of 8 million people in 2005. In 2004, 27,000 health education sessions were reported as well as 700 radio spots on trachoma prevention and hygiene education. The program estimates that 53% of the population has access to a functional water source within 1 hour travel time or 1 kilometer. A 2004 report estimates that 70% of households use or have access to a latrine. However, the program cites challenges with cultural barriers to latrine use and construction in some target communities. The national rural water supply and sanitation program does not target trachoma-endemic districts. The program also mentions a lack of resources required to conduct the Participatory Hygiene and Sanitation Transformation (PHAST) trainings to support F&E activities.

*Surgery (S)*

The program achieved its 2004 target for trichiasis surgery, having reached 4,036 people. In addition, 61 trichiasis surgeons were trained during the year.

*Antibiotics (A)*

Antibiotic distribution in Tanzania is community-based using community health workers/community drug distributors. District coverage with the new mass treatment approach is reported to be very high (greater than 90%). The program cited problems with differing incentives to community distributors by different programs. Local government elections disrupted the mass treatment campaigns, as did unforeseen heavy rains in most of mainland Tanzania. New guidelines and monitoring tools for the approach to antibiotic distribution were developed and used in 2004.

<b>2004</b>	<b>Target</b>	<b>Achievement</b>	
Population reached	8 million	8 million	100%
Surgeries- number of people	4,000	4,036	101%
Trichiasis surgeons trained	72	61	85%
Azithromycin distribution- Persons reached	1,600,000	989,084	62%
Health Education- Number of sessions	33,984	26,975	79%
Health Education- Number of radio spots	662	705	106%
Environment- Number of new latrines	80,000	5,278	7%
Environment- Number of new water sources	363	255	70%

## **Program targets for 2005**

### *Hygiene Education, Face Washing and Environmental Sanitation (F&E)*

- Conduct 33,984 IEC sessions in intervention villages
- Conduct 20,000 latrines
- Continue to advocate for more resources for F&E activities
- Incorporate trachoma control into the school curriculum for teachers
- Develop an inventory of key partners involved in water and sanitation projects
- Participate in advocacy activities for water and environment, such as Maji (water) week
- Develop and disseminate national strategic plan for Environment, Health, and Sanitation

### *Surgery (S)*

- 6,000 trichiasis surgeries
- Dissemination of trichiasis surgery guidelines

### *Antibiotic (A)*

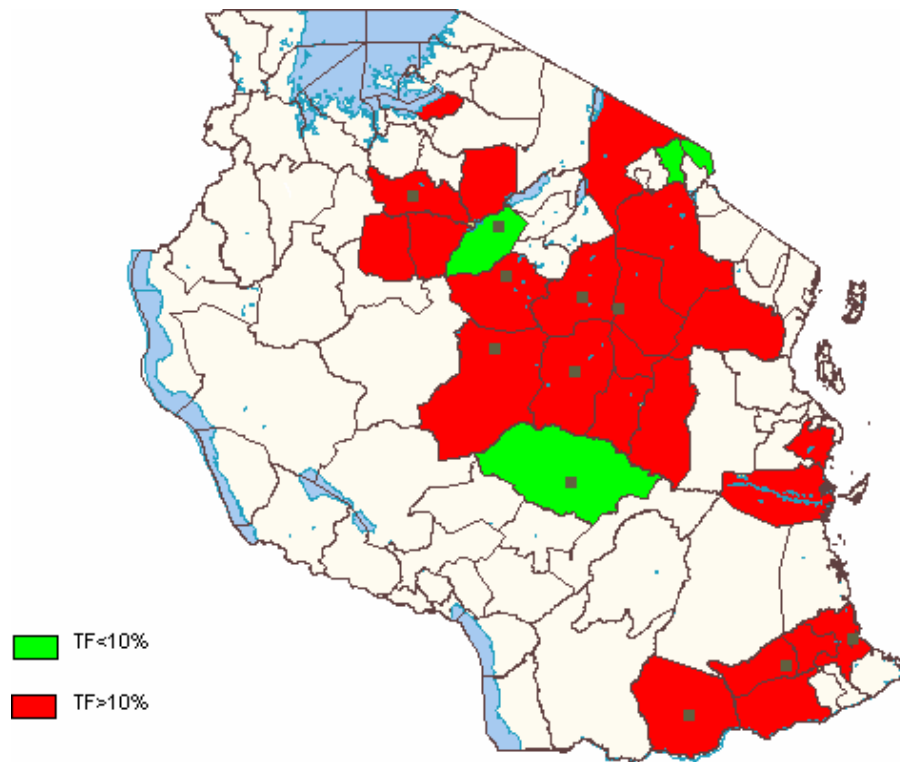
- Distribute 7 million doses of azithromycin (to reach 26 districts)

### *Other targets*

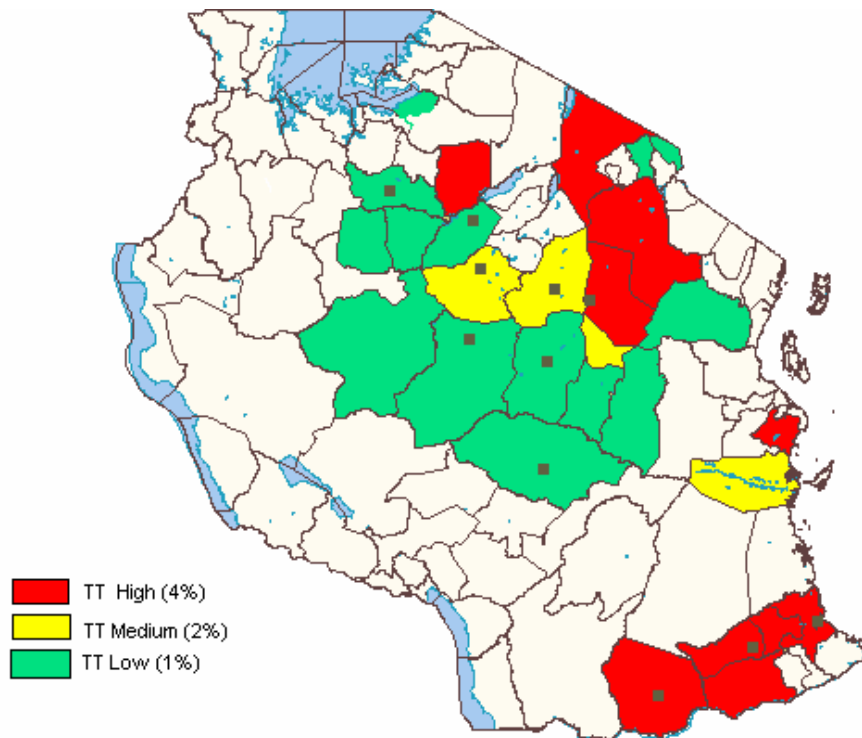
- Baseline survey of the remaining 20 districts
  - Community survey 4 districts with prevalence of TF less than 10%
  - Follow-up survey of health equity districts



**Map 3: Tanzania Showing Areas of High and Moderate Prevalence of TF in Children aged 1-9 years, Data Show Districts Surveyed in 2004**



**Map 4: Tanzania Intervention Districts with High, Medium and Low TT Prevalence**



## **Morocco Trachoma Control Program**

*Presentation prepared by Dr. Jaouad Hammou, National Prevention of Blindness Program, Ministry of Health, Kingdom of Morocco.*

*As presented by Dr. Amos Sam-Abbenyi, International Trachoma Initiative.*

### **Background**

The Kingdom of Morocco has an estimated population of 30 million persons with a population of 680,000 at risk of trachoma. It is divided into 37 provinces, of which 5 in the south-east are trachoma-endemic (Errachidia, Figuig, Ouarzazate, Tata, and Zagora). The program has been conducted in three phases in the 20 districts that make up these 5 provinces: Phase I from 1999-2001, Phase II from 2001-2004, and the current Phase III from 2005-2007. An evaluation of Phases I and II took place in December 2004.

Access to potable water before the program was established was approximately 40%. For all five regions, population coverage in access to potable water in 2005 was greater than 80%.

Trichiasis surgery takes place in fixed surgical centers, during routine surgical outreach campaigns, and during trichiasis surgery campaigns with the support of ophthalmologists from the Hassan II Ophthalmologic Foundation.

Prevalence surveys in September 2004 showed a reduction in trachoma prevalence from the 1999 estimate. The survey also allowed the program to identify districts where trachoma interventions should be focused and to calculate ultimate intervention objectives for each of the SAFE strategy components. Using this data, the program has used mass antibiotic distribution in the Agdez district of Zagora where TF prevalence remains above 10% and switched to target household distribution in Arfoud, Zagora (urban), Agdez (urban), and Zagora district. Individual treatment will then take place in other districts.

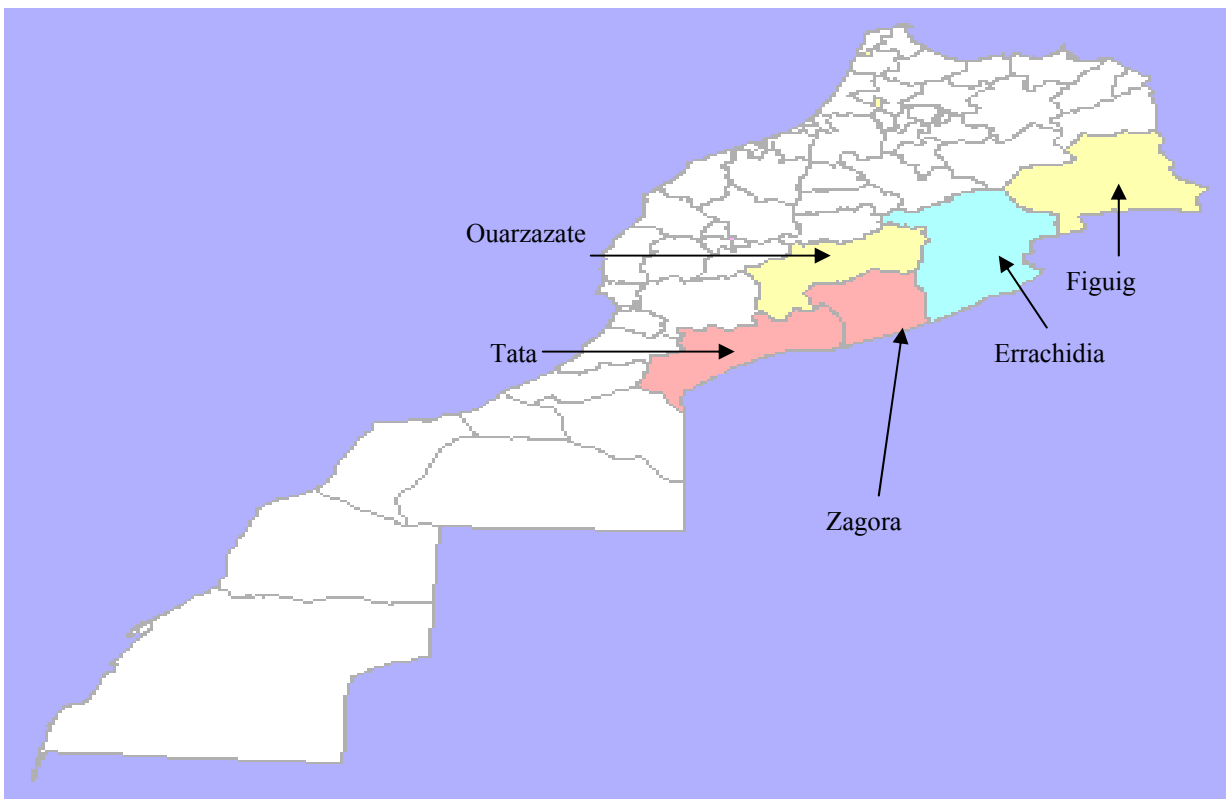
The program has an active screening and treatment campaign for active trachoma. The antibiotic coverage rate is at 92%. According to a 2003 survey, 100% of the target population has access to potable water within 1 hour travel time or within 1 kilometer, and 55-83% of households uses or has access to a latrine. Trachoma prevention is part of the curriculum for school teachers and prevention of blindness is taught in primary schools.

The Moroccan Program for the Prevention of Blindness interacts and collaborates with the national Ministry of Health (Program of Mother and Child Health, Program for School and University Health), Governmental Departments (Ministries of Education, Social Affairs, Equipment, and the National Office for Potable Water), as well as numerous nongovernmental associations (Hassan II Ophthalmologic Foundation, Helen Keller International, International Trachoma Initiative, Moroccan Red Crescent) and with general civil society through other local development associations.

**Targets:**

2005 is marked as the year that blinding trachoma will be eliminated from the Kingdom of Morocco. In 2005, the program hopes to consolidate the multisectorial collaboration and reinforce civil society's commitment to the program in order to sustain its accomplishments. The program plans to conduct 6,678 trichiasis surgeries and put in place an epidemiological surveillance system.

**Map of Morocco with 5 Intervention Provinces**





**Table 1. Summary of Trachoma Control Interventions**

*National data as reported for 2004 at Sixth Annual Program Review, Atlanta, February 28-March 2, 2005*

	Ghana	Mali	Niger	Sudan		Ethiopia	Nigeria	Totals
				GOS	OLS/S			
<b>F &amp; E</b>								
Number of villages with hygiene education	567	277	4 438	*	767	654	172	<b>6 875</b>
Villages targeted	680	4 500	4 000	1 500	1 261	654	108	<b>12 703</b>
Percent coverage	83%	6%	111%	*	61%	100%	159%	<b>54%</b>
Number of latrines constructed	1 813	3 327	5 355	70	980	89 096	1 871	<b>102 512</b>
Target for latrines	1 500	3 500	3 000	2 000	750	10 130	2 260	<b>23 140</b>
Percent coverage	121%	95%	179%	4%	131%	880%	83%	<b>443%</b>
Number of water sources provided	1 012	0	10	*	*	-	0	<b>1 022</b>
Targeted number of water sources	250	100	25	650	-	-	15	<b>1 040</b>
Percent coverage	405%	0%	40%	*	*	-	0%	<b>98%</b>
<b>Antibiotics</b>								
<b>Azithromycin</b> intervention villages:	*	5 484	4 438	*	932	*	*	<b>10 854</b>
Treatments	292 560	2 688 061	1 915 456	266 630	180 708	816 205	2 428	<b>6 162 048</b>
Target Population	315 000	2 500 000	2 363 252	500 000	182 000	550 000	-	<b>6 410 252</b>
Percent coverage	93%	108%	81%	53%	99%	148%	-	<b>96%</b>
<b>Tetracycline</b> intervention villages:	*	*	4 438	*	1 255		108	<b>5 801</b>
Treatments	15 101	0	48 886	0	43 105	142 424	45 582	<b>295 098</b>
Target Population	30 000	100 000	44 054	50 000	31 000	266 000	*	<b>521 054</b>
Percent coverage	50%	0%	111%	0%	139%	54%	*	<b>57%</b>
<b>Surgery</b>								
Surgeries	951	2 758	5 286	276	1 481	32 316	3 830	<b>46 898</b>
Target Population	2 100	5 000	10 500	2 000	6 900	48 881	*	<b>75 381</b>
Percent coverage	45%	55%	50%	14%	21%	66%	*	<b>62,2%</b>

\* Data not presented

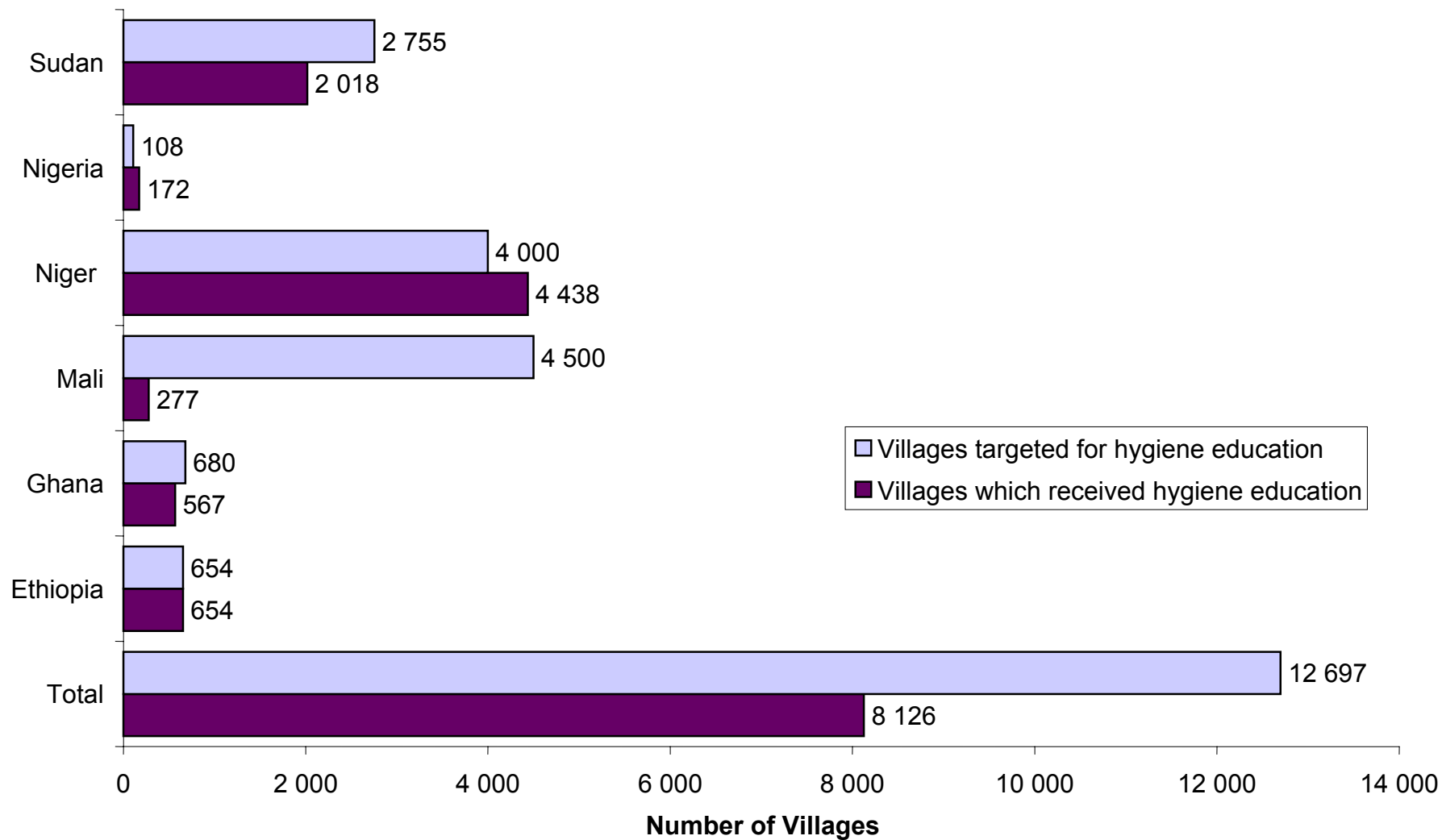
**Table 2. National Trachoma Control Program Annual Targets 2005**  
**As presented at the Sixth Annual Program Review, Atlanta, February 28-March 2, 2005**

	Ghana	Mali	Niger	Sudan		Ethiopia	Nigeria	Total
				GOS*	GOSS			
<b>Facial cleanliness &amp; Environmental change</b>								
Health education (villages)	2 010	**	4 438	**	1 596	654	200	<b>8 898</b>
Household latrines to construct	5 000	5 000	8 400	**	800	278 966	3 000	<b>301 166</b>
Water sources to construct or repair	200	1 319	113	**	**	120	2	<b>1 754</b>
<b>Antibiotic</b>								
Azithromycin mass distribution (persons)	1 122 000	3 789 360	3 296 280	1 250 000	247 000	3 061 419	5 493 301	<b>18 259 360</b>
Tetracycline ointment distribution (persons)	16 000	77 334	**	**	**	265 970	**	<b>359 304</b>
<b>Surgery</b>								
Persons for trichiasis surgery	1 500	10 511	7 560	4 000	6 160	57 194	37 187	<b>124 112</b>

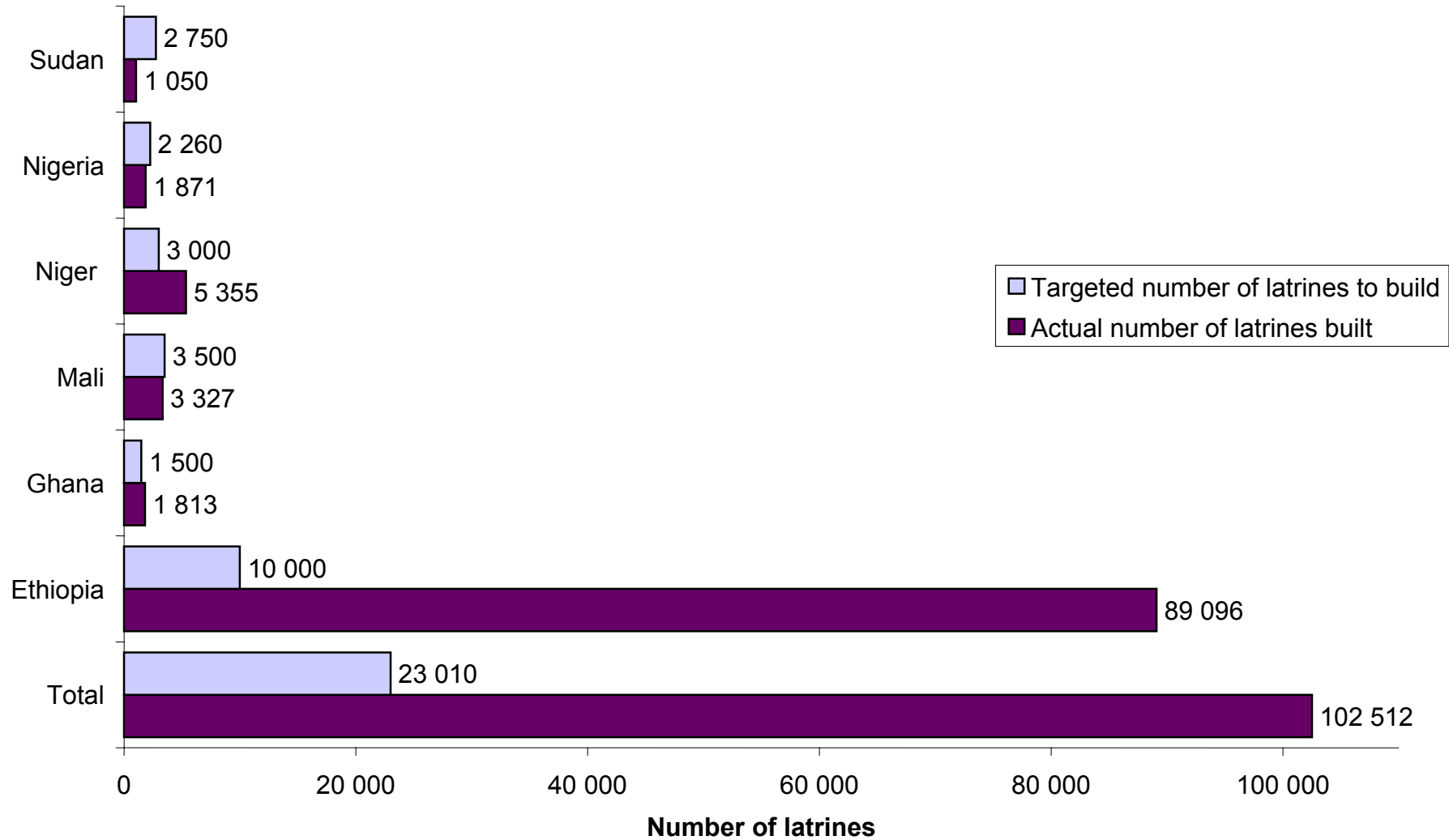
\* Government of Sudan targets are through calendar year 2006

\*\* Targets not presented/available

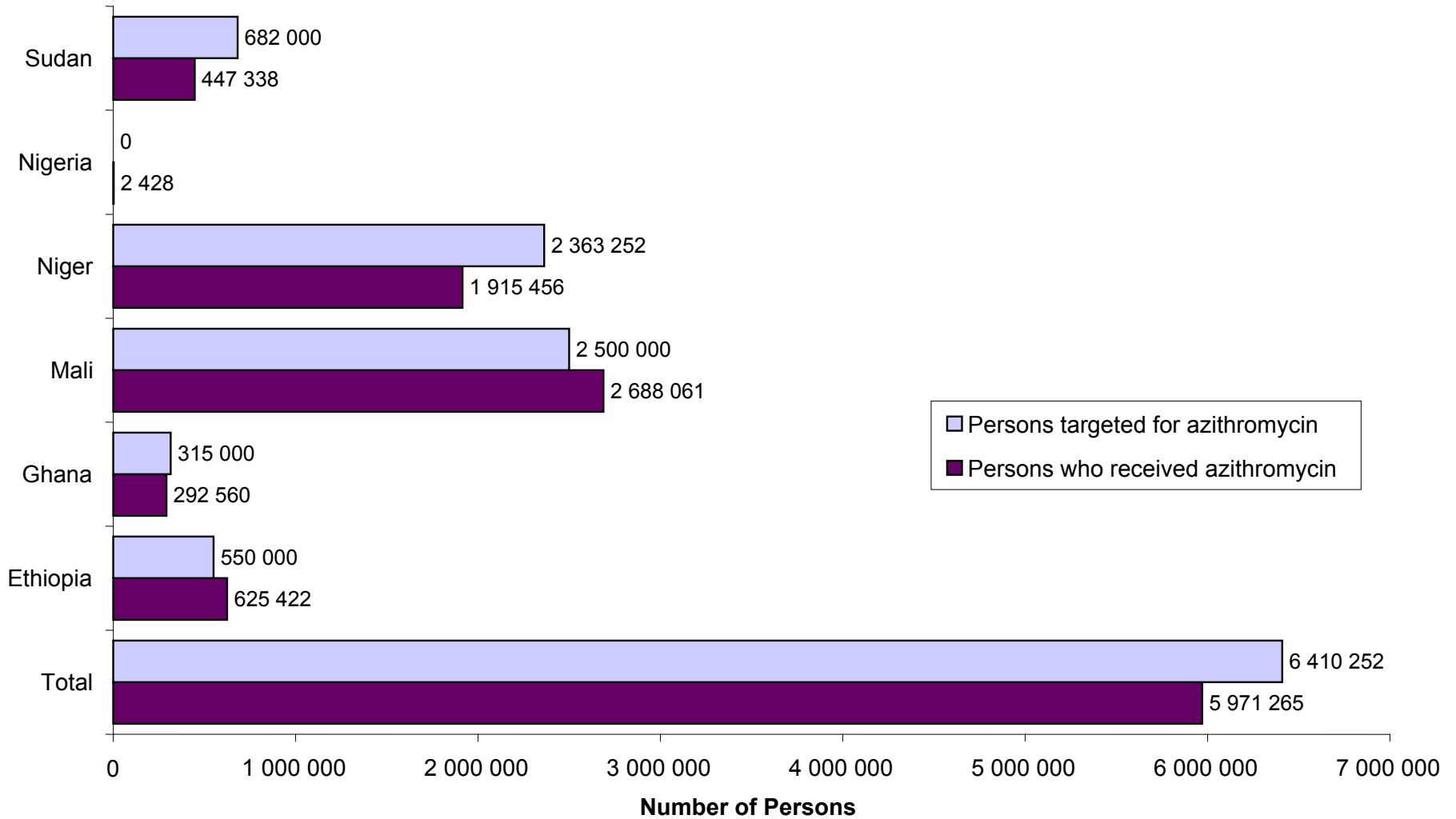
**Figure 1. Villages Receiving Hygiene Education, by country**  
*National program data as presented for January - December 2004*



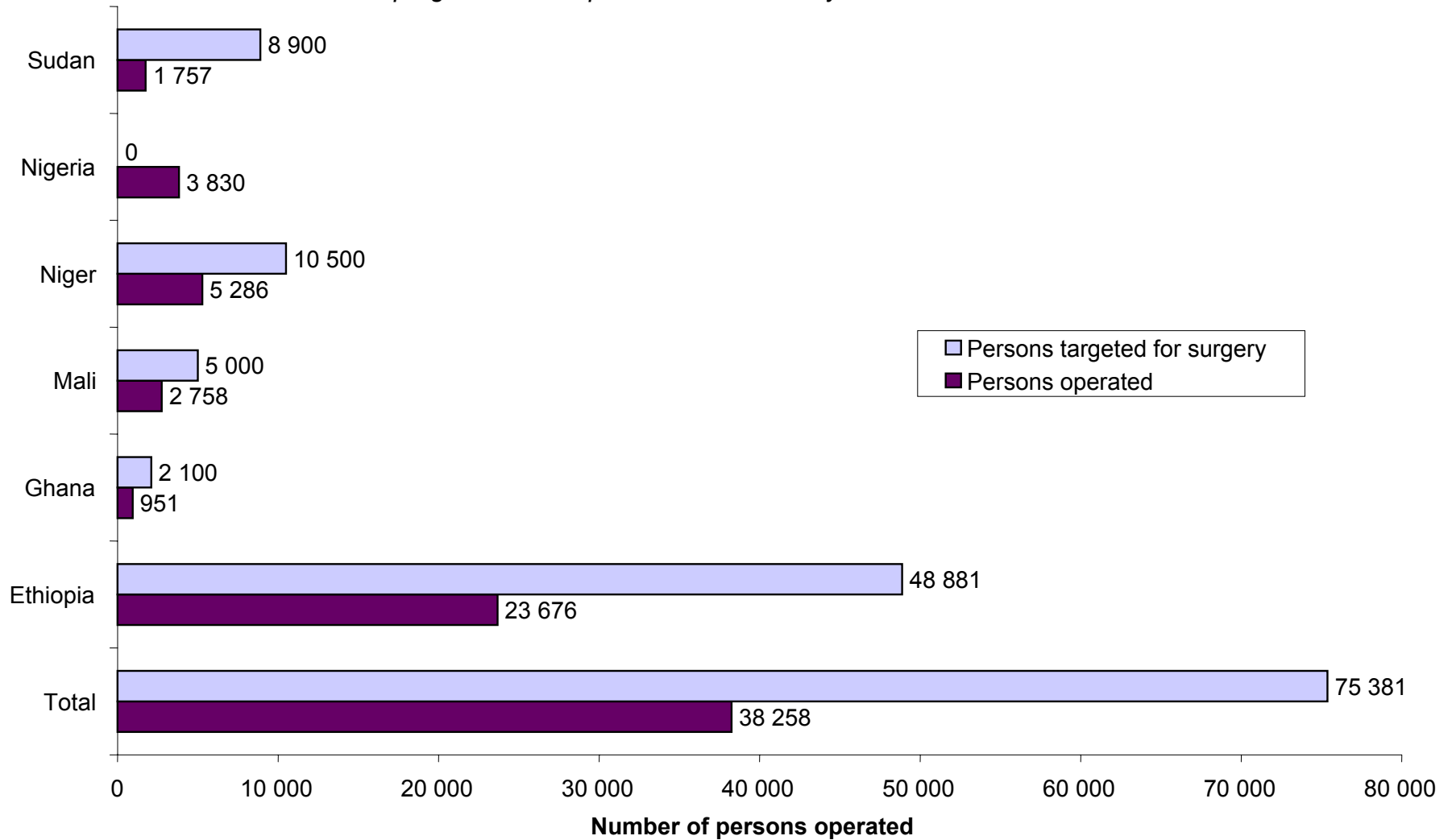
**Figure 2. Household Latrines Built, by country**  
*National program data as presented for January - December 2004*



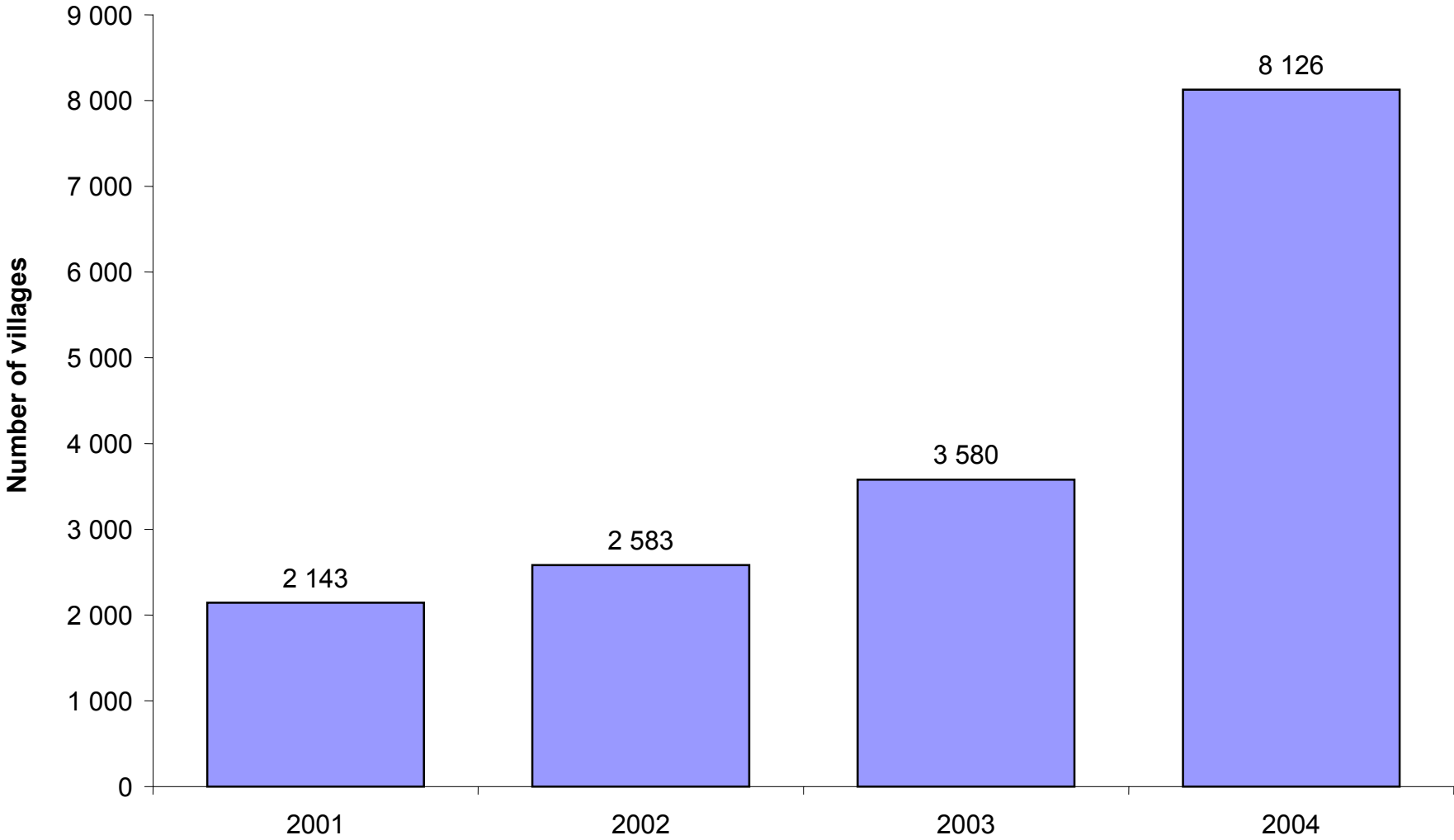
**Figure 3. Azithromycin Distribution, by Country**  
*National program data as presented for January - December 2004*



**Figure 4. Persons Having Received Trichiasis Surgery, by country**  
*National program data as presented for January - December 2004*

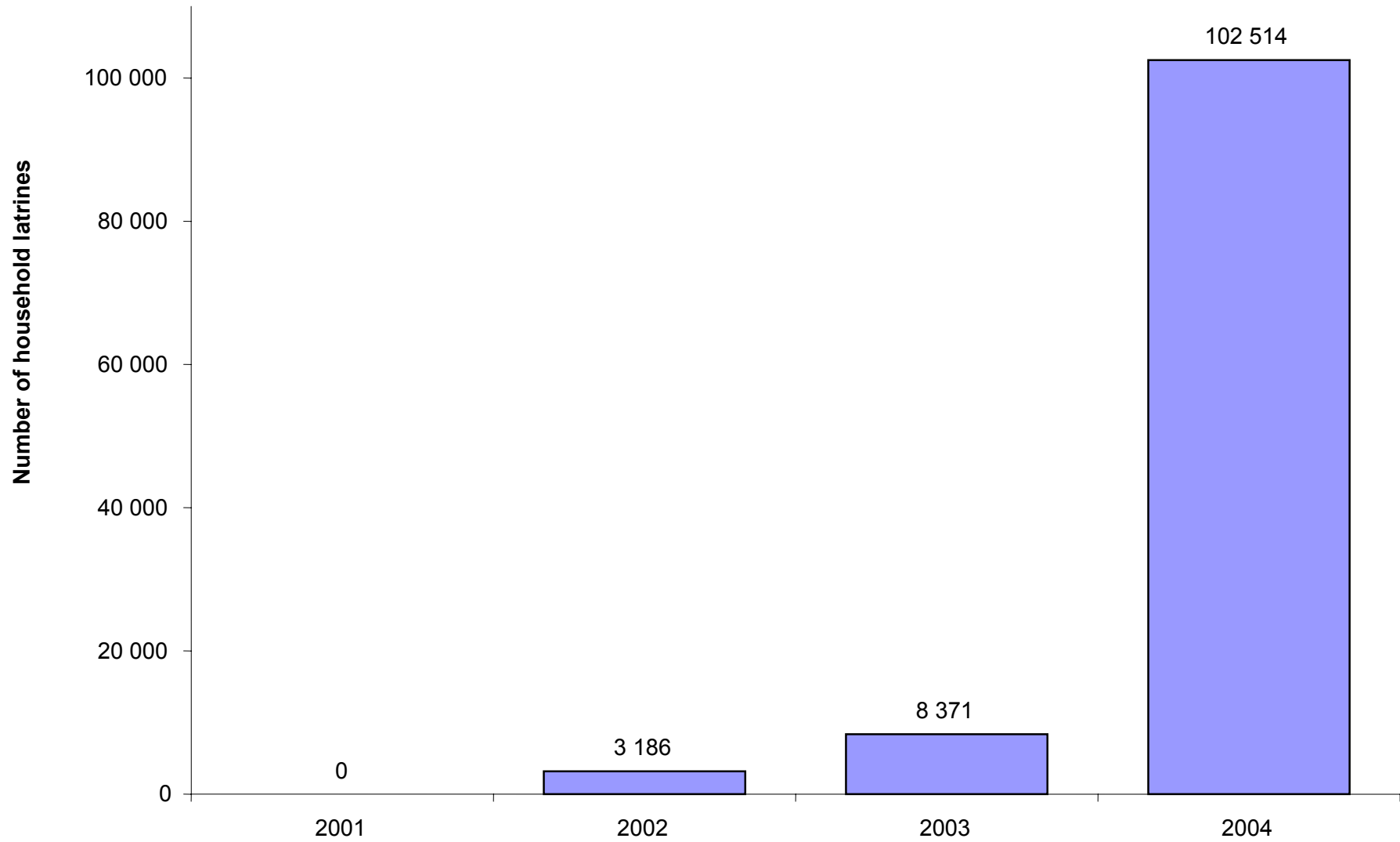


**Figure 5. Villages which Received Ongoing Health Education**  
*National data in Carter Center-assisted countries as presented for 2001-2004*



### Figure 6. Household Latrines Built

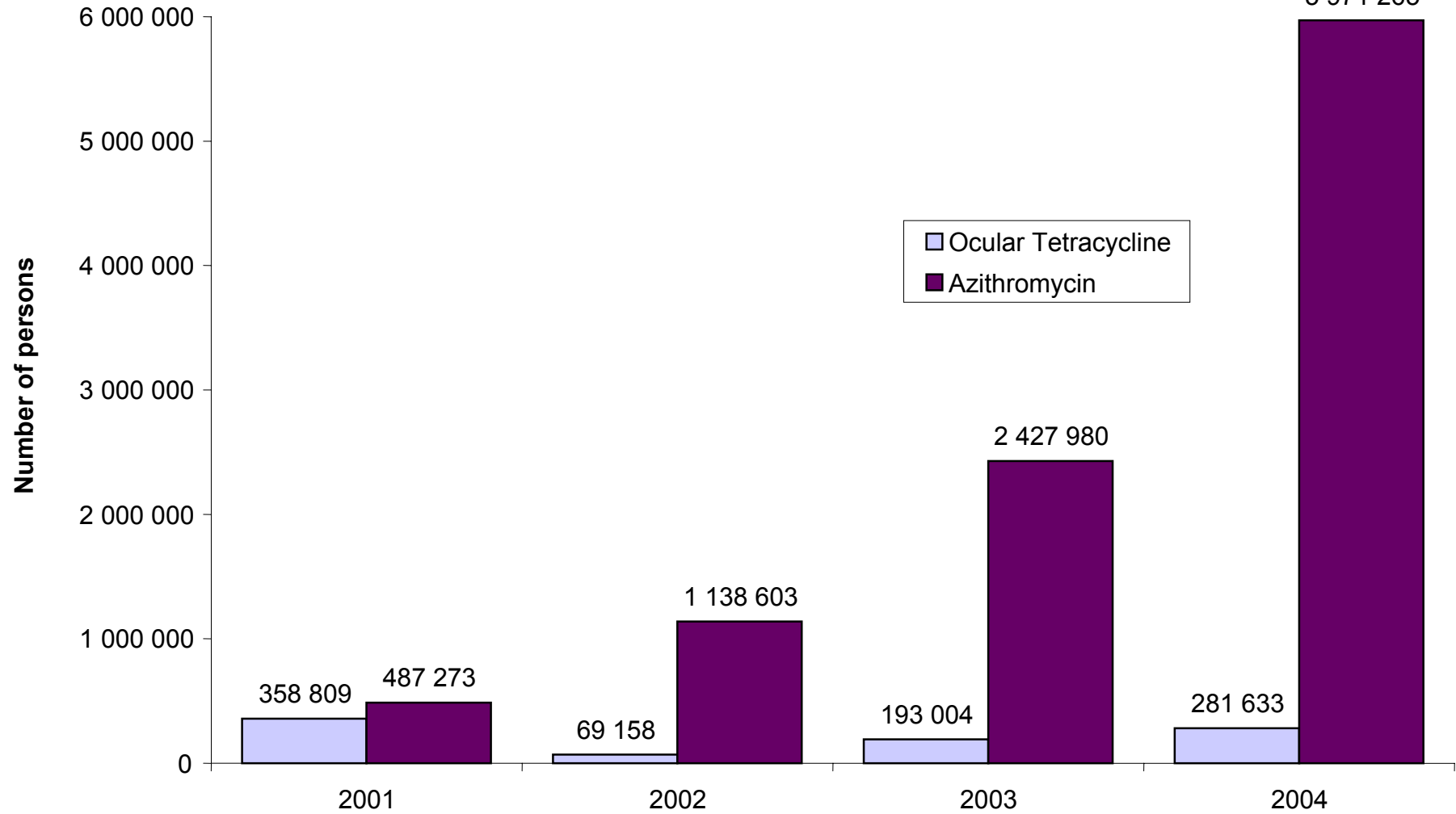
*National data in Carter Center-assisted countries as presented for 2001-2004*





### Figure 7. Persons Having Received Antibiotics

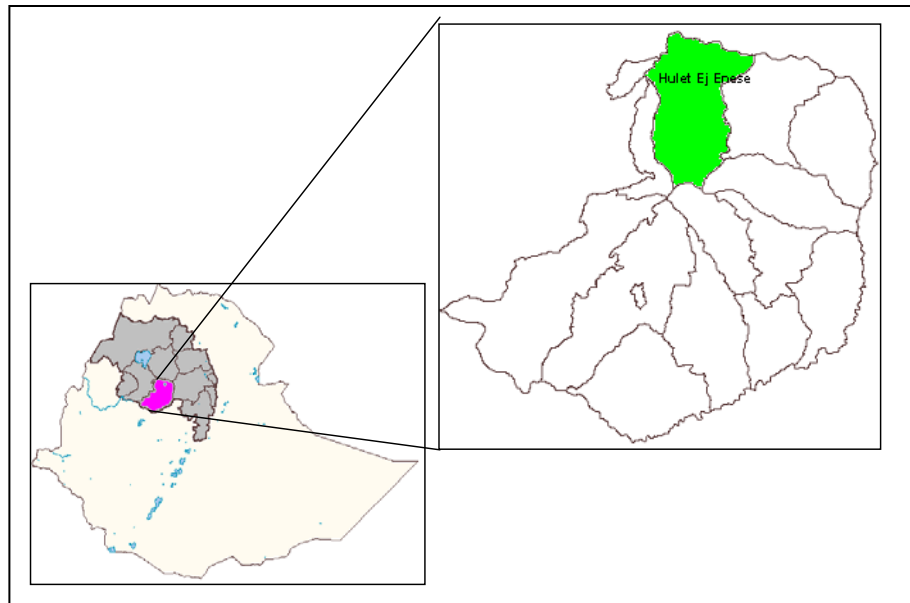
National data for Carter Center-assisted countries as presented for 2001-2004



## Pit Latrine Promotion in Amhara, Ethiopia

*Presented by Teshome Gebre, Carter Center Resident Technical Advisor, Ethiopia*

The presentation reported the experience of Hulet Eju Enessie woreda in East Gojam zone of Amhara Regional State (map) which produced in excess of 26,000 household latrines in 2004.



### **Background and foundation**

Amhara is a region that has been badly affected by war, drought and famine which has resulted in considerable internal migration of people and a feeling of temporariness in the communities. Sanitation coverage is reported to be less than 4% and access to safe water less than 25% making this one of the most underserved populations in the world. The aid agencies FINNIDA and UNICEF/WES initiated latrine promotion in 2001 targeting several Kebeles (groups of villages) in the woreda and raised considerable levels of awareness, particularly among the decision makers.

### **Think big, start small, act now**

Latrine promotion became a cornerstone of The Carter Center support for Amhara in January 2004. All the key decision makers and influential groups were included in a sensitization workshop in which the chief administrator stressed that *'the solution to most of our health problems are in our own hands'*. In the workshop it was agreed that there was no need for people to suffer from ailments such as trachoma for which the means to prevent them were at his own disposal and that everybody – without exception – could build a latrine and make use of it.

The leaders agreed that their ability to promote latrines would be used as a key performance indicator. Individual conviction to the program would be demonstrated by they themselves building latrines for their own families and at public gathering points such as schools, clinics, and public offices. They would set their own targets for latrine construction and provide the critical support and motivation for village health workers. Performance would be measured through accurate record keeping. The motto became '*think big, start small, act now*'.

### **Household pit latrines as a gender issue**

An obsolete tradition in Amhara banned women from defecating during the day time; they were supposed to restrict themselves to early in the morning or late in the evening. This tradition was resurrected by women activists to mobilize women to apply pressure on their husbands to participate in the program.

### **Empowering the people to take their own concerns into their own hands**

Having raised awareness and increased the demand for latrines among the population the homeowners were empowered to build their own latrines. The program provided no subsidy, so all the materials would have to be found locally. But, the people were trained by the health workers how to do it for themselves using local material. The absence of a subsidy was a great leveler – everybody who could build a house for their family could also build a latrine for them. Regular house-to-house supervision by an army of volunteers and supervisors maintained pressure on home owners and kept the motivation high.

### **Lessons learnt**

The example of Hulet Eju Enessie shows us that all populations, however underserved and resource constrained they may be, still have great potential. Once the problem of trachoma or lack of sanitation is taken as their own concern, the people themselves can take the solution into their own hands. Promoting a local latrine design that is both desirable and achievable using only local resources contributed greatly to the success of the program. A subsidy of just \$20 per latrine would have required an investment in excess of \$500,000 in this woreda alone in 2004. Conscientious and accurate record keeping linked to targets set for themselves and contributing to performance evaluations focused the attention, commitment and conviction of the health staff. Their great achievement in 2004 has been rewarded by the Region making Hulet Eju Enessie a 'model woreda' for others to emulate.

## **Verification, Knowledge, Attitudes and Practices of Latrine Construction and Utilization as Part of a Trachoma Control Program– Ethiopia, 2004**

*Presented by Dr. Rosalyn O'Loughlin, The Centers for Disease Control and Prevention*

**Background:** The Carter Center has supported latrine building community mobilization programs in the Amhara Region, Ethiopia, as part of its implementation of the “E” (environmental sanitation) component of their trachoma control program. This program yielded an increase in reported household latrine coverage from 6.5% to 58% in one implementation district - Hulet Eju Enessie Woreda. We sought to verify latrine presence and assess knowledge, attitudes, and practices regarding latrines in this community. This was facilitated by the presence of lists of names of heads of households with latrines or latrines under construction.

### **Objectives**

- To verify the accuracy of the lists documenting households with latrines or with latrines under construction.
- To assess the knowledge, attitude and practice of households with latrines.
- To assess the knowledge, attitude and practice of households without latrines
- To make recommendations related to expanding this latrine building program to other woredas.

**Methods:** We conducted a cross-sectional survey of 20 heads of household from each of eight randomly-selected kebeles (administration areas of about 5,000 persons) in one intervention district. Households were selected using a systematic random sample from lists of those reported as having latrines. We interviewed the head (or representative) of each selected household using a standard questionnaire to establish knowledge and attitudes regarding latrines and conducted a visual inspection of latrines to determine use. When possible, we interviewed neighbors with no latrines for comparison. Odds ratios calculated using Epi-info's C-sample program were used to adjust for the clustering effect.

**Results:** We visited 144 households, 128/160 (80%) from the lists of latrine owners and 16 non-latrine owning neighbors. Of those listed, 113/128 (87%) had a latrine or a latrine under construction and, of these with a latrine (n=111), 100 (90%) were being used. We found that the lists from our sample were 87% accurate for latrine coverage (95% CI 77-97). If we consider this figure to be representative of the woreda we can apply this figure to the number reported by the woreda to estimate true coverage. Our best estimate for latrine coverage in the woreda is 50.8% (95% CI 44.8-57.1) and our best estimate for latrine use is 45.7% (95% CI 40.5-51.4). This increase from 6.5% prior to 2004 represents a remarkable achievement in a short space of time. The generalisability of these results may be somewhat limited due to the small sample size.

Cleanliness (56/116, 48%) and health benefits (49/116, 42%) were reported as the main advantages of latrines. Of those that had no latrine nearly all (29/30, 97%) recall being advised to build one, but their main reason for not doing so was lack of manpower (11/30,

37%). The odds of having and using a latrine were 4.7 (95% CI 2.0 – 11.1) times higher among urban households than rural households.

The quality of several latrines, particularly those in rural areas was poor. Many latrines were of insufficient height, depth and had inadequate privacy. Of those who built their latrine in 2004, 31% paid for some materials or labor with a mean cost among those who paid of 25.8 Birr (USD3). Over three quarters (79%) had no water container present outside the latrine and none had soap present.

**Conclusion:** We found the presence of latrines to be only slightly lower than that reported and the utilization of latrines to be high (90%). A number of recommendations were made, summarized below, to increase the standard of latrines (suggested minimum standards written) and to ensure sustainability of the program. We recommend that similar latrine promotion programs are extended to other districts. This latrine program will contribute to the reduction of trachoma, other diseases such as diarrhea and will contribute to achieving the sanitation Millennium Development Goal.

#### **Summary of recommendations:**

**Recommendation 1:** Expand the program to other woredas using similar community mobilizations techniques

**Recommendation 2:** Continue with this community led total sanitation program.

**Recommendation 3:** Emphasize all benefits of latrines in promotion – not just health benefits.

**Recommendation 4:** Develop and implement minimum construction standards

**Recommendation 5:** Promote hand-washing with soap

**Recommendation 6:** Find solutions for those without latrines

**Recommendation 7:** Concentrate on rural communities when promoting latrines

**Recommendation 8:** Encourage woredas to record lists of households with latrines to facilitate verification studies

**Recommendation 9:** Maximize opportunities for latrine promotion.

## **Assessment of Household Latrine Use and Sustainability in Rural Doutchi District, Republic of Niger, 2004**

*As presented by Mr. Sadi Moussa, Foege Fellow at Emory University Rollins School of Public Health*

### **Background**

A hygiene and sanitation project was implemented from 1994 to 2001 with the support of the Dutch development agency and the “Conseil de l’Entente” in Doutchi, a district of the Dosso region in western Niger. The promotion of Sanplat latrines was a key component of the project, with approximately 7,600 Sanplat latrines built in more than 230 villages. The project was based on social marketing and self-promotion strategies, and was never evaluated. The Doutchi project’s experience in promoting low-cost latrines has been cited as an example of a successful rural sanitation strategy. Little is known about the sustainability of the technology.

This study was conducted in Doutchi, with a study population that was the beneficiary of the PHV-H &A/CE/PB project (Projet Hydraulique Villageoise- Hygiene et Assainissement/ Conseil de l’Entente/Pays-Bas). We evaluated the acceptability, usage, maintenance, and sustainability of Sanplat latrines ten years after the project started and three years after its completion. The specific objectives were:

- To determine the proportion of households using latrines in 2004 compared to 1995 in project and non-project villages
- To determine whether latrines provided by the project were being maintained
- To evaluate whether the project had been sustained and continued by the community

### **Materials and Methods**

Ten villages were selected purposively in the project area and ten others randomly in non-project areas; 200 households were randomly selected in each area. Focus group discussions were conducted in the twenty villages, and household latrines were visited to observe condition and maintenance. Patterns of latrine use, perceived benefits of a latrine, and reasons for not having latrines were explored during the focus group discussions.

### **Findings**

Approximately 51% of households in the project area had latrines, compared with only 4% in the non-project area. The majority of latrines built in the project area were the Sanplat type promoted by the Dutch sanitation and hygiene project. In the non-project area there was only one Sanplat latrine. Of 101 households with latrines in the project area, 24 (12%) latrines had collapsed, and were thus unusable. In total, 77 (39%) households in the project area had usable latrines. In both areas, a significant proportion of households did not have fixed locations for defecation; they used open field or neighbors’ latrines. In the non-project area, open field defecation was very common because only 4% of the households had latrines.

The study showed there is a high proportion of latrine use all the time by family members in the project area, 91%, 87% and 77% respectively for women, men and children greater than 10 years (see Table 1).

**Table 1.** Latrine coverage and use in the study area, Doutchi district, Niger, 2004

	<b>Project area</b>	<b>Non-project area</b>
Respondents	200	197
Households that had built any latrine since 1994	50.5 % (101/200)	4.1 % (8/197)
Households that had built latrines which were unusable	12 % (24/200)	0%
Households with usable latrines	38.5 % (77/200)	4.1% (8/197)
Always use latrine		
Women	90.8 %	100 %
Men	86.7 %	100 %
Children < 10 yrs old	76.8 %	60 %
Satisfied with latrine	77 %	83.3 %
Heard of the project	84 %	84 %

**Perceived benefits of having a latrine**

Convenience, privacy and prestige were reported as the major perceived benefits, and health aspects were mentioned last in both areas (see Table 2). Of 101 heads of household with latrines, 78 (77%) were satisfied with their latrines in the project area, versus 23% who were unsatisfied.

**Table 2.** Reported benefits of having a household latrine, Doutchi district, Niger, 2004

<b>Project area</b>	<b>Number of respondents</b>	<b>Non-project area</b>	<b>Number of respondents</b>
Easy access and privacy	41	Easy access and privacy	57
Easy access	30	Avoid going to the bush	6
Avoid going to the bush	28	Hygiene	6
Privacy	18	Privacy	4
Cleanliness/hygiene	12		
Disease prevention	5	Disease prevention	2
		Easy access	2
Other reasons (when sick, for visitors, neighbors, Muslim women)	13		0

**Reported reasons of not having a latrine**

During household interviews in the project area, the most commonly cited reasons for not having a latrine was that the head of the household was absent during the project period (18%) or that the household was not aware of the project at the time it was active (15%). A number of households (14%) also cited other reasons such as preference for open field

defecation, concern about collapse, and lack of project assistance. In the non-project area, the main reasons reported were lack of resources, not targeted by the project, or a preference for going to the bush. Other reasons mentioned were lack of cement, latrine collapsed, or lack of masons to build latrines. In both areas, 84% of respondents reported that they had heard of the project during its implementation period. In the non-project area, 98% of respondents said they used a latrine in other villages or cities and 97% showed very high exposure and a felt need for latrines.

### **Latrine maintenance**

The household questionnaire showed that most households maintained their latrines on a regular basis. Of 73 respondents with usable latrines, 71 (97%) reported that they cleaned their latrines. The responsibility for cleaning the latrines was divided equally between men (49% of respondents) and women and children (49%). About half (51%) of respondents declared that they only swept the latrine, whereas 31% washed it with water, and 18% reported that they both swept and washed. It is of concern that only 10% of respondents reported that they emptied their latrines.

A visual inspection was conducted of all the latrines in the study households using a standard check list. Most of the latrines (62%) had a fence but only 13 % of the latrines had doors. The superstructure was usually constructed of mud or cement blocks (67%). Covers were usually made of cement (59%), or mud or wood (41%). Most of the drop holes were covered (56%) at the time of the visit. Few latrines had visible feces or worms around the drop hole. Of concern, about half of the latrines were filled to with 50 cm of the cover and would soon need to be emptied or replaced. None of the latrines visited had a roof. Among those households without latrines, 96% of respondents said they defecated in the bush, 3% used neighbors' latrines, and 1% used school latrines. From the focus-group discussion in the project area, when the pit was full people either covered it with waste or poured waste water, chemicals, or salt to lower the level then continued to use it. A few households dug new pits nearby or relocated the latrines.

### **Sustainability**

Regarding disadvantages of Sanplat latrines, the participants highlighted the problem of emptying the pit and lack of materials. The latrines also collapsed during the rainy season, had bad odors, and bothersome heat escaped from the drop hole. A high proportion (41%) of the drop hole lids are made of non-permanent materials and the slab was not well-sealed to the pit. The participants suggested digging deeper pits, providing emptying material, lining the pit with concrete blocks, training people on how to empty the pit, and reducing the bad odors. They commented that the Sanplat latrine is useful for family members and visitors. The slab was strong and could be reused. But, the pit should be lined with concrete bricks instead of mud blocks, therefore preventing the pit from collapsing. In the focus-group discussion, the villagers estimated that the cost of a latrine is \$30-100 US for the household, compared to the estimated project cost of \$50 US. They believed that every household could not have a latrine because it could not pay the contribution of 65 % of the total cost of the latrine.



## **Conclusions and recommendations**

The program increased latrine coverage from 4% in 1994 to 39% in 2004, and when available, a high proportion of family members used the latrines. There is no transfer of the program to the neighboring community, and no continuity in Sanplat latrine promotion, even in the project area.

Our recommendations are as follows:

- Emphasize more non-health benefits in health education messages (privacy, prestige, and convenience) when promoting latrines
- Stimulate community participation and support school health education programs
- Consider the possibility of offering a choice in latrine type
- Establish a mechanism for supplying necessary construction materials and skills within the community
- Train and equip sufficient masons
- Train masons on different emptying options if the pit is full
- Consider increasing the depth of the pit
- Create an enabling environment through legislation, information campaigns and capacity-building
- Take soil structure into account, in unstable ground the use of cement bricks could be recommended to line the pit
- Health workers and village volunteers should conduct home visits to encourage those building latrines and promote latrines to those who are not
- Collect base-line data on latrine coverage rates, perceived benefits of latrines, and amount of money that people can contribute
- Advocate for policy development

## **Making Traditional Soap to Fight Trachoma in Niger**

*Presented by Mr. Ali Amadou, Trachoma Control Program Officer, The Carter Center,  
Niger*

In addition to water, soap plays a key role in improving personal hygiene. This message was emphasized by the Niger Trachoma Control Program (TCP) 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 TCP 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. As a result, the demand for soap grew, but commercial soaps in Zinder are expensive in village markets (about 40 cents or 200 F CFA per soap bar), 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, three women per village were selected by their village to participate in the training. The first group of thirty women from ten villages in rural Zinder was trained in traditional soap production in a two-day training session that took place in one village. The soap and hygiene training was done by sanitation technical officers from the Zinder Regional Ministry of Health, led by Mr. Ali Amadou of the Carter Center. The participants learned that soap can 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.

From 2003 through 2004, a total of 303 rural women from 60 villages were trained in local soap production—180 trained by TCP staff in Zinder and Maradi and 123 women trained by their peers in Zinder. During routine field supervision, TCP staff provide ongoing training and support as needed.

Through the production of local soap, and the training of women to train their peers, improved hygiene and the end of blinding trachoma may have been found by looking to the past for traditional solutions.

## **If You Build Them, Will They Come? An Example of Latrine Provision in The Gambia**

*Presented by Dr. Paul Emerson, Technical Director of Trachoma Control Program,  
The Carter Center, Atlanta*

### **How are we going to take latrine provision to scale?**

Since Pfizer pledged to increase the scale of the donation of azithromycin for trachoma control to 135 million doses from 2004 to 2008, many trachoma control programs have started to scale-up activities. Whilst developing a strategy to distribute more antibiotic is relatively straight forward, there remains a huge problem of taking the “E” of SAFE to scale. Despite the best efforts of many implementing agencies, access to latrines remains low in many trachoma-endemic countries, and whilst the technical ability exists to increase latrine access, sanitation budgets are not increasing in line with other program expansion. Trachoma-endemic areas need more latrines, faster, within the existing budgets if “E” is going to keep pace with “SAF”.

There are currently two main paradigms for latrine provision: subsidized best practice, and community-led ‘total sanitation’. Subsidized best practice aims to provide the best available technology and usually relies on cost-sharing between the implementing agency and the latrine beneficiary. Such programs produce high quality latrines – but at a high unit cost. Examples of programs producing in excess of 5,000 latrines are rare. Community-led ‘total sanitation’ relies on increasing the perceived need of latrines to such a point that every family feels that they must get one. Local technologies and local materials are used without any form of subsidy at all. Indeed the merest thought of a subsidy can derail this type of program since it relies on the idea ‘catching fire’ with resultant prompt action – waiting for a subsidy would brake the system to such a point that it stops.

### **Taking the best aspects of both paradigms – ‘Community-led, subsidized total sanitation’ in The Gambia**

This method provided all households in a community (total sanitation) with access to improved latrines (subsidized best practice). All people in the communities received latrines at the same time. All materials that cost money were provided by the project, whilst all the local materials and labor were provided by the community. Providing only for the reinforced cement slab, bulk purchasing of materials, and reduced transport costs kept the unit cost per latrine to around \$13. Controversially, the project also made a contribution to the village development committee of around \$5 per completed latrine. The project attracted criticism as being unsustainable and for ‘paying people to build something that we wanted them to have, but that they didn’t want’.

In order to assess whether these criticisms were justified, we followed-up on the 666 latrines provided to the 32 villages an average of three years after they had been built. We found that latrine access was 95% (it had been 32% at baseline) and that 87% of the latrines built were still usable. The latrines were being maintained with new fences and clean slabs. Of

the 585 usable latrines, 87% were currently in use, and 97% of latrine recipients reported that they would build a new latrine after the current one became full.

Whilst it is too early to assess whether new latrines will be built, we can interpret this follow-up to demonstrate that the latrine delivery mechanism was suitable to achieve a rapid increase in latrine coverage with a good quality, durable technology. Community-led, subsidized total sanitation may be a suitable tool to help environmental improvement keep pace with the other aspects of the SAFE strategy.

### **Comparison of subsidized best practice and community-led ‘total sanitation’**

	<b>Subsidized best practice</b>	<b>Community-led ‘total sanitation’</b>
<i>Who benefits?</i>	Those who can pay their contribution – the richest of the poor	All families able to do construction work
<i>Who participates?</i>	Risk takers, the better educated, those who are more worldly-wise	All families
<i>Unit cost of latrines</i>	High (estimates from \$30-\$100) Cost-share	Low (estimates from 0 - \$5) Families pay all
<i>Coverage</i>	A good program can produce 2,000 a year	A good program can produce >50,000 a year
<i>Quality</i>	Good. 5-8 year life expectancy	Low. 1-2 year life expectancy
<i>Sustainability</i>	Assumes that there is a transfer of skills to the communities, that cement and other materials can be purchased, and that demand remains strong	Assumes that local materials remain available, that people are prepared to make frequent repairs/renewals, and that demand remains strong
<i>Risks</i>	Poor coverage Hard to make appreciable effect on latrine access at population level	Poor quality latrines do not generate future demand Bad experiences (collapse, injury, etc.) can reverse the trend

## **The International Trachoma Initiative: Past, Present and Progress**

*Presented by Dr. Jacob Kumaresan, International Trachoma Initiative*

In 1998, the Edna McConnell Clark Foundation and Pfizer Inc founded the International Trachoma Initiative (ITI), an NGO dedicated solely to eliminating blinding trachoma. ITI supports national trachoma programs in countries where the World Health Organization has documented widespread disease and collaborates with ministries of health and other partners to identify trachoma control target areas. ITI also assists in developing national plans for **SAFE** implementation and helps to mobilize people and resources for elimination efforts.

**SAFE** is an innovative, community-based approach designed to fight trachoma by treating infection and reversing its damage, thereby increasing the availability of health care in endemic areas while addressing the underlying medical, behavioral and environmental causes of the disease. This World Health Organization-recommended strategy is comprised of the following components:

- Surgery to correct trichiasis—the immediate precursor to blindness;
- Antibiotics to treat active disease—particularly Pfizer Inc-donated azithromycin (Zithromax<sup>®</sup>);
- Facial cleanliness to reduce transmission; and,
- Environmental improvement to affect the determinants of vulnerability.

In 1999, ITI supported country programs in Tanzania and Morocco and has since expanded into Ghana, Mali, Sudan, Vietnam, Ethiopia, Nepal, Niger, Mauritania and Senegal.

Trachoma was a significant public health problem in Morocco for several decades; however, by 1999 the disease was confined to the five southern provinces of Errachidia, Figuig, Ouarzazate, Tata and Zagora, due to good control measures. Introduction of the **SAFE** strategy with annual distributions of a single oral dose of Zithromax to the affected communities in these provinces resulted in a 90 percent reduction of active disease rates in children under the age of ten by 2003. Morocco's success in implementing the **SAFE** strategy can be attributed to the strong commitment of its political leaders at the national, provincial and district levels. Prevention and treatment efforts have been integrated into the routine activities of government agencies and communities actively participate in local health initiatives. Surgeries, while once performed in regional hospitals at an average rate of 400 per year, were increased to 2500 in 1995 and peaked at 5000 in 2000 due to decentralization to smaller health units in high prevalence areas. Additionally, Zithromax distributions were provided annually to 680,000 people – 100 percent of the population at risk.

The success of Morocco's trachoma control program has been chronicled in the book, ***Millions Saved: Proven Successes in Global Health***, published by the What Works Working Group of the Center for Global Development in 2004. This book is the result of an 18-month study of more than a dozen, sustained, large-scale health success stories in poor countries.

The research performed in the early 1990s that led to the development of the **SAFE** strategy proved that a single oral dose of the antibiotic azithromycin (Zithromax) could replace the accepted course of therapy of six weeks of tetracycline eye ointment applied twice daily. This breakthrough led Pfizer to play a critical role in the global elimination effort. From 1998 to 2003, ITI supported national programs with 10 million treatments of the Pfizer-donated antibiotic, Zithromax. And in November 2003, Pfizer committed to an increased donation of 135 million treatments of Zithromax over the next five years.

In order to absorb the increased Zithromax donation by Pfizer, ITI has joined with other partners and Ministries of Health to ramp up trachoma control efforts. An example of this is the development of five-year national plans in Ethiopia, Ghana, Mali, Nepal, Niger, Tanzania and Vietnam. In this context, ITI has developed a set of engagement criteria for its support to national trachoma control efforts:

- a) Political commitment;
- b) Burden of disease estimates, and;
- c) Engagement of partners for all components of **SAFE**.

ITI has also contributed to several accomplishments over the past three years:

- a) founding of the International Coalition for Trachoma Control (ICTC);
- b) the completion of population-based surveys in 30 out of 50 trachoma endemic districts in Tanzania, and;
- c) equity research and mathematical modeling projects.

However, as progress is made, challenges still remain. There is a continual need for strong advocacy efforts to raise awareness of trachoma and the **SAFE** strategy; burden of disease estimates to engage in control efforts; integrated approaches to community-based interventions and linkages with other public health programs; collaboration between health, education and water/sanitation sectors and applied research to improve **SAFE**.

## **Can Trachoma be Eliminated with Antibiotics Alone?**

*Presented by Dr. Jaya Chidambaram, Research Fellow, UCSF Proctor Foundation*

Until very recently, trachoma was a disease that affected most of the world. In the last few decades, we have witnessed its elimination from Western Europe and the U.S. – the last documented case of active trachoma in the U.S. was in the 1970s. Currently, standard definitions for eradication, elimination or control of any disease are as follows:

- **Eradication:** Global reduction of the level of infection to zero
- **Elimination:** Local reduction of the level of infection to zero, which may require continued intervention
- **Control:** Reduction of the level of infection to an acceptable level, requiring continued intervention

The availability of a single-dose, highly effective antibiotic has changed our approach to treating trachoma.

### **Mass Antibiotic Treatment Strategies**

Azithromycin is 95% effective at eliminating chlamydial infection from the individual, as found in STD studies. For ocular chlamydial infection, randomized trials have shown that azithromycin can significantly reduce infection at the individual level and at the community level.

The effect of different mass antibiotic treatment strategies has been evaluated to a limited extent. Following a single mass treatment with azithromycin in communities in Egypt, Tanzania, and The Gambia, there was a dramatic reduction of infection early on 2 months later, but there was some evidence that infection was returning in these communities 12-14 months after treatment at the end of the study.

A few studies have evaluated repeat mass treatments. In a Tanzanian village, a single mass azithromycin distribution was followed up with annual targeted treatment of active trachoma cases every 6 months; after a 24-month time period, only a single infected case remained in the village. Similarly, repeated annual treatment of children in villages in Nepal over 3 years nearly eliminated infection from this community, with only a single infection remaining.

### **But is a single mass antibiotic treatment effective in the long-term?**

Our collaborative study with Orbis Ethiopia has found that a single mass antibiotic treatment is effective at reducing the level of ocular chlamydial infection in the community from a mean prevalence of 43.5% at baseline to a significantly lower level 2 months after treatment. However, infection does return into the community, significantly so by 18 months. The return of infection is slow, and is still only 9.8% mean prevalence by 18 months after treatment. Infection may have returned more quickly, but for the presence of a secular trend towards fewer cases.

**What is needed to bring about the elimination of trachoma?**

High antibiotic coverage is required to bring about a reduction of ocular chlamydial infection in a community with mass antibiotic treatment. However, this effect may not be sustainable in the long-term. No trachoma program uses antibiotics alone in their treatment strategy for trachoma. Other measures, such as face-washing and environmental improvements, may need to be evaluated to ascertain their contribution to sustainability.



## **Elimination of Ocular *C. trachomatis* Infection after One Dose of Azithromycin**

*Presented by Dr. Anthony Solomon, London School of Hygiene & Tropical Medicine*

The World Health Organization now recommends annual mass antibiotic treatment in any area in which the prevalence of TF in 1-9 year-old children is 10% or greater. The paper “Mass treatment with single-dose azithromycin for trachoma” (NEJM 2004, 351(19): 1962-71) evaluates the impact of one very high coverage round of mass azithromycin treatment in a meso-endemic community in Rombo District, Tanzania. This presentation summarised the conduct, results and possible implications of that research.

In the study, the principal outcome measures were the prevalence and intensity of ocular *Chlamydia trachomatis* infection, as measured by quantitative PCR: a very sensitive and specific laboratory technique that can determine not just whether or not chlamydial infection is present, but how much *Chlamydia* is present in a standard swab taken from the eye.

At baseline, there were 978 residents in Kahe Mpya, the sub-village involved in the study. 956 were examined, and 195 of them (20.4%) had active trachoma (TF and/or TI in either eye); the prevalence of TF in 1-9 year-old children was 36.0%. The prevalence of ocular *C. trachomatis* infection (all ages) was 9.5%. Treatment immediately followed swabbing. Of the 978 residents, 916 (93.7%) received azithromycin, and another 39 (4.0%) received two tubes of tetracycline eye ointment for self-application at home. In total, therefore, 955 people (97.6% of residents) were treated.

No further azithromycin was given over two years of post-treatment follow-up. At 6, 12 and 18 months after treatment, however, people who had clinical evidence of active disease were given tetracycline eye ointment. This was done to satisfy the requirements of our ethics committees.

Prevalence of infection fell from 9.5% before treatment to 2.1% at two months after treatment, 1.5% at 6 months, 0.9% at 12 months, 0.6% at 18 months, and 0.1% at 24 months. A measure of the average intensity of infection, called the “Community ocular *C. trachomatis* load” (COCTL), fell from 0.423 before treatment to 0.059 at 2 months (13.9% of its baseline value), then continued to fall, reaching 0.003 (0.8% of baseline) at 24 months. There were few new infections after treatment: at each time point after baseline, over 90% of the total community burden of ocular *C. trachomatis* was found among subjects who had been positive the previous time they were swabbed. Population turnover over the course of the two year study totaled nearly 20%, but only 2 of 195 new residents brought *C. trachomatis* infection with them, and they did not appear to infect their household contacts. In the paper, analyses are presented which suggest that post-mass-treatment use of tetracycline eye ointment did not itself have much impact on the community’s burden of infection; however, a possible effect of this intervention can not be ruled out.

The results suggest that a single round of mass azithromycin treatment was successful in interrupting transmission of ocular *C. trachomatis* infection in this sub-village. The most likely explanation for this effect is the extremely high antibiotic coverage that was achieved.

Though this finding is extremely encouraging, ensuring that over 95% of residents take offered antibiotic is much more difficult at district- or national-level. Operational research is required to further investigate the reasons for incomplete acceptance of offered antibiotic in trachoma control programs.

Though the study discussed did not evaluate this hypothesis, it is likely that concerted efforts to implement the 'F' and 'E' components of SAFE would have an additional effect in prolonging the impact of mass antibiotic treatment. Continued work to educate endemic communities, encourage face washing, improve water supplies and increase access to safe methods of disposal of human feces is therefore warranted, alongside the use of antibiotics.

## **Integration of Lymphatic Filariasis and Blinding Trachoma Elimination**

*Presented by Mr. Jonathan King, U.S. Centers for Disease Control, and  
Dr. Peter Kilima, International Trachoma Initiative*

Lymphatic filariasis (LF) is a parasitic disease that damages lymphatic vessels and can lead to lymphedema, hydrocele and elephantiasis. An estimated 120 million people are infected with the parasite that causes LF and 43 million are disabled due to the disease. Over 1 billion people are at risk of infection in over 80 endemic countries.

Trachoma is the world's leading cause of preventable blindness. The bacterial disease affects the inner upper eyelid and cornea. Children are especially susceptible to the early, inflammatory stage of the disease. Repeated infection leads to scarring, thickening of the conjunctiva, and distortion of the eyelid. The eyelashes begin to rub the eye, leading to corneal opacity and blindness, typically in adults. About 84 million people have the active disease in about 46 developing countries. Trachoma and LF coexist in many of these countries. Both diseases generally occur in poor areas where people have limited access to basic needs such as water and health care. The World Health Assembly has called for the elimination of both LF and blinding trachoma by interrupting transmission and caring for those currently suffering from the diseases.

Integration of LF with trachoma control programs (TCP) provides an opportunity for increased efficiency and effectiveness as Ministries of Health are challenged with scaling up services to all endemic areas. Integration does not mean the expansion of one program to include the other, but implies synergy to achieve greater impact without compromising the SAFE strategy. Integration does not mean the capture of one program into another, but the creation of linkages to improve the delivery of health services given existing resources. Integration can occur at different levels of the health system and involve collaboration, coordination and co-implementation.

TCP and LF programs involve similar activities and often utilize the same health staff. For example, both programs require mapping endemic areas, advocacy and social mobilization, active case finding, mass drug distribution, monitoring adverse events from mass treatment and evaluating impact of interventions. In addition, both programs involve training and supervision of many of the same district and sub-district staff and community volunteers.

In August of 2004, National LF and TCP managers of Ghana and Tanzania met in Bagamoyo to start a dialogue on the potential for integration. Country representatives compared program strategies and discussed unique operational settings and environments. The participants outlined the following list of activities felt most beneficial and feasible:

- Joint National Communication Strategy
- Joint advocacy and social mobilization
- Joint registration (census prior to drug distribution)
- Integrated hygiene improvements
- Coordinated mass treatment (training, same drug distributors, etc.)
- Combined program review
- Joint task force at all levels
- Increased participation of planning
- Coordination of the sequence of program activities
- Integrated supervision
- Strengthening policies and guidelines
- Combined case detection and referral

Additional meetings were held subsequently in Tanzania and Ghana to plan integrated activities in a few districts and measure the impact. National programs reviewed geographical information on prevalence and interventions and outlined overlapping areas. Program managers selected districts where both diseases are public health problems, the district health leadership is strong and access to districts was not restricted. Participants proposed the following indicators to evaluate integration: cost of implementation, time required for implementation, the proportion of the target population served and the number of cases identified for surgery. The next steps are to implement selected integrated activities with existing resources, document the lessons learned, develop recommendations for future integration and draft proposals for continued financial support for more efficient implementation of disease elimination strategies.

## **Use of Data in Program Planning (With an emphasis on F and E)**

*Presented by Dr. Paul Emerson, Technical Director of Trachoma Control Program, The Carter Center, Atlanta*

A firm evidence base is of tremendous value when planning and implementing programs. Relying on common knowledge is not sufficient, a sound evidence base allows programs to focus resources on the areas of greatest need, plan delivery strategies appropriate to the areas, justify resource allocation, frame suitable targets and objectives, demonstrate progress against objectives, and demonstrate the impact of the programs.

### **What gets measured gets done**

At the simplest level we need to have population-based estimates of the number of people requiring corrective lid surgery, the number of people who require population-based mass drug administration, the number of villages that require hygiene education and the number of villages requiring access to safe water and sanitation facilities. Basic baseline information on trachoma prevalence, knowledge about trachoma, potentially harmful and beneficial practices, environmental risk factors, population size of at-risk groups, main communication channels used, and main motivators for behavior change would allow a program to be planned and outputs measured.

### **The need for a standardized grading system for clean face**

The WHO simplified grading system for trachoma allows comparisons of prevalence between localities in time and space – there is a standard definition of ‘TF’ that applies in all countries at all times. There is no such system for clean face, making it impossible to interpret findings from a single country made by different observers or to make comparisons between countries. Clean faces is one of the main aims of both the F (hygiene promotion) and E (access to safe water) parts of the SAFE strategy and a simplified grading system would facilitate measuring progress on these crucial aspects of the strategy.

Such a system is possible and could be based on one or more of the following elements that have been used to define a clean face:

1. The presence of nasal discharge
2. The presence of ocular discharge
3. The presence of food on the face
4. The presence of dust or other dirt on the face
5. The presence of flies on the face

The final grading system is likely to be combination of dichotomous indicators that best predict whether a child has had his or her face washed that day.

## **Collecting and Using Data for Hygiene Interventions**

A step-wise approach can be used to develop, plan and implement a successful hygiene promotion intervention.

1. Step one: Identify the target group
2. Step two: Decide how to reach the target group
3. Step three: Identify how to engage and motivate the target group
4. Step four: Design suitable messages for the target group

Target groups can be primary (the actual group, e.g., young children), secondary (those who have direct access to the primary group, e.g., parents of young children) or tertiary (those who influence decision making in the community, e.g., political leaders or school teachers). The way to reach, engage and motivate these groups will be different, influencing the form and content of the most appropriate messages to use. The sources of data to go through probably already exist within the trachoma task force of each country but probably include: prior knowledge, demographic and household surveys, media habits surveys, and marketing research.

### **Data for monitoring and evaluation**

The indicators used for monitoring and evaluating programs need to be relevant, easily understood, easy to measure, and repeatable (so that somebody else collecting the same data will get similar results). Setting realistic goals and annual targets allows reporting against both process indicators (what is being done towards achieving a target) and outcome indicators (the proportion of a target reached).

Good baseline data, collected at any time, is above all else the most useful data that a program can have. Good baseline data can be used to evaluate the impact of work, plan a new phase, or as the basis for a future impact evaluation.

## WHO Update

*Presented by Dr. Silvio Mariotti, Prevention of Blindness and Deafness, World Health Organization, Geneva*

The presentation had two main themes: issues and initiatives in the integration of trachoma control with other programs; and certification of the elimination of blinding trachoma.

### **Issues and initiatives of integration**

Whilst integration with the lymphatic filariasis programs was the subject of a separate special session, the broader issues of the desirability of integration were presented. The aim of integrating programs is to increase the long-term sustainability, productivity and effectiveness of programs and avoiding having a short-term effect, duplicating effort, and the constructing expensive and elaborate structures that produce less than their potential.

With long-term sustainability in mind vertical programs should be looking to join with the existing Primary Health Care (PHC) or Primary Eye Care (PEC) structures and probably not with other vertical programs. However, the PHC systems in most trachoma-endemic countries are already loaded with the traditional core activities of immunization, maternal and child health, family planning, and vitamin A supplementation in addition to the recently added priorities of tuberculosis, HIV/AIDS and malaria. Given the burden on existing PHC systems the addition of another program may not be advantageous, as it may add to the burden to the detriment of all.

Areas of trachoma control suitable for integration are: assessment and screening of cases; mass interventions such as health education and mass drug administration that could be combined with other diseases; routine surveillance, follow-up and monitoring activities; and evaluation activities. When considering integrating activities there are risks to successful implementation that need to be taken into account. In particular there is a risk that the vertical campaign may lose its visibility since it is now mixed with other activities, and this can result in it gradually losing momentum until it grinds to a halt after a few years. Conversely the program may be more attractive to the health staff who may find the possibilities of incentives or the additional interest of a new activity to be so alluring that they neglect their core duties. Lastly the demands of the program in terms of timing and the magnitude of the operation can overwhelm the PHC system.

After two and a half years of consideration at the WHO, the consensus has been that the focus should be on the integration of care delivery services rather than the integration of specific vertical programs. In the context of the trachoma programs this means that WHO would support identifying areas within and between programs where there is a synergistic effect of combining activities. Examples include delivery of efficiently integrated school-based and community-based health programs that include trachoma, hygiene education and other communicable diseases of relevance to the area, or the co-administration of antibiotic with other drugs depending on the area and subject to the settling issues of pharmacokinetic compatibility.

For trachoma control programs to be considered for integration managers must be very careful to consider their own country context, as there is no single formula for integration that can be applied across countries. The program that is to be implemented, and integrated, is the SAFE strategy. Not just the F and E being rolled into mass education campaigns or the S and A being integrated into mass distribution and screening programs. Integration is unlikely to be a way of saving money. Programs with limited financial support will probably not be able to contribute to the strengthening of the PHC or PEC infrastructure and even risk weakening it.

For integration to work it should result in a strengthened PHC or PEC system. A synergistic arrangement that is of benefit to all the programs, that enhances competencies and results in improved health service delivery to the people who need it.

### **Certification of elimination of blinding trachoma**

The World Health Assembly resolution 51.11 refers to the goal of the GET 2020 alliance as ‘no more blindness from trachoma by 2020’, although this is qualified with the phrase ‘as a public health problem’. The certification procedure is a normal function of the WHO are required three general steps: declaration; pre-certification; and certification.

For this to take place for trachoma there need to be a set of guidelines developed that refer to WHA declaration 51.11. These will be developed by the Guidelines Steering Group in consultation with a Technical Guideline Development Group and Guidelines Task Forces. Once the guidelines are in place certification Commissions will be appointed, these will review the evidence to establish certification for each country. If the evidence is consistent with the guidelines for declaring a country or region free of blinding trachoma as a public health problem then the country or region will move into the pre-certification phase. Successful completion of pre-certification will lead to final certification.



## Trachoma Prevalence Survey in Twelve Districts of Northern and Upper West Regions in Ghana

*Presented by Dr. Daniel Yayemain, Trachoma Program Coordinator, Ministry of Health, Ghana*

The Ministry of Health and Ghana Health Service are committed to eliminating trachoma as a cause of blindness in Ghana. This commitment is evidenced by setting the target as 2009 rather than 2020. In order to better plan and operationalise activities, a prevalence survey has been conducted with the support of ITI in all the endemic districts of Ghana. Preliminary results of this survey were presented.

### **Aim of the survey**

The purpose of the survey was to provide baseline data for the program and identify the districts in which interventions are warranted. Data on prevalence of signs of active disease in children aged 1-5 years, cicatricial trachoma in women aged 40 years and above, and the availability of potable water and latrines were collected.

### **Methodology**

The program used a multi-stage sampling procedure that randomized at the community, compound, household and individual level. Data were collected by ophthalmic nurses from the eye care program who had been trained in the survey techniques and tested for their reliability in trachoma grading. The survey was used as an opportunity to treat all people with signs of active disease and to register all those seen with trichiasis for surgical follow-up.

### **Results**

Selected results from the presentation are shown in the table.

District	Number of communities surveyed	Number of households surveyed	Active disease in children aged 1-5 (%)	Trichiasis in women aged 40+ (%)	Proportion of communities with access to safe water	Proportion of households with latrines
Jirapa/Lambuisse	50	712	5.0	0.8	98.0	0.3
Lawra	52	766	2.8	0.7	94.2	9.0
Nadowli	49	778	3.6	1.3	91.8	0.0
Bole	53	816	8.2	1.8	81.1	0.1
East Gonja	48	914	3.7	0.9	27.1	0.7
East Mamprusi	49	764	2.8	0.6	73.5	2.9
Gushiegu/Karaga	33	480	4.4	0.8	90.9	9.6
Nanumba	47	777	3.8	0.5	63.8	0.0
Saboba/Chereponi	44	595	3.2	0.5	34.1	0.0
West Mamprusi	42	626	6.8	0.8	59.5	3.7
Yendi	40	630	3.5	1.0	80.0	1.9
Zabzugu/Tatale	44	723	6.7	0.4	65.9	0.3

A total of 40,183 people from 8,681 households in 551 communities were examined. Of these 19,796 were children aged from 1-5 years and 20,387 were women aged 40 years and above. Overall 222/551 (40%) of communities had a prevalence of signs of active trachoma over 5% and 124 (23%) had a prevalence of trichiasis greater than 1%. Signs of active disease ranged from 0-53.3% and trichiasis from 0-13%.

Access to safe drinking water was generally good although East Gonja, Saboba/Chereponi and West Mamprusi have their own problems. Access to latrines at the household level was some of the lowest in the world ranging from 0-9.6%

### **Conclusions and interpretation**

Trachoma is in decline in Ghana. Where it remains it is a focal disease, with the existence of hotspots with signs of active disease at 50% or more. The actual communities that were identified in this survey as being hotspots are likely to change over time in the normal cycle of trachoma underlining the need for district-wide intervention with the SAFE strategy.

These data provide an excellent base for monitoring the program and for evaluating the impact of the five year plan.

## **Training Village Volunteers for Health Education in Mali**

*Presented by Mr Yaya Kamissoko, Trachoma Control Program Officer,  
The Carter Center, Mali*

A survey conducted in Segou region in 2003 showed that only 3% (17/515) of respondents had received trachoma health education from the village or community health worker in contrast to the 29% (150) who had heard trachoma messages over the radio. This indicated that the village health workers were either not sufficiently active or were too few in number to reach the target population at risk.

In order to improve on this situation a program of selection and training of volunteers to serve the 277 target villages was instituted. The village heads were requested to nominate two people from their village (preferably a man and a woman) who were to be trained as volunteers. The voluntary nature of the position (we sought true volunteers who would not receive any payment) was emphasized.

Criteria were applied to selection. Volunteers were required to be:

- 1) Resident in the village
- 2) Able to read and write in at least one language
- 3) Ability to read and write in French was an advantage
- 4) Willing to volunteer and receive no cash payments, although occasional motivators such as caps and tee shirts would be provided from time to time

The volunteers were invited to the health facility for a two day training course in groups of around 20. The training was split into information on trachoma and use of the health education materials and how to reach the village population. The volunteers were then provided with a flipchart, pamphlets, a tee shirt, and cap.

The volunteers will now conduct household sessions and focus group discussions in the villages to promote trachoma health education.

The effectiveness of this strategy will be assessed after a couple of years.

## **Enhancing Community-Directed Public Health Programs through Kinship Involvement in Sub-Saharan Africa**

*Presented by Dr. Moses Katabarwa, Program Epidemiologist, Onchocerciasis Program, The Carter Center, Atlanta*

As we go to scale with azithromycin distribution issues surrounding the cost to distribute each dose become of acute importance. Reports of the cost of mass drug administration with azithromycin vary from US \$0.15 in parts of Ethiopia to US\$ 0.60 in Niger. These costs are bearable when the target population is numbered in the hundreds of thousands, but present an impossible cost when scaled up to millions of people. This problem has also been faced by the onchocerciasis control programs in Africa, and research into the most efficient way to reach the target population has been conducted. Uganda stands out among countries with large ivermectin (Mectizan®) distribution programs in that it has exceeded the 65% treatment coverage with a mean national coverage of 76.9%.

### **Why do some communities succeed in reaching distribution targets where others fail?**

Counter-intuitively it has been found that communities in which the community directed distributors do not receive any monetary or other incentives actually reach a higher proportion of the target than those who receive incentives. And communities in which the distributors are selected from within the communities do better than those for whom the distributors are selected by the program. It follows that the most successful communities are those in which the community selects the distributor or distributors and where they receive no incentive from the program.

### **Kinship is the true motivator**

An understanding of African community structure is incomplete without an understanding of the 'blood ties' that run within tribes, clans and ultimately communities. Every community member knows their own position in their kinship hierarchy and patterns of behavior between groups are modeled and affected by the kinship lines. Obligations within kinship groups are taken very seriously and given paramount importance. Consider the conflicting obligations of taking a seriously sick child to the clinic or going to your paid work as a school teacher – the child will go to the clinic every time, whilst the other 'non-kin' children will wait in the classroom. Similarly the obligations extend to uncles, aunts, cousins: in short, kin.

Where programs work with kinship groups and request that the grouping itself nominate the person or persons from that group to distribute the treatments the dynamic shifts from a program provision to a kinship provision; from a job of work to labor of love. The responsibility put on the distributors is now that of treating your kin, not of going to work. The process becomes a joyful activity which not only gives reward in itself, but failure to provide the service to your kin - when they have selected you to do it – comes with the risk of severe personal sanctions if you let them down. Who would risk being excommunicated by their family for failing to provide the treatment that they need?

In addition to the social and moral obligations within the kinship group there are competitive strands between kinship groups which have existed for generations. These can manifest in joking relationships, but run deep. No member of a kinship group that has a competitiveness with another would like to know that more people from the other group were treated than within their own. This competition strengthens the likelihood of sustainability. Experience has shown that distributors start to request drug from supervisors around the time of annual distribution and do not need to be recruited by the program again.

The utility of kinship structures to program delivery are not limited to drug distribution. For health education to really reach a large proportion of the population, to penetrate and lead to lasting health behavior change there is a need to work through kinships. If the deep social constructs and their accompanying 'legal systems' are ignored and the normal way of life is threatened, then there is little chance of making a lasting impact.

The potential of using kinship structures when offering an intervention that is perceived as being genuinely useful to the community are:

- 1) Unnecessary costs for incentives are avoided
- 2) Training costs – per diem and lunch, are avoided
- 3) Higher geographic coverage is achievable
- 4) Higher population coverage is achievable
- 5) Involvement of women is enhanced
- 6) Positive health behaviors are learnt within the community from people that matter to them in their normal day-to-day lives.

The parallels for trachoma control programs are clear, although it requires a bold program manager to start the switch away from paying incentives to a few selected distributors to recruiting many community-selected unpaid volunteers who will only work within their own kinship groups.

## 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: FINAL AGENDA  
STRATEGIES FOR SCALING UP:  
Sixth Annual Trachoma Control Program Review  
The Carter Center, Cecil B Day Chapel  
February 28 - March 2, 2005**

**Monday, February 28**

7:30 – 8:00	<u>Breakfast/Ivan Allen Foyer</u>	
8:00 – 8:30	Welcome and Introductory Remarks	Dr. Donald Hopkins
<b>F &amp; E Components of the SAFE Strategy</b>		
8:30 – 9:00	Ethiopia presentation and discussion	Ato Teshome Gebre
9:00 – 9:30	Ghana presentation and discussion	Dr. Maria Hagan
9:30 – 10:00	Mali presentation and discussion	Dr. Bamani Sanoussi
10:00 - 10:30	<u>Coffee Break/Ivan Allen Foyer</u>	
10:30 – 11:00	Nigeria presentation and discussion	Drs. Apiafi and Nimzing
11:00 – 11:30	Sudan (OLS) presentation and discussion	Ms. Alice Onsarigo
11:30 – 12:00	Sudan (GOS) presentation and discussion	Mr. Raymond Stewart
12:00 – 1:00	<u>Lunch/Ivan Allen Foyer</u>	
1:00 – 1:30	Niger presentation and discussion	Dr. Kadri Boubacar
1:30 – 2:00	Tanzania presentation and discussion	Dr. Grace Saguti
2:00 – 2:30	Pit latrine promotion in Ethiopia	Ato Teshome Gebre
2:30 – 3:00	<u>Coffee Break/Ivan Allen Foyer</u>	
3:00 – 3:30	Profile of early latrine acceptors in Ethiopia	Dr. Rosalyn O’Loughlin
3:30 – 3:50	Latrine research in Niger	Mr. Sadi Moussa
3:50 – 4:10	Soap in Niger	Mr. Ali Amadou
4:10 – 4:30	If you build them, will they come? An example of latrine provision in The Gambia	Dr. Paul Emerson
4:30 – 4:50	Discussion	

### **Appendix III: List of Participants**

#### **Ethiopia**

Mr. Asefa Cherinet (ITI)  
Mr. Teshome Gebre (The Carter Center)  
Mr. Abate Tilahun (The Carter Center)  
Dr. Anteneh Woldetensay (The Carter Center)

#### **Ghana**

Dr. Agatha Aboe (ITI)  
Ms. Lydia Ajono (The Carter Center)  
Dr. Maria Hagan  
Mr. Aryc Mosher (The Carter Center)  
Dr. Daniel Yayemain

#### **Mali**

Dr. Mamadou Bathily (The Carter Center)  
Mr. Yaya Kamissoko (The Carter Center)  
Dr. Bamani Sanoussi  
Dr. Antandou Telly (ITI)

#### **Niger**

Mr. Ali Amadou (The Carter Center)  
Dr. Kadri Boubacar  
Mr. Mohamed Salissou Kane (The Carter Center)  
Mr. Mohamed Samna (ITI)

#### **Nigeria**

Dr. Dienne Apiafi  
Dr. Nimzing Jip (The Carter Center)  
Dr. Emmanuel Miri (The Carter Center)

#### **Sudan**

Ms. Alice Bosibori-Onsarigo (The Carter Center)  
Dr. Bellario Ahoy Ngong  
Ms. Glenna Snider (The Carter Center)  
Mr. Raymond Stewart (The Carter Center)

#### **Morocco**

Professor Mohammed Belmekki (ITI)

#### **Tanzania**

Dr. Edith Ngirwamungu (ITI)  
Dr. Grace Saguti

#### **The Carter Center**

Ms. Kelly Callahan  
Mr. Don Denard  
Dr. Mamadou Diallo  
Mr. Philip Downs  
Dr. Paul Emerson  
Ms. Sarah Hodgson  
Dr. Donald Hopkins  
Ms. Emily Howard-Staub  
Dr. Moses Katarwa  
Ms. Nicole Kruse  
Ms. Lisa Rotondo  
Dr. Ernesto Ruiz-Tiben  
Ms. Shandal Sullivan  
Ms. Robin Thompson  
Mr. Marc Tewari  
Mr. Craig Withers

#### **Conrad N. Hilton Foundation**

Ms. Dyanne Hayes  
Ms. Jennifer Lieberstein

#### **Cristoffel Blindenmission**

Dr. Adrian Hopkins

#### **Lions Clubs International Foundation**

Ms. Sonia Pelletreau

#### **Centers for Disease Control and Prevention**

Dr. Ellen Dotson  
Mr. Jonathon King  
Dr. Rosalyn O'Loughlin  
Dr. Frank Richards  
Dr. Robert Wirtz



**International Trachoma Initiative**

Mr. Ibrahim Jabr  
Dr. Peter Kilima  
Dr. Jacob Kumaresan  
Dr. Lorenzo Martinez  
Dr. Amos Sam-Abbenyi  
Mr. Christian Stengel

**London School of Hygiene and Tropical  
Medicine**

Dr. Anthony Solomon

**Pfizer Inc.**

Mr Robert Mallett  
Ms. Atiya Ali

**World Vision USA**

Mr. Samuel Jackson  
Dr. Joseph Riverson

**World Health Organization**

Dr. Silvio Mariotti

**Emory University**

Mr. Ayman Elsheikh  
Mr. Sadi Moussa  
Dr. Nicolas Menzies

**Proctor Foundation**

Dr. Jaya Chidambaram

**Sight Savers International**

Ms. Catherine Cross

**Independent Consultant**

Dr. Laura Frost