Summary Proceedings

Sixteenth Annual Trachoma Program Review

Looking Back, Moving Forward

THE
CARTER CENTER

Waging Peace. Fighting Disease. Building Hope.

Atlanta, Georgia

March 2-4, 2015

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Acronyms

API	Active Pharmaceutical Ingredients (specific to Pfizer Inc)
BCC	Behavior Change Communication
CHW	Community Health Worker
DFID	Department for International Development
FGD	Focus Group Discussion
FMOE	Federal Ministry of Education
FMOH	Federal Ministry of Health
GET 2020	Alliance for the Global Elimination of Blinding Trachoma by 2020
GTMP	Global Trachoma Mapping Project
HE	Health Education
HEW	Health Extension Worker
HH	Household (in reference to latrine construction)
HKI	Helen Keller International
ICTC	International Coalition for Trachoma Control
ITI	International Trachoma Initiative
LGA	Local Government Area (specific to Nigeria)
MDA	Mass Drug Administration
MOH	Ministry of Health
MORDOR	Mortality Reduction After Oral Azithromycin
NGDO	Non-governmental Development Organization
NPPB	National Program for Prevention of Blindness
NTD	Neglected Tropical Disease
OCO	Opthalmic Clinical Officer
PCR	Polymerase Chain Reaction
PCT	Preventative Chemotherapy
PNLC(C)	Programme National de Lutte contre la Cecité (National Prevention of Blindness Program)
PNSO	Programme National de Soins Oculaire (National Eye Health Program)
SAFE	Surgery, Antibiotics, Facial Cleanliness, and Environmental Improvement
SWIFT	Sanitation, Water and Instruction in Face-Washing for Trachoma
TANA	Trachoma Amelioration in Northern Amhara
TAP	Trachoma Action Plan
TEO	Tetracycline Eye Ointment
TF	Trachomatous Inflammation-Follicular
TF_{1-9}	Trachomatous Inflammation-Follicular (for children between one and nine years of age)
TI	Trachomatous Inflammation-Intense
TIRET	Tripartite International Research for the Elimination of Trachoma
TIS	Trachoma Impact Survey
TS	Trachomatous Scarring
TT	Trachomatous Trichiasis
UCSF	University of California San Francisco
UIG	Ultimate Intervention Goal
UNICEF	United Nations Children's Fund (formerly United Nations Children's Education Fund)
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

Indices for Ultimate Intervention Goals (UIGs)*

Surgery	$\frac{\text{Sum of surgeries to date}}{\text{Sum of surgeries to date + most recent backlog}}$
Antibiotics**	$\frac{\text{Annual sum of azithromycin and TEO distributed}}{\text{Total population where TF in children ages 1-9 > 10\%}}$
Facial Cleanliness	$\frac{\text{Number of villages in which there is routine health education}}{\text{Total number of villages in districts where TF in children ages 1-9 > 10\% + any villages where TF in children ages 1-9 > 10\% in non-endemic districts}}$
Environmental Improvement†	$\frac{\text{Sum of household latrine construction to date}}{\text{Total households without a latrine x 0.5}}$

NB: Progress against UIGs was calculated for both Carter Center-assisted output and for national program output.

**The UIGs are indicated in the denominator of each indicator.*

***The goal for antibiotic distribution is not strictly a UIG; it is the proportion of the Annual Treatment objective obtained.*

†*The Millennium Development Goal 7c (MDG7c) calls to halve the proportion of the population without access to a latrine by 2015.*

Executive Summary

Looking Back, Moving Forward

The Sixteenth Annual Trachoma Program Review was held at The Carter Center in Atlanta from March 2-4, 2015. The theme of this year's review was "Looking Back, Moving Forward". Attending this year's review were representatives from the Ministries of Health and Carter Center field offices in the seven countries where the Center currently provides assistance: Ethiopia, Mali, Niger, Nigeria, South Sudan, Sudan, and Uganda. Partners and donors in attendance included representatives from CBM, the U.S. Centers for Disease Control and Prevention, U.K. Department for International Development, William H. Donner Foundation, Emory Eye Center, the Bill & Melinda Gates Foundation, Conrad N. Hilton Foundation, Helen Keller International, Fred Hollows Foundation, International Trachoma Initiative, Lions Club International Foundation, London School of Hygiene and Tropical Medicine, Pfizer Inc, Francis I. Proctor Foundation of the University of California San Francisco, The Queen Elizabeth Diamond Jubilee Trust, Emory University's Rollins School of Public Health, RTI International, Sightsavers, Task Force for Global Health, WaterAid, and the World Health Organization.

As with past program reviews, the 2015 program review provided an opportunity to assess the status of each national program and discuss progress made towards meeting elimination goals. This year, the program review had a special emphasis on lessons learned over the past 15 years and how those lessons can inform the global trachoma community as it moves toward the elimination of blinding trachoma as a public health problem by 2020.

In 2014, progress continued towards elimination in all countries. Data collected in trachoma impact surveys (TIS) in 2014 showed that in the two states in Nigeria where The Carter Center has been supporting the SAFE strategy, the World Health Organization (WHO) proxy elimination indicators have been met. Activities in South Sudan resumed in October 2014, after having been suspended in December 2013 due to insecurity. With only three months remaining in the calendar year, South Sudan made great progress in surgical activities. In Niger, the National Program exceeded all targets for 2014 except latrine construction, and made great progress towards addressing the backlog of surgical patients. The Amhara Region of Ethiopia continues to be the world's leader in trachomatous trichiasis (TT) surgery and mass drug administration (MDA) against blinding trachoma.

Our partners presented updates on several studies The Carter Center has collaborated on and will assist in the coming years. The Francis I. Proctor Foundation is in the final stages of the Tripartite International Research for the Elimination of Trachoma (TIRET) study. Preliminary results of the polymerase chain reaction (PCR) analysis currently underway at the Bahir Dar Regional Laboratory in the Amhara Region of Ethiopia were presented. The representative from the Proctor Foundation also presented the initial work that is being done in Niger to start the Mortality Reduction after Oral Azithromycin (MORDOR) study and information on the new study, Sanitation, Water and Instruction in Face-Washing for Trachoma (SWIFT), which is in its initial stages in Amhara, Ethiopia. Staff from The Carter Center-Ethiopia presented a brief overview of a new study also underway in the Amhara Region, which aims to understand the behavioral factors that promote good hygiene practices, such as facial cleanliness and latrine usage, across the Amhara region in order to develop new trachoma health education messages and tools. Understanding barriers to facial cleanliness and environmental improvement uptake is critical in order for Ethiopia to reach its ultimate intervention goals (UIG) in the elimination of blinding trachoma.

Angelia Sanders, Associate Director of The Carter Center's Trachoma Control Program, proposed several new indicators in her presentation, "Facial Cleanliness and Environmental Improvement Indicators: Showing Impact Through Purpose". Ms. Sanders challenged the current indicators, explaining that while they tell the trachoma community that health education is being done and latrines are being constructed, the indicators do not provide information about the level of comprehension of the messages and the degree of latrine usage. Some of the proposed indicators include 100 percent of children one to nine years old with clean face and 100 percent latrine use.

Aisha Stewart and Dr. Scott Nash, Associate Director and Epidemiologist of the Carter Center's Trachoma Control Program, and Violeta Jimenez, a consultant from Emory University, challenged attendees at this year's program review to look at alternative strategies for using and distributing Zithromax® in order to move forward to achieve the elimination targets in a timely manner. Ms. Stewart, Dr. Nash, and Ms. Jimenez approached the topic of the rational use of Zithromax® by looking back at the past 15 years of data and evidence in order to move forward with the use of drug to treat and prevent infection. Several questions were asked: At what point do we have enough evidence to take action and who decides? What is feasible to implement at scale? How long can the approach be sustained?

Overall, this year's program review was successful in its goal of looking back in order to move forward. Attendees of the program review were challenged to continue to focus on impact, both in looking at the past 15 years and in planning for the next five.

SAFE in Ethiopia

Presented by Mr. Oumer Shafi, NTD Team Leader, Federal Ministry of Health, Ethiopia

Background

The National Survey on Blindness, Low Vision, and Trachoma conducted in 2006 revealed that 2.8 million people in Ethiopia had low vision and 1.2 million people were blind. It was estimated that 87 percent of blindness was from avoidable diseases. The survey revealed that active trachoma was endemic in virtually all regions of the country, with more than 1.3 million people in the country living with TT. The results of the survey showed that Ethiopia had approximately 30 percent of the burden of trachoma in sub-Saharan Africa.

There is growing momentum on the issue of Neglected Tropical Diseases (NTDs) in Ethiopia. In 2013, a national NTD master plan was launched, with regional states preparing their own NTD master plans. An NTD team was formed within the Federal Ministry of Health (FMOH) and NTD indicators became part of the national health management information system. National treatment registers and health extension worker (HEW) pocket guidelines are in the process of being developed, with plans for NTDs to be integrated into the existing health system. In order to better understand the NTD burden in Ethiopia, mapping of diseases that can be treated with preventative chemotherapy (PCT), such as lymphatic filariasis, schistosomiasis, and soil-transmitted helminthiasis, was conducted. The results from the Global Trachoma Mapping Project (GTMP) will further assist with the NTD effort related to trachoma elimination.

Timeline of Events

2001: National guideline for Primary Eye Care developed[1]
2006: National guideline for mass antibiotics distribution developed; national taskforce for trachoma control established
2006-2007: Amhara region's baseline survey at zonal level
2008: Trachoma Campaign, formerly MalTra, launched[2]
2012: National Trachoma Action Plan (TAP) was prepared
2010-2014: GTMP and trachoma impact surveys conducted in Amhara region
2013: Trachoma becomes part of national NTD program under disease prevention and control directorate
2020: Target date for elimination

[1] A five-year document, currently in 3rd cycle.
[2] MalTra (Malaria and Trachoma) week was a biannual weeklong outreach campaign that involved the mass distribution of azithromycin to prevent and treat trachoma. Additionally, recipients were provided with health education and testing and treatment for malaria with Coartem®.

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	693,037	150,000	65,658 (44%)	61,537	40,450 (66%)
# of women operated		Target not set for 2014	N/R	Target not set for 2014	25,509
# of surgeons trained		N/R	N/R	41	0 (0%)
# of surgeons retrained		N/R	N/R	Target not set for 2014	N/R
# of surgeons certified		N/R	N/R	Target not set for 2014	N/R
Doses of azithromycin distributed during MDA	44,723,508	44,723,508	27,653,520 (57.3%)	16,361,469	16,516,059 (100.9%)
Doses of tetracycline distributed during MDA	894,470	894,470	N/R	498,610	359,400 (72%)
# of villages with health education	10,850	10,850	10,850 (100%)	3,459	3,459 (100%)
# of household latrines built	17,000,000	2,000,000	1,732,049 (86%)	284,405	104,777 (36.8%)

Surgery (S)

In comparison to 2013, 2014 had a much lower output of surgeries, possibly due to the higher degree of strictness on data reporting. The National Program completed 65,658 surgeries in 2014. The Carter Center supported 40,450 surgeries in the Amhara region, which represents 66 percent of the target for 2014. Of the total completed surgeries, 25,509, or 63 percent, were performed on women.

Antibiotic Therapy (A)

Ethiopia bears more than 30 percent of the trachoma burden in sub-Saharan Africa. 542 of 604 (90 percent) districts have a trachomatous inflammation-follicular (TF) prevalence above 10 percent, while 82 percent of trachoma prevalence lies in the four regions of Tigray, Amhara, Oromia, and SNNPR. In the most endemic districts with greater than 10 percent TF prevalence—Amhara, Oromia, SSNPR, and Tigray—167 of 167, 106 of 235, 76 of 156, and 9 of 37 districts are covered with MDA respectively. In 2014, Ethiopia met 57.3 percent of its treatment target, more than half of which was in Carter Center-assisted areas. HEWs and the Health Development Army are mobilized to conduct MDA in Ethiopia, and trained district government health officers provide supervision. By the end of the upcoming Ethiopian calendar year (corresponding to September 2015), the FMOH will add therapeutic coverage from PCT NTDs to the health management information system.

Facial Cleanliness (F)

HEWs currently work in all trachoma-endemic areas. Under the assumption that HEWs carry out health education, all endemic areas are covered by health education; thus, the program conducted health education in 10,850 villages, achieving 100 percent of its target. The Carter Center supported health education in 3,459 villages in 2014.

Environmental Improvement (E)

Improved latrines—a latrine which includes a hand-washing facility, a slab, and ventilation pipe—are in 6.76 percent of households in the Oromiya region. A total of 42.4 percent of households in the Amhara region have a latrine according to the TIS conducted in 2010-2014. Since 2009, 79 percent of the household latrine construction UIG has been achieved. In 2014 with the construction of 1,732,049 latrines, Ethiopia reached 86 percent of its annual construction goal of two million latrines. According to the 2014 Ethiopian Mini Demographic Health Survey, 57 percent of rural households own non-improved toilet facilities, and only 55 percent of total households have access to an improved source of drinking water.

In 2014, The Ethiopian Ministry of Health (MOH) revised its TAP based on the completed GTMP. The revised TAP describes a plan for the inclusion of the F and E components of the SAFE strategy in the Health Extension Package of the National Health Care System. To identify coverage of F and E components, the FMOH, through the TAP, identified water, sanitation, and hygiene (WASH) partners' locations and assumed that F and E activities were active in these districts. However, the extent of WASH partners' F and E activities or the extent to which they apply to trachoma elimination remains unclear.

Also in 2014, the Ethiopian government created a national, multi-sectoral WASH collaboration between governmental sectors—Ministry of Education, FMOH, Ministry of Finance and Economic Development—and donors called One WaSH. In addition to advocating for a consolidated WASH account, the initiative outlines sanitation and hygiene promotion in rural, urban, and institutional divisions depending on specific criteria. The Ethiopian government is providing about 10 percent of the funding for this 4.84 billion-dollar initiative. Determining points of collaboration and alignment between trachoma elimination objectives and the One WaSH program will be a priority for the program in 2015.

Programmatic Challenges:

More than 250 endemic districts remain uncovered by MDA in Oromia, SNNPR, Tigray, and Ethiopian-Somali regions.

Status of 2014 Program Review Meeting Recommendations:

Recommendation 1: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

A post-MDA coverage survey was completed in the Amhara Region only.

Recommendation 2: Whenever possible, national trachoma programs should publish data documenting their experiences related to levels of TF, stopping of MDA, follow up, and sampling frames used to assess level of TF.

Ethiopia's data management is improving through its use of the Integrated Planning and Costing tool and WHO's NTD integrated database.

Recommendation 3: Ethiopia should create regional trachoma task forces.

Not addressed.

Targets for 2015 and Plans to Meet Targets:

Surgery (S)

- Operate on 58,672 trichiasis patients with Carter Center assistance in the Amhara region
- Train 1,117 TT surgeons, 159 with Carter Center assistance in the Amhara region
- Equip and organize 826 static TT surgery facilities and outreach sites
- Equip and organize 50 mobile TT surgery teams

In April 2014, the Hon. Federal Minister of Health of Ethiopia, H.E. Dr Kesetebirhan Admasu, announced an initiative to clear the backlog of 693,037 TT surgeries in Ethiopia in 18 months. The total estimated cost of the initiative is US$23,798,845. The FMOH pledged a 10 million Birr challenge grant (approximately US$480,000), to train a sufficient number of TT surgeons. In addition, the initiative includes a strategy established by the National Trachoma Task Force which combines static surgery sites, outreach campaigns, and dedicated mobile teams to clear the backlog. To match Ethiopia's dedication to mobilize and equip the workforce required to clear the backlog, the initiative calls for donors and partners to provide TT surgery kits and the operational costs of the effort. The first phase of implementation will be completed by July 2015, in the four regions with the highest TT burden, before the effort scales up to address the remainder of the backlog. To ensure quality of surgeries and training, qualified experienced eye care professionals will use the WHO's trichiasis surgery training guidelines, and registers and reporting formats will be employed for monitoring and evaluation.

Antibiotic Therapy (A)

- Distribute 50,000,000 doses of azithromycin; 18,826,517 with Carter Center assistance in the Amhara region
- Distribute 384,215 doses of tetracycline in Amhara Region, all with Carter Center assistance

The program will continue to encourage government ownership of MDA, specifically in regional health bureaus.

Facial Cleanliness (F)

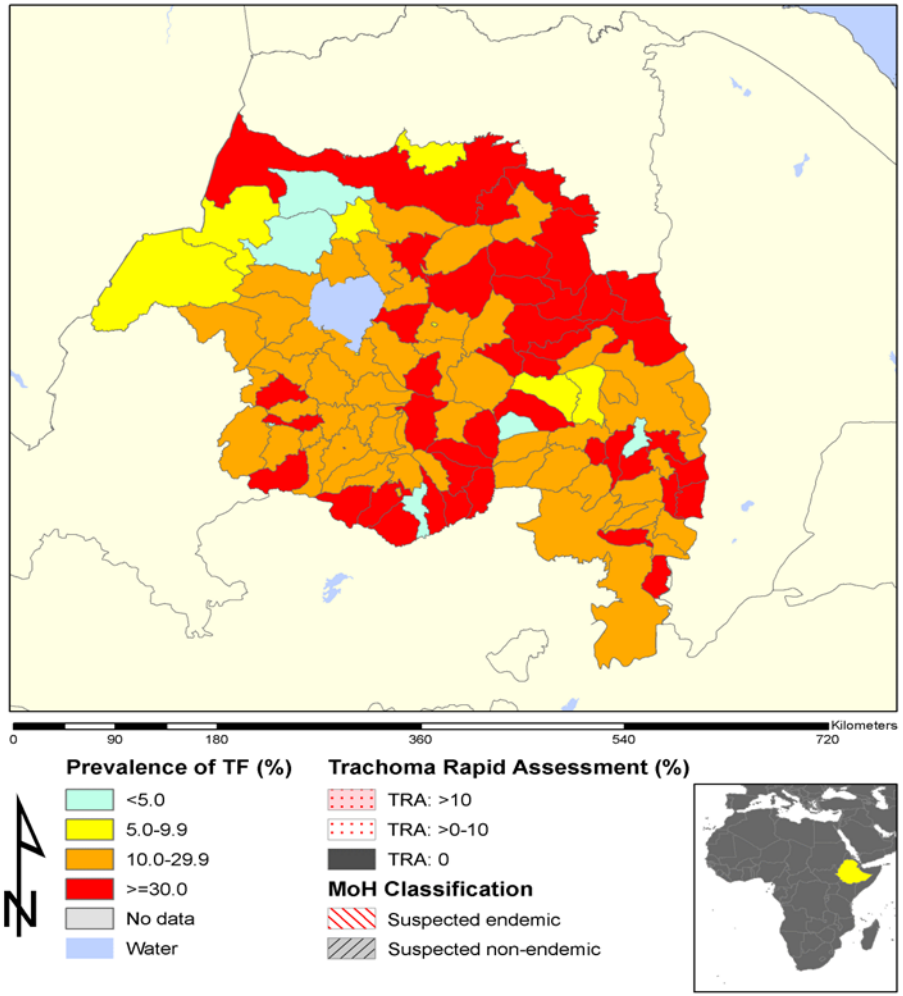
- Conduct health education in 10,850 villages; 3,459 with Carter Center assistance in the Amhara Region
- Align and coordinate with One WaSH National Program

Environmental Improvement (E)

- Construct 2,000,000 latrines; 350,000 with Carter Center support in the Amhara region
- Align and coordinate with One WaSH National Program

2014

Prevalence of active trachoma in Amhara, Ethiopia



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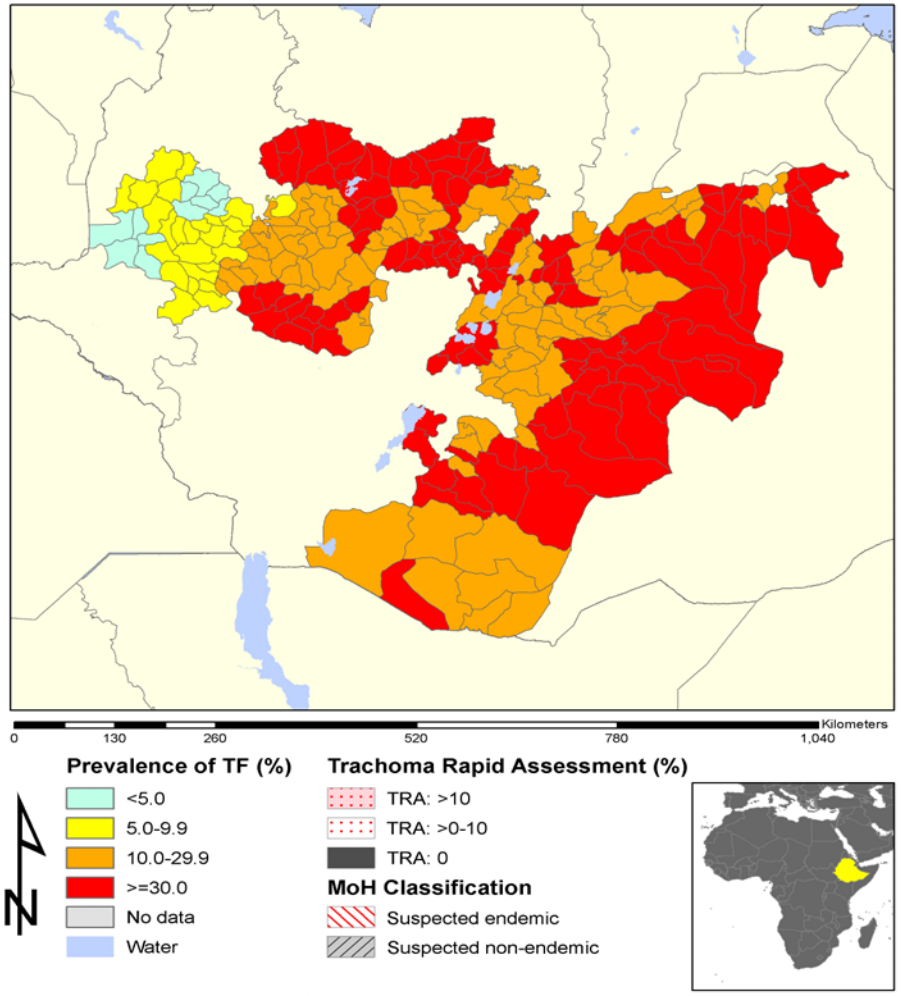
2014

Prevalence of active trachoma in Oromia, Ethiopia



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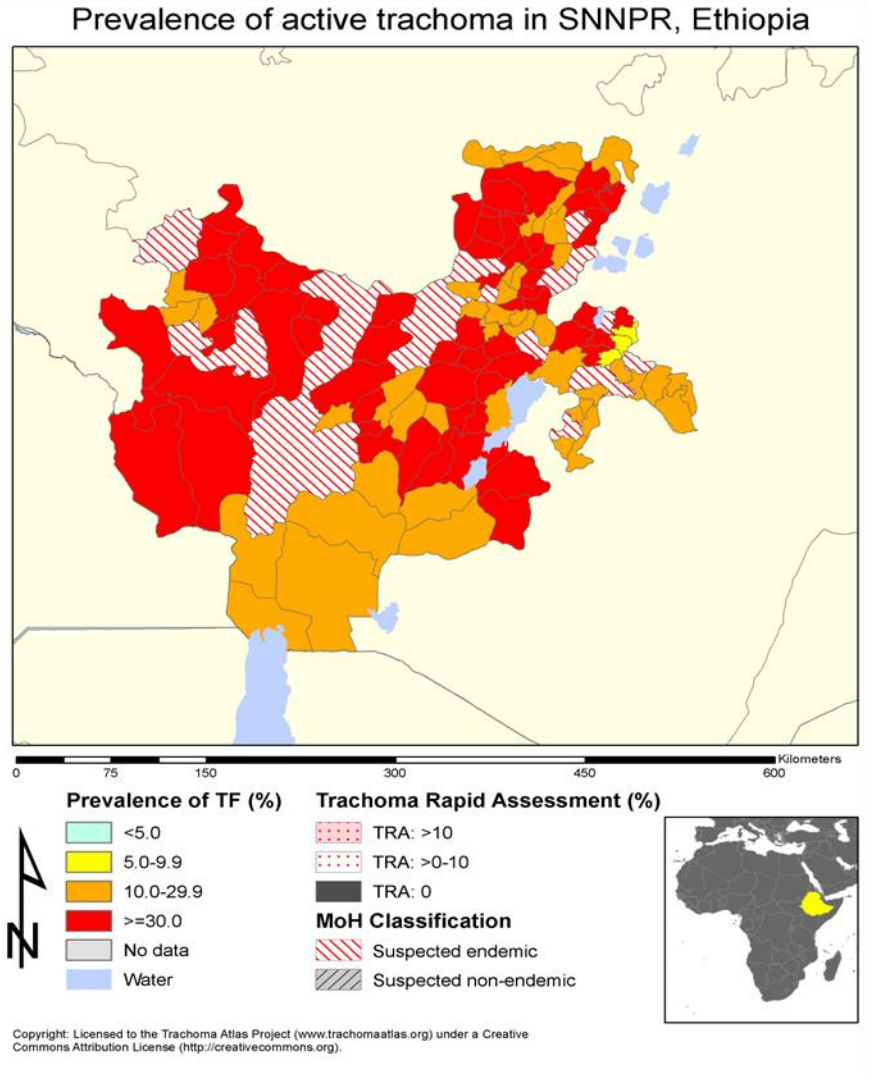
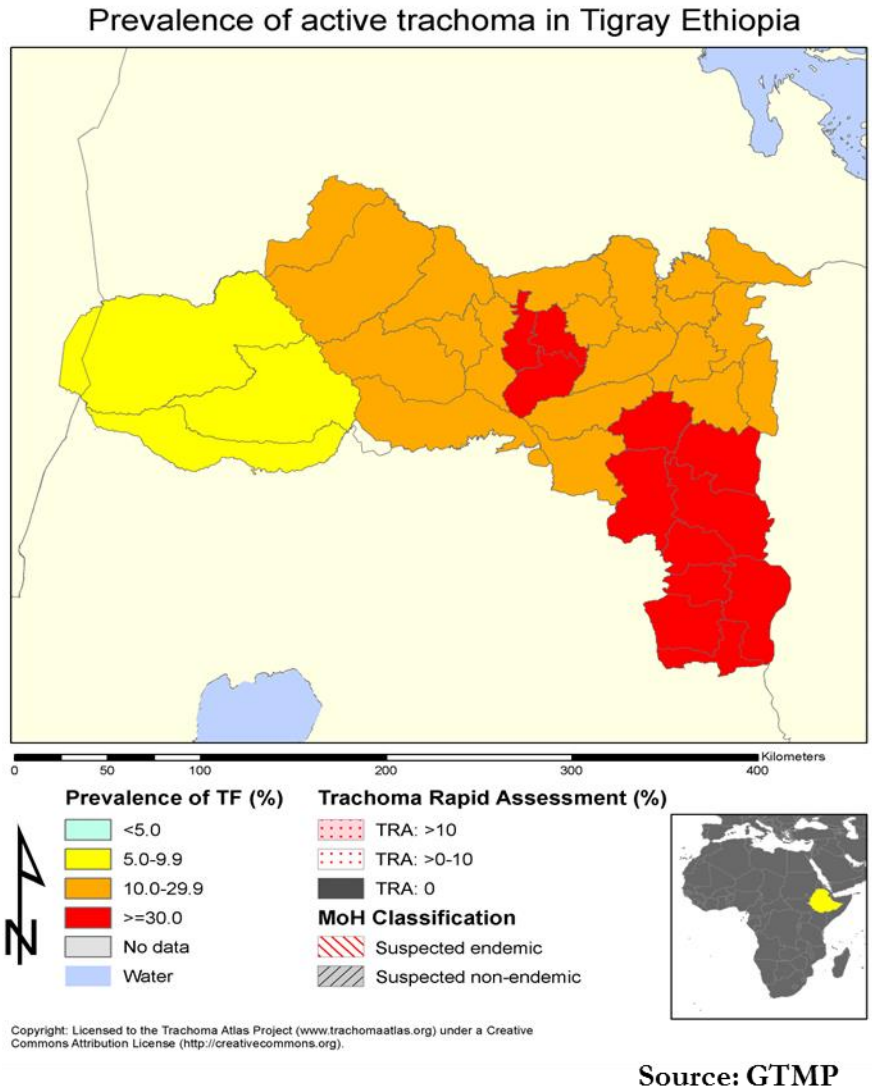
Source: GTMP

2014



2014



Source: GTMP

SAFE in Mali

Presented by Professor Lamine Traoré, Coordinator PNSO, Ministry of Health, Mali

Background

In 1994, the National Blindness Prevention Program (PNLC) was created, and since December 2014 it has been known as the National Eye Health Program (PNSO). Following prevalence surveys conducted in 1996-1997, trachoma was identified as a major public health issue in Mali. Despite the MOH's three priorities being malaria, HIV, and tuberculosis, a national trachoma control program was established in 1999. Though Mali does not have a formal TAP, at the end of each year, the PNSO develops a plan of action during its annual program review meeting. The Carter Center, along with other partners, currently supports the implementation of all SAFE components. For the A component another NGO partner supports azithromycin distribution, so The Carter Center is limited to the purchase of tetracycline eye ointment (TEO).

Timeline of Events

1994: PNLC launched
1996-1997: National baseline prevalence survey
1999: Mali Trachoma Control Program launched
1999: Surgeries initiated
2001: Distribution of Pfizer-donated Zithromax® begins
2003: Facial cleanliness and Environmental improvements activities initiated
2005-2014: TIS conducted
2014: PNLC becomes PNSO
2015: Target date for elimination of blinding trachoma in Mali[3]

[3] Mali's target date for elimination is currently under review.

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	20,324	15,000	4,493 (30%)	6,000	2,742 (46%)
# of women operated			3,056 (68%)		1,910 (70%)
# of surgeons trained		0	15	0	0 (0%)
# of surgeons retrained		10	10 (100%)	0	0 (0%)
# of surgeons certified		17	0 (0%)	0	0 (0%)
Doses of azithromycin distributed during MDA	385,934	385,934	0 (0%)	N/A[4]	N/A
Doses of tetracycline distributed during MDA	4,000	4,000	0 (0%)	4,000	0 (0%)
# of villages with health education	4,997	2,872	2,843 (99%)	2,872	2,843 (99%)
# of household latrines built	54,004	15,000	9,054 (60%)	15,000	4,661 (31%)

Surgery (S)

Impact surveys conducted in 2014 revealed that two districts have met the elimination threshold for TT, 38 districts have TT prevalence less than one percent, and 13 districts have TT prevalence between one and 4.9 percent. In 2014, the National Program operated on 4,493 people achieving 30 percent of its target of 15,000. The National Program also trained 15 surgeons, retrained 10 surgeons, but did not certify any surgeons. The Carter Center supported 2,742 trichiasis surgeries, 46 percent of the national 2014 target of 6,000 and 61 percent of all trichiasis surgeries delivered.

An estimated 20,324 cases remain to be operated to reach the UIG for TT surgeries. In 2014, the program retrained all surgeons and trained two supervisors per region to support the new surgeons. In order to locate trichiasis cases and encourage TT surgery, the program utilized several channels for outreach including radio messages, community leaders, women's groups, and door-to-door methods. The program provides TT surgeries during car- and motorcycle-based outreach campaigns, as well as assisting surgeries at health clinics.

No official epilation policy exists in Mali, and while it is a common practice, it is not taken into account in national TT statistics. For reporting during mobile surgery outreach, one copy of the report remains in the districts while another is sent to the National Program. All data is centralized at the national level through a data manager. The program piloted a mobile telephone data reporting system in 2014 and will extend the technology to the Mopti and Kayes regions in 2015. Supervision of surgeries has been a weak point for the Malian program. As a result, the program has developed a supervision plan that includes efforts to supervise all future surgical activities, including surgical campaigns.

[4] The Carter Center does not assist MDA in Mali.

Antibiotic Therapy (A)

In 2014, among children ages one to nine, only nine districts had TF prevalence between five and 9.9 percent, and only five districts had TF prevalence between 10 and 29.9 percent. Security challenges prevented impact surveys from taking place in five northern districts. With the issue of new interim standard operating procedures from the WHO, the National Program began conducting impact surveys in all districts to determine the district-level prevalence of TF and to determine whether MDA is warranted. As a result, in 2014 the National Program did not distribute any doses of azithromycin or TEO through MDA. The Carter Center does, however, support the National Program in distributing TEO for each surgical patient post-operatively.

Facial Cleanliness (F)

In 2014, the National Program conducted health education in 2,843 villages, all with Carter Center assistance, reaching 99 percent of its target. To promote facial cleanliness, the program created flipcharts, broadcasted radio messages, and formed women's groups. In the districts of Bankass and Douentza in the region of Mopti, prevalence surveys in 2014 revealed that 20 and 33 percent of children one to nine years old had clean faces, respectively.

Environmental Improvement (E)

The National Program constructed 9,054 latrines in 2014, achieving 60 percent of its target. The MOH and partners created improved latrines and promoted hygiene. The program also trained masons for latrine construction. In the towns of Bankass and Douentza, prevalence surveys in 2014 revealed that 67.7 and 83.7 percent of households had latrines with a usage of 76.4 and 99.7 percent, respectively. In 2014, the National Hydraulic Department established water points and used a mobile telephone system to track usage of the water points.

Programmatic Challenges

Many challenges exist for the program to reach the target elimination date of 2015, primarily related to insecurity in the north of the country. Other challenges relate to TT surgeries, such as the need to operate the remaining backlog of patients (20,324 cases) in one year; the management of cases who refuse surgeries and those who require repeat surgeries; the need for supervision at all levels; and the need to ensure the quality of surgeries at all levels. In addition, there is a lack of coordination between the WASH sector actors and a lack of funding for the WASH sector in Mali. In the following year, the program will advocate strongly for stakeholders to invest in the WASH sector to address this issue.

Status of 2014 Program Review Meeting Recommendations

Recommendation 1: Enhance collaboration with all stakeholders of WATSAN/WASH.

In progress. WASH partners participated in national trachoma meetings and program reviews.

Recommendation 2: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

Since MDA was not conducted in 2014, this recommendation was not applicable.

Recommendation 3: Whenever possible, national trachoma programs should publish data documenting their experiences related to levels of TF, stopping of MDA, follow up, and sampling frames used to assess level of TF.

Not completed. Planned for 2015.

Recommendation 4: All country programs should consider developing detailed plans to increase TT surgical output and quality to present at next year's program review meeting.

Completed.

Recommendation 5: The program should resume activities in the North, security permitting.

Insecurity continues to prevent activities in the Kidal and Gao regions.

Recommendation 6: Conduct cross-border collaborative meetings and plans by both the implementing partners and member states.

Completed. Trachoma program officials from Niger and Mali participated in each other's program reviews. For a week in the summer, the Malian program and its partners visited the field in Niger to observe trachoma control interventions.

Recommendation 7: National Programs should consider strengthening their system of mobilization and sensitization at the community level.

Completed.

Recommendation 8: National Programs should identify what resources, skills, and personnel are required to strengthen their data management and intervention reporting and convey these needs to implementing partners.

The program implemented a mobile data collection in the Koulikoro region and plans to extend it to the Mopti and Kayes regions in 2015.

Targets for 2015and Plans to Meet Targets

Surgery (S)

- Operate on 6,000 trichiasis patients, 2,625 with Carter Center assistance
- Retrain 35 TT surgeons
- Certify 40 TT surgeons

In 2015, the program will train new certifiers and certify at least 40 TT surgeons. To mobilize patients, the program will also use door-to-door outreach in addition to its current methods. The program will conduct a pilot study in areas with the highest backlog. Teams will canvas all districts to encounter all TT cases, a

method which partners in last year's program review recommended. The program will also pursue a new monitoring system.

Antibiotic Therapy (A)

The program will establish MDA targets pending results of district-level impact surveys conducted in 2015.

Facial Cleanliness (F)

- Conduct health education in 521 villages, all with Carter Center assistance

In 2015, the National Program will continue to conduct health education in villages. While strengthening broadcast supervision, the program will also train and retrain radio broadcasters' to increase effectiveness of facial cleanliness messages.

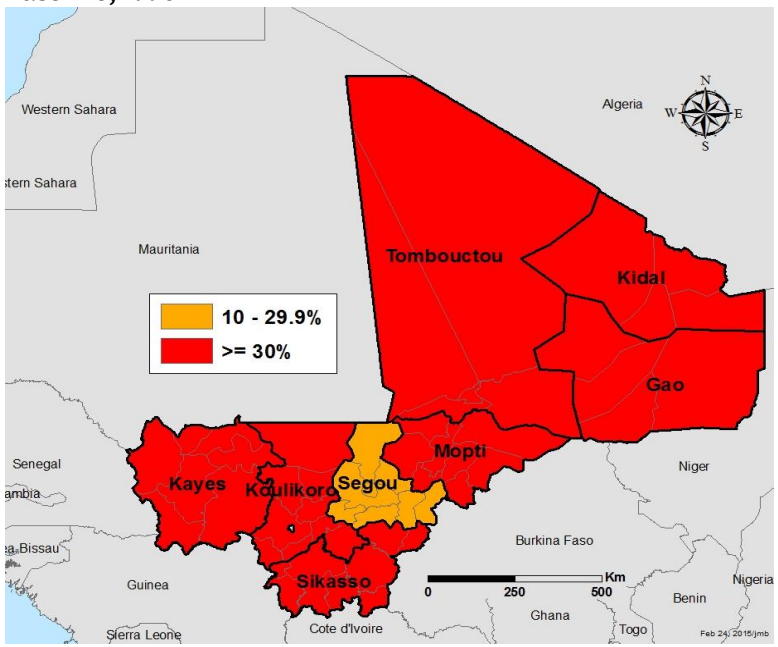
Environmental Improvement (E)

- Construct 12,000 latrines, 9,000 with Carter Center assistance

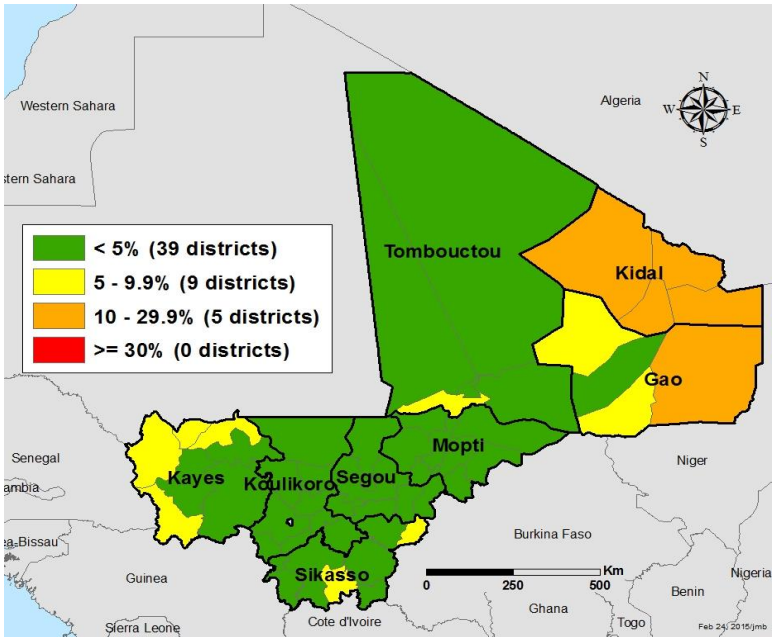
In 2015, the program will advocate with involved government representatives and partners to create water points in areas that need them most. Moving forward, the National Program will advocate for stakeholders to invest in the WASH sector. The program will also staff all endemic villages with trained masons and equipment and promote latrines constructed with slabs. In addition, the program will strengthen collaboration among partners through meetings and other events.

Mali: TF Prevalence among Children 1-9 years

Baseline, 1996

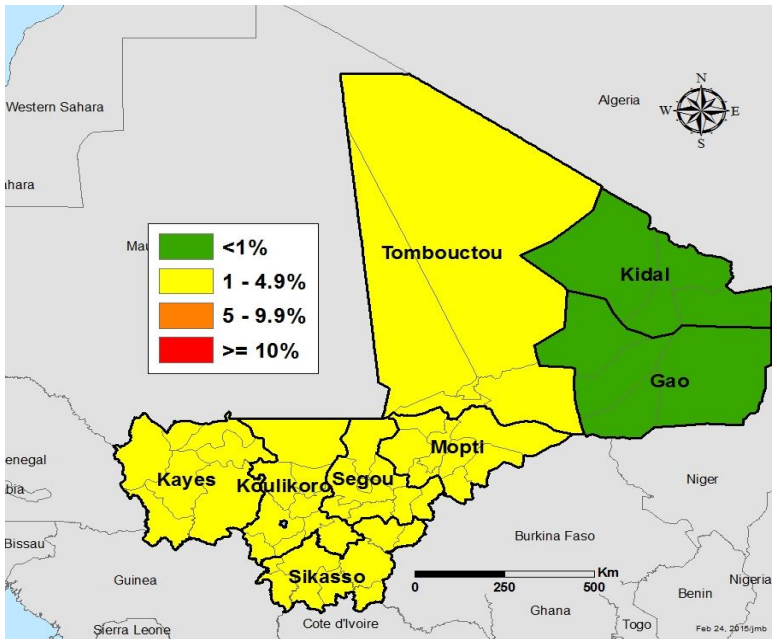


2014



Mali: Prevalence of TT among Adults ≥ 15 years

Baseline, 1996



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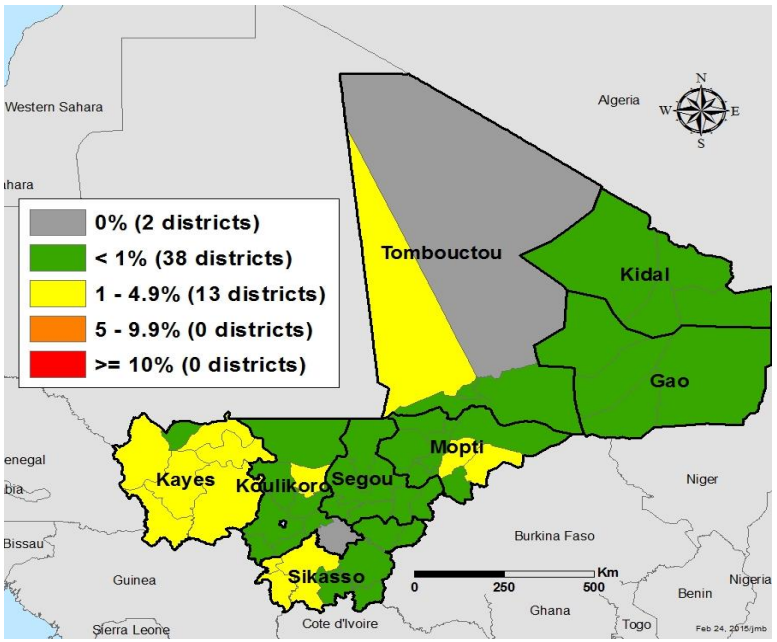
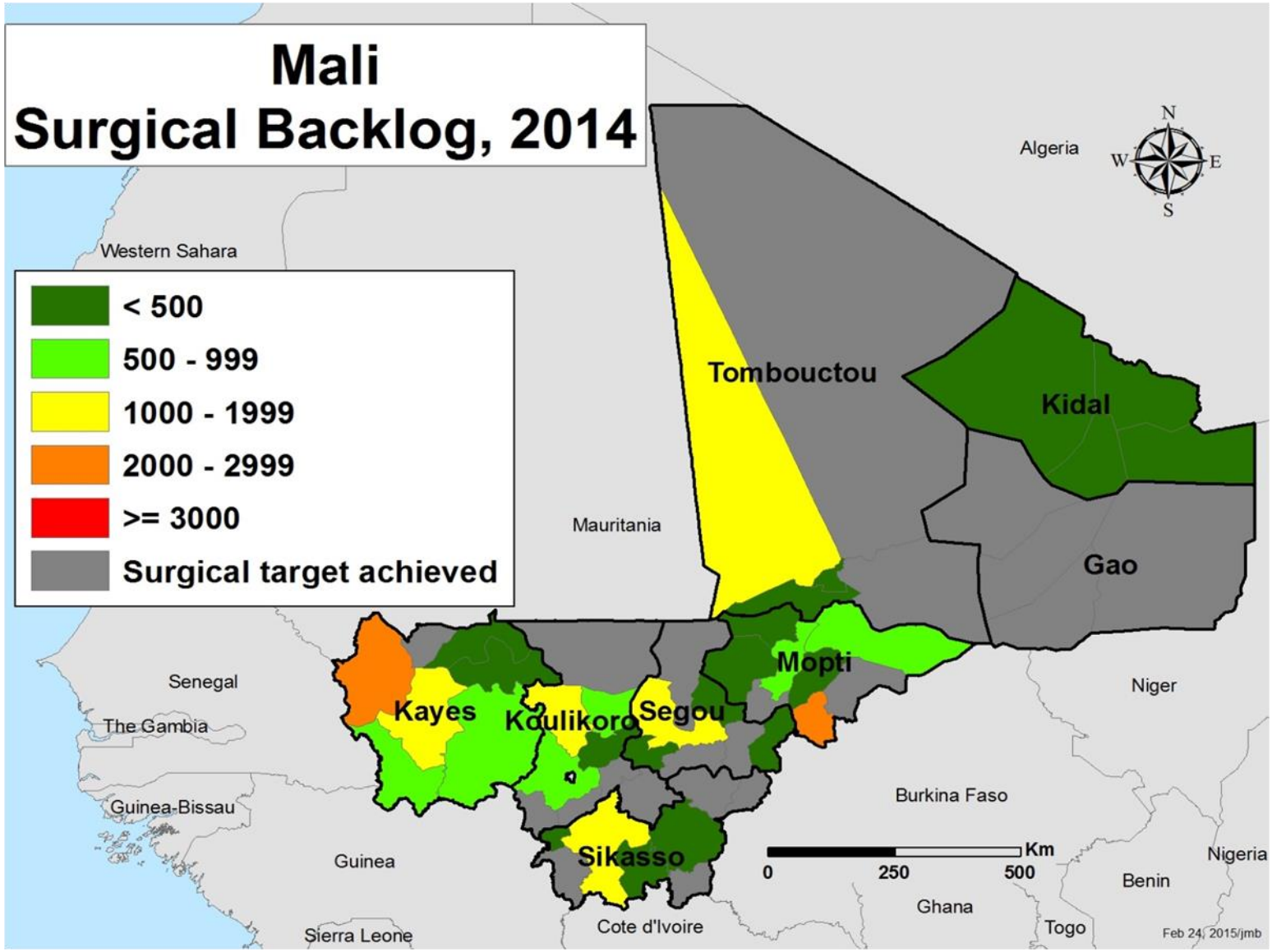



Mali
Surgical Backlog, 2014
< 500
500 - 999
1000 - 1999
2000 - 2999
>= 3000
Surgical target achieved
Algeria
Western Sahara
Mauritania
Tombouctou
Kidal
Gao
Mopti
Kayes
Koulikoro
Segou
Sikasso
Senegal
The Gambia
Guinea-Bissau
Guinea
Sierra Leone
Cote d'Ivoire
Ghana
Burkina Faso
Niger
Nigeria
Benin
Togo
N
W
E
S
0
250
500
Km
Feb 24, 2015/jmb

SAFE in Niger

Presented by Dr. Kadri Boubacar, Deputy Coordinator PNSO, Ministry of Health, Niger

Background

The PNLC was established in 1987 following national surveys showing a prevalence of blindness of 2.2 percent, with one-quarter due to trachoma. Regional baseline surveys conducted from 1997 to 1999 found that 44 percent of children ages one to nine had active TF and/or trachomatous inflammation-intense (TI)) and 1.7 percent of women over 15 years of age had trichiasis. In 1999, the PNLC formed the National Trachoma Task Force and, beginning in 2001, prevalence surveys were conducted at the district level. Currently, trachoma is part of the Department of NTDs and is not considered a high priority disease. Though trachoma is integrated into the NTD department, trachoma partners organize trachoma specific coordination and annual review meetings at the regional level. The program implements all components of the SAFE strategy where warranted.

In 2013, the Minister of Health made a statement of appreciation for the work of the MOH trachoma coordinators and the two main partners, The Carter Center and Helen Keller International (HKI). These statements were made during a TT surgical outreach week in March 2013. Also in 2013, the program name changed from PNLC to PNSO.

Timeline of Events

1987: PNLC started
1997-1999: Baseline surveys conducted at regional level
2000: The Carter Center begins support of the program
2001: District level baseline surveys started
2001: SAFE strategy implementation begins
2006: Trachoma impact surveys
2007: NTD Program launched
2010 and 2012: TIS completed
2013: PNLC becomes PNSO
2018: Updated target date for the elimination of blinding trachoma

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	29,887	15,000	17,745 (118%)	11,000	14,790 (134%)
# of women operated			N/R[5]		8,858 (60%)
# of surgeons trained		40	44 (110%)	30	30 (100%)
# of surgeons retrained			0 (0%)		0 (0%)
# of surgeons certified		40	40 (100%)	20	20 (100%)
Doses of azithromycin distributed during MDA	4,768,480	4,768,480	N/R	N/A[6]	N/A
Doses of tetracycline distributed during MDA	170,000	170,000	N/R	170,000	N/R
# of villages with health education	634	634	647 (102%)	634	647 (102%)
# of household latrines built	N/R	15,000	8,107 (54%)	15,000	8,107 (54%)

Surgery (S)

Reaching 118.3 percent of its target in 2014, the program operated on 17,795 patients, 14,790 of whom were assisted by The Carter Center. This impressive output was made possible in part by the awareness generated by the second annual national "trachoma week" focused on the fight against trichiasis chaired by the Minister of Health. The program used the occasion to recognize and give awards to the most productive districts, operators, and other workers.

The program also trained 44 TT surgeons and certified 40 TT surgeons, achieving 110 and 100 percent of its target respectively. Using radio communication to share TT surgery success stories, the program mobilized patients and will use door-to-door mobilization in the future. Surgery camps were the most efficient method in reaching TT patients.

Antibiotic Therapy (A)

A total of 22 of the 42 districts have a TF prevalence of less than five percent among children ages one and nine. Since last year's program review, the National Program completed surveying the northern Agadez region, finding the TF prevalence to be less than 10 percent among children ages one to nine. The program presented its MDA achievements for 2013 revealing that it distributed 6,778,185 doses of azithromycin, reaching 80 percent of its target. MDA distribution for 2014 was delayed and began in January 2015. Results have not yet been reported. MDA training for trachoma was integrated with training for five other NTDs. MDA supervision and training were carried out via a cascade method flowing from central, to regional, to district, and finally to community levels. MDA mobilization via radio messages only occurred for one month, a time period that the program acknowledges is insufficient. The districts have held a meeting each year to launch the MDA campaign to promote mobilization. Health agents and community distributers carried out sensitization and employ public criers.

[5] N/R = Not reported by the program.

[6] N/A = Not applicable; The Carter Center does not support MDA in Niger.

For supervision, a set allowance of days is given for supervisors at each level to go into the field; often this allowance does not account for the realistic amount of time to carry out supervision activities. The supervisor inspects training, introduction of drugs, and other inputs. The community distributors noted the number of doses distributed in a disease-specific check sheet, where gaps of information are sometimes encountered due to the distributors' low educational level.

Facial Cleanliness (F)

In 2014, 647 villages received health education, achieving 102.1 percent of its target, all with Carter Center assistance. Public hygiene advocates and partners developed tools to promote facial cleanliness and sanitation including posters, audiocassettes, radio interviews, and flipcharts. Community health workers, religious leaders, teachers, and masons use these tools to educate the population.

Environmental Improvement (E)

The program constructed 8,107 latrines, all with Carter Center assistance, reaching 54 percent of its target. It is difficult to know the exact amount, however, because activities on the ground from various partners were not coordinated or calculated. The number of latrines remaining to construct to reach the UIG has not yet been calculated. The Ministry of Water and Sanitation has determined a water policy, establishing that one water point should exist per 250 habitants.

Programmatic Challenges

Challenges in the trachoma program involve coordinating information with the rest of the WASH sector and harmonizing the interventions, specifically with providing materials for latrine construction. Resulting from some delays, including a three-month delay due to financing of the scheduled distribution period, the program has identified that it needs of more financial, logistical, and material support for program activities. The program also faces an influx of refugees from the crisis in the north of Nigeria. This influx has almost doubled the population in the Diffa region, impacting the TT surgery backlog and the prevalence of trachoma. As a result, the program will carry out feasible interventions and will manage the TT cases in the refugee camps.

Status of 2014 Program Review Meeting Recommendations

Recommendation 1: Enhance collaboration with all stakeholders of WATSAN/WASH.

Coordinating between sectors and between partners remains a challenge for the program. The program will continue its efforts to strengthen this collaboration.

Recommendation 2: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

Not completed. Planned for 2015.

Recommendation 3: Whenever possible, national trachoma programs should publish data documenting their experiences related to levels of TF, stopping of MDA, follow up, and sampling frames used to assess level of TF.

Not completed. Planned for 2015.

Recommendation 4: Complete mapping in Agadez before the rainy season, if security permits.

Completed.

Recommendation 5 and 6: Have a meeting between Mali and Niger to discuss putting in place post-endemic surveillance as well as strategies that will enable them to reach elimination by 2015. Conduct cross-border collaborative meetings and plans by both the implementing partners and member states.

Completed. Trachoma program officials from Niger and Mali participated in each other's program reviews. For a week in the summer, representatives from the Mali and Burkina Faso trachoma programs and its partners conducted a field visit in Niger**.**

Recommendation 7: All country programs should consider developing detailed plans to increase TT surgical output and quality to present at next year's program review meeting.

Completed. The process of organizing surgery camps along with organizing rainy season camps was successful in 2014.

Recommendation 8: National Programs should consider strengthening their system of mobilization and sensitization at the community level.

Completed. Public issues were carried out in the villages and in surgical camps to increase mobilization of TT surgeries. The MOH had requested assistance in strengthening social mobilization and detecting TT cases.

Recommendation 9: National Programs should identify what resources, skills, and personnel are required to strengthen their data management and intervention reporting and convey these needs to implementing partners.

Not completed. Planned for 2015.

Targets for 2015 and Plans to Meet Targets

Surgery (S)

- Operate on 15,000 patients, 12,000 with Carter Center assistance
- Train 60 surgeons, 40 with Carter Center assistance
- Certify 70 surgeons, 50 with Carter Center assistance

Antibiotic Therapy (A)

- Distribute 3,349,749 doses of azithromycin
- Distribute 150,000 doses of tetracycline, all with Carter Center assistance

In 2015, the National Program will conduct MDA in November/December.

Facial Cleanliness (F)

- Conduct health education in 634 villages, all with Carter Center assistance

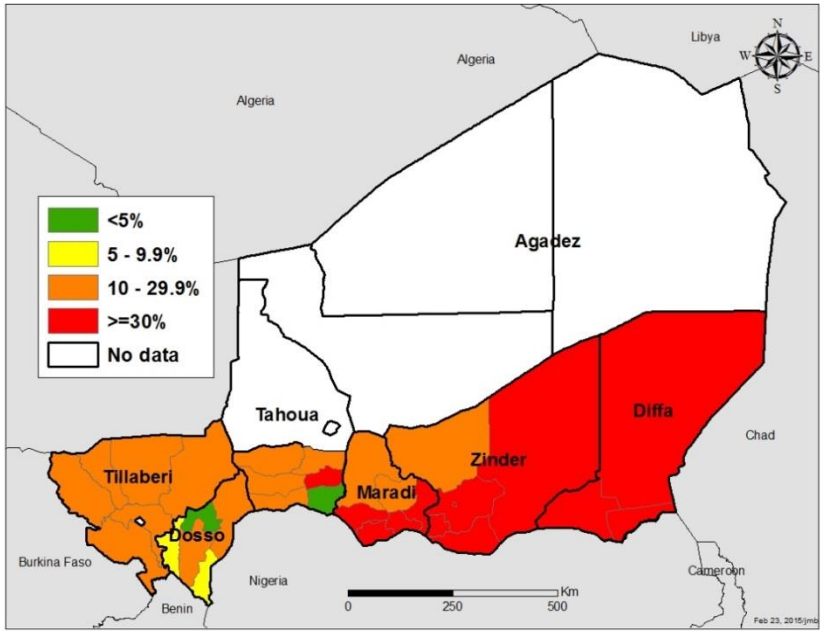
The program will meet with village leaders and district heads. The program has experienced a relative standstill in the dissemination of facial cleanliness messages in schools; as a result, the program wants to target academic advisors who train teachers to train one teacher per school on facial cleanliness messages and to include training on facial cleanliness messages in the teachers' curriculum.

Environmental Improvement (E)

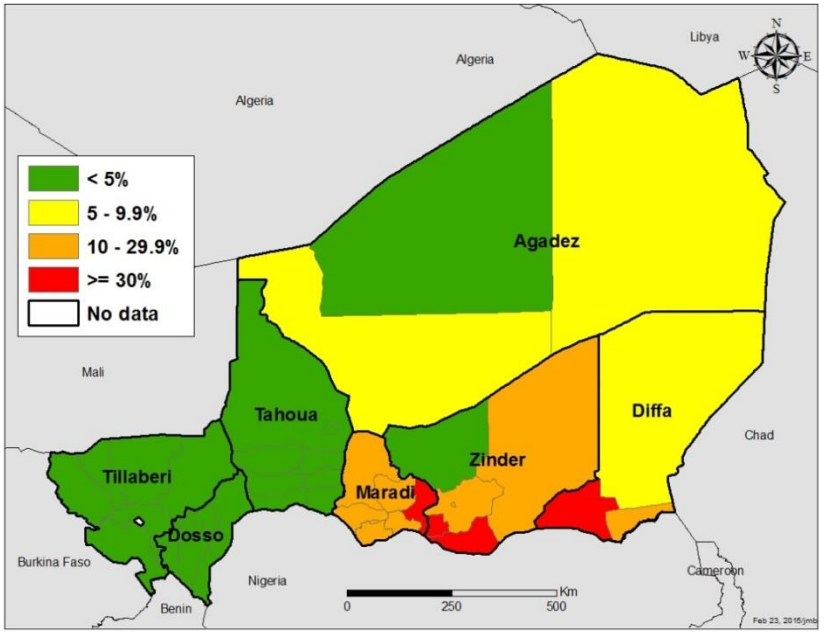
- Construct 10,000 latrines, all with Carter Center assistance

Niger: TF Prevalence among Children 1-9 years

Baseline, 2000-2007

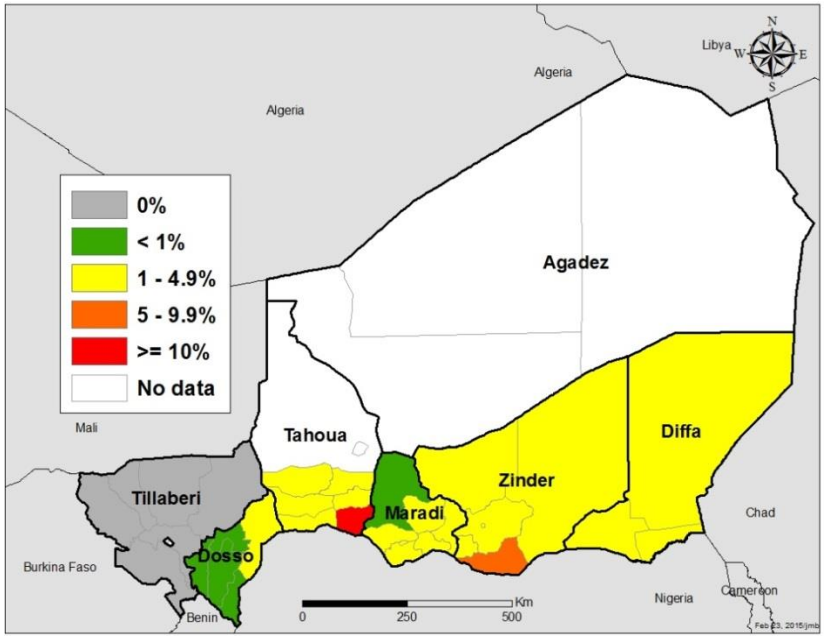


2014

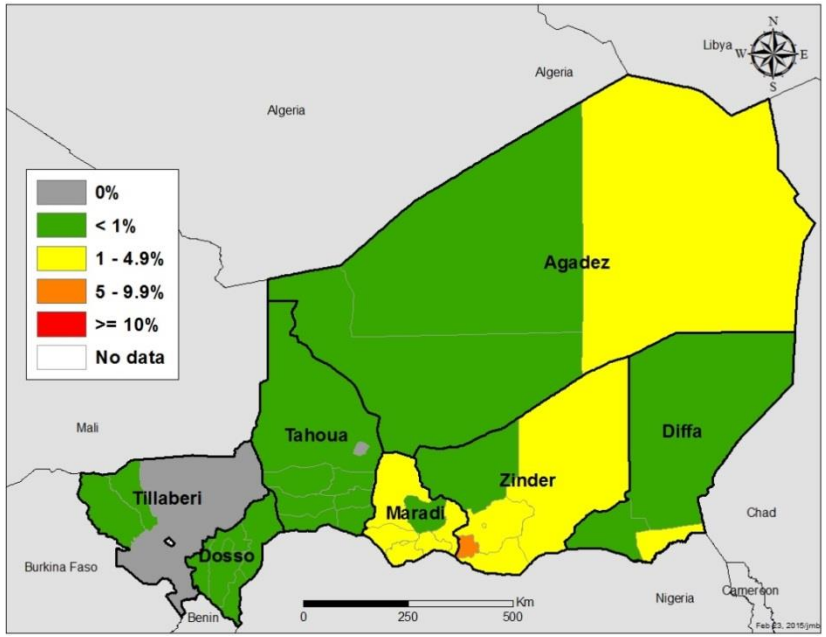


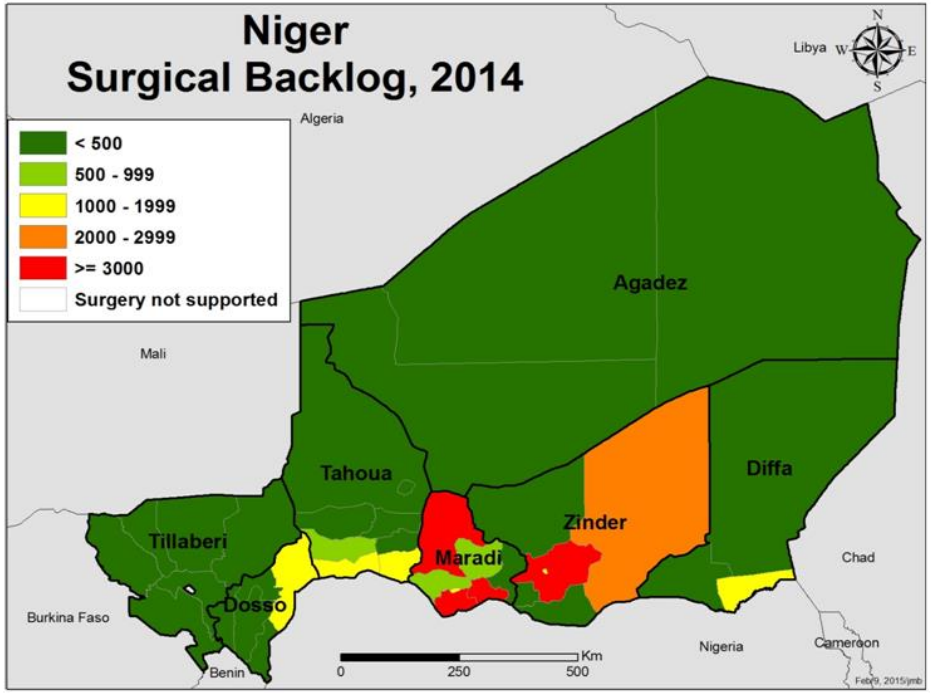
Niger: Prevalence of TT among Adults ≥ 15 years

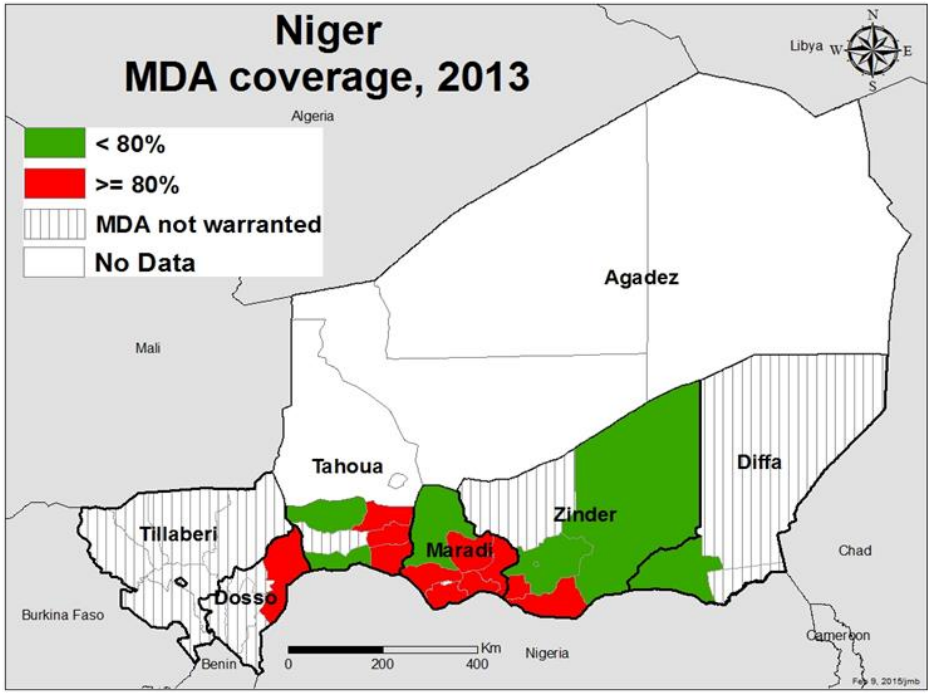
Baseline, 2000-2007

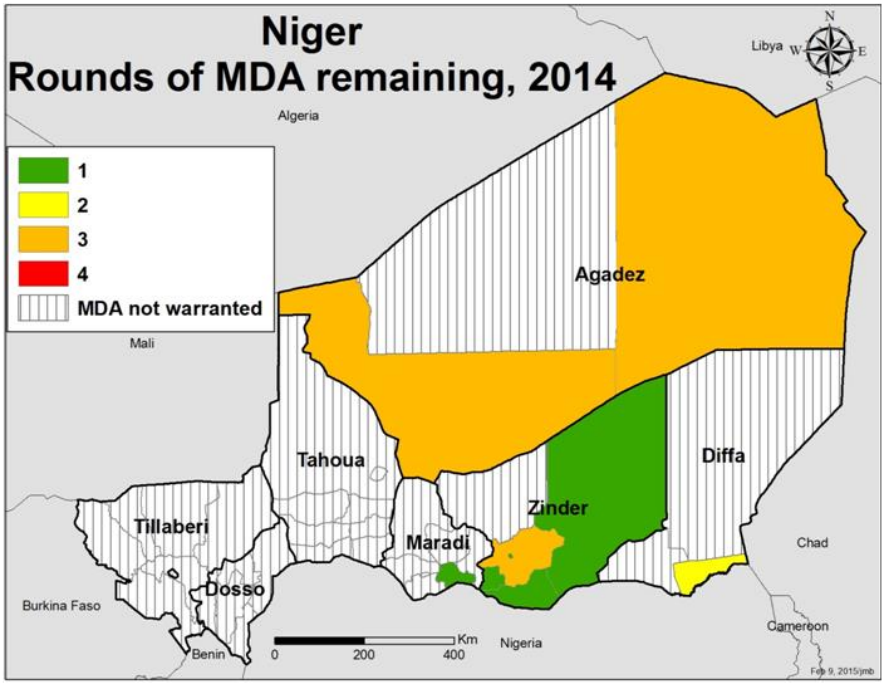


2014




Niger
Surgical Backlog, 2014
< 500
500 - 999
1000 - 1999
2000 - 2999
>= 3000
Surgery not supported
Libya
Algeria
Mali
Agadez
Tahoua
Diffa
Zinder
Tillaberi
Maradi
Dosso
Chad
Burkina Faso
Nigeria
Cameroon
Benin
Km
0
250
500


Niger
MDA coverage, 2013
< 80%
>= 80%
MDA not warranted
No Data
Libya
Algeria
Mali
Agadez
Tahoua
Diffa
Zinder
Tillaberi
Maradi
Dosso
Chad
Burkina Faso
Nigeria
Cameroon
Benin
Km
0
200
400


Niger
Rounds of MDA remaining, 2014
1
2
3
4
MDA not warranted
Libya
Algeria
Mali
Agadez
Tahoua
Diffa
Zinder
Tillaberi
Maradi
Dosso
Chad
Burkina Faso
Nigeria
Cameroon
Benin
Km
0
200
400

SAFE in Nigeria

Presented by Dr. Falam J. Nimzing, Trachoma Officer, The Carter Center, Nigeria and
Mr. Nicholas Olobio, Data Manager, National Trachoma Control Program, Federal Ministry of Health, Nigeria

Background

The Nigeria Blindness and Low Vision Survey of 2005-2007 noted that the overall prevalence of blindness in Nigeria was 0.78 percent and that the prevalence varied across the different geopolitical zones of the country (range: 2.8-6.1 percent). The survey identified cataract as the main cause of avoidable blindness in Nigeria, followed by trachoma. Trachoma is among the top health priorities in the country and part of the NTDs division of the FMOH.

Though eye care activities have been conducted in Nigeria since 1991 under the National Program for Prevention of Blindness (NPPB), in 2001 the National Trachoma Control Program was established in order to better focus on trachoma control activities. Regular coordination meetings are held for government and partners in trachoma control. With the support of ENVISION, a project funded by the United States Agency for International Development (USAID) and implemented by RTI International, the meeting for the development of a TAP was held in Abuja from June 24-28, 2013. The Nigerian TAP sets out the implementation details of the SAFE strategy in Nigeria with the goal of eliminating blinding trachoma by 2018.

In 2013, the GTMP and ENVISION supported household surveys to generate new and updated data on active and blinding trachoma and access to sanitation and safe water. In 2014, GTMP completed mapping of all local government areas (LGAs) in the country suspected of being endemic for trachoma, excluding any insecure areas. The Carter Center assisted with the mapping in five states in the Southeast. Currently, only Adamawa and Borno states remain to be mapped with assistance from other partners. The Carter Center has assisted interventions against trachoma in Nigeria only in Plateau and Nasarawa states.

Timeline of Events

1991: NPPB launched
2000-2014: Baseline mapping
2001: National Trachoma Control Program began and Trachoma Task Force formed
2003: The Carter Center-assisted Trachoma Control Program in Nigeria began
2005-2007: National blindness survey conducted
2010: MDA for trachoma control with Pfizer-donated Zithromax® launched
2013: TAP established
2014: Impact assessments in Plateau and Nasarawa states conducted
2018: Target date for the elimination of blinding trachoma (in mapped areas)

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	294,821	40,700	7,905 (19%)	N/A[7]	N/A
# of women operated		19,188	3,680 (19%)	N/A	N/A
# of surgeons trained		12	7 (58%)	N/A	N/A
# of surgeons retrained		N/A	N/A	N/A	N/A
# of surgeons certified		12	7 (58%)	N/A	N/A
Doses of azithromycin distributed during MDA	5,313,511	5,313,511	4,595,528 (86%)	N/A	N/A
Doses of tetracycline distributed during MDA	N/R	106,270	93,648 (88%)	N/A	N/A
# of villages with health education	1,404,378	12,100	7,755 (64%)	855	855 (100%)
# of household latrines built	587,038	450	130 (29%)	N/A	N/A

Surgery (S)

In 2014, the National Program operated on 7,905 patients, reaching 19 percent of its target. Training and certifying seven TT surgeons, the program achieved 58 percent of the 2014 target. Surgery certification and training varies in each state, as no national curriculum exists. Training is based off of the WHO TT surgery manual and lasts two weeks. Additionally, training takes place in localities with a high TT prevalence, where trainees practice with mannequins before operating on actual patients and where they perform a minimum of 20 TT surgeries before certification. The National Eye Center, Kaduna, in collaboration with the National Eye Health Program, certifies the surgeons.

To mobilize patients, the program uses community drug distributors, case finders, general eye screening, and a referral system. After case finders have encountered enough cases, they report to an ophthalmic nurse or TT surgeon who then goes to the community, confirms the cases, and performs TT surgery. To raise awareness and to detect cases, the program also holds marketing days. Surgery is performed during outreach campaigns, and patients are kept overnight for removal of dressing on the first day post-operation or allowed to return home if they live close enough. Follow up for suture removal occurs seven to 10 days post-operation. While patients are always encouraged to receive surgery, epilation is encouraged for those who refuse surgery. Experienced TT surgeon trainers carry out supervision of TT surgeons, checking for the quality, quantity, and the environment of the surgery. In order to clear the estimated backlog of 213,201 cases before the 2018 elimination date, the National Program, partners, and WHO representatives developed a four-year plan and budget.

Antibiotic Therapy (A)

In 2014, the National Program distributed 4,595,528 doses of azithromycin, achieving 86 percent of its target. The National Program provided two-day MDA trainings that covered comprehensive topics including WHO

[7] N/A = Not applicable. The Carter Center only supports F interventions in Nigeria.

SAFE Strategy, drug distribution, reporting, and mobilization. In some areas, the National Program integrated trachoma MDA training with other NTD MDA trainings. To enhance community sensitization, the program used posters and handbills. Radio stations also aired radio jingles in local languages to provide the benefits and dates of MDA. The program continues to meet with community, opinion, and religious leaders and schoolteachers to increase mobilization.

MDA supervision is carried out in three divisions. Pre-MDA supervision occurs during training. During the MDA, intra-MDA supervision ensures proper health education, dosing, and direct observed treatments compliance. In addition to conducting spot checks and coverage surveys, post-MDA supervision monitors timely reporting and proper disposal of containers. Nigeria's MDA reporting flows from communities, to Frontline Health Facilities, to LGA's, to states, to zones, and then to partners and the FMOH.

Facial Cleanliness (F)

In 2014, the program conducted health education in 7,755 villages, achieving 64 percent of its target. The Carter Center assisted in reaching 855 of these villages. The National Program produced a Trachoma Instructional Program to sustain the progress already made on the elimination targets in Nasarawa and Plateau states. To implement this program, Nigeria held teacher workshops for two teachers from each school in the states of Nasarawa and Plateau, where the intervention took place. The National Program produced health education materials to aid teachers. In addition to providing health education in places of worship, market places, ceremonies, and in clinics, the National Program also aired radio jingles and TV life presentations.

Environmental Improvement (E)

The program constructed a total of 130 latrines, achieving 29 percent of its target. Until 2009, The Carter Center assisted all National Program latrine construction. With the exception of one partner's work, no official program-supported latrine construction took place in Nigeria in 2014. The National School Health Curriculum for trachoma included education on sanitation and hygiene and used materials such as posters, flipcharts, and billboards to help disperse these messages. In the past year, the National Program provided plastic containers for water in each classroom and provided wells or boreholes at home and schools. Sanitation officers, town announcers, and local government integration health teams helped promote sanitation and hygiene. The National Program encouraged communities to dig wells, rehabilitate water points, and harvest rain water. The government at state, LGA, and community levels collaborates with WASH institutions to promote access to water.

Programmatic Challenges

Political interests and lack of reporting by partners contribute to weak linkages and poor collaboration for the F and E components of the SAFE strategy. Partners and the Nigerian government's low commitment to F and E activities pose a challenge to water and sanitation improvement. Security challenges prevent trachoma interventions in some parts of the country. The states of Adamawa and Borno remain unmapped due to this issue. The government and its partners' inability to make significant progress in clearing the surgical backlog has also been a challenge in the past year. The National Program has since developed a four-year plan to clear the backlog starting in 2015.

Status of 2014 Program Review Meeting Recommendations

Recommendation 1: Enhance collaboration with all stakeholders of WATSAN/WASH.

Not completed.

Recommendation 2: All countries should collaborate on cross-border issues to ensure that eligible populations, specifically displaced persons, receive MDA and other trachoma interventions, where needed.

Not completed.

Recommendation 3: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

In December 2014, Sightsavers conducted an MDA coverage survey in the Zamfara state, the results of which are not yet available.

Recommendation 4: All countries should encourage their World Health Assembly delegates to raise the issue of criteria for verification for the elimination of blinding trachoma as a public health problem.

Post-endemic surveillance protocol was drafted during the Trachoma Strategic Plan workshop and requires refinement.

Recommendation 5: All country programs should consider developing detailed plans to increase TT surgical output and quality to present at next year's program review meeting.

Completed. Last December the National Program, partners, and WHO representatives developed a plan to clear the remaining TT backlog for 2018.

Recommendation 6: All countries should conduct cross-border collaborative meetings and plans by both implementing partners and member states.

Not completed.

Recommendation 7: National Programs should consider strengthening their system of mobilization and sensitization at the community level.

In progress.

Recommendation 8: National Programs should identify what resources, skills, and personnel are required to strengthen their data management and intervention reporting and convey these needs to implementing partners.

In progress.

Targets for 2015 and Plans to Meet Targets

Surgery (S)

- Operate on 9,465 patients
- Train and certify 235 surgeons
- Retrain 30 surgeons

In order to meet the surgical UIG by the 2018 elimination date, Nigeria will standardize the training curriculum to ensure that all TT surgeons have demonstrated an accepted level of surgical competency. According to the work plan for clearing the TT surgery backlog by 2018, the target of operating 9,465 patients is in addition to the 31,980 surgeries set out by the plan to be performed in 2015.

Antibiotic Therapy (A)

- Distribute 8,675,865 doses of azithromycin
- Distribute 173,517 doses of tetracycline

In 2015, the program will continue its current activities for MDA mobilization. The National Program has placed FMOH staff in zonal offices who will aid in collating data from the states and transmit the data to the federal level. Additionally, the program will introduce an integrated NTD reporting form, developed through the support of RTI International. The program's target for azithromycin distribution matches its UIG for MDA, which requires a scale-up of MDA for 2015. The MOH will collaborate with other partners to revise and develop further guidelines for post endemic surveillance in the TAP.

Facial Cleanliness (F)

- Provide 13,000 villages with health education

The National Program will continue its health education activities from 2014. While working to improve government commitment to F and E components, the National Program will also work to strengthen inter-sector linkages for F and E. In addition, the program will identify additional support from partners and donors for F and E and will establish an improved F and E data management and collection system.

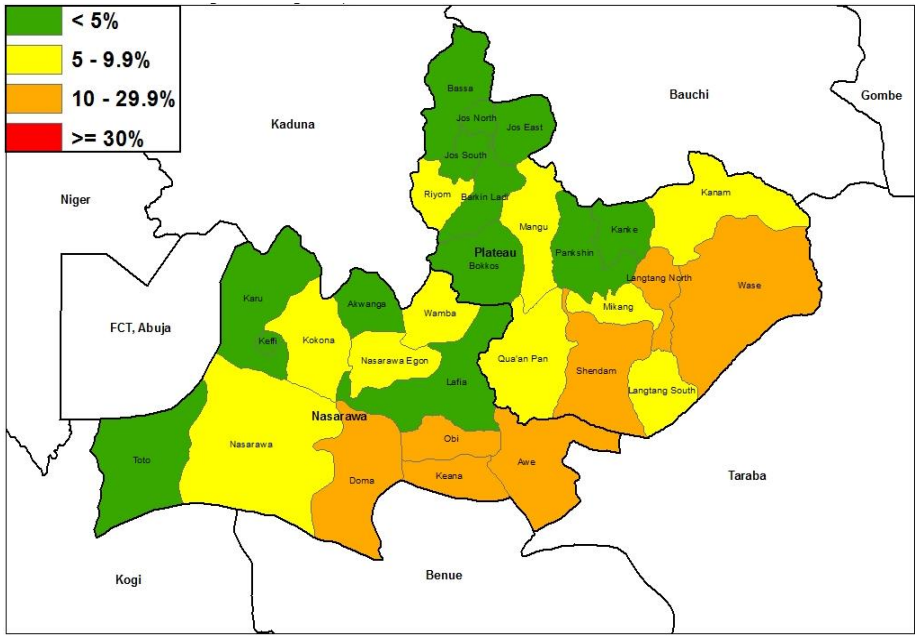
Environmental Improvement (E)

- Construct 300 latrines

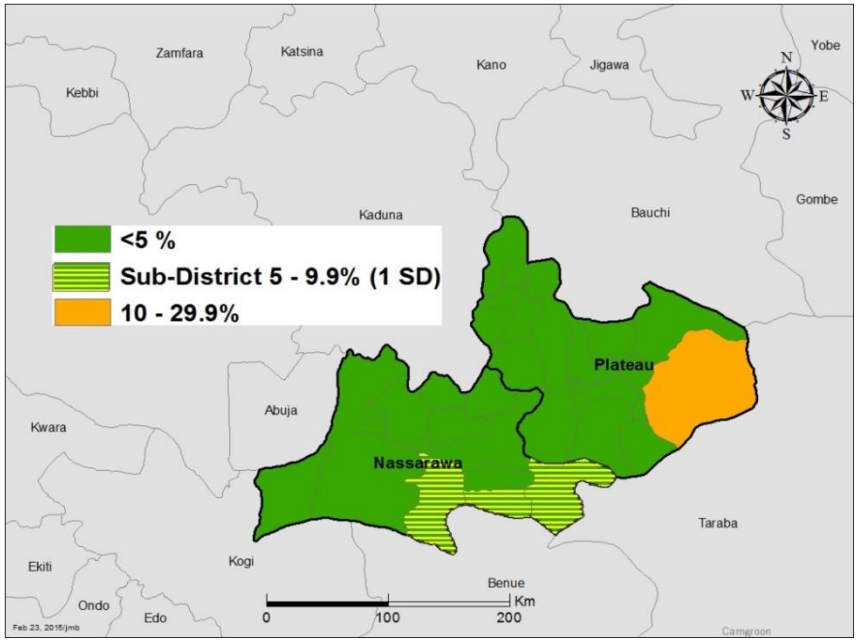
The program will strengthen the operation of sanitation mobile courts to increase latrine usage. In addition to encouraging regular sanitary inspection by Environmental Health Officers, the program will introduce rewards sponsored by the local authorities for the cleanest villages and compounds.

Nigeria (Plateau & Nasarawa): TF Prevalence among Children 1-9 years

Baseline, 2007

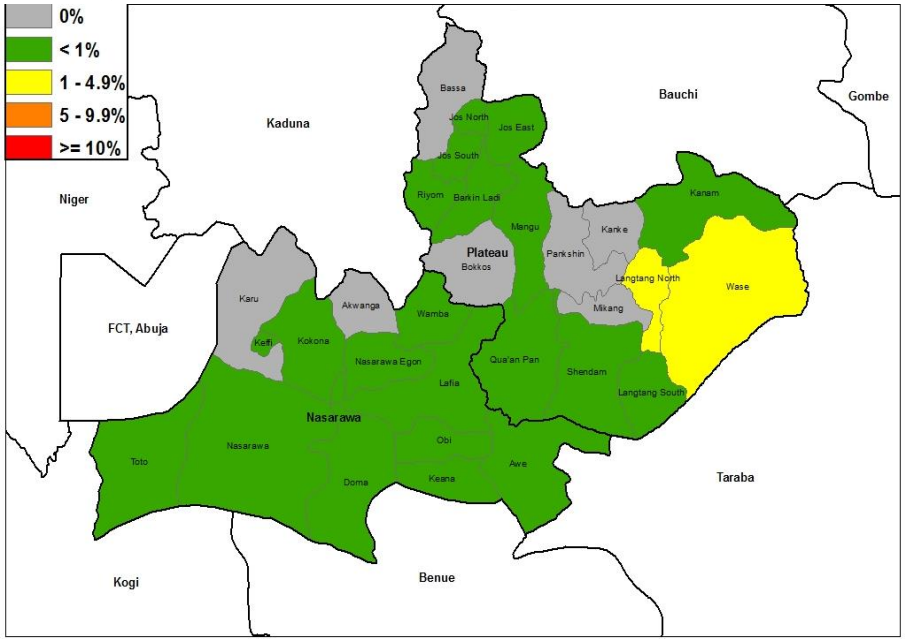


2014

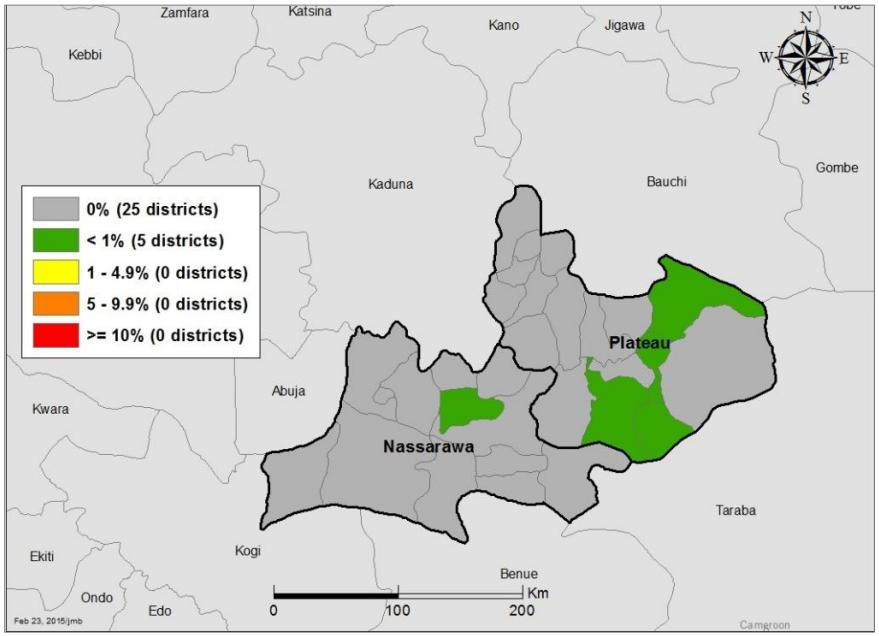


Nigeria (Plateau & Nasarawa): Prevalence of TT among Adults ≥ 15 years

Baseline, 2007



2014



SAFE in South Sudan

Presented by Dr. Ali Ngor, Director of Eye Care Services, Federal Ministry of Health, South Sudan

Background

Prevalence surveys conducted between 2001 and 2006 showed TF prevalence as high as 77.2 percent among children one to nine years old and TT prevalence as high as 15.1 percent among adults 15 years and older in some districts in the Greater Upper Nile region. Despite the high prevalence, trachoma currently is not a top priority for the government. The trachoma program was previously under the Department of Eye Care Services; however, in late 2013 it was relocated to the Department of NTDs. SAFE activities have not been conducted in all the districts due to a lack of resources. In the districts receiving SAFE interventions, most activities focus on the S and A components. The TAP was completed in 2012.

The program had originally planned to conduct baseline surveys in five states in South Sudan as part of the GTMP and impact surveys in eight districts in Carter Center-assisted areas; however, fighting throughout most of 2014 prevented these surveys from occurring. Due to the insecurity, The Carter Center suspended all activities in December 2013. Since the conflict began, more than 800,000 people have fled their homes, many of which were located in districts supported by the Trachoma Control Program. The Carter Center recommenced program activities in September 2014.

Timeline of Events

1999-2010: Baseline mapping
2001: Trachoma control activities began
2005: Comprehensive Peace Agreement signed
2007: MOH Government of Southern Sudan Trachoma Control Program established
2008: Trachoma Taskforce established
2011: South Sudan gains independence
2012: TAP finalized
2013-2014: Fighting in parts of the country causes displacement of population
2020: Target year for elimination

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	121,062 (28 of 79 districts)	No target set for 2014	453	No target set for 2014	213
# of women operated			354		191
# of surgeons trained		No target set for 2014		No target set for 2014	
# of surgeons retrained					
# of surgeons certified					
Doses of azithromycin distributed during MDA	N/A[8]	N/A	N/A	N/A	N/A
Doses of tetracycline distributed during MDA	N/A	N/A	N/A	N/A	N/A
# of villages with health education	N/A	N/A	N/A	N/A	N/A
# of household latrines built	N/A	N/A	N/A	N/A	N/A

Surgery (S)

In the past year, the program completed 453 TT surgeries, of which 213 were supported by The Carter Center. While the backlog is estimated to be 51,418 cases in the 28 mapped districts, the national backlog is expected to increase once baseline surveys are completed. The program did not train or certify any surgeons in 2014. TT surgical techniques are incorporated into Ophthalmic Clinical Officer (OCO) training. When possible, OCO students are partnered with organizations in order to gain practical experience. Moving forward, the Department of Eye Care Services will lead the planning of TT surgeons training and certification.

Antibiotic Therapy (A)

Of the 28 mapped districts, 23 have TF prevalence 10 percent or greater among children ages one to nine years; one district has TF prevalence between five and 9.9 percent, and four districts were found to be non-endemic (TF less than five percent). MDA was not conducted in 2014 due to insecurity.

Facial Cleanliness (F)

The Department of Health Education and Promotion provides the education materials for all health programs, including eye care and trachoma. Partners also support facial cleanliness through school-based health education and dissemination of health education materials such as night video shows and flip charts. The MOH has conducted health education on sanitation and hygiene in intervention communities.

[8] Due to insecurity, all program activities were suspended in December 2013. The program recommenced in September 2014 with surgical activities only.

Environmental Improvement (E)

Health education on the importance of sanitation and hygiene is carried out at all levels of the MOH. There is no current documentation by the program on the number of latrines constructed in 2014 in trachoma-endemic areas.

Programmatic Challenges:

There are numerous challenges in South Sudan. First and foremost is insecurity, making it difficult for implementing partners to reach certain parts of the country, particularly in Jonglei and Upper Nile states. The recent violence caused a mass displacement of people, a large percentage of which lived in highly trachoma-endemic areas. Many of these people have become internally displaced in other parts of South Sudan or have become refugees in neighboring countries. In addition to a lack of government personnel assigned to trachoma-related activities and poor coordination with the WASH sector, there is a lack of MOH funding for training, MDA, and surgical camps. There are a limited number of TT surgeons in the country and there is a lack of surgical kits for those surgeons who know how to perform the surgeries and are assigned to a government clinic or hospital. Lack of infrastructure continues to impede access to remote areas.

Currently, there is no standardized data collection system or archive of past activities. The limited baseline data and changes in district names and boundaries, since South Sudan became independent in 2011, renders it difficult to adequately measure progress in a district against previous surveys. Additionally, it is difficult to measure the National Program's progress towards achieving its UIGs since implementing partners often work in districts that have not completed baseline surveys. In addition, the lack of information flow, specifically for TT surgery data, between the non-profit sector and the MOH prevents accurate accounting.

Status of 2014 Program Review Meeting Recommendations:

Recommendation 1: Partners should meet to discuss the feasibility of working together to provide training for TT surgeons, who are currently living in Juba and in countries bordering South Sudan, to ensure enough surgeons are trained and able to provide quality services once interventions are able to begin again.

Not completed due to insecurity. Partners have committed to future collaborations, and The Carter Center has offered to give newly certified TT surgeons the opportunity to practice their skills during surgical camps.

Recommendation 2: Partners should support the National Program to achieve a high level of coordination of trachoma activities.

Not completed due to insecurity. Trachoma Taskforce meetings have resumed and a quarterly meeting schedule has been developed. Partners are returning to the country, and they have actively participated in taskforce meetings, where each partner presents achievement made toward national goals. These forums are useful for collaboration between partners.

Recommendation 3: National Programs should identify what resources, skills, and personnel are required to strengthen their data management and intervention reporting and convey these needs to implementing partners.

Not completed due to insecurity.

Recommendation 4: All country programs should consider developing detailed plans to increase TT surgical output and quality to present at next year's program review meeting.

The South Sudan National Program initiated discussion to improve surgical outcome through regular postoperative care and refinement of newly trained TT surgeons' skills by connecting them to partners conducting TT surgical camps. A detailed plan will be finalized under the leadership of the Eye Care Unit in the future.

Recommendation 5: Enhance collaboration with all stakeholders of WATSAN/WASH.

Not completed due to insecurity. Partners did not return to the country until the end of the year.

Targets for 2015 and Plans to Meet Targets:

Surgery (S)

- Operate on 2,000 trichiasis patients, 1,000 with Carter Center assistance
- Train and certify 10 surgeons, two with Carter Center assistance
- Retrain four surgeons

The Department of Eye Care Services will lead the planning of TT surgeons' training and certification.

Antibiotic Therapy (A)

- Distribute 1,000,000 doses of azithromycin, 236,000 with Carter Center assistance
- Distribute 10,000 doses of tetracycline, 7,080 with Carter Center assistance

The Carter Center will assist with impact assessments in Eastern Equatoria in the upcoming year. Results of these impact surveys will dictate which districts will receive MDA in Carter Center-assisted areas in 2015.

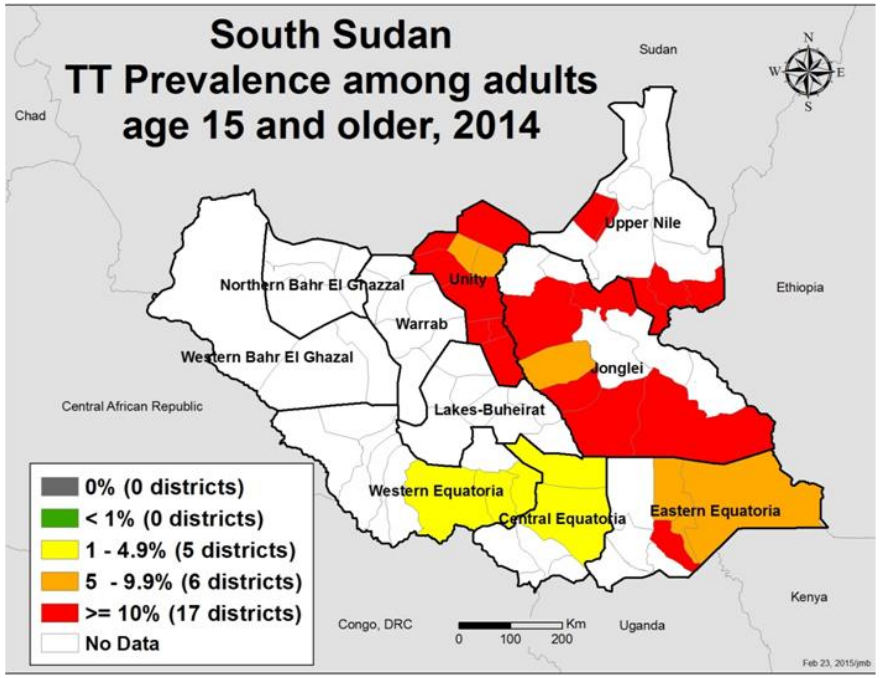
Facial Cleanliness (F)

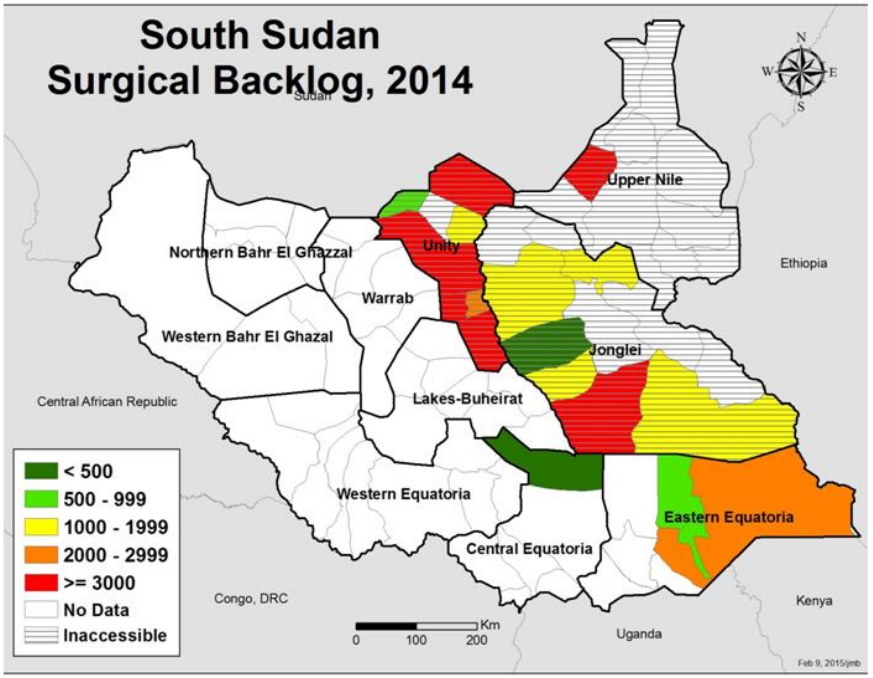
- Conduct health education in 200 villages, 30 with Carter Center assistance

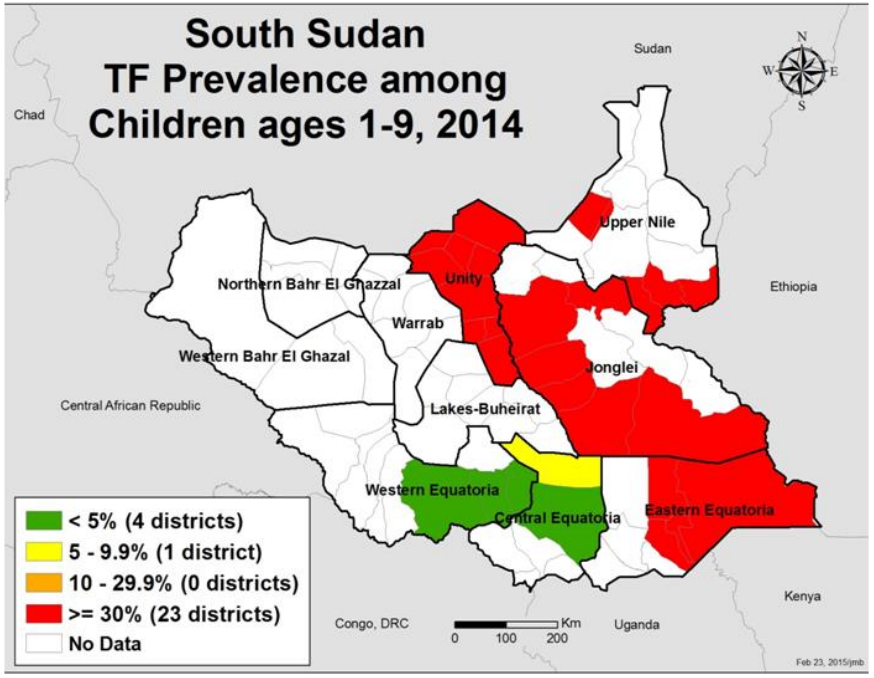
Environmental Improvement (E)

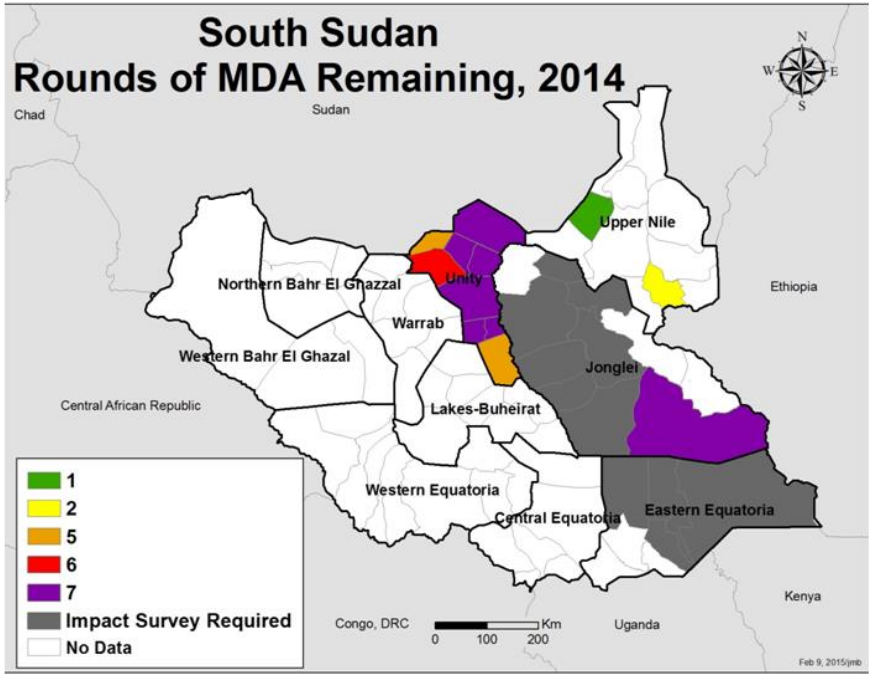
- Construct 70 latrines

The MOH will identify and collaborate with partners in the WASH sector and the Ministry of Dam and Irrigation in endemic communities to promote latrine construction and use.


South Sudan
TT Prevalence among adults age 15 and older, 2014
Sudan
Chad
Ethiopia
Kenya
Uganda
Congo, DRC
Central African Republic
Upper Nile
Unity
Northern Bahr El Ghazzal
Warrab
Western Bahr El Ghazal
Jonglei
Lakes-Buheirat
Western Equatoria
Central Equatoria
Eastern Equatoria
0% (0 districts)
< 1% (0 districts)
1 - 4.9% (5 districts)
5 - 9.9% (6 districts)
>= 10% (17 districts)
No Data
0 100 200 Km
Feb 23, 2015/jmb


South Sudan
Surgical Backlog, 2014
Sudan
Ethiopia
Kenya
Uganda
Congo, DRC
Central African Republic
Upper Nile
Unity
Northern Bahr El Ghazzal
Warrab
Western Bahr El Ghazal
Jonglei
Lakes-Buheirat
Western Equatoria
Central Equatoria
Eastern Equatoria
< 500
500 - 999
1000 - 1999
2000 - 2999
>= 3000
No Data
Inaccessible
0 100 200 Km
Feb 9, 2015/jmb


South Sudan
TF Prevalence among Children ages 1-9, 2014
Sudan
Chad
Ethiopia
Kenya
Uganda
Congo, DRC
Central African Republic
Upper Nile
Unity
Northern Bahr El Ghazzal
Warrab
Western Bahr El Ghazal
Jonglei
Lakes-Buheirat
Western Equatoria
Central Equatoria
Eastern Equatoria
< 5% (4 districts)
5 - 9.9% (1 district)
10 - 29.9% (0 districts)
>= 30% (23 districts)
No Data
0 100 200 Km
Feb 23, 2015/jmb


South Sudan
Rounds of MDA Remaining, 2014
Sudan
Chad
Ethiopia
Kenya
Uganda
Congo, DRC
Central African Republic
Upper Nile
Unity
Northern Bahr El Ghazzal
Warrab
Western Bahr El Ghazal
Jonglei
Lakes-Buheirat
Western Equatoria
Central Equatoria
Eastern Equatoria
1
2
5
6
7
Impact Survey Required
No Data
0 100 200 Km
Feb 9, 2015/jmb

SAFE in Sudan

Presented by Dr. Nabil Aziz Mikhail, Country Representative, The Carter Center, Sudan
Zeinab Abdalla, Program Officer, The Carter Center, Sudan
Dr. Balgesa Mohammed, National Coordinator, Trachoma Control Program, Federal Ministry of Health, Sudan

Background

The FMOH has been working towards trachoma control since 1962, when trachoma was incorporated into the NPPB. The Academy of Medical Sciences and Technology took over the leadership of the program in the 1990s as contractors on behalf of the FMOH. In 2005, the FMOH relocated the Trachoma Control Program to the NPPB. The elimination of blinding trachoma is one of the FMOH's priorities and government funds are allocated to support the program. In 2012, the government allocated 1.5 million USD for five years to help support The Carter Center's partnership for trachoma control. There is a strong coordination mechanism between the government, represented by the FMOH and Federal Ministry of Finance, and implementing partners such as The Carter Center and Sightsavers.

National prevalence mapping began in 2006 and finished in 2010. Mapping was completed in Darfur in 2015 through the coordination of the FMOH, GTMP, Sightsavers, and The Carter Center. S, A, & F interventions are assisted by The Carter Center, Sightsavers, and the FMOH. The E intervention is implemented by various federal and state ministries, and supported by United Nations Children's Fund (UNICEF) and other organizations. Though The Carter Center does not directly fund E activities, it supports advocacy for this component.

Timeline of Events

1999: The Carter Center began supporting the trachoma control program
2000: Zithromax® donation by Pfizer Inc began
2005: National Trachoma Program moved to the FMOH
2005-2010: Baseline prevalence surveys conducted (except for Darfur states)
2006: TT surgery training manual locally adapted in Arabic
2010: Impact surveys conducted in Northern and Blue Nile states
2011: National Program started mobile TT campaigns
2013: Impact surveys conducted in Red Sea and Gedarif states
2013: Sightsavers began supporting the Trachoma Control Program
2014: School health curricula and teacher guidelines on trachoma elimination were completed
2015: Mapping in Darfur is completed
2020: Target date for elimination

Table 1. Program Achievements in 2014

Indicator	UIG	National		Carter Center-Assisted	
		Target	Achieved	Target	Achieved
# of persons operated	30,408	5,000	3,295 (65.9%)	2,000	1,924 (96.2%)
# of women operated			1,756 (53.1%)		1,227 (63.8%)
# of surgeons trained		30	30 (100%)		
# of surgeons retrained					
# of surgeons certified		30	30 (100%)		
Doses of azithromycin distributed during MDA	1,946,971	1,701,316	977,569 (57.5%)	1,701,316	977,569 (57.5%)
Doses of tetracycline distributed during MDA	38,940	34,026	14,686 (43%)	34,026	14,686 (43%)
# of villages with health education	1,366	651	187 (28%)	651	187 (28%)
# of household latrines built	7,021	N/R[9]	N/R	N/A[10]	N/A

Surgery (S)

In 2014, Sudan met 65.9 percent of its target by completing 3,295 surgeries of which 53.1 percent were on women. The Carter Center supported 1,924 of those surgeries. The National Program successfully met its targets of training and certifying 30 TT surgeons. A total backlog of 27,113 cases remains for operation, the majority of which are in Al Jazeera, Gadaref, and the Blue Nile states. Only ophthalmologists and ophthalmologic residents are permitted to conduct TT surgery using the WHO surgery guidelines. The Khartoum Eye Teaching Hospital is responsible for training resident doctors in TT surgery as well as other ophthalmic surgical interventions once per week and no surgeons were lost to attrition this year. To mobilize patients, dates and locations for TT surgery camps and community awareness health education sessions are set at the village level. In addition, ophthalmic medications, reading glasses, and sunglasses are offered as incentives for TT surgery screening. All refusals are counseled and, if desired, receive a referral for a higher level of service. In 2014, no follow up was carried out in the six months following surgery. Epilation is currently not an official practice; however, the National Program will propose epilation as a second option for TT cases and begin to provide epilation forceps. National Program personnel directly supervise TT surgeons and record activities daily in a logbook.

Antibiotic Therapy (A)

In 2014, the program distributed 977,569 doses of azithromycin, achieving 57.5 percent of its target, all with Carter Center assistance. Four districts had over 80 percent MDA coverage. The program had less than 80 percent MDA coverage in Alfashaga locality in Gadaref state, due to an overestimation of the population. MDA in four areas was postponed due to inaccessibility or uncoordinated implementation of activities. No post-MDA coverage surveys were conducted in 2014, but the program plans to conduct surveys in 2015. The program hosted MDA trainings three days prior to MDA for 25 to 30 volunteers each.

[9] N/R = Not reported by the program.

[10] N/A = Not applicable. The Carter Center does not assist E interventions in Sudan.

In 2014, in order to increase awareness before and during MDA, the program mobilized politicians and communities, employed mobile and mass media health education campaigns, disseminated health education materials, and held opening ceremonies for MDA and orientation for community leaders. Using integrated supervision, which utilizes local and national supervisors, the MDA area was divided into sub-sectors to heighten supervision, and a "double-check" monitoring system was implemented. This "double-check" monitoring system includes direct supervision, in which each of the five teams of 10 volunteers has a team leader, and indirect supervision, in which samples of 30 households are randomly identified and checked for drug distribution and registration. After volunteers register MDA data, team leaders revise and report them to a higher level, where the coverage is calculated on a daily basis and compiled at the end of a distribution round.

Facial Cleanliness (F)

In 2014, with Carter Center assistance, the program provided 187 villages with health education, out of a target of 651. As a counterpart to the National Trachoma Program, the Federal Ministry of Education (FMOE) revised the curricula for basic and secondary schools using standardized references, produced guidelines for teachers on delivering trachoma education, and administered and supervised training and health education. In addition, the National Program produced health education materials, such as posters, stickers, caps, and t-shirts, and continued its mass media and mobile campaigns.

Environmental Improvement (E)

The Trachoma Control Program has no direct interventions for water and latrines; instead, the program works with the Ministry of Irrigation, Ministry of Water and Electricity, and Ministries of Engineering at the federal and state levels to address trachoma interventions. The Dams Construction Unit, private oil companies, state ministries of engineering, local communities, and local engineering departments support water provision and latrine construction in trachoma-endemic areas. No latrines were constructed by the Trachoma Control Program or its implementing partners; however, UNICEF, development partners and private companies have been constructing latrines since 2005 to reach Sudan's UIG for 50 percent of households in trachoma-endemic communities to have a latrine. In 2014, the National Program, UNICEF and WASH partners met multiple times and established an information exchange regarding trachoma endemic areas. Trachoma-endemic areas coincided 100 percent with UNICEF/WASH areas targeted for water provision and latrine construction.

Programmatic Challenges:

Insecurity is a continual challenge in Sudan, and it delayed program activities during 2014 in some targeted areas of Blue Nile and South Kordofan states. Widespread rumors regarding side-effects of the MDA contributed to delayed activity implementation. Changing population figures resulting in an overestimation of the population also has complicated MDA, specifically in Gadaref state. Additionally, the soil type in certain endemic areas poses a challenge to latrine construction. In some states, the loose black cotton soil is washed away in the rainy seasons while in other regions, the soil's denseness and its rocky composition makes digging latrines difficult. Other challenges include convincing refusals to accept surgery in TT camps.

Status of 2014 Program Review Meeting Recommendations:

Recommendation 1: Enhance collaboration with all stakeholders of WATSAN/WASH.

Completed. The National Program advocated with UNICEF to prioritize trachoma-endemic areas needing WASH services.

Recommendation 2: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

Not completed. Planned for 2015.

Recommendation 3: The National Program should survey accessible areas of Darfur if possible.

Completed. A coordinated effort of the GTMP, Sightsavers, The Carter Center, FMOH in Darfur regions, and the private sector made possible the successful completion of the Darfur States Trachoma Prevalence Survey.

Recommendation 4: All programs should consider developing detailed plans to increase TT surgical output and quality.

Completed.

Recommendation 5: The Carter Center should continue to pay the revolving cost for surgeries conducted at hospitals as part of routine services and extend to district hospitals.

The Carter Center supports the Khartoum Eye Teaching Hospital and is willing to support state hospitals.

Targets for 2015 and Plans to Meet Targets:

Surgery (S)

- Operate on 7,000 trichiasis patients, 2,000 with Carter Center assistance
- Train and certify 30 surgeons

The program increased the surgical output target for 2015 in order to account for the newly-mapped Darfur states. In 2015, the Sudan Medical Specialization Board will require that future classes of residents complete 100 TT surgeries to be certified, an increase from the 10 TT surgeries previously required. In addition, The Carter Center will support state hospitals with instruments, needed equipment, and consumables to increase the uptake and quality of TT surgery. The program will reach an agreement to integrate TT surgery and cataract campaigns with nongovernmental organizations that specialize in eye surgery. In addition, the program will focus on social mobilization of state politicians, officials, community leaders, media, religious leaders, and women's groups in order to increase the uptake of TT surgery. The National Program will propose epilation as a second option for TT patients. The Carter Center will provide forceps for elderly people with fewer than five peripheral lashes or those with minor trichiasis who decline TT surgery.

In addition to continuing campaigns to cover areas with high TT prevalence, the program will strengthen mobilization and health education before and during TT surgery camps. The program also will explore more ways to incentivize TT patients. In order to increase uptake and quality of surgeries, mobile surgical units will

reach all districts with TT prevalence greater than one percent among adults older than 15 years old, while the districts with TT prevalence greater than 0.1 percent of the total population will be accessed through government and private sector hospitals.

Antibiotic Therapy (A)

- Distribute 1,439,315 doses of azithromycin, all with Carter Center assistance
- Distribute 28,786 doses of tetracycline, all with Carter Center assistance

The program will continue to increase awareness before and during MDA by mobilizing politicians and communities, employing mobile and mass media health education campaign, disseminating health education materials, and holding orientation for community leaders and opening ceremonies. In addition, the program will conduct more health education sessions at the community level, focus health education on villages with refusals in previous rounds of MDA, and concentrate on campaigns directed towards women's groups. The program will continue to employ a "double-check" monitoring system for supervision. The program will continue to conduct health education and community mobilization before and during MDA and will use population figures reached during the first MDA rounds as a target for the next MDA.

Facial Cleanliness (F)

- Conduct health education in 732 villages, all with Carter Center assistance
- Implement trachoma weeks

In 2015, the FMOE will become a partner in trachoma-endemic states, and trachoma curricula will be incorporated into the basic and secondary schools' curricula. The National Program will conduct training workshops for teachers on the new trachoma curricula as well as training for community leaders on trachoma control among their community. The program plans to update, produce, and disseminate new material on facial cleanliness and implement official trachoma weeks in various localities.

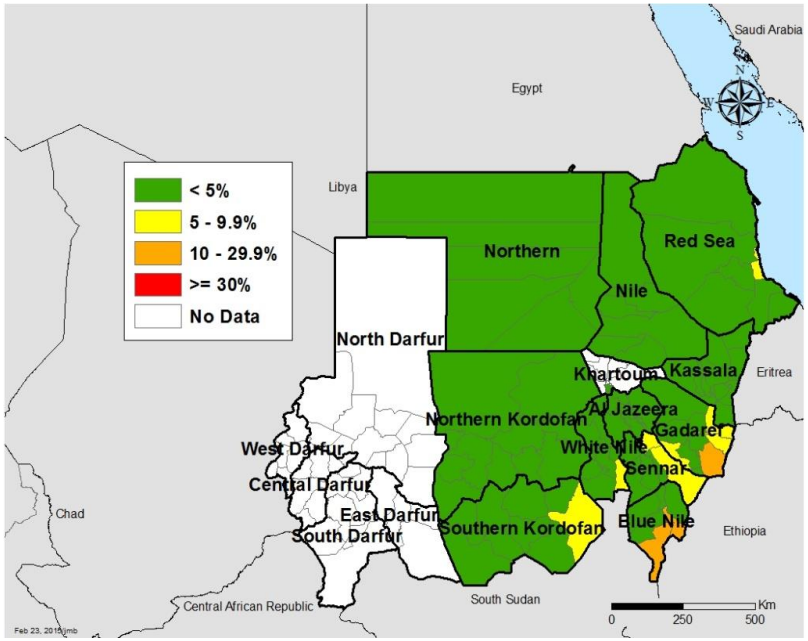
Environmental Improvement (E)

- The program has no set numbers for latrine construction.

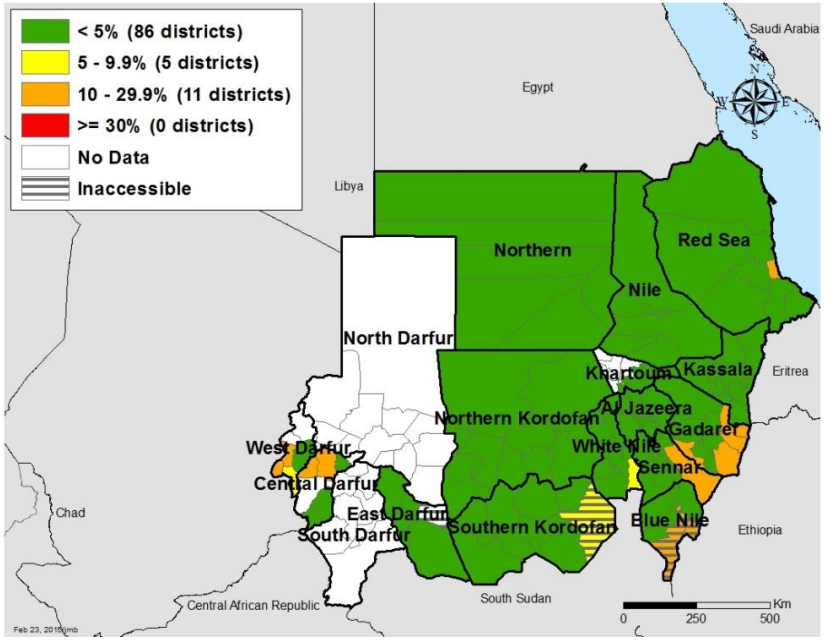
In 2015, the program will work with partners to ensure that more than 85 percent of households in trachoma-endemic areas have access to water (defined as a distance of not farther than 30 minutes or one kilometer walking). The program also will continue advocacy for households to have their own latrines.

Sudan: TF Prevalence among Children 1-9 years

Baseline, 2006-2010

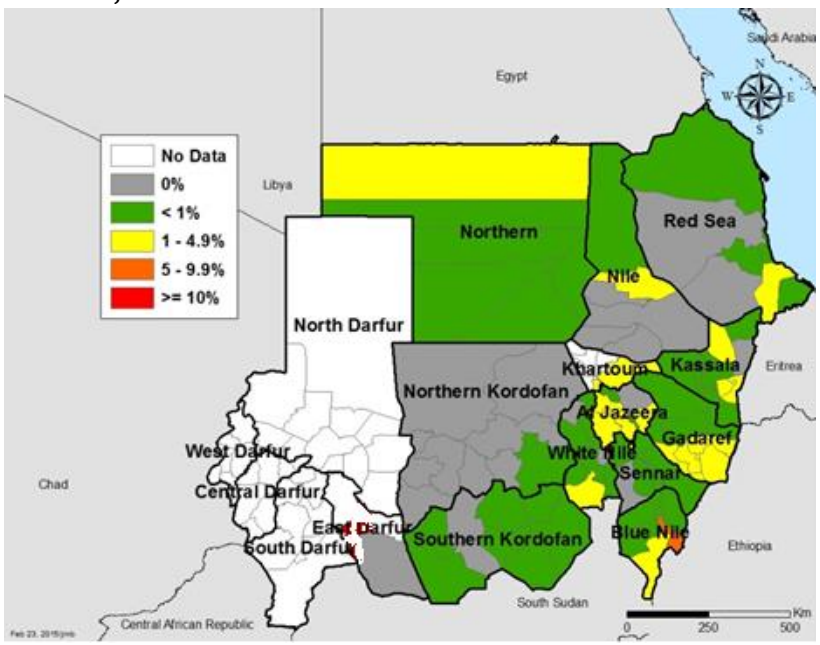


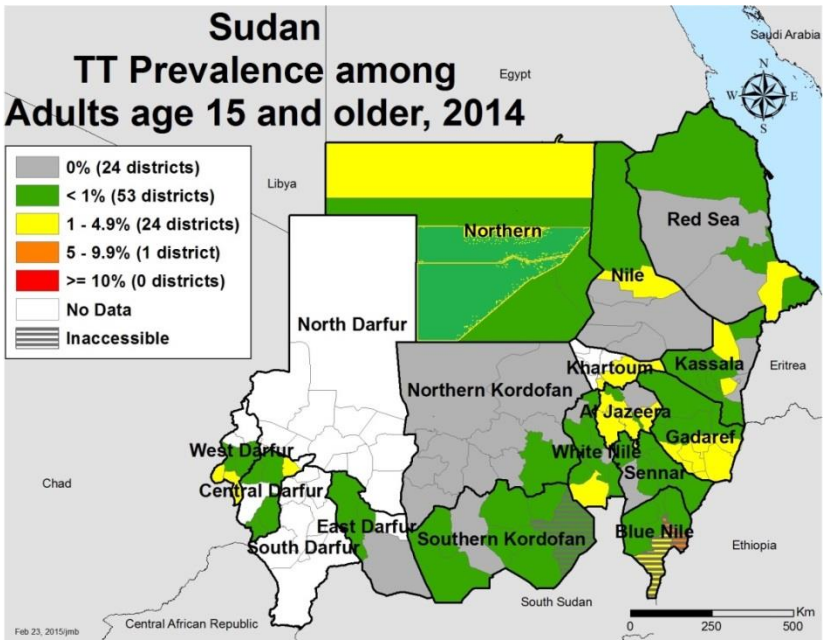
2014

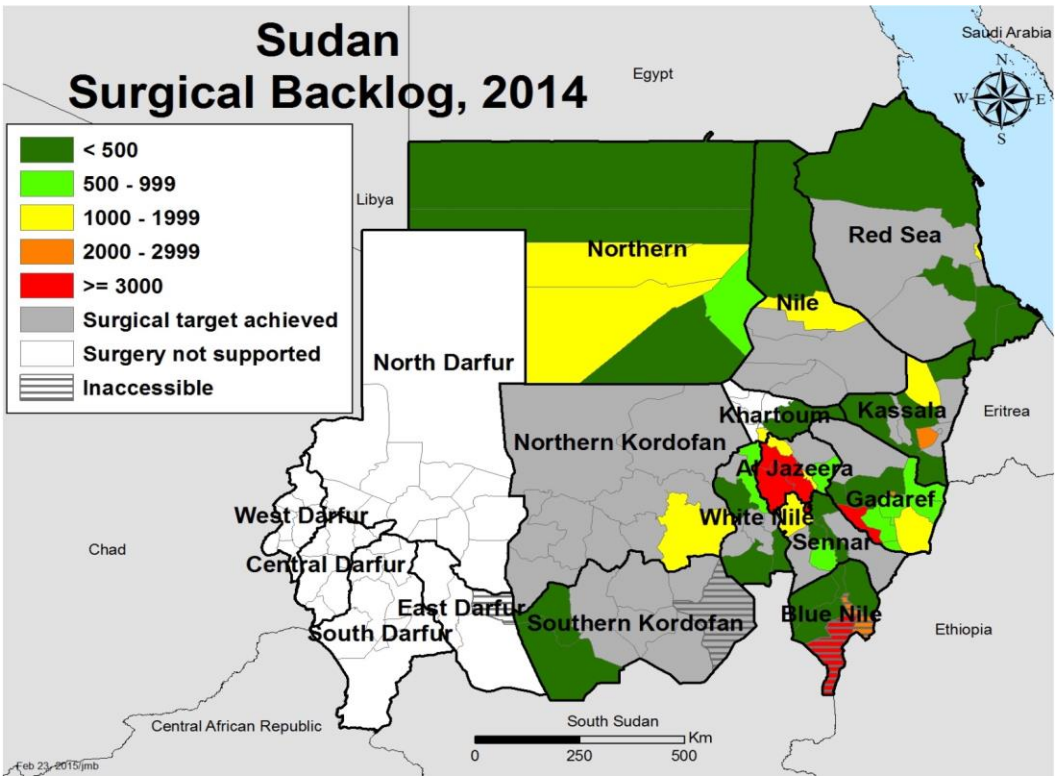


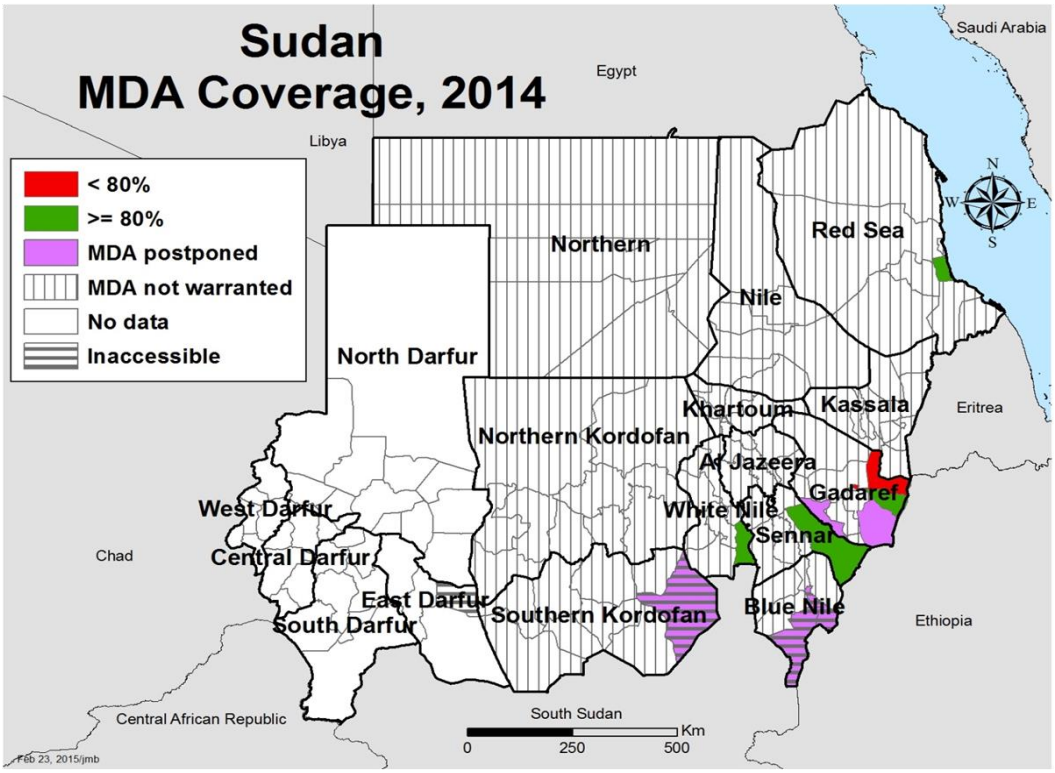
Sudan: Prevalence of TT among Adults ≥ 15 years

Baseline, 2006-2010






Sudan
Surgical Backlog, 2014
< 500
500 - 999
1000 - 1999
2000 - 2999
>= 3000
Surgical target achieved
Surgery not supported
Inaccessible
Saudi Arabia
Egypt
Libya
Red Sea
Northern
Nile
North Darfur
Khartoum
Kassala
Eritrea
Northern Kordofan
Al Jazeera
Gadaref
White Nile
Sennar
West Darfur
Chad
Central Darfur
East Darfur
South Darfur
Southern Kordofan
Blue Nile
Ethiopia
Central African Republic
South Sudan
Km
0
250
500
Feb 23, 2015/jmb


Sudan
MDA Coverage, 2014
< 80%
>= 80%
MDA postponed
MDA not warranted
No data
Inaccessible
Saudi Arabia
Egypt
Libya
Red Sea
Northern
Nile
North Darfur
Khartoum
Kassala
Eritrea
Northern Kordofan
Al Jazeera
Gadaref
West Darfur
White Nile
Sennar
Chad
Central Darfur
East Darfur
South Darfur
Southern Kordofan
Blue Nile
Ethiopia
Central African Republic
South Sudan
Km
0
250
500
Feb 23, 2015/jmb

SAFE in Uganda

Presented by Dr. Edridah Tukahebwa, National NTD Program Manager, Ministry of Health, Uganda and Dr. Patrick Turyaguma, National Trachoma Program Manager, Ministry of Health, Uganda

Background

Eye care is a key component of the Uganda National Minimum Health Care Package. Trachoma is included in the five-year Integrated NTDs Master Plan and is highlighted in the Uganda National Development Plan for the years 2011-2015. Trachoma and four other NTDs are earmarked for elimination by 2020 in the Health Sector Strategic and Investment Plan.

Trachoma is known to be endemic in 36 of 112 districts in Uganda. An estimated one million children less than 10 years old have active trachoma and 10.8 million more people of all ages are at risk. Currently, there are approximately 10,000 persons who have become blind due to trachoma. In regards to the implementation of the SAFE strategy, TT surgery is available in the two regions of Busoga and Karamoja and antibiotic distributions have been conducted annually in all 36 known endemic districts. The facial cleanliness and environmental improvement components of SAFE have not been adequately and uniformly addressed in endemic areas.

Following at least three years of MDA, impact assessments have been on-going since 2013, with 19 impact surveys conducted and 18 more planned in 2015. So far, these impact surveys have shown a drastic reduction in TF in most of the surveyed districts. The NTD program has developed advocacy strategies and tools to support the program, and the Ministry of Health launched a TAP in 2014.

Timeline of Events

2006-2014: Baseline mapping
2007: National Trachoma Control Program began
2007: MDA for trachoma control with Pfizer-donated Zithromax® officially launched
2013: TAP drafted and impact assessments began
2014: The Carter Center becomes coordinating partner for the Queen Elizabeth Diamond Jubilee Trust Trachoma Initiative
2014: TAP launched
2014: Initiation of TT surgeon refresher trainings
2020: Target date for the elimination of blinding trachoma

Table 1. Program Achievements in 2014

Indicator	UIG	National	
		Target	Achieved
# of persons operated	150,940	12,653	9,980 (79%)
# of women operated			6,098 (61%)
# of surgeons trained		0	0 (0%)
# of surgeons retrained		18	18 (100%)
# of surgeons certified		18	18 (100%)
Doses of azithromycin distributed during MDA	6,080,446 (2014 target)	6,080,446	3,752,843 (61%)
Doses of tetracycline distributed during MDA	124,090 (2014 target)	124,090	105,576 (85%)
# of villages with health education	100% of villages in endemic districts	100% of villages in endemic districts	100%
# of household latrines built	N/R	N/R	N/R

Surgery (S)

In 2014, Uganda operated on 9,980 TT cases, achieving 79 percent of its target. This year's results bring the cumulative number of Uganda's trichiasis surgeries to 37,613 cases, addressing 25 percent of its national backlog. Utilizing HEADSTART[11], the program retrained and certified 18 TT surgeons, reaching 100 percent of its target. The program formed a Surgical Monitoring and Evaluation Working Group to improve trainings and standardize monitoring checklists and forms. In addition to radio announcements and mobile public address systems, village health teams worked to mobilize patients around TT surgeries. The program developed standardized surgical guidelines in line with the WHO guidelines for trichiasis surgery. Patients also received follow up one to two days after surgery.

For reporting, TT surgeons record data in counter-books, from which the surgeons compile data summaries and submit them to implementing partners and districts; these partners and districts then compile and report the data to the MOH. Regional ophthalmologists and implementing partners carry out surgery supervision, providing routine supervision at every outreach camp and making quarterly supervision visits to static facilities.

Antibiotic Therapy (A)

In 2014, the program distributed 3,752,843 doses of azithromycin, achieving 61 percent of its target. The program also administered 105,576 doses of tetracycline, reaching 85 percent of its target. Uganda's MDA training structure is carried out and disseminated at each step, beginning with training of central workers, to district level workers, sub-county level workers, to community medicine distributors and teachers. The National Program held advocacy meetings with civil and political leaders at central and local levels and with

[11] HEADSTART is a mannequin head that enables the TT surgeon/ trainee the opportunity to practice performing TT surgery before they operate on a live patient.

schools and communities. Radio announcements, sporting events, and television talk shows were conducted and public announcements were made to promote MDA mobilization.

For MDA supervision, the MOH first makes courtesy calls on District Officials and then reviews NTD records in health facilities and at district and sub-districts levels. The MOH interacts with medicine distributors and local leaders, visits district medical storekeepers for stock information, and holds post-MDA debriefings with the District Officials. Reporting flows from village health teams, which control the information registries, to parish supervisors, and then to sub-county supervisors. The sub-county supervisors report sub-county summaries to district health officers, who report district summaries to the national level.

Facial Cleanliness (F)

In 2014, all villages in trachoma endemic districts received health education through house-to-house outreach, school instructions, radio jingles, talk shows, and social mobilization activities. The program trained village health teams and teachers to deliver facial cleanliness messages during MDA. Education on facial cleanliness was also provided to patients during surgical outreach. Lastly, as a part of its integrated communication strategy to increase facial cleanliness, the National Program also developed flipcharts, village health team cards, and information sheets.

Environmental Improvement (E)

The Ugandan National Program is developing E indicators with WASH partners, which will be defined in 2015. Due to a lack of a definition of a latrine, the program was not able to determine the number of latrines built. In 2014, only 16 of 48 districts mapped for trachoma have reached the household sanitation coverage target of 77 percent. The Ugandan MOH strengthened its partnership with the Environmental Health Division for personal hygiene and environmental sanitation activities in districts. The program trained village health teams and teachers to deliver E messages, such as hand washing and latrine use, during MDA, and E messages were provided to patients during surgical outreach. The School Health Program, through the Ministry of Education, also delivered E messages. Lastly, the program engaged the Ministry of Water and Environment and WASH partners during the F and E workshop held in late 2014.

Programmatic Challenges

Limited engagement of WASH partners in F and E activities and lack of coordination with these WASH partners make it difficult to assess the range and impact of F and E activities. Facial cleanliness information is lacking because current impact survey tools do not include this facet. Volunteer fatigue among village health teams, community drug distributers, and teachers poses a barrier to proper program delivery. Uganda faces low MDA coverage and challenges with MDA data retrieval and verification. In addition, existing reporting tools caused gaps in data assessment. Surgery refusals, low patient mobilization for surgery, and long travel distances to surgery locations continue to be barriers to proper TT surgery coverage.

Status of 2014 Program Review Meeting Recommendations

Recommendation 1: Enhance collaboration with all stakeholders of WATSAN/WASH.

Ongoing. The MOH seeks to engage more WASH partners to join the Trachoma Task Force in 2015.

Recommendation 2: All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

Not completed. Planned for 2015.

Recommendation 3: Whenever possible, national trachoma programs should publish data documenting their experiences related to levels of TF, stopping of MDA, follow up, and sampling frames used to assess level of TF.

Not completed. USAID's ENVISION project, led by RTI International, will support a scientific workshop in 2015 and publication of MDA data.

Recommendation 4: All programs should consider developing detailed plans to increase TT surgical output and quality.

Completed in Busoga and Karamoja regions. The program is standardizing TT surgery trainings and monitoring and evaluation activities.

Recommendation 5: Conduct cross-border collaborative meetings and plans by both the implementing partners and member states.

Not completed. Planned for 2015.

Recommendation 6: National Programs should consider strengthening their system of mobilization and sensitization at the community level.

Not completed. The program will complete this recommendation in 2015 and will expand the recommendation to include TT case finder training.

Recommendation 7: National Programs should identify what resources, skills, and personnel are required to strengthen their data management and intervention reporting and convey these needs to implementing partners.

The Monitoring and Evaluation Working Group was formed, and the program will use the eHEALTH system to manage the data.

Targets for 2015 and Plans to Meet Targets

Surgery (S)

- Retrain and certify 25 TT surgeons
- Operate on 15,498 trichiasis patients

In 2015, the program will hold more retraining and certification camps for TT surgeons. The MOH will adopt the WHO standardized training and surgical guidelines for TT surgeries and will create and implement a training curriculum for trachoma TT case finders. After piloting this TT case finders training in the Busoga region, the program plans to expand the training to all endemic regions. Under its goal of clearing the surgical backlog in three years in the Karamoja and Busoga regions, the National Program implores for support of trachoma activities in the remaining districts where a backlog of over 100,000 patients exists. The program

will also develop a six-month post-operative follow-up strategy and will organize TT surgery camps closer to settlements. Disaggregating the data by gender, the National Program will standardize data collection tools—surgical logbooks, TT patient registers, TT case finders' registers, and summary reporting forms—and will pilot these tools, tracking their success through a new eHEALTH reporting system. To increase surgery uptake, the program will intensify patient counseling using success stories. In 2014, TT surgeon trainers almost refused to conduct trainings due to a lack of facilitation allowance; therefore, the program will consider increasing TT surgeon trainers' facilitation allowance in the next fiscal year. Finally, based on the results of the 18 impact assessments planned for 2015, the program will adjust the UIG for TT surgeries.

Antibiotic Therapy (A)

- Distribute 2,414,877 doses of azithromycin
- Distribute 49,283 doses of tetracycline

To further MDA mobilization, the program will target women's groups, social gatherings, and religious institutions. In addition to promoting testimonies regarding MDA, the program will strengthen collaboration among all development parties engaged in health programs to promote MDA mobilization. In 2015, the MOH aims to integrate support supervision for MDA with partners and conduct coverage surveys. For uniformity, the program intends to share MDA reports with partners at the national levels and will conduct data quality assessments to identify gaps in data retrieval and verification. From 2015-2017, the National Program plans to conduct 33 impact assessments.

Facial Cleanliness (F)

- Conduct health education in 100 percent of villages

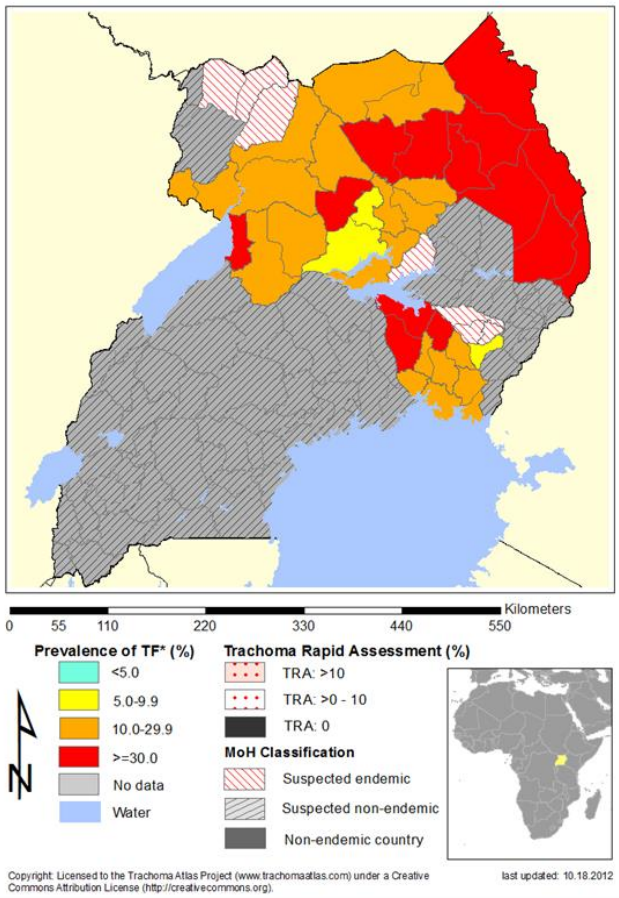
In 2015, the National Program will engage WASH partners to include F messaging in existing WASH strategies and integrate the F messaging into the National Sanitation Guidelines and School Sanitation Guidelines. In addition, the program will develop and broadcast more trachoma-specific radio and video messages.

Environmental Improvement (E)

In 2015, the National Program, in collaboration with WASH partners, will define E indicators. The MOH seeks to encourage more WASH partners to join the Trachoma Task Force in 2015. In addition, the MOH will encourage WASH partners to integrate trachoma F and E messages into existing activities and to integrate them into the existing National Sanitation Guidelines and School Sanitation Guidelines. The MOH's NTD Program will become a member of the National Sanitation Working Group.

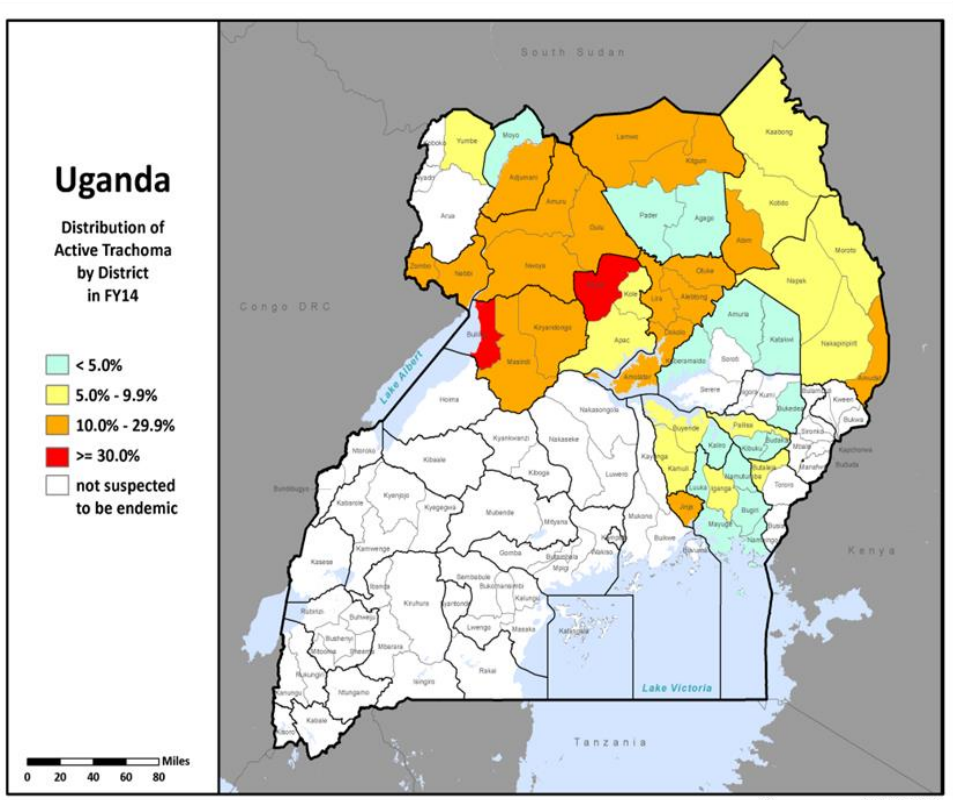
Uganda: TF Prevalence among Children 1-9 years

Baseline and Impact Surveys
2006-2012



Source: GTMP

2014



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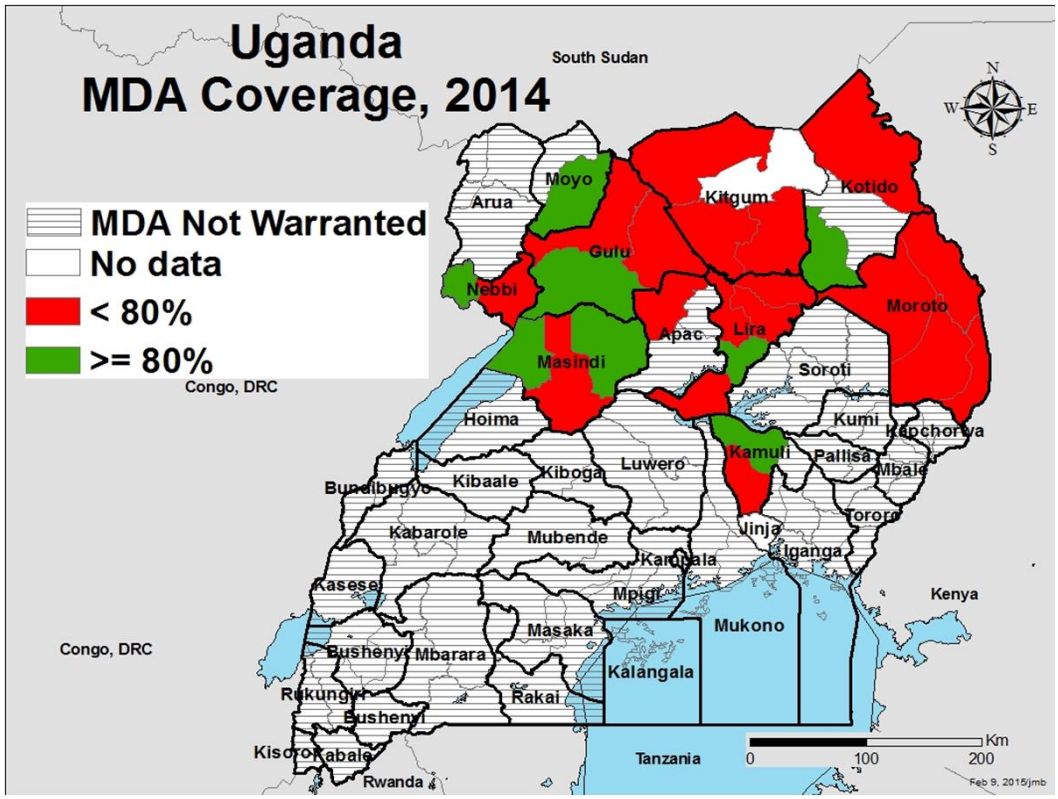
Uganda
MDA Coverage, 2014
South Sudan
MDA Not Warranted
No data
< 80%
>= 80%
Congo, DRC
Moyo
Arua
Kitgum
Kotido
Gulu
Nebbi
Moroto
Apac
Lira
Masindi
Soroti
Hoima
Kumi
Kapchorwa
Kamuli
Pallisa
Mbale
Luwero
Kiboga
Kibaale
Bundibugyo
Tororo
Kabarole
Mubende
Jinja
Iganga
Kampala
Kasese
Mpigi
Kenya
Mukono
Masaka
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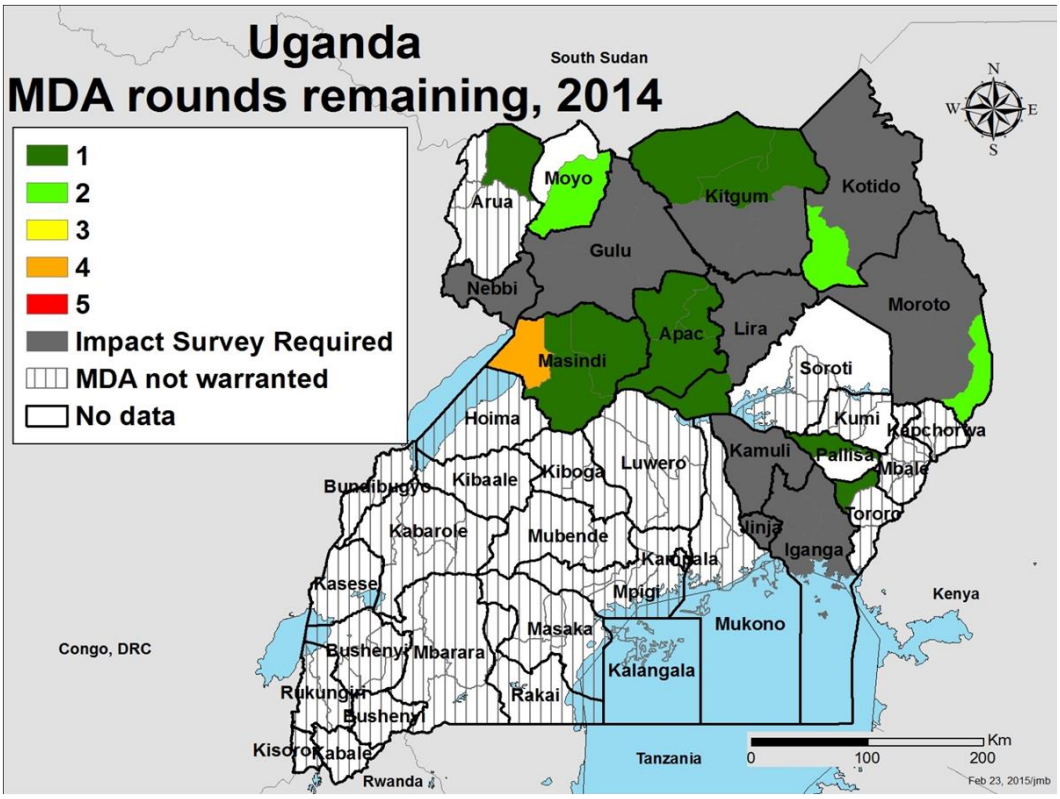
Uganda
MDA rounds remaining, 2014
South Sudan
1
2
3
4
5
Impact Survey Required
MDA not warranted
No data
Congo, DRC
Moyo
Arua
Kitgum
Kotido
Gulu
Nebbi
Moroto
Apac
Lira
Masindi
Soroti
Hoima
Kumi
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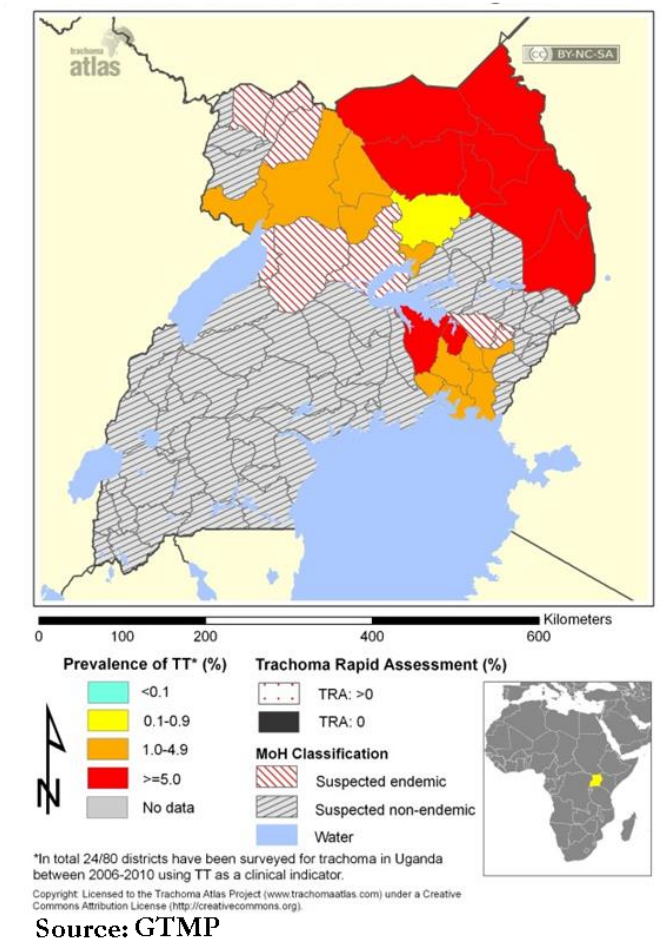
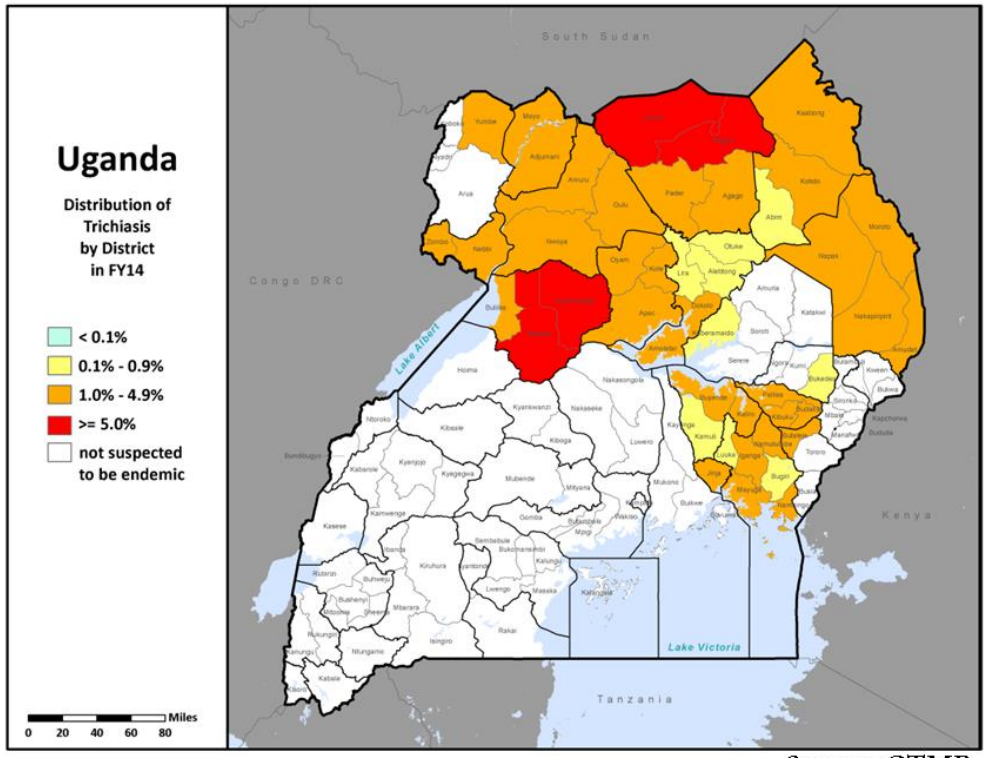
Uganda: Prevalence of TT among Adults ≥ 15 years

Baseline and Impact Surveys 2006-2012



Source: GTMP

2014



Source: GTMP

Table 1. Summary of National Data from Trachoma Control Programs (Carter Center-Assisted Countries)

National Data as Reported for 2014 at the Sixteenth Annual Program Review, Atlanta, Georgia, March 2-4, 2015

	Mali	Niger	Sudan	South Sudan*	Ethiopia	Nigeria	Uganda	Total
Surgery								
Surgeries	4,493	17,745	3,295	453	65,658	7,905	9,980	**99,549**
2014 Target	15,000	15,000	5,000	N/A	150,000	40,700	12,653	**225,700**
Percent Coverage	30.0%	118.3%	65.9%	N/A	43.8%	19.4%	78.9%	**44.1%**
Antibiotics								
Azithromycin								
Doses	0	N/R	977,569	N/A	25,653,520	4,595,528	3,752,843	**34,979,460**
2014 Target	385,934	4,768,480	1,701,316	N/A	44,723,508	5,313,511	6,080,446	**62,973,195**
Percent Coverage	0.0%	N/A	57.5%	N/A	57.4%	86.5%	61.7%	**55.5%**
Tetracycline								
Doses	0	N/R	14,686	N/A	361,519	93,648	105,576	**575,429**
2014 Target	4,000	170,000	34,026	N/A	508,816	106,270	124,090	**947,202**
Percent Coverage	0.0%	N/A	43.2%	N/A	71.1%	88.1%	85.1%	**60.8%**
Facial Cleanliness and Health Education								
Villages with Health Education	2,843	647	187	N/A	10,850	7,755	100% of villages in endemic districts	**22,282**
2014 Target	2,872	634	651	N/A	10,850	12,100	100% of villages in endemic districts	**27,107**
Percent Coverage	99.0%	102.1%	28.7%	N/A	100.0%	64.1%	100.0%	**82.2%**
Environmental Improvements								
Latrines	9,054	8,107	N/A	N/A	1,732,049	130	N/A	**1,749,340**
2014 Target	15,000	15,000	N/A	N/A	2,000,000	450	N/A	**2,030,450**
Percent Coverage	60.4%	54.0%	N/A	N/A	86.6%	28.9%	N/A	**86.2%**

N/A=Not Applicable

N/R=Not Reported

Totals only include countries where data are available.

*Trachoma Program activities recommenced in October 2014; only surgeries were conducted

Table 2. National Trachoma Control Program Annual Targets 2015 (Carter Center-Assisted Countries)

Targets[†] as Presented at the Sixteenth Annual Program Review, Atlanta, Georgia, March 2-4, 2015[§]

	Mali	Niger	Sudan	South Sudan	Ethiopia	Nigeria	Uganda	Total**
Surgery								
Persons to operate for trichiasis	6,000	15,000	7,000	2,000	N/R	9,465	15,498	**54,963**
Antibiotics								
Doses of azithromycin to distribute during MDA†	0	3,349,749	1,439,315	1,000,000	50,000,000	8,675,865	2,414,877	**66,879,806**
Doses of TEO to distribute during MDA	0	150,000	28,786	10,000	N/R	173,517	49,283	**411,586**
Facial cleanliness								
Villages to reach through health education	521	634	732	200	10,850	13,000	100% of villages in endemic districts	**25,937**
Environmental improvement								
Household latrines to construct	12,000	10,000	N/A	70	2,000,000	300	N/A	**2,022,370**

N/A=Not Applicable

N/R=Not Reported

[§]All targets are subject to change.

†Antibiotic targets do not reflect ITI-approved allocations of Zithromax®

**Totals only include countries where data are available.

Table 3. Carter Center-Assisted Implementation of SAFE (Carter Center-assisted outputs)**

Summary of Interventions per Country, January - December 2014

Indicators	Mali	Niger	Sudan	South Sudan	Ethiopia-Amhara	Nigeria	Total
Surgery							
Persons operated for trichiasis	2,742	14,790	1,924	213	40,450	0	**60,119**
2014 Target	6,000	11,000	2,000	N/A*	61,537	500	**81,037**
Percentage	45.7%	134.5%	96.2%	N/A	65.7%	0.0%	**74.2%**
Antibiotics							
Doses of azithromycin distributed	N/A	N/A	977,569	N/A	16,516,059	N/A	**17,493,628**
2014 Target	N/A	N/A	1,701,316	N/A	16,361,469	N/A	**18,062,785**
Percentage	N/A	N/A	57.5%	N/A	100.9%	N/A	**96.8%**
Facial cleanliness and health education							
Villages with ongoing health education	521	647	187	N/A	3,459	855	**5,669**
2014 Target	2,872	634	651	N/A	3,459	855	**8,471**
Percent Coverage	99.0%	102.1%	28.7%	N/A	100.0%	100.0%	**94.3%**
Environmental improvement							
Household latrines constructed	4,661	8,107	N/A	N/A	104,777	N/A	**117,545**
2014 Target	15,000	15,000	N/A	N/A	284,405	N/A	**314,405**
Percentage	31.1%	54.0%	N/A	N/A	36.8%	N/A	**37.4%**

N/A=Not Applicable

* No targets set in 2014 due to insecurity; only S interventions took place once program activities recommenced in September 2014.

** The Carter Center is the coordinating partner for S, F, and E activities in Uganda. The Center does not directly implement activities and therefore does not have set targets for SAFE interventions.

Table 4. Carter Center-Assisted Implementation of SAFE

Cumulative Interventions per Country, 1999-2014

Indicators	Mali	Niger	Sudan	South Sudan	Ethiopia-Amhara	Nigeria	Total
Persons operated for trichiasis	28,432	47,725	8,408	9,236	384,421	453	**478,675**
Doses of azithromycin distributed	698,083	3,780,384	3,507,228	2,658,359	100,328,884	2,817,167	**113,790,105**
Villages with ongoing health education	2,622	1,122	664	3,574	3,459	860	**12,301**
Household latrines constructed	95,940	93,717	N/A	646	2,914,235	31,979	**3,136,517**

N/A=Not Applicable

Figure 1. Persons Operated for Trichiasis, Carter Center-Assisted Countries

National Program data as presented for January - December 2014

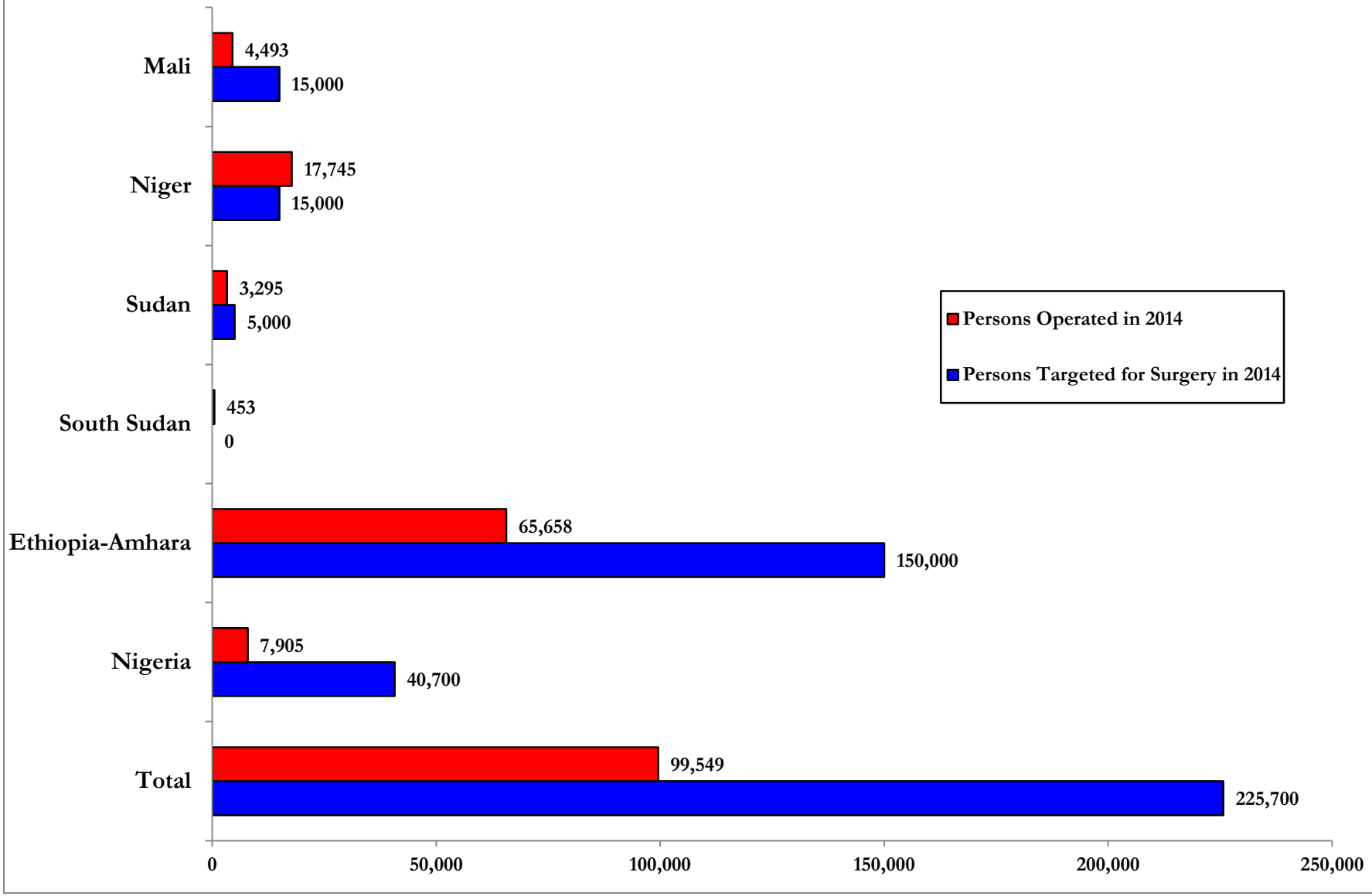


Figure 2. Azithromycin Distribution, Carter Center-Assisted Countries

National Program data as presented for January - December 2014

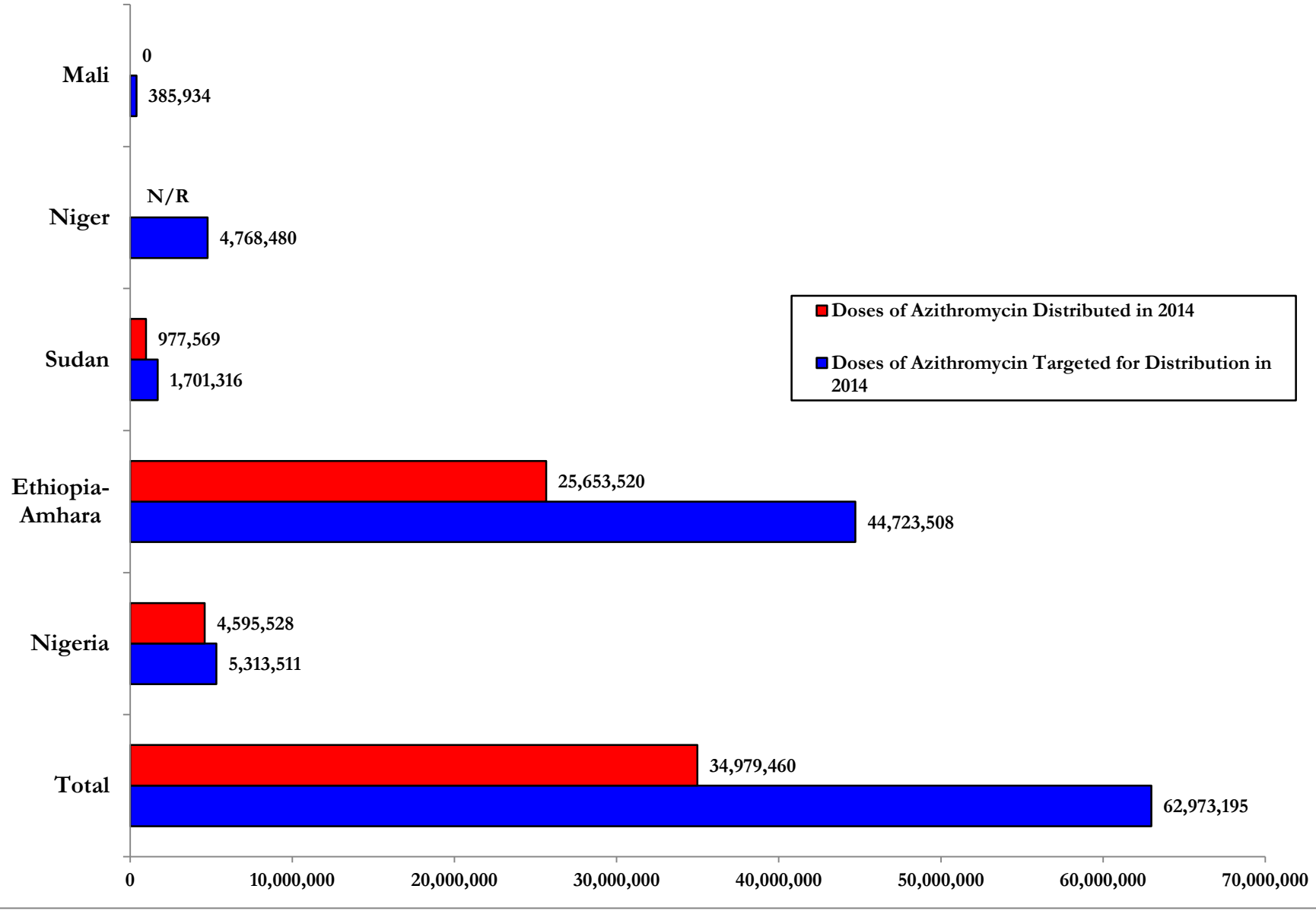


Figure 3. Health Education, Carter Center-Assisted Countries

National Program data as presented for January - December 2014

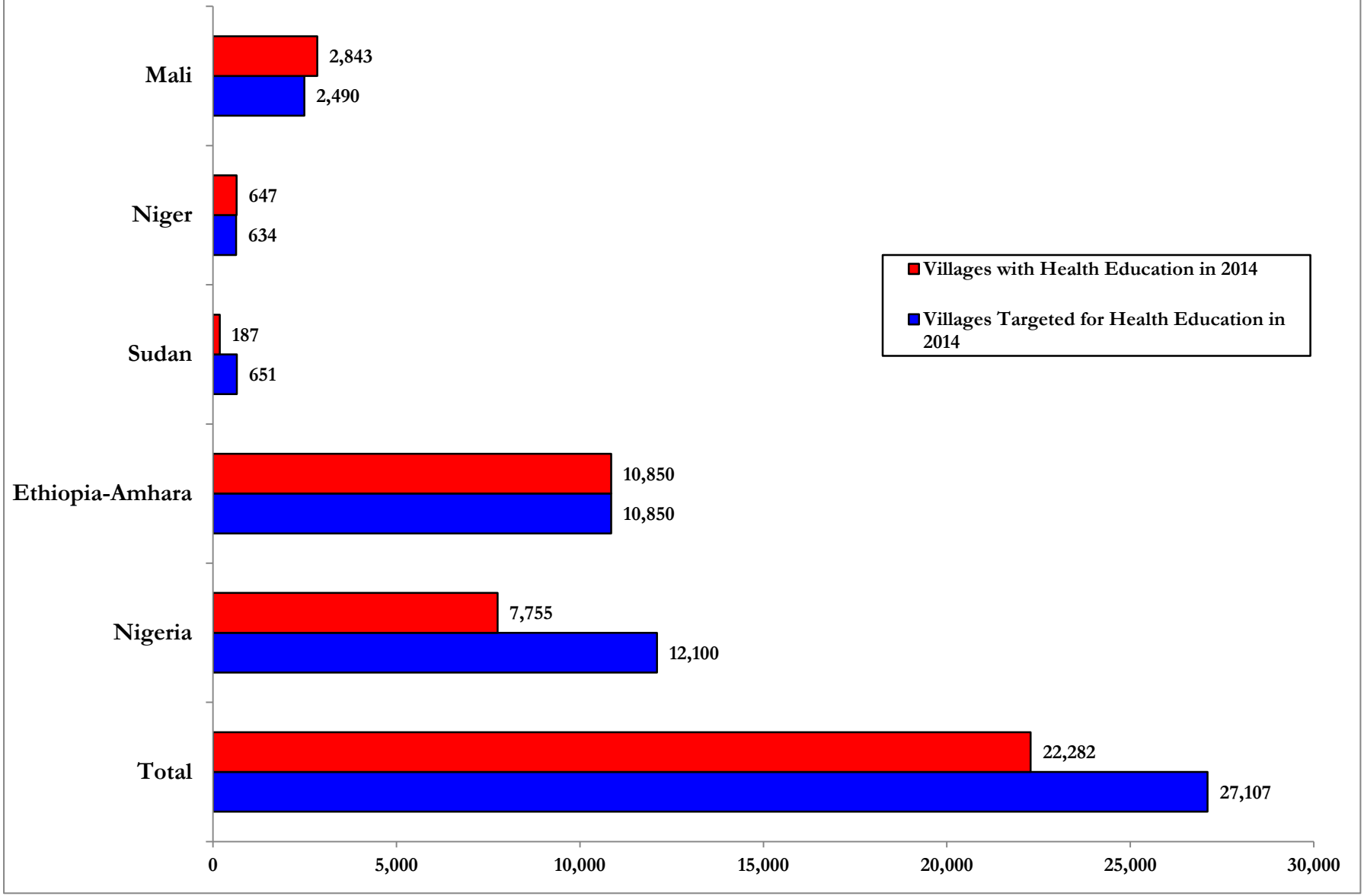
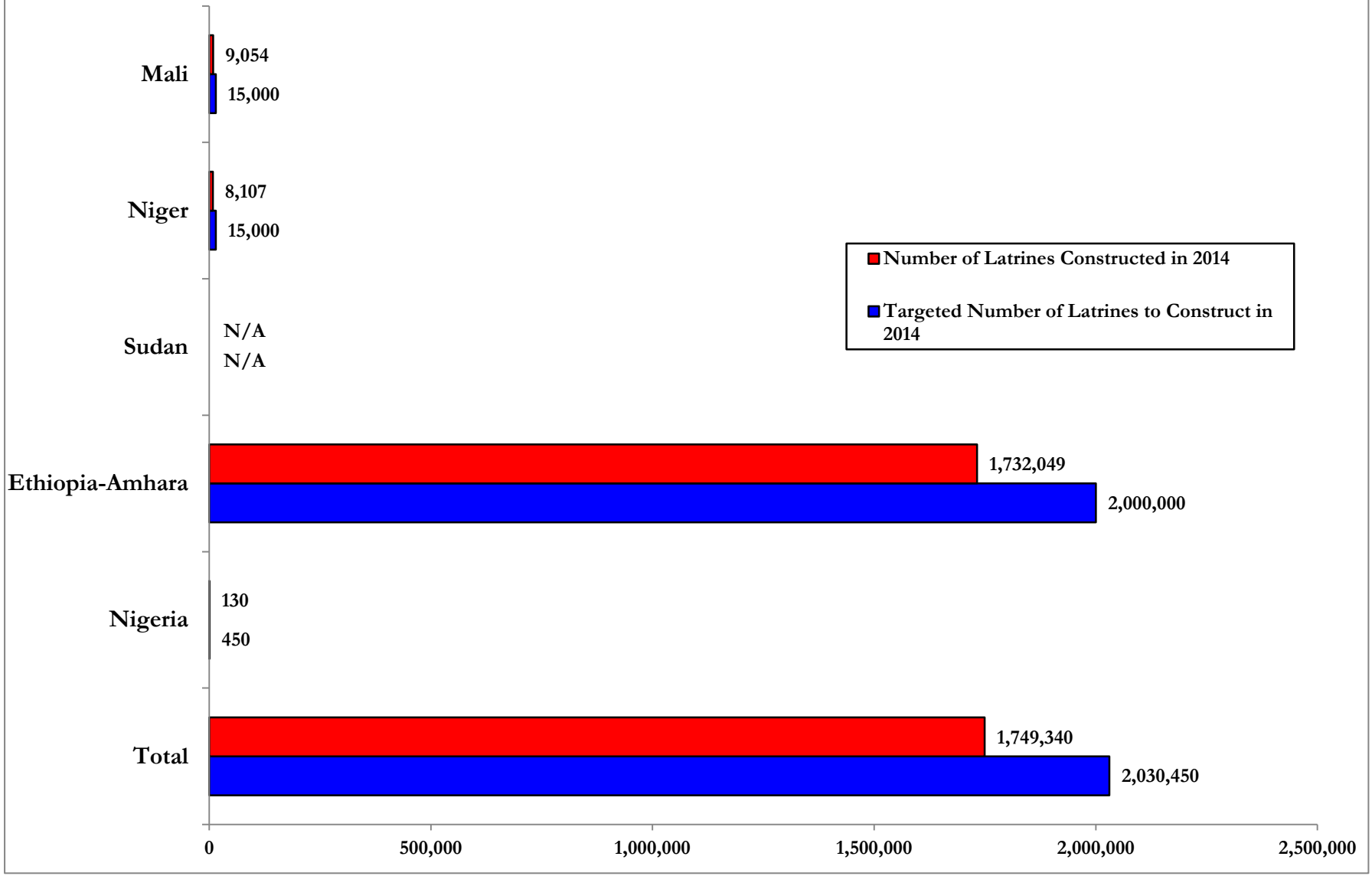


Figure 4. Household Latrines Constructed, Carter Center-Assisted Countries

National Program data as presented for January - December 2014



Where do opportunities for behavioral change communication exist?

Presented by Tara Brant, BCCE Consultant, The Carter Center, Ethiopia

Background and Rationale

In Ethiopia, the Amhara Region has both the highest known prevalence of active trachoma in children ages one to nine years, as well as TT in adults ages 15 years and older. While there have been successes with the S and A components of the SAFE strategy, including high, validated drug coverage, the region has not yet reached the UIGs. MDA alone is likely not enough to eliminate trachoma in areas which are most affected by the disease and facial cleanliness and environmental improvement must be included in elimination strategies. Understanding the barriers to F and E uptake is crucial in meeting the UIGs in Amhara.

Aim

This study aims to understand the behavioral factors that promote and inhibit good hygiene practices, such as facial cleanliness and latrine usage, across the Amhara Region in order to develop new trachoma health education messages and tools.

Study Objectives

1. To assess important behavioral determinants influencing face washing of children
2. To assess important behavioral determinants influencing building and repair of latrines and latrine usage
3. To explore existing opportunities for behavior change and communications (BCC) in the Amhara Region and determine appropriate messages and tools for each setting and for both the F and E components of SAFE

Methods

For Objectives One and Two, a doer/non-doer survey will be used to identify the main determinants that influence the face washing behaviors of mothers of children under six years and among school age children seven to nine years, as well as the determinants which influence latrine usage among the community members. In order to determine existing opportunities for BCC and develop health education materials as proposed in Objective Three, focus group discussions (FGD) will be conducted among key informants across the Amhara Region.

Selection of Woredas

This study will take place throughout the Amhara Region. All 10 sites are eligible for inclusion in the study and up to 16 sites will be assessed, until saturation is reached. Woredas will be selected for inclusion based on observed change of TF prevalence from baseline to most recent impact assessment. Sites will be selected in both East and West Amhara, and will include woredas that demonstrate increases and decreases in TF prevalence. For woredas that do not have district-level impact assessments, the zonal-level estimate will be used to compare with the impact assessment, ensuring a difference in the point estimate of TF that is outside the confidence interval.

Sample Size

The proposed sample size for the doer/non-doer survey can be seen in Figure 1 below.

Figure 1. Sampling Matrix for Doer/Non-Doer Surveys

Behavior	Priority Group	No. of Study Sites for each survey	Minimum No. of Participants
Face washing	Mothers of children ages 1-6 years	16	640
Latrine usage	Community members ages 13 and above	16	640
	Total	16	1280

FGDs: In each of the 10 zones, a FGD will be conducted with six to 10 members of each of the following groups:

- Women's Health Development Army
- Teachers (grades one to five)
- Students (grades one to five)
- Religious Leaders, merchants and other influential persons in the community

Progress

As of March 2015, the pilot for the study has been conducted and the study team has been trained. Data collection will begin by April 2015 and take place for an estimated three months. As the data is collected, it will be analyzed and will inform the development of new health education messages and tools.

Progress on WASH for Trachoma Elimination

Presented by Yael Velleman, Senior Policy Analyst (Health and Hygiene), WaterAid, speaking on behalf of the ICTC WASH Working Group and WHO

Background

In the past few years, there has been increased recognition of the crucial role of WASH in the effective control of blinding trachoma to achieve the 2020 elimination target. This recognition is leading to increased collaboration with WASH stakeholders, as well as moving beyond coordination to improved practice. This presentation outlines some of the key activities currently under way in order to receive feedback from meeting participants and engage them in forthcoming processes.

Strategy and Guidance

WHO

At the 2014 WHO Alliance for the Global Elimination of Blinding Trachoma by the year 2020 meeting, the need for increased internal coordination within the WHO on WASH and trachoma was noted as a key consideration. WHO has since set up an internal coordination group bringing together the NTDs department and the Water Sanitation and Health team. This group has initiated a process of defining an organizational strategy for WASH and NTDs, with trachoma as one of the focus diseases. The draft strategy will be finalized in the next few months through a consultation process and includes the following strategic objectives:

- Information and awareness raising: "Improve awareness of the benefits of joint WASH and NTDs action by sharing evidence based on the results of improved delivery"
- Monitoring: "Enhance WASH and NTDs monitoring to highlight inequalities and target investment"
- Evidence and norms: "Increase the evidence base on how to deliver effective WASH interventions for NTD control and elimination and embed findings in guidance and practice"
- Joint program planning and delivery: "Plan, deliver and evaluate WASH and NTDs programs with mutual inputs from WASH and NTDs stakeholders at global, national, and district levels"

International Coalition for Trachoma Control (ICTC)

The ICTC WASH Practices working group, established in January 2014, has developed a set of Principles for F and E, to help inform programming and partnerships for trachoma elimination.

Practice

Following the work to define Principles for F and E, and building on the existing NTDs manual for WASH practitioners, the ICTC WASH working group is currently finalizing a planning tool for F and E. The tool is designed to inform trachoma program managers as well as other stakeholders involved in trachoma programming, initially under the auspices of funded programs (The Queen Elizabeth Diamond Jubilee Trust and the Department for International Development (DFID) trachoma programs); however, the intention is to make the tool widely available to all stakeholders who may find it useful. The tool will be finalized by April 2015. The tool is envisaged as a useful resource for other NTDs, and it is hoped that it can complement the WHO WASH and NTDs strategy.

Over 2013-2014, there have been several intensive formative research studies focused on identification of barriers and norms around F and E interventions in Northern Kenya and Uganda.

- Research to inform the development of behavior change interventions for the F and E of the SAFE strategy in Turkana and Marsabit, Kenya- November 2013-London School of Hygiene and Tropical Medicine.
- Understanding Individual and Contextual Factors for Development of a Behavior Change Communication Campaign for Trachoma Prevention In Busoga and Karamoja Regions, Uganda- April 2014- Johns Hopkins University Center for Communications Programs.

The Fred Hollows Foundation, in collaboration with other ICTC members, is undertaking work to address specific knowledge gaps surrounding two areas: the behavioral motives of facial cleanliness and other hygiene practices to inform better behavior change programming (through funding formative research work in Ethiopia); and the cost of implementing F and E for trachoma elimination in national programs at different stages of the intervention life cycle, including start-up, ongoing implementation and maintenance (through funding work by PriceWaterhouseCooper).

ICTC is doing further work to support engagement with the WASH sector. In August 2014, ICTC representatives attended the World Water Week conference in Stockholm to undertake important networking and advocacy. A joint ICTC and WHO proposal for a session on WASH and NTDs has been submitted for the 2015 World Water Week.

Within the broader NTD community, a WASH working group has been established under the NTDs Nongovernmental Development Organization (NGDO) Network, with an initial meeting held in September 2014. This meeting followed a WASH and NTDs roundtable hosted by the Sanitation and Hygiene Applied Research for Equity research consortium in London, which discussed and defined a joint agenda around research and monitoring for WASH and NTDs.

Monitoring

The need for a monitoring framework for WASH and trachoma that facilitates better collaboration as well as integration where needed is increasingly being recognized, given that "what gets measured gets done." Following the WASH and NTDs roundtable, hosted by the SHARE research consortium in London in September 2014, the newly-established WASH working group of the NTDs NGDO Network has begun a process of defining shared WASH and NTDs indicators. This will utilize the Delphi method and build on existing work under the Global Trachoma Mapping Project, technical papers produced for the London roundtable, and the WHO consultation draft on post-2015 indicators and proposed WASH post-2015 targets and indicators. It is hoped that this work can inform monitoring discussions at various level, such as the possibility of including WASH indicators in the London Declaration report and NTD indicators in global WASH monitoring frameworks. ICTC members comprise the sub-group leading this work.

Conclusions

There is significant momentum within the trachoma community around increasing prioritization of F and E and collaboration with WASH stakeholders. This momentum informs work being done in other NTD communities, with particular interest in programming and monitoring tools. Efforts should focus on finalizing current pieces of work and ensuring their broad application while documenting and sharing successes.

International Coalition for Trachoma Control Update

Presented by Dr. K.H. Martin Kollmann, Chair of the ICTC

Background

The trachoma community is making great progress as demonstrated by the second progress report on the London Declaration on NTDs, which tracks progress against landmark commitments made in 2012. The 2014 report, produced by United against NTDs, indicates that trachoma is on track against all indicators, a great encouragement to those involved in the fight against trachoma. Furthermore, the WHO Weekly Epidemiological Report demonstrates that trichiasis surgeries and antibiotic distribution have increased significantly over the last decade even though the challenge of implementing F and E components remains significant.

This success is building on:

- A strong global partnership (WHO GET2020 Alliance)
- Local ownership and leadership (national programs)
- An agreed public health approach (SAFE strategy)
- A drug donation program (International Trachoma Initiative (ITI))
- The support of the ICTC
- Donor interest and coordination

Progress in 2014

Working Groups

ICTC's seven working groups launched in early 2014 are the primary channel for member engagement and member contributions to the work of the coalition.

Technical Resources

The working groups have been developing a range of technical resources as 'ICTC preferred practices' to assist in operationalizing WHO strategies and guidelines and build the capacity of members and partners. Recently added resources include: Organizing Trichiasis Surgical Outreach Manual, Micro-planning Manual for Effective Zithromax® Mass Drug Administration, Zithromax® Mass Drug Administration Trainers Guide, and an updated Trachoma Action Planning: A planning guide for the national elimination of blinding trachoma. A number of other resources are in the pipeline.

Grant Management Approach

With the launch of two large-scale ICTC partnership initiatives, ICTC has been developing its grant management approach to provide technical support, quality assurance, and risk mitigation. Through the roll-out of ICTC preferred practices and the oversight of an ICTC Program Advisory Committee, the model can be applied across different implementation program, ensuring a consistent approach and program overview, as well as ensuring coordination among donors.

Grasping the Scale of the Problem

The GTMP, which aims to survey every suspected endemic district in the world, made exceptional progress in 2014. The project met its original target well ahead of schedule in September 2014. By the end of 2014, GTMP had mapped 94 percent of the targeted districts and examined over 1.8 million people in 21 countries.

Funding Streams

Diverse, generous funders support SAFE strategy implementation including USAID, DFID, Lions Clubs International Foundation, The Queen Elizabeth Diamond Jubilee Trust, Pfizer Inc., Conrad N. Hilton Foundation, and others. The following grants are managed directly by ICTC as a consortium, also known as 'partner initiatives': The Queen Elizabeth Diamond Jubilee Trust Trachoma Initiative and DFID SAFE. A number of ICTC members also work together on the GTMP supported by DFID, through a grant to Sightsavers and USAID.

ICTC Partnership Initiatives

In 2014, ICTC members together with funding partners launched two large scale trachoma elimination initiatives; The Queen Elizabeth Diamond Jubilee Trust Trachoma Initiative in Africa, which is working in Uganda, Kenya, Malawi, Mozambique, Nigeria, and Tanzania, and DFID's Trachoma SAFE Implementation Program currently working in Chad, Ethiopia, Tanzania, and Zambia.

Other Initiatives

- Trust Trachoma Initiative in the Pacific has invested in ICTC membership, The Fred Hollows Foundation, who has reinvested funds in working with The Queen Elizabeth Diamond Jubilee Trust, local government departments and MOHs, and nongovernmental organization partners to identify the programming mix required to eliminate blinding trachoma in four Pacific Island nations.
- Eastern Mediterranean Region Alliance for Trachoma Control also has sourced some funding. ICTC has been working with the Alliance through a memorandum of understanding in supporting capacity-building workshops, sharing technical resources and engaging in practical field experiences. ICTC and Alliance members have also have supported GTMP mapping in the region and are coordinating a funding proposal for full SAFE implementation in Egypt, Pakistan, and Sudan.
- ICTC member HKI was appointed the prime partner in a five-year, $35 million Cooperative Agreement Grant on Morbidity Management and Disability Prevention for blinding trachoma and Lymphatic Filariasis activities. The other partners are RTI International, African Filariasis Morbidity Project, and the Kilimanjaro Center for Community Ophthalmology.

Key Challenges

WASH

ICTC is working closely with members and other stakeholders, including WHO, on WASH, articulating strategies and principles, and defining practical indicators to address F and E.

Scale up and capacity-building

Scale up requires coordinated capacity-building around cost saving, coordination, and translation of global policy to local practice and program management.

More Funding Needed

In 2011, our ICTC global roadmap 2020INSight estimated that 430 to 748 million USD would be needed to reach elimination. Significant scale-up and finalizing the fight against trachoma brings new challenges affecting cost.

Upcoming Highlights

- Post-2015 strategy planning: ICTC is undertaking a strategy planning consultation to develop its post-2015 strategy in response to a rapidly changing environment and challenges ahead.
- Advocacy resources for 2015: To advocate for the support needed to meet the 2020 elimination deadline, ICTC is developing a number of key tools, including a gap analysis to highlight unfunded countries and areas (in collaboration with WHO), a 'Global SAFE Implementation Calculator' to help identifying the cost of elimination in different environments, and a progress report on the 2020 Insight: the end in sight global roadmap.
- New Vice Chair elections: ICTC will welcome a new Vice Chair in April 2015.

Facial Cleanliness and Environmental Improvement (F and E) Indicators: Showing Impact through Purpose

Presented by Angelia Sanders, Associate Director of the Trachoma Control Program, The Carter Center

Background

It has been continually acknowledged that measuring behavior is challenging and there is a need for "simple, valid and repeatable indicators" since "what gets measured gets done". Despite this need, The Carter Center's Trachoma Control Program has struggled with adopting F and E indicators that both inform program decision-making and help evaluate progress in the field. In 2000, the suggested F and E indicators included reporting on:

- Percent of targeted villages having received health education (HE)
- Percent of children one to-10 years old with clean faces
- Percent of endemic communities with most (>50 percent) households (HH) having a toilet or covered latrine available
- Percent of endemic communities with most (>50 percent) HHs having a water source within 1 kilometer (30 minutes travel) of the HH

In evaluating current indicators it is important to know what they say and do not say. The two current indicators: 100 percent of targeted villages received HE (number of villages with HE) and 100 percent of households have latrines (number of household latrines built) tell us that HE is being *done* and that latrines *exist*; however, they do not tell us if the messages are being *understood* and resulting in positive behavior change or if latrines are being *used*.

Proposed Indicators:

Based on previous Carter Center program review proceedings, the new indicators proposed by the Joint Monitoring Program, WASH related studies and academic research, conversations with WASH partners, and personal experience gained in the field, five F&E indicators have been proposed for the programs to use moving forward:

Facial Cleanliness

1. *100 percent of children one to nine years old with clean faces*
    a. Clean face defined as absence of nasal and ocular discharge

Environmental Improvement

2. *100 percent adequate latrine coverage at HH level*
    a. An adequate latrine is defined as:
        i. A pit latrine with superstructure
        ii. Platform of squatting slab which fully covers the pit content other than through the squatting hole
        iii. Access (lack of barriers, not being used for other purposes)

iv. Facility is shared among no more than five families or 30 persons, whichever is fewer, and if the users know each other

3. *100 percent of latrine coverage in schools*
    a. Latrine coverage is defined as:
        i. At least one toilet per 25 girls and at least one toilet for female staff
        ii. A minimum of one toilet plus one urinal (or 50 centimeters of urinal wall) per 50 boys and at least one toilet for male staff
        iii. Is equipped with hand/face washing stations inside or immediately outside the sanitation facility

4. *100 percent latrine use*
    a. Latrine use is considered met when at least *two out of five* of the below signs (or other culturally appropriate signs) are present:
        i. Path to latrine worn
        ii. Presence of fresh feces in latrine
        iii. Water in/next to latrine used for anal cleansing and/or hand washing
        iv. HH verbally confirms use
        v. No feces observed in compound and within vicinity of compound (Open Defecation Free)

5. *100 percent of HHs have access to protected water source*
    a. Protected water sources include:
        i. Shallow well
        ii. Deep well
        iii. Borehole pump
        iv. Rain catchment
        v. Piped water

These indicators were categorized based on the need to answer six questions (see Table 1). The answers will provide programs with a wealth of information, such as whether children's' faces are clean; households have and are using latrines; children have access to latrines while in school; and if households have access to water. Clean faces, access to and use of latrines both at home and in school, and access to clean water are all potential contributors to reduce risk of infection. In the case of children, having access to latrines in school further reinforces latrine use behavior change and health education messaging. Additionally, due to the fact that many of these indicators overlap with current indicators used by the WASH sector, it should be easier for the different sectors to work together, streamline activities and share data.

F and E Activities

In order for programs to successfully reach their indicators, activities must be conducted and documented. There are many activities that ministries of both health and water can conduct in order to reach the indicator goals; however, not all of them are easy to document on a regular basis. Recognizing the difficultly in reporting at the village level, four primary activities (see Table 2) are recommended as actions to be taken and documented in monthly community health workers' (CHWs) reports. These include: HE sessions *conducted*, new latrines *constructed*, new water sources *constructed*, and existing water sources *repaired*. In regards to HE,

these sessions are most useful when linked to good supervision and feedback. A good monthly supervisory visit includes: data verification, observation of HE sessions, ensuring villagers understand HE messages, and providing immediate feedback to the health workers that are being supervised. In order to ensure that villagers understand the HE messages, a supervisor should question the community members receiving the HE to confirm that the correct messaging is being both conveyed and understood. This feedback should guide future HE sessions and messaging.

Challenges

These activities and indicators are not without their challenges. Already, there is CHW data collection fatigue due to CHWs being used for multiple disease programs. At times, there is discrepancy in data between partners and government, information delay from village to national levels, and lack of supervision due to low human resources and limited time. F and E activities cut across different agencies and ministries which can make it difficult to collect data from ministry offices and partners. Lastly, the reliance on TIS and MDA coverage surveys as a source of data collection will cause these surveys to take additional time.

Table 1. Proposed Indicators

What (indicator/goal)	**100% Children1-9 with Clean Faces**	**100% Adequate Latrine Coverage at HHs**	**100% Latrine Coverage in Schools**	**100% Latrine Use**	**100% HH Have Access to Protected Water Source**
Who (unit of measurement)	Children 1-9 yrs	Households	Schools	Household	Household
How (how the information is measured)	# Children 1-9 yrs observed with clean faces/ # Children 1-9 yrs observed	# HHs with latrine/ # of HHs	# Schools with latrine/# of Schools	# HH use/# of households with latrine present	# HHs access to clean water/# of HHs in district
When (the points in time when data is collected)	TIS/MDA coverage surveys	During TIS/MDA coverage surveys / Partner reports	TIS/MDA coverage surveys / Partner reports	TIS/MDA coverage surveys / Partner reports	TIS/MDA coverage surveys / Partner reports
Why (purpose of the indicator)	Clean face behavior change reduces risk of infection	Latrine provision reduces fly breeding sites	Reinforcement of trachoma/WASH messaging; Ideal age group to focus behavior change	If you build it doesn't mean people are using it	Theoretically people more likely wash face if improved access to water
Action (what steps a program would take based on information)	If coverage not improving then increase focus on HE messaging	Evaluate if coverage met. Advocate for more latrines if coverage low	Evaluate if coverage met. Advocate for more latrines if coverage low	Evaluate if latrines used. If not, increase focus on HE messaging and how latrines introduced	Lobby for water provision

Table 2. Activities in the Field

What (indicator/goal)	**HE Sessions conducted**	**New latrines provided**	**New Water sources Constructed**	**Water sources repaired**
Who (unit of measurement)	Village/ School	Village/ School	Village/ School	Village/ School
How (how the information is measured)	# of sessions conducted each month	# new latrines constructed each month	# new water sources	# water sources repaired/ # needing repair
When (the points in time when data is collected)	Monthly in CHW report	Monthly in CHW report	Monthly in CHW report	Monthly in CHW report
Why (purpose of the indicator)	Support behavior change for latrines and clean face	Latrines needed in order to be used	Access water makes easier to clean face. Identify if water is being provided and use to lobby for water provision	Are water sources working and being maintained? If not, lobby for money for repairs.
Action (what steps a program would take based on information)	Needed in order to increase latrine and face washing uptake. Important for supervision	Lobby for WASH partners and/or evaluate why villages not building	Lobby for water provision	Lobby for water provision and repairs.
Threshold	TF >5%	TF >5% and < 50% of households have access to latrines	TF >5%, Clean Face 1-9 yrs <80% and less than 50% of HHs have access to safe water within 1 kilometer (30 min walk)	TF >5%, Clean Face 1-9 yrs <80% and less than 50% of HHs have access to safe water within 1 kilometer (30 min walk)

New WHO Recommendations for Trachoma Surveillance

Presented by Dr. Anthony Solomon, Medical Officer, Neglected Tropical Diseases, World Health Organization

Background

The new WHO Trachoma Elimination Program Standard Operating Procedures for Trachoma Surveillance, produced initially at a 2014 Technical Consultation at the Task Force for Global Health, have yet to be ratified by WHO Strategic and Technical Advisory Group on NTDs. WHO's Medical Officer for NTDs is responsible for these interim standard operating procedures, whose wording should be sufficiently precise to operate without further explanation. The following version of the SOPs was previously modified on October 12, 2014 and will be reviewed on April 1, 2015:

1. Pre-validation trachoma surveillance should be conducted as a cluster random sample survey undertaken, in general, in each district in which trachoma elimination interventions have been required, two years after a district-level impact assessment shows that elimination targets for TT and TF have been reached.
2. The pre-validation trachoma surveillance survey should estimate the prevalence of TT "unknown to the health system" in the whole population, and the prevalence of TF in one-to-nine-year-old children.
3. In trachoma surveillance surveys, when TT is observed, graders should attempt to evert the eyelid to assess for and record the presence or absence of conjunctival scar. The presence of scar, or the inability to evert the lid because of lid tightness, should be taken to indicate that the trichiasis is TT.
4. In trachoma surveillance surveys, electronic data collection systems (if used) should automatically alert recorders to the recording of the presence of TT in survey data for an individual of any age, by giving a distinctive warning, requiring the recorder to check and confirm the finding.
5. In trachoma surveillance surveys, mechanisms for robust supervision of field teams, with confirmation of at least a proportion of positive findings, must be in place.
6. Prevalence thresholds for programmatic decision-making after pre-validation trachoma surveillance survey are the same as those used for impact assessments, except that the finding of prevalence of TT and TF below the elimination targets does not indicate that the pre-validation trachoma surveillance period should recommence.
7. Programs and funders should give strong consideration to (a) incorporating operational research elements in trachoma surveillance activities, and (b) contributing data to an international data repository for ongoing analysis, in order to help refine the evidence base for these and other standard operating procedures.
8. Post-validation trachoma surveillance has not yet been considered in this document.
9. TT surgical services should be provided until there are no longer any incident TT cases.

Zithromax® Global Supply

Presented by Julie Jenson, Director Corporate Responsibility/Brand Supply Lead Zithromax®, Pfizer Inc.

Background

Since the London Declaration launched in 2012, because of great commitments made by donors and ministries of health, Pfizer has increased its donation of the antibiotic Zithromax® from 50 million treatments in 2014 to a projected 80 million treatments in 2015. Sixteen years ago, Pfizer made the commitment to provide Zithromax® in the effort to help eliminate blinding trachoma by 2020 and preserve and restore health and well-being of affected families worldwide. Since the donation program began in 1998, Pfizer has donated over 450 million treatments, more than half of which has been in the past five years. In late 2014, Pfizer encountered a manufacturing issue in the early stages of the production process for both its commercial and donation Zithromax® product. Pfizer identified the issue and produced a series of corrective actions to mitigate impact on country programs.

Moving Forward

Following the 2015 Trachoma Program Review, Pfizer, in collaboration with ITI, held a series of meetings with partners and stakeholders and communicated with endemic countries to address the production issues. The information presented at the Trachoma Program Review should not be considered current and a course of action is now in place. Pfizer is committed to working with all partners and countries in the fight against trachoma.

University of California San Francisco – Carter Center Research Partnership

Presented by Nicole Stoller, Program Manager, Francis I. Proctor Foundation

Background

Since 2006, the F.I. Proctor Foundation at The University of California, San Francisco (UCSF) has been collaborating with The Carter Center and the Amhara Regional Health Bureau to investigate the efficiency of the components of the SAFE approach. Here, three of these collaborative studies—TIRET, MORDOR, and SWIFT—are discussed. TIRET aims to determine how best to keep infection from returning. The MORDOR study seeks to define the role of mass azithromycin treatments more precisely as an intervention for reducing childhood morbidity and mortality. The SWIFT study aims to determine the benefit of WASH for communities in Africa.

TIRET: Tripartite International Research for the Elimination of Trachoma

The TIRET Study is a continuation of Trachoma Amelioration in Northern Amhara (TANA), funded by the National Eye Institute at the National Institutes of Health. It was designed to follow study villages from TANA Arms A (annual treatment for everyone) and B (biannual treatment for children only) for an additional 36 months.

TIRET study aims:

1. To determine if antibiotics can be stopped after four years. The study hypothesized that infection would return, even from low levels. Twenty-four communities that received repeated mass treatments for four years were monitored for an additional three years to determine if chlamydial infection returned. Average infection rates at baseline were 10.4 percent in the annually treated communities, and 7.7 percent in the biannually treated communities; rates at 36 months were 14.1 percent in both study arms.
2. To determine whether infection can be completely eliminated if mass treatments continue for seven years. The study hypothesized that infection would be completely eliminated in all communities. The study monitored the prevalence of infection in 12 communities that continued to receive annual mass treatments, and 12 that continued to receive biannual mass treatments. At 42 months, the final data collection point for this comparison, infection was zero percent in six of the 12 annually treated communities and in nine of the 12 biannually treated communities. Average infection dropped from 8.8 percent at baseline to 4.6 percent at 42 months in the annual treatment arm, while average infection dropped from 5.6 percent at baseline to 1.6 percent at 42 months in the biannual treatment arm.
3. To determine whether treatment targeted to pre-school aged children, or to households in which a pre-school aged child has clinically active trachoma, can prevent infection from return to the community. The study hypothesized that identifying and treating clinically active cases would delay or even prevent reemergence at a far lower cost than mass treatment of all individuals. The study monitored 12 communities where treatment was targeted to pre-school children and another 12 communities where treatment was targeted to clinically active cases and their households. While cost effectiveness analyses are not yet complete, infection increased between baseline and 36 months in both of the targeted treatment arms: from 4.3 percent to 9.3 percent in the arm where targeted

treatment of pre-school children was performed, and from 2.8 percent to 7.0 percent where targeted treatment of clinically active cases and their households was completed.

Please note: all PCR results are expressed as percentage of positive pools, and are preliminary pending the completion of individual sample processing.

MORDOR: Mortality Reduction After Oral Azithromycin

An estimated 7.7 million pre-school aged children die each year, the majority from infectious diseases.[12] Recently, a 2011 study that the group conducted demonstrated that mass azithromycin distributions for trachoma may have the unintended benefit of reducing childhood mortality.[13,14] This surprising result was observed in an area of Ethiopia with highly prevalent trachoma. Another trial is necessary to determine whether a similar effect will be seen in areas not eligible for trachoma treatments. If mass azithromycin can be proven to reduce childhood mortality, then widespread implementation in developing countries could be feasible and perhaps integrated with other interventions.

The long-term goal of the study is to define the role of mass azithromycin treatments more precisely as an intervention for reducing childhood morbidity and mortality. The study has undertaken a multi-site, cluster-randomized trial comparing communities randomized to oral azithromycin with those randomized to placebo. To assess the generalizability of the intervention, the study will monitor for antibiotic resistance, which could potentially limit adoption of mass antibiotic treatments. The study is also investigating possible explanatory factors for mortality reduction by assessing several measures of infectious diseases. The study hypothesizes that mass azithromycin treatments will reduce childhood mortality even in areas with low trachoma prevalence and will be accompanied by an acceptable level of antibiotic resistance.

Objective 1: To test the hypothesis that mass distributions of oral azithromycin targeted to one-to-60-month-old children reduces childhood mortality, in a cluster-randomized trial.
Objective 2: To assess the cost-effectiveness of mass azithromycin in reducing childhood mortality.
Objective 3: To investigate the most plausible factors that could explain an effect of mass azithromycin on childhood mortality.
Objective 4: To assess for emergent macrolide resistance among children following mass azithromycin treatments.
Objective 5: To collect and securely store samples from the nasopharynx, nares, oropharynx, conjunctiva, blood, and stool after azithromycin distributions to assess infectious burden and resistance.

A consortium of experienced researchers and program implementers will conduct the study in three sites (Niger, Tanzania, and Malawi), chosen for diversity of geography and co-morbidities, existence of a functioning national azithromycin distribution program, and previous investigator experience.

- **West Africa:** Loga and Boboye departments, Niger (The Carter Center Niger; Niger Ministry of Health; UCSF)

12 Rajaratnam JK, Marcus JR, Flaxman AD, et al. Neonatal, postneonatal, childhood, and under-5 mortality for 187 countries, 1970-2010: a systematic analysis of progress towards Millennium Development Goal 4. Lancet 2010;375:1988-2008.
13 Porco TC, Gebre T, Ayele B, et al. Effect of mass distribution of azithromycin for trachoma control on overall mortality in Ethiopian children: a randomized trial. Jama 2009;302:962-8.
14 Keenan JD, Ayele B, Gebre T, et al. Childhood mortality in a cohort treated with mass azithromycin for trachoma. Clin Infect Dis 2011;52:883-8.

- **East Africa:** Kilosa district, Tanzania (Tanzania National Institute for Medical Research; Muhimbili Medical Center; Johns Hopkins University)
- **Southern Africa:** Mangochi district, Malawi (Malawi Ministry of Health; College of Medicine, University of Malawi, Blantyre; London School of Hygiene & Tropical Medicine)

SWIFT: Sanitation, Water, and Instruction in Face-Washing for Trachoma
Summary

The Proctor Foundation of UCSF and The Carter Center will conduct a cluster-randomized trial in Ethiopia in which clusters of households are randomized to either receive (1) a comprehensive WASH package, (2) targeted quarterly azithromycin treatment of all infected children, or (3) no intervention until the end of the study. The study will monitor for trachoma, soil transmitted helminths, and childhood growth to determine the benefit of WASH for communities in Africa.

Relevance

Trachoma, caused by ocular chlamydial infection, is the leading infectious cause of blindness worldwide and a focus of elimination efforts. The WHO recommends the four-component SAFE strategy for the elimination of trachoma. Numerous randomized clinical trials have demonstrated the efficacy of mass azithromycin distributions, but in areas with hyperendemic trachoma, antibiotics alone do not appear to be sufficient for elimination. Many in the trachoma community believe that facial hygiene promotion and environmental improvements (i.e., the F and E components of SAFE) are crucial for preventing the return of trachoma after mass azithromycin distributions have ended. However, the evidence base suggesting efficacy of non-antibiotic measures for trachoma is extremely weak. Moreover, very few studies have implemented a comprehensive WASH package for trachoma, even though many in the trachoma community believe that only the combination of all WASH components together will be effective to prevent transmission of trachoma. To test the efficacy of a comprehensive WASH intervention for trachoma and other neglected tropical diseases, the study will implement a cluster-randomized trial. The study will also test a competing strategy to prevent the return of trachoma after mass treatments, which consists of quarterly azithromycin treatments of infected children only. The goal of the study is to help elucidate the efficacy of these expensive and difficult-to-implement WASH interventions. The results of the trial will be informative to a broad range of stakeholders dedicated to the elimination of trachoma, including nongovernmental organizations, ministries of health, and funding agencies.

Methods

General study design: In a cluster-randomized trial of 68 study clusters in the WagHimra District of the Amhara Region in Ethiopia, 22 clusters will receive a comprehensive WASH package (to be compared with 22 clusters that do not receive any interventions until the end of the trial) and 12 will receive quarterly azithromycin treatment of infected children (to be compared with 12 clusters that do not receive antibiotics). Annual monitoring of the study clusters will be performed for three years. The primary outcome is the prevalence of ocular chlamydia in zero-to-five-year-old children at 36 months. Several secondary outcomes will be monitored, including facial cleanliness, anthropometry, nasopharyngeal pneumococcus, soil-transmitted helminths, and health post visits for infectious illnesses.

Randomization unit: Primary school districts

Formative research: The study will promote several key hygiene messages throughout the trial in an attempt to improve adherence to facial hygiene in the intervention clusters. It will fine-tune messaging and try to identify barriers to improving hygiene behaviors through the use of focus group discussions at the beginning of the study.

Census: The study will perform a population census of all selected study clusters each year of the trial using an electronic data capture system.

Mass azithromycin distribution: Communities have been treated with annual mass azithromycin distributions since May 2009.

WASH Interventions: Two local "hygiene officers" will be hired to assist the study coordinator with all aspects of the WASH package and to ensure high uptake of WASH interventions in all study clusters.

- **Water:** A hand dug well in each intervention study cluster will be built with the help of local nongovernmental organizations.
- **Sanitation:** Construction of one usable latrine per household will be promoted.
- **Hygiene:** Hygiene promotion will focus on habit formation surrounding face washing, hand washing, and latrine use. In order to help habit formation, the study will implement two hardware components: first, materials and assistance to build a tippy-tap at each household will be provided, and second, a quantity of soap for the duration of the trial will be provided. Hygiene messages will be disseminated in several forums, which will be based on the results of focus group discussions. Posters and pamphlets will be printed that can be distributed at any hygiene workshops, and the study will work with schools to deliver hygiene promotion curriculum for all primary school children.

WASH process indicators: The study will include annual monitoring of the uptake of the intervention, using random spot-checks of intervention study clusters, direct observation of latrines and tippy taps during the census, and observation of the newly constructed wells.

Outcomes: Monitoring will be performed of all zero-to-five-year-old children in each cluster, as well as a random sample of 30 children ages six to nine years and a random sample of 30 individuals ages 10 years and older. In addition, the study will perform anthropometry and trachoma examination on all children who make up the cohort that was ages zero to five years at the beginning of the study.

- **Primary outcome:** Prevalence of ocular chlamydia in zero-to-five-year-old children at 36 months
- **Secondary outcomes:** Secondary outcomes will be assessed, including ocular chlamydia in the remaining age groups, clinically active trachoma in all age groups, anthropometry (height and weight) in the cohort of children ages zero to five years at baseline, soil-transmitted helminths in zero-to-nine-year-olds, dried blood spots in children zero-to-nine-year-olds, nasopharyngeal pneumococcus in zero-to-five-year-olds, and age-stratified health post visits for diarrhea and other infections.

Cost-effectiveness analysis: The study will include a trial-based cost-effectiveness analysis over the time horizon of the trial as well as a model-based cost-effectiveness analysis that extrapolates beyond the dates of the trial.

MDA for Trachoma Control: Looking Back, Moving Forward

Violeta Jimenez, Consultant, Emory University
Aisha Stewart, Associate Director, Trachoma Control Program, The Carter Center
Dr. Scott Nash, Epidemiologist, Trachoma Control Program, The Carter Center

Looking back, a considerable body of evidence has been generated on the use of Zithromax® for trachoma control. In highly endemic areas, such as in the Amhara region, of Ethiopia, the prevalence of TF has declined after intensive control efforts with Zithromax®. However despite tens of millions of doses of Zithromax® being consumed in Amhara, elimination targets have yet to be reached. In order to move forward to achieve the elimination targets in a timely manner, alternative strategies should be considered.

We looked back at the evidence base, as well as programmatic data from Carter Center-assisted areas, and then considered how to move forward to use drug more rationally.

Looking Back at the Evidence Base

We reviewed the evidence base in six broad categories, and suggest that the following approaches could be tested:

- **Dose and dosing schedule:**
  - Height-based dosing could be adjusted to fit the local physique
  - Repeated MDA, shortly after the first round, might prevent treatment failure and reduce the total number of MDAs required
  - Characterization of the conditions under which *C. trachomatis* persists on fomites might inform recommendations to reduce transmission
- **Population coverage**:
  - Determining the reasons for intentional non-participation in MDAs would allow better community sensitization and increase in participation
  - Follow-up MDA, or "catch-up" days, may also help address the problem of treatment non-compliance and increase overall coverage
- **Target group**:
  - Providing oral or ophthalmic Zithromax® to infants may reduce non-compliance with tetracycline, and thus increase treatment effectiveness
  - MDAs targeted to children, either as a supplement to or as a replacement for population-based MDAs, may be as effective as population-based MDAs while using less antibiotic
- **Reemergence of infection**:
  - The risk of reemergence can be reduced by ensuring very high coverage in large continuous geographical areas
- **Frequency of distribution:**
  - Supplementary targeted treatment at biannual or more frequent intervals may accelerate trachoma elimination
  - After prevalence is reduced to some predetermined level, biennial MDA (conducted once every two years) may help prevent reemergence while transmission is interrupted

- **Duration of distribution**:
    - Areas with prevalence >30% should prepare for over five rounds of treatment
    - Higher treatment frequency, improvements in coverage, and F and E implementation may improve success at achieving elimination

Looking Back at Programmatic Data

Since the early 2000s, The Carter Center has assisted with annual MDA with Zithromax® and TEO. The number of doses distributed annually increased through 2011 and then has since remained relatively stable. Most notably, in 2013, the majority of drugs were distributed in the Amhara region, Ethiopia, which total about 28 percent of the global antibiotic output. Over 100 million doses of Zithromax® have been distributed in Amhara since 2003. However, despite these doses, the prevalence of TF among children ages one to nine in the South Gondar zone, the long-standing program area, has not declined below the elimination threshold of 5 percent. Instead, the prevalence of TF decreased from the baseline survey in 2003 through the first impact survey in 2007, and subsequently plateaued with prevalence hovering around 30 percent. Interestingly, the prevalence of TI has decreased 81 percent since baseline.

If we examine the components of the SAFE strategy with influence on TF, we notice the following:

- Reported coverage and results from coverage surveys indicate that coverage of antibiotics has been high, with reported coverage exceeding the WHO target of 80 percent during each MDA and survey results indicating true coverage to be around 90 percent;
- Baseline and trachoma impact survey results show an increase in the proportion of children ages one to nine years with a clean face from 28 percent in 2003 to 75 percent in surveys conducted from 2011 through 2013; and
- Baseline and trachoma impact survey results also indicate an increase in the proportion of household with an observed used latrine from 4 percent in 2003 to 40 percent as assessed during impact surveys conducted from 2011 through 2013.

Considering these factors, which indicate positive change, we would expect to see a decline in TF and a complementary decline in the number of antibiotic doses forecasted to reach elimination. Instead, the number of doses forecasted for 2015 remains high and results from future impact surveys may indicate that about the same number of doses will be needed in future years. To consider how to use drug more rationally and to achieve impact to reach the elimination thresholds, innovation is needed.

Moving Forward with Operational Research

The Carter Center has a long history of partnering with national trachoma programs and research partners to conduct trachoma focused operational research across a number of countries. In Ethiopia, The Carter Center assisted several research partners in a study called the TANA study, which tested several antibiotic intervention strategies on trachoma infection. In Niger, in collaboration with research partners, The Carter Center assisted in the Partnership for the Rapid Elimination of Trachoma and MORDOR studies which tested alternative antibiotic approaches on trachoma infection, morbidity and mortality in Niger. These have been very successful collaborations which have led to the generation of much useful knowledge about the characteristics and efficacy of different antibiotic treatment strategies. The Carter Center will continue to collaborate with various research partners and national trachoma programs to develop operational research which seeks to answer important questions to the trachoma community.

Discussion Points

Given the results of the many community randomized trials, and what we know to date about MDA for trachoma control, it is important to take a step back and have a conversation among the wider trachoma community to help set priorities and goals. Some important questions to be discussed by the global community include:

- At what point do we have enough evidence to take action (at a programmatic level) and who decides?
- What is feasible to implement at scale?
- What resources are required?
- How long can an approach be sustained?
- Can study results be applied in different settings?
- What is the role of implementers in deciding research priorities?

The Impact of Trichiasis on Quality of Life and Poverty

Presented by Matthew Burton, Senior Lecturer and Wellcome Trust Senior Research Fellow, London School of Hygiene and Tropical Medicine

Background

Trachoma is considered a disease of poverty that significantly affects individuals' quality of life. Although there are many epidemiological studies linking trachoma to factors normally associated with poverty, formal quantitative data linking trachoma to household economic poverty within endemic communities is relatively limited. Likewise, little formal quantitative data support the conclusion that TT affects individuals' quality of life. This dual study aimed to show the relationship between trichiasis and poverty and also trichiasis and quality of life.[15],[16]

Aim

To determine the relationship between trichiasis and economic poverty and trichiasis and the quality of life.

Methods and Results

Trichiasis and Poverty

Two hundred people with TT were recruited through community-based screening. Cases were individually matched by age and gender to 200 controls without trichiasis, selected randomly from the same sub-village as the case. A broad set of asset-based indicators was measured and household economic poverty determined through principal component analysis. In addition, self- and peer-rated wealth scores were collected. Trichiasis cases were more likely to belong to poorer households by all measures: asset-based analysis (odds ratio (OR)=6.24; 95% confidence interval (CI): 3.63–10.70; p<0.0001), in self-rated wealth (OR, 4.41, 95% CI, 2.75 – 2.07; p<0.0001) and peer-rated wealth (OR, 8.22, 95% CI, 2.75 – 2.07; p<0.0001). Cases had less access to latrines (57% vs. 76.5%, p=<0.0001) and higher person-to-room density (4.0 vs. 3.31; P<0.020) than the controls. Household economic poverty was also independently associated with not having a marriage partner, lack of family formal education, and daily labor being the main family occupation. It was inversely associated with farming and having higher number of productive age-group family members. Neither trichiasis severity (OR, 0.88; 95% CI, 0.52 – 1.49; p=0.63) nor corneal opacity (OR 1.27; 95% CI 0.89 – 1.81; p=0.19) was associated with household economic poverty among the trichiasis cases.

Trichiasis and Quality of Life

One thousand people over 18 years old with TT were recruited through community based screening. Two hundred individuals without TT or a history of TT or evidence of epilation were also recruited. These were

[15] The Impact of Trachomatous Trichiasis on Quality of Life: a case control study in Ethiopia. Abstract. Esmael Habtamu, Tariku Wondie, Sintayehu Awoke, Zerihun Tadesse, Mulat Zerihun, Zebideru Abebe, Kelly Callahan, Robin L Bailey, David C. W. Mabey, Saul N. Rajak, Sarah Polack, Helen A. Weiss, and Matthew J. Burton.
[16] Trachoma and Economic Poverty: a case control study in Ethiopia. Abstract. Esmael Habtamu, Tariku Wondie, Sintayehu Awoke, Zerihun Tadesse, Mulat Zerihun, Zebideru Abebe, Kelly Callahan, Robin L Bailey, David C. W. Mabey, Saul N. Rajak, Sarah Polack, Helen A. Weiss, and Matthew J. Burton.

selected randomly from the sub-villages of every fifth trichiasis case and were matched by age (within five years) and sex.

Vision and health related quality of life was measured using the WHO/PBD-VF20 and WHOQOL-BREF tools respectively. Data on the impact of TT on social relations, marriage, and sleeping were collected through semi-structured questions. The comparison of the quality of life scores between cases and controls were made using linear regression adjusted for age, sex, and socioeconomic status.

The TT cases had substantially lower vision and health related quality of life in all domains than the controls ($P<0.0001$). Trichiasis cases also had significantly lower overall quality of life scores (Mean score: 34.5 v 64.6, $p<0.0001$) and overall health satisfaction (38.2 v 71.7, $p<0.0001$) than the controls. In trichiasis cases, longer trichiasis duration, central corneal opacity, poor vision, and contrast sensitivity scores were independently associated with low vision related quality of life in all subscales. Not having marriage partner ($p<0.0001$), daily laboring ($p<0.0001$), unemployment ($p=0.010$), poor vision (p 0.0076), poor contrast sensitivity (p 0.0002), and presence of other health problems ($p<0.0001$) were independently associated with poor overall health related quality of life score in trichiasis cases. Due to their trichiasis: 596 (59%) feel ashamed of or embarrassed; 913 (91.3%) worry that they will lose their remaining eye sight; 70 (7.0%) have been troubled in their marriage and ignored by their marriage partners; and 681 (68.1%) had sleep disturbances.

Conclusions

Trichiasis and Poverty

This study demonstrated a strong association between trachomatous trichiasis and poverty. It remains uncertain whether trachoma leads to poverty or vice versa. However, a cyclical relationship is plausible. Longitudinal studies investigating the effect of trichiasis surgery on household economic welfare may elucidate this relationship.

Trichiasis and Quality of Life

Trachomatous trichiasis significantly reduces vision and health related quality of life. Prompt intervention is needed not only to prevent vision loss but also to end the physical and psychological suffering and social exclusion of trichiasis patients and to improve overall well-being. Longitudinal studies are needed to measure the long-term effect of trichiasis surgery on the quality of life of trichiasis patients.

Supervision and Monitoring: Using surgical quality assessments to improve performance

Presented by Professor Lamine Traoré, Coordinator PNSO, Ministry of Health, Mali

Background

Blinding trachoma has been considered a public health problem in Mali since the national survey of 1996-1997. Recent impact surveys indicate that the prevalence of trachoma has decreased substantially from baseline and that elimination is in sight. While the prevalence of TF is below 5 percent in some districts, the prevalence of TT exceeds the elimination threshold in other districts. Three partners currently assist the PNSO to facilitate provision of TT surgical services, with an estimated 20,636 trichiasis patients remaining to be operated. The patients remaining to be operated on are largely concentrated in three regions: Kayes, Koulikoro, and Mopti. With assistance from HKI, the PNSO conducted a surgical quality assessment in the Kayes region in 2014 to ensure quality data from the field.

Study Aim

To improve the outcomes of trichiasis surgery through evaluation of surgical patients.

Objectives

1. To ensure the effectiveness of trichiasis surgery activities in the districts visited
2. To encounter patients that have been operated on for trichiasis
3. To evaluate the quality of trichiasis surgery
4. To determine patients' satisfaction levels of their trichiasis surgeries

Methods

The monitoring team conducted:

- A field visit to meet with local officials responsible for the management of TT cases in their communities, including doctor leaders, technical directors of surgery centers, operators, etc.
- A random drawing of at least three patients from the list of operated TT patients in the districts visited
- A questioning of these surgical patients, from which the team asked the following:
    - Patient's identity
    - Delivery of surgery
    - Patient satisfaction of the surgery
    - Quality of the surgery

Results

Table 1 highlights results from the field visits. In summary, five districts were visited and the team encountered more than half of the patients selected from the randomized drawing. All patients had undergone operations during a motorcycle campaign. In three districts, the surgery report differed from the reality observed when visiting the randomly selected patients during the assessment. In all but two districts, patients visited reported leaving post-operative bandages on for 24 hours and all patients reported suture removal occurred on the seventh day. All operated patients indicated that they were satisfied with their surgery and were willing to advise the TT surgery to their relatives.

Table 1. Surgical quality assessment results, Kayes region, Mali, 2014.

District	Date Surveyed	# Patients Selected	# Patients Visited	Agreement between surgical report and survey visit
Kayes	September	20	7 (35%)	6 not operated
Kénieba	August	20	12 (60%)	1 not operated
Kita	June	20	13 (65%)	All operated
Nioro	July	20	18 (85%)	All operated
Yélimané	December	20	17 (85%)	4 not operated

The team found that this monitoring was essential to ensure the effectiveness and quality of the surgical procedure. In addition, the study determined that regular supervision during surgery improves reporting, team productivity and the quality of the surgery, and also motivated surgeons and the surgical team. Surgical assessments will be continued throughout 2015 to assess the effectiveness and quality of surgery provided.

2015 Trachoma Program Review Recommendations

General Recommendations:

1. Carter Center assisted areas should collect F and E data during coverage and impact surveys to include:
    - x/y and proportion of children 1-9 years old with clean faces (defined as absence of ocular and nasal discharge and absence of flies)
    - x/y household and proportion with a currently used latrine
    - x/y household and proportion with access to an improved water source

2. Enhance collaboration with all stakeholders of WATSAN/WASH.

3. National Trachoma Control Programs should make the effort to obtain and share data on latrines constructed by other partners through concerned government institutions.

4. Each National Trachoma Control Program should strengthen, establish, and/or identify an intersectoral body to help advocate and coordinate F and E activities (water and sanitation) with other ministries and partners.

5. Programs should use the ICTC F and E planning tool as an aid to bring together stakeholders for trachoma elimination.

6. When undertaking research, programs should focus on generating operational indices of good practice for F and E.

7. Whenever possible, national trachoma programs should publish data documenting their experiences related to levels of TF, stopping of MDA, follow up, and sampling frames used to assess levels of TF.

8. Country programs should report the number of districts and the sum of the population that were formerly endemic and now have $TF_{1-9} < 5$ percent as a success story.

9. Programs should identify capacity/opportunities for operational research which seeks to develop alternative approaches within the SAFE strategy.

10. Countries should develop district line listings showing MDA in the out years based on latest TIS.

11. All programs should consider conducting a brief survey to assess MDA coverage after every drug distribution.

12. Countries should do everything possible to make efficient use of available drugs (Zithromax®) by way of strict stock management and taking maximum precautions to avoid expiration and minimize wastage of drugs.

13. Programs should ensure funding to carry out reverse drug logistics or transportation of Zithromax® within a country to ensure all stock is used before expiration and to ensure all countries maximize the use of the limited supply.

14. Countries conducting TT surgeries should carry out validation studies to verify reporting.

15. Supportive supervision of TT surgeons should include both administrative as well as surgical supervision by well-trained and experienced surgeons.

16. Conduct cross-border collaborative meetings and plans by both the implementing partners and member states (Niger and Nigeria; South Sudan and Uganda; Sudan and Ethiopia).

17. All countries should collaborate on cross-border issues to ensure that eligible populations, specifically displaced persons and refugee populations, receive MDA and other trachoma interventions where needed.

18. Partner organizations should consider investing in training of South Sudanese in advanced eye care in neighboring countries.

19. WHO should guide countries on how to prepare country dossiers for trachoma elimination.

Country-Specific Recommendations:

Mali

1. In view of the current epidemiological status of trachoma in Mali, the country should consider revising the elimination target date of 2015.

2. Mali and Niger should continue cross border collaboration.

Niger

1. Mali and Niger should continue cross border collaboration.

2. The program should do one round of MDA in areas with TF prevalence 5-9.9 percent, especially in Agadez, by October/November.

Nigeria

1. The program should liaise with secondary, tertiary, and private health institutions to collect TT surgery data.

South Sudan

1. The program should advocate the GTMP be completed in accessible identified areas as soon as possible (East and Central Equatoria, Lakes, Warab, and Northern Bhar al Ghazal).

2. The program should track quality of surgeries by documenting post-op complications. The program should improve quality of TT surgeries by offering comprehensive post-op care.

3. The program and its partners should provide TT kits to primary health care units with trained OCOs.

4. The program should establish one reporting system, which would be used by all implementing partners and would include key indicators of the SAFE strategy.

Sudan

1. The program should move to district level surveys to accelerate elimination.

2. The program should establish a set period for evaluation of TT surgeries.

Uganda

1. The program and its partners should consider extending support to the three endemic regions (28 districts) for TT surgeries.

Trachoma: The Disease

Trachoma, the world's leading cause of preventable blindness, can be found in over 50 countries. More than 232 million people are at risk for trachoma, and over 4 million are at immediate risk for blindness from trichiasis. Trachoma is caused by repeated infections of the conjunctiva (the lining of the eye and eyelid) by the bacterium *Chlamydia trachomatis*, and can be prevented through simple hygiene practices. 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 stage of the disease is called *inflammatory trachoma*, and is most common among children. Inflammatory trachoma can present as either the formation of whitish follicles on the conjunctiva under the upper lid or around the cornea, or as an intense painful or uncomfortable inflammation with thickening of the conjunctiva. Repeated cycles of infection and resolution lead to the formation of scar tissue on the conjunctiva. 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 twice as often as men. Trachoma is transmitted through discharge from the eyes and nose of infected individuals by contact with hands, towels and clothing, or by flies, which are attracted to ocular and nasal discharge. As trachoma patients' eyelids are repeatedly infected with *Chlamydia trachomatis*, subsequent scarring of the conjunctiva deforms the eyelid margin, resulting in eyelashes turning inward and rubbing against the cornea. This condition, called *trichiasis*, causes disabling pain and physically abrades the cornea, scratching it and introducing other infections. Trichiasis is horrific in itself, but also rapidly leads to blindness.

Recent developments have brought new hope that we can effectively control this disease. In 1987, eye care experts and the WHO developed a simplified trachoma grading scale, which facilitated and standardized the diagnosis and identification of all stages of trachoma. In 1997, the WHO established the GET 2020 Alliance, which brought 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 and WHO, the *SAFE strategy* was created to control trachoma through community-based interventions. In 2004, ICTC, a coalition of NGDOs, donors, academic institutions, and other partners, was created to support GET2020 and to advocate for the implementation of the SAFE strategy.

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. In 2009, Pfizer Inc, manufacturer of Zithromax®, recommitted to supporting the WHO GET2020 goal of eliminating blinding trachoma by the year 2020. Since the beginning of the donation in 1998, approximately 444 million doses of Zithromax® have been donated by Pfizer Inc and managed by ITI. The donation has reached more than 30 countries with plans to continue expansion in 2015. The existence of the donation program has served to invigorate national trachoma programs and global support for the elimination of blinding trachoma.

Monday, March 2		
7:30	***~Depart the Sheraton for The Carter Center~***	
8:00 – 8:30	Breakfast	
8:30 – 8:50	Welcome, Introductions & Opening Remarks	Dr. Donald Hopkins Vice President, Health Programs The Carter Center
8:50 – 9:00	Informational Overview	Nina Bloch Program Assistant, Trachoma Control Program The Carter Center
9:00 – 9:30	Program Review Overview & Chairperson Announcements	Ms. Kelly Callahan (Chairperson) Director, Trachoma Control Program The Carter Center
9:30 – 10:00	Ethiopia F & E Presentation & Discussion	Mr. Oumer Shafi NTD Team Leader Federal Ministry of Health - Ethiopia
10:00 – 10:30	Nigeria F & E Presentation & Discussion	Mr. Nicholas Olobio Data Manager, Trachoma Control Program Federal Ministry of Health - Nigeria
10:30 – 11:00	Coffee Break	
11:00 – 11:30	Mali F & E Presentation & Discussion	Professor Lamine Traoré National Coordinator, National Eye Care Program Ministry of Health - Mali
11:30 – 12:00	Niger F & E Presentation & Discussion	Dr. Kadri Boubacar Deputy Coordinator, National Eye Care Program Ministry of Health - Niger
12:00 – 12:30	Sudan F & E Presentation & Discussion	Dr. Balgesa Elkheir Elshafie National Coordinator, Trachoma Control Program Federal Ministry of Health - Sudan
12:30 – 1:30	Lunch	
1:30 – 1:45	Chairperson Announcements	
1:45 – 2:15	Uganda F & E Presentation & Discussion	Dr. Patrick Turyaguma Trachoma Program Manager Ministry of Health - Uganda
2:15 – 2:45	Where do opportunities for behavioral change communication exist?	Ms. Tara Brant BCCE Consultant The Carter Center - Ethiopia
2:45 – 3:15	Coffee Break	
3:15 – 3:45	Progress on WASH for Trachoma Elimination	Ms. Yael Velleman Senior Policy Analyst on Health and Sanitation WaterAid
3:45 – 4:15	International Coalition for Trachoma Control Update	Dr. K.H. Martin Kollmann Chair International Coalition for Trachoma Control
4:15 – 5:00	F & E Indicators: Showing Impact through Purpose	Ms. Angelia Sanders Associate Director, Trachoma Control Program The Carter Center - Atlanta
5:15	***~Shuttle Departure to Sheraton Hotel~***	
6:30	***~Shuttle Departure from Sheraton Hotel to Edgewood Shopping Center~ (6:30-9:30)***	

Tuesday, March 3		
7:30	***~Depart the Sheraton Hotel for The Carter Center~***	
8:00 – 8:30	Breakfast	
8:30 – 8:45	Chairperson Announcements	Dr. Zerihun Tadesse Country Representative The Carter Center - Ethiopia
8:45 – 9:30	New WHO Recommendations for Surveillance	Dr. Anthony Solomon Medical Officer, Neglected Tropical Diseases World Health Organization
9:30 – 10:00	Zithromax® Global Supply	Ms. Julie Jenson Director Corporate Responsibility/Brand Supply Lead Zithromax Pfizer
10:00 – 10:30	Ethiopia A Presentation & Discussion	Mr. Oumer Shafi NTD Team Leader Federal Ministry of Health - Ethiopia
10:30 – 11:00	Coffee Break & Group Photo	
11:00 – 11:30	Mali A Presentation & Discussion	Professor Lamine Traoré National Coordinator, National Eye Care Program Ministry of Health - Mali
11:30 – 12:00	Niger A Presentation & Discussion	Dr. Kadri Boubacar Deputy Coordinator, National Eye Care Program Ministry of Health - Niger
12:00 – 12:45	University of California, San Francisco Francis I. Proctor Foundation Partnership – Current Studies	Ms. Nicole Stoller Program Manager Francis I. Proctor Foundation
12:45 – 1:45	Lunch	
1:45 – 2:00	Chairperson Announcements	Mr. Sadi Moussa Country Representative The Carter Center - Mali
2:00 – 2:30	Sudan A Presentation & Discussion	Dr. Balgesa Elkheir Elshafie National Coordinator, Trachoma Control Program Federal Ministry of Health - Sudan
2:30 – 3:00	Uganda A Presentation & Discussion	Dr. Patrick Turyaguma Trachoma Program Manager Ministry of Health - Uganda
3:00 – 3:30	Coffee Break	
3:30 – 4:00	Nigeria A Presentation & Discussion	Mr. Nicholas Olobio Data Manager, Trachoma Control Program Federal Ministry of Health – Nigeria
4:00 – 4:30	South Sudan Program Update	Dr. Ali Ngor Director of Eye Care Services Ministry of Health - South Sudan
4:30 – 5:15	MDA for Trachoma Control: Looking Back, Moving Forward	Dr. Scott Nash, Ms. Aisha Stewart, Ms. Violeta Jimenez Epidemiologist, Associate Director, Acting Assistant Director The Carter Center - Atlanta & Emory Eye Center
5:15 – 5:25	Preview: "Trachoma: Defeating a Blinding Curse"	
5:30 – 7:00	Reception (The Carter Center Library and Museum Lobby)	
7:15	***~Shuttle Departure to Sheraton Hotel~***	

Wednesday, March 4		
7:30	***~Depart the Sheraton Hotel for The Carter Center~***	
8:00 – 8:30	Breakfast	
8:30 – 8:45	Chairperson Announcements	Dr. Emmanuel Miri Country Representative The Carter Center - Nigeria
8:45 – 9:30	Ethiopia S Presentation & Discussion	Mr. Oumer Shafi NTD Team Leader Federal Ministry of Health – Ethiopia
9:30 – 10:00	The impact of trichiasis on quality of life and poverty	Dr. Matthew Burton Senior Lecturer & Wellcome Trust Senior Research Fellow London School of Hygiene and Tropical Medicine
10:00 – 10:30	Uganda S Presentation & Discussion	Dr. Patrick Turyaguma Trachoma Program Manager Ministry of Health - Uganda
10:30 – 11:00	Coffee Break	
11:00 – 11:30	Mali S Presentation & Discussion	Professor Lamine Traoré National Coordinator, National Eye Care Program Ministry of Health – Mali
11:30 – 12:00	Niger S Presentation & Discussion	Dr. Kadri Boubacar Deputy Coordinator, National Eye Care Program Ministry of Health - Niger
12:00 – 1:00	Lunch	
1:00 – 1:15	Chairperson Announcements	Mr. Salissou Kane Country Representative The Carter Center - Niger
1:15 – 1:45	Nigeria S Presentation & Discussion	Mr. Nicholas Olobio Data Manager, Trachoma Control Program Federal Ministry of Health - Nigeria
1:45 – 2:15	Supervision & Monitoring: Using surgical quality assessments to improve performance	Professor Lamine Traoré National Coordinator, Prevention of Blindness Program Ministry of Health - Mali
2:15 – 2:45	Sudan S Presentation & Discussion	Dr. Balgesa Elkheir Elshafie National Coordinator, Trachoma Control Program Federal Ministry of Health - Sudan
2:45 – 3:15	Coffee Break	
3:15 – 4:45	Conclusions & Recommendations	Mr. Craig Withers Director, Office of Program Support The Carter Center
4:45 – 5:00	Closing Remarks	Ms. Kelly Callahan Director, Trachoma Control Program The Carter Center
5:15*	***~Depart The Carter Center for the Sheraton Hotel~***	

****Time subject to change. Bus will depart The Carter Center shortly after the conclusion of the meeting.***

Ethiopia
Mr. Ali Gebeyehu (ARHB)
Mr. Oumer Shafi Abdurahman (FMOH)
Dr. Zerihun Tadesse (The Carter Center)
Mr. Belay Bayissasse (The Carter Center)
Mr. Mohammed Aderajew (The Carter Center)
Mr. Eshetu Sata Shanka (The Carter Center)
Mr. Mulat Zerihun Lemu (The Carter Center)
Ms. Tara Brant (The Carter Center)

Mali
Prof. Lamine Traoré (MOH)
Mr. Sadi Moussa (The Carter Center)
Mr. Yaya Kamissoko (The Carter Center)

Niger
Dr. Kadri Boubacar (MOH)
Mr. Mohamed Salissou Kane (The Carter Center)
Dr. Sabo Hassan Adamou (The Carter Center)

Nigeria
Dr. Bridget Okoeguale (FMOH)
Mr. Nicholas Olobio (FMOH)
Dr. Emmanuel Miri (The Carter Center)
Dr. Falam Jip Nimzing (The Carter Center)

South Sudan
Dr. Ali Ngor (MOH)
Ms. Joy Chebet (The Carter Center)

Sudan
Dr. Balgesa Elkheir Elshafie (FMOH)
Dr. Nabil Aziz Awad Alla (The Carter Center)
Ms. Zeinab Abdalla (The Carter Center)

Uganda
Dr. Edridah Muheki Tukahebwa (MOH)
Dr. Patrick Turyaguma (MOH)
Ms. Peace Habomugisha (The Carter Center)

CBM
Dr. K.H. Martin Kollman

The U.S. Centers for Disease Control and Prevention
Dr. Diana Martin

U.K. Department for International Development
Dr. Maddy Gupta-Wright
Mr. Iain Jones

William H. Donner Foundation
Ms. Anita Winsor

Emory Eye Center
Dr. Danny Haddad
Ms. Violeta Jimenez

The Fred Hollows Foundation
Ms. Virginia Sarah

The Bill & Melinda Gates Foundation
Mr. Aryc Mosher

Helen Keller International
Ms. Whitney Goldman
Ms. Emily Toubali

Conrad N. Hilton Foundation
Mr. Robert Miyashiro

International Trachoma Initiative
Dr. Paul Emerson
Ms. PJ Hooper
Dr. Teshome Gebre Kanno

Lions Club International Foundation
Hon. Dr. Tebebe Y. Berhan
Mr. Mohama Tchatagba

London School of Hygiene and Tropical Medicine
Dr. Matthew Burton

Pfizer Inc
Ms. Julie Jenson
Mr. Gary Pelletier
Ms. Vanessa Torres

Francis I. Proctor Foundation, UCSF
Mr. Jeremy Keenan
Ms. Nicole Stoller

The Queen Elizabeth Diamond Jubilee Trust
Dr. Andrew Cooper

Emory University, Rollins School of Public Health
Mr. Jonathan Bressler
Ms. Nicole Devereaux
Dr. Matthew Freeman
Dr. Christine L. Moe
Mr. Will Oswald

RTI International
Mr. Achille Kabore
Mr. Benjamin Nwobi
Ms. Lisa Rotondo
Ms. Alexis Serna

Sightsavers
Dr. Agatha Aboe
Mr. Colin Beckwith
Mr. Tom Millar

The Task Force for Global Health
Dr. Pat Lammie

WaterAid
Yael Velleman

World Health Organization
Dr. Anthony Solomon

The Carter Center
Ms. Sarah Bartlett
Ms. Nina Bloch
Dr. Stephen Blount
Ms. Kelly Callahan
Ms. Kenya Casey
Ms. Becky Carter
Mr. Yohannes Dawd
Mr. Don Denard
Ms. Madelle Hatch
Ms. Alicia Higginbotham
Dr. Don Hopkins
Ms. Nicole Kruse
Ms. Rachel McNally
Dr. Scott Nash
Mr. Oz Nelson
Dr. Gregory Noland
Ambassador Mary Ann Peters
Dr. Frank Richards
Ms. Angelia Sanders
Ms. Alethia Sanon
Mr. Randall Slaven
Ms. Rennie Sloan
Ms. Aisha Stewart
Mr. Craig Withers