Summary Proceedings

Twenty-Sixth Annual Trachoma Control Program Review

Eyes on the Future: Navigating the Path to Elimination

THE
CARTER CENTER

Waging Peace. Fighting Disease. Building Hope.

Atlanta, Georgia

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“Together Towards Elimination”

The Twenty-Sixth Annual Trachoma Control Program Review

The Carter Center

Atlanta, Georgia

Acknowledgments

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Alwaleed Philanthropies

ARISE Fund

Children's Investment Fund Foundation

Coalition for Operational Research on Neglected Tropical Diseases

Cure Blindness Project

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And to many others who may not be listed, our sincere gratitude.

Acknowledgements

The Carter Center's Trachoma Control Program (TCP) marked a year of progress in the fight against trachoma, with advancements in partnership, collaboration, and innovation, to eliminate trachoma as a public health problem. The TCP assists four programs: Ethiopia's Amhara region, Niger, South Sudan, and Sudan in the implementation, monitoring and evaluation of the World Health Organization (WHO) endorsed SAFE (Surgery, Antibiotics, Facial cleanliness, and Environmental improvement) strategy. In 2024, despite security challenges, these country Programs delivered remarkable results to make considerable headway toward elimination thresholds. The collective efforts of these country Programs impacted millions of lives at risk of trachoma—the leading cause of infectious blindness worldwide—relieving those at risk of debilitating pain and suffering from the late stages of the disease.

Through joint efforts with communities and ministries of health in Ethiopia, Niger, South Sudan, and Sudan, cumulatively, since 1999, The Carter Center assisted in providing 960,683 people with trachomatous trichiasis (TT) surgery; and distributed more than 241 million doses of antibiotics. The Center's partnerships have also supported health education programs reaching more than 3,800 villages and 9,000 schools; the training of over 14,100 masons for latrine building and the construction of over 3.6 million latrines.

The Carter Center's achievements and impacts are only possible through the commitment and partnership of health ministries and community health care workers, alongside the crucial support and devotion of numerous collaborators and donors, including Abbott, the Ajram Family Foundation, Alwaleed Philanthropies, ARISE Fund, Children's Investment Fund Foundation, Coalition for Operational Research on Neglected Tropical Diseases (COR-NTD), Mr. and Mrs. DeHarpporte, Drugs & Diagnostics for Tropical Diseases (DDTD), The END Fund, Gates Foundation, The Ghanta Family Foundation, Conrad N. Hilton Foundation, Cure Blindness Project (CBP), William R. Hoch Family Foundation, Hopper-Dean Foundation, International Trachoma Initiative (ITI), Lions Clubs International Foundation, Lions Clubs of Ethiopia, Mr. Edward Magarian, Manaaki Foundation, The P.D. Merrill Charitable Trust, Dr. Ronald P. Ngayan, Noor Dubai Foundation, Orbis International, Th P Twenty-One Foundation, Pfizer Inc., Francis I. Proctor Foundation for Research in Ophthalmology, The Rauch Family Foundation, Schreiber Philanthropy, Sightsavers, The Task Force for Global Health (TFGH), WHO and many others. Additionally, we would like to extend our gratitude to our essential academic collaborators and research partners whose unwavering dedication and scientific contributions are instrumental in advancing our shared mission to eliminate trachoma as a public health problem.

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Acronyms

APHI	Amhara Public Health Institute
ARHB	Amhara Regional Health Bureau
AVENIR	*Azithromycine pour la Vie des Enfants au Niger: Implémentation et Recherche*
CBM	Christian Blind Mission
CBP	Cure Blindness Project
CDC	United States Centers for Disease Control and Prevention
COR-NTD	Coalition for Operational Research on Neglected Tropical Diseases
Ct	*Chlamydia trachomatis*
DBS	Dried Blood Spots
DDTD	Drugs & Diagnostics for Tropical Diseases
EMR	Eastern Mediterranean Regional
EU	Evaluation Unit
FGC	Full Geographic Coverage
ICTC	International Coalition for Trachoma Control
IECW	Integrated Eyecare Workers
ITI	International Trachoma Initiative
KEC	Kapoeta East County
KNC	Kapoeta North County
LFA	Lateral Flow Assay
MDA	Mass Drug Administration
MFTA	More Frequent than Annual
MOH	Ministry of Health
MORDOR	*Macrolides Oraux pour Réduire les Décès avec un Oeil*
NGO	Non-Governmental Organization
NTD	Neglected Tropical Disease
OPT	Ophthalmic Technician
PC-NTD	Preventative Chemotherapy-Neglected Tropical Disease
PCR	Polymerase Chain Reaction
Pgp3	Plasmid gene protein 3
PNSO	*Programme National de Santé Oculaire*
PTT	Post-operative Trachomatous Trichiasis
R&D	Research and Development
RSF	Rapid Support Forces
REACH	Resiliency for Children through Azithromycin
SAF	Sudanese Armed Forces
SAFE	Surgery, Antibiotics, Facial Cleanliness, and Environmental Improvement
SANPLAT	Sanitary Platform

SCH	Schistosomiasis
SCR	Seroconversion Rate
STH	Soil-Transmitted Helminths
STP	School Trachoma Program
TCP	Trachoma Control Program
TEC	Trachoma Expert Committee
TEO	Tetracycline Eye Ointment
TF	Trachomatous Inflammation-Follicular
TFGH	The Task Force for Global Health
TIS	Trachoma Impact Survey
TSS	Trachoma Surveillance Survey
TT	Trachomatous Trichiasis
U5M	Under-Five Mortality
WASH	Water, Sanitation, and Hygiene
WHA	World Health Assembly
WHO	World Health Organization
WHO/AFRO	World Health Organization – Regional Office for Africa

Executive Summary

The Twenty-Sixth Annual Trachoma Control Program (TCP) Review was held at The Carter Center February 24-25, 2025, in Atlanta, Georgia. The theme of this year's Review was "*Eyes on the Future: Navigating the Path to Elimination*". The Review focused on the progress and the challenges in 2024 while exploring innovative pathways to advance the programs assisted by The Carter Center (Ethiopia, Niger, South Sudan, and Sudan) and the global program towards the elimination of trachoma as a public health problem. Attendees included representatives from the ministries of health from the four aforementioned Carter Center TCP-assisted countries along with partners and donors; this includes but is not limited to the Amhara Regional Health Bureau (ARHB), Helen Keller Intl, Conrad N. Hilton Foundation, Christian Blind Mission (CBM), Cure Blindness Project (CBP), Gates Foundation, International Coalition for Trachoma Control (ICTC), International Trachoma Initiative (ITI), Johns Hopkins University, London School of Hygiene and Tropical Medicine (LSHTM), Noor Dubai, Orbis International, Pfizer Inc., Sightsavers, the Francis I. Proctor Foundation at the University of California at San Francisco, The END Fund, The Task Force for Global Health (TFGH), and the World Health Organization (WHO).

Upholding tradition, the Review allowed national programs to share and discuss progress towards elimination, challenges faced, and the necessary measures required to reach elimination thresholds. This year, the two-day meeting was co-chaired by Drs. Angelia Sanders and Scott Nash, Senior Associate Directors of the TCP.

Ms. Kelly Callahan, Director of the TCP, commemorated President Jimmy Carter, founder of The Carter Center, who passed in December 2024, just 13 months after the passing of his beloved wife and Carter Center co-founder, Mrs. Rosalynn Carter. President Carter was a man of the people, for the people, using his 100 years of life to advocate for human rights, health care access, peace, compassion, and kindness. President Carter was the pioneer in the fight against neglected tropical diseases (NTDs) with The Carter Center at the forefront. A brief video was shared of President Carter's national funeral service in Washington, D.C, which featured eulogies by members of the Carter family, friends, and politicians. Ms. Callahan highlighted President Carter's belief that NTDs keep so many people locked in a cycle of poverty, and if not disrupted, the gap between the rich and the poor widens, leading to unrest, and ultimately costing peace. The work assisted by The Carter Center, with support from partners, donors, collaborators, and many others, is a testament to President and Mrs. Carter's vision to continue the fight against NTDs until the end. President and Mrs. Carter have left behind an immeasurable impact on global health, and their legacy lives on in our collective work to fight disease and build hope.

Dr. Kashef Ijaz, Vice President of The Carter Center's Health Programs International, followed by highlighting the success seen in the global fight against trachoma and the powerful collaboration and coordination of international partners; what began as a seemingly insurmountable public health challenge has transformed into a beacon of hope through the tireless work of diverse stakeholders. Organizations like the ICTC, ITI, Pfizer, the WHO, and ESPEN (Expanded Special Project for Elimination of NTDs) have forged an unparalleled alliance, combining their expertise, resources, and unwavering dedication. Dr. Ijaz shared the status of The Carter Center's health programs and provided an overview of the Center's strategic plan. In his remarks, Dr. Ijaz echoed Ms. Callahan's words on the legacy of the Carters, who transformed the landscape of NTDs through their strategic vision and

bold action backed by science. Where others saw difficult challenges, the Carters recognized solvable problems and mobilized unprecedented resources and attention to some of the most disadvantaged regions of the world impacted by various preventable diseases.

Ms. Callahan provided an overview of the programmatic achievements in 2024 towards the elimination of trachoma as a public health problem in Carter Center-assisted countries. The Carter Center, in partnership with the ministries of health in Ethiopia, Niger, South Sudan, and Sudan, demonstrated an unyielding commitment to achieving programmatic objectives despite the challenges of uncertainty and insecurity. In 2024, the Carter Center-assisted programs performed 11,045 trachomatous trichiasis (TT) surgeries, of those 7,263 (66%) were performed on women; and over 4.5 million doses of antibiotics were distributed through mass drug administration (MDA), including 236,739 doses distributed as part of the more frequent than annual (MFTA) MDA strategy in Amhara, Ethiopia, to combat persistent trachoma. Additionally, more than 6,500 new people were trained in health education, and 2,553 latrines were built.

During the two-day Review, presentations stressed the determination of The Carter Center and its partners to mitigate challenges to reach the elimination of trachoma as a public health problem. In addition to the programmatic updates from national program representatives, several partners provided global trachoma updates, including WHO, ITI, Pfizer, and ICTC. Scientific and research partners, including the University of California, San Francisco, TFGH, Johns Hopkins University, and Drugs & Diagnostics for Tropical Diseases (DDTD), discussed complementary indicators for trachoma monitoring, child mortality prevention using azithromycin, and how to reach special and vulnerable populations.

In her closing remarks on day two, Ms. Kelly Callahan reflected on the rich discussions and the great successes within the global program despite insecurity, cross-border issues, persistent and recrudescent trachoma, and the need to strengthen health systems. Ms. Callahan commended the ministries of health for their dedication to eliminating trachoma a public health problem despite the challenges and their focus on doing "what they can, where they can, when they can with what they have to fight trachoma." Callahan also acknowledged that, despite the changing ecosystem, success would not be possible without the support of organizations such as Pfizer, ITI, donors, implementing partners, and innovative collaborators. The Carter Center is committed to building hope, which was profoundly shown by all the participants in the room. To close, Ms. Callahan thanked the meeting chairs, Drs. Angelia Sanders and Scott Nash, implementing and academic partners, donors, WHO, ITI, the TCP team, and others for their collective efforts towards ridding the world of blinding trachoma.

SAFE in Ethiopia

Presented by Eshetu Sata, Program Manager, The Carter Center,
on behalf of the Ministry of Health – Ethiopia

Background

Ethiopia has the highest trachoma burden globally, with more than 59% of the global population living in trachoma endemic districts. Due to years of dedicated efforts to reduce the burden of disease, currently 358 (38.8%) districts are below 5% trachomatous inflammation-follicular (TF) in children ages one to nine years, equating to an estimated 33.9 million people who do not require MDA for trachoma. Of the 567 endemic districts, 241 (42.5%) are considered persistent for TF, requiring enhanced focus and interventions to achieve the 5% elimination threshold. For TT, 141 (15.6%) districts have achieved the 0.2% elimination threshold, with 763 districts still requiring intervention. The National Program is continuing its efforts to achieve the elimination of trachoma as a public health problem by 2030.

Surgery (S)

At baseline, the national mean prevalence of TT in Ethiopia was 2.07%. Since 2003, Ethiopia has provided nearly 1.8 million TT surgeries, with peak surgical outputs between 2015-2017 through the Fast Track Initiative and significantly decreased outputs during the COVID-19 pandemic. As a result of these TT efforts since 2003, currently, the estimated mean prevalence is 0.7%, demonstrating a 66.2% decrease and great progress toward the elimination of TT as a public health problem. While insecurity impacted many areas throughout Ethiopia, making surgery provision difficult in some areas, in 2024, 62,014 TT surgeries were conducted, or 64.6% of the annual target. The Oromia region contributed the greatest number of surgeries—comprising 28,128 (45%) of the national output. In addition to the provision of TT surgeries in 2024, the Ethiopia program also finalized and approved the TT case finding with full geographic coverage (FGC) guidelines, revised the guidelines for surgical quality assessments, endorsed the epilation guidelines for minor TT and post-operative TT (PTT), and rolled out the training for TT management.

Antibiotic Therapy (A)

There has been extensive progress toward the elimination of trachoma; at baseline most districts in Ethiopia were endemic for trachoma with a mean prevalence of 23.8% TF. As of the end of 2024, the mean prevalence is now 9.3% TF with nearly half of the previously endemic districts below 5% TF. All regions have demonstrated reductions in their TF prevalence estimates since baseline, with the greatest reductions observed in the regions of Amhara, Central Ethiopia, Oromia, South Ethiopia, and Southwest Ethiopia. Currently, of the ever-endemic districts, 358 districts have fallen below the 5% TF threshold with 567 districts above 5%, requiring additional MDA interventions.

In 2024, 456 districts planned to implement MDA, though due to insecurity and drug shortages, only 321 districts completed MDA, distributing 32,456,611 treatments of antibiotics. The MDA distributions in 2024 also included the implementation of Child MDA in 29 districts, whereby the standard community-wide MDA treatment was followed by an additional treatment to children ages one to nine years; the approach was piloted in six districts in 2023, and the approach will continue to scale up in additional districts in 2025.

Surveys

To assess progress toward elimination and assess the need for additional MDA interventions, a total of 130 trachoma impact surveys (TISs) and 41 trachoma surveillance surveys (TSSs) were completed. Of the 130 districts completing TIS, 34 (26%) fell below the 5% TF threshold; of the 41 TSS, 23 (56%) remained below the 5% TF threshold, while 18 (44%) were recrudescent.

Facial Cleanliness (F) & Environmental Improvement (E)

In alignment with the F & E components of the WHO-endorsed Surgery, Antibiotics, Facial cleanliness, and Environmental improvement (SAFE) strategy, the Ethiopian government has been advocating for stronger WASH (Water, Sanitation, and Hygiene) and NTD collaboration and has integrated WASH initiatives at various levels of government. As a result of a recommendation from the WASH-NTD technical working group, in 2024, a minimum WASH-NTD package was piloted in 20 districts in East Shewa, Arsi, and Gamo zones. The districts were selected due to their high TF prevalence and co-endemicity for soil-transmitted helminths (STH) and/or schistosomiasis (SCH). The National Program also revised the operational manual for the National One WASH program, which includes NTDs as a selection criterion for investment.

SAFE in Amhara, Ethiopia

Presented by Mr. Adisu Abebe, NTD Team Leader,
Amhara Regional Health Bureau

Background

The Amhara region of Ethiopia, the most trachoma-affected region in Ethiopia, has made great progress toward the elimination of trachoma as a public health problem since 2007, when survey estimates revealed that every zone in the Amhara region was endemic for trachoma. Since then, the implementation of the SAFE strategy has been expanded to every zone in the region, which to date has resulted in more than 218.6 million treatments of antibiotics distributed to combat trachoma and more than 810,000 people operated to correct TT and prevent unnecessary suffering and blindness. Due to these efforts, as of December 2024, 58 out of 166 districts in the Amhara region achieved the <5% elimination threshold for TF and are exempt from MDA, including 45 districts that remained <5% at TSS. This leaves 108 districts still requiring MDA for trachoma. Additionally, while there have been significant decreases in district-level prevalence of TT throughout the region, currently there are 165 out of 166 districts still endemic for TT. Based on survey results and the TT surgeries recently conducted, an estimated 68,000 people still require surgery to address TT.

The TCP in Amhara continued to be impacted by insecurity in 2024, making it difficult to implement activities due to damaged infrastructure, loss of supplies, and active fighting, making movement between and within communities unsafe. This resulted in delayed program implementation, including MDA, surveys, and surgeries. MDA was able to restart later in 2024 in select areas due to alternative implementation strategies, though surveys could not, due to the difficulty of implementation in insecure settings as compared to MDA. In 2024, despite these challenges, the Program completed 7,570 surgeries, distributed 4.4 million treatments of antibiotics, and completed six prevalence surveys. The Amhara region remains focused on restarting more activities in 2025 to ultimately reach the elimination of trachoma as a public health problem.

Table 1. Program Achievements in 2024

Indicator	Amhara Region (Carter Center-Assisted)		
	Target	Achieved	% Achieved
# of persons operated	**34,845**	**7,570**	**22%**
# of women operated		**4,782**	**63%**
Doses of azithromycin distributed during MDA	**15,856,569**	**4,330,294**	**27%**
Doses of TEO distributed during MDA	**320,531**	**82,475**	**26%**
# of surveys administered	**44**	**6**	**14%**

Surgery (S)

As of December 2024, 165 of the 166 districts in Amhara remain above the 0.2% elimination threshold for TT, though much progress has been made to decrease the burden of TT in the region. At baseline, every zone was above 1% TT, with some zones with TT greater than 5%. Currently, there are no districts above 5% TT, 94% of all districts are below 2%, with most of the districts (57%) between 0.2%-1% TT. Further, of the 165 endemic districts, 112 (67%) have <500 TT cases that need to be

managed—this not only demonstrates tremendous progress to date, but also how challenging it will be to reach the remaining cases in Amhara. With the national guidelines for FGC endorsed by the Ministry of Health (MOH), the Amhara region will finish many districts by conducting case finding documenting FGC.

In 2024, 7,570 people received TT surgery across the region, including 4,782 (63%) women. Fewer surgeries were completed due to insecurity; it was not possible to conduct case finding or large campaigns, as this requires significant social mobilization and movement throughout the community. The surgeries that were conducted, despite the difficult situation, were done because of the dedicated efforts of the regional health bureau, integrated eyecare workers (IECWs), health extension workers, and everyone involved.

As TT case finding was not possible in 2024, to increase surgery productivity, the region integrated TT surgery into cataract campaigns and conducted TT screening during MDA implementation. More than 1,000 of the TT surgeries conducted in 2024 were done through the integration with cataract campaigns, by including a TT surgeon in the cataract campaign to screen and operate TT cases. Additionally, during the MDA campaigns conducted in November and December 2024, more than 8,000 suspected TT cases were identified; the confirmation and surgery activities for these suspected cases are planned for 2025.

Antibiotic Therapy (A)

As of the end of 2024, 58 of the 166 districts in the Amhara region are below the elimination target for TF, and an estimated 6.4 million people no longer require MDA for trachoma; this includes 45 districts (4.9 million population) that remained below the elimination threshold at TSS, thus achieving one of the requirements for elimination of trachoma as a public health problem. While 108 (65%) of the districts are still above the TF threshold, 70 (43%) of the districts are between 10-29.9%, with 40 of these districts between 10-19.9%. The Amhara region planned to distribute more than 16 million treatments in 107 districts in 2024; this includes the treatments distributed during child MDA. Due to insecurity, MDA was conducted in 35 of the planned 107 districts, distributing more than 4.4 million (27%) treatments. More than 7,600 people supported the MDA activities, including 2,711 individuals trained to conduct MDA, and 5,735 community leaders and volunteers who received orientation to support community mobilization and implementation of MDA. Following the pilot in two districts in 2023, Child MDA was completed in seven districts in 2024. MDA targeting children ages six months to nine years was conducted four to six weeks after the community-wide MDA. A total of 240,912 children were targeted for the second treatment of MDA, and 236,739 (98%) were treated.

Conducting MDA in the insecure context of Amhara required modifications to the standard activities in 2024. MDA was conducted based on weekly security assessments and context-specific information for each district, and required communication with government command posts and armed rebel groups. MDA training was decentralized, with the district health office staff leading district-level training if the zonal and regional staff could not attend; higher level trainings were also conducted remotely when necessary. In some districts, local transportation (motorbikes, three-wheel cars, mini-buses, etc.) was used to transport drug and MDA commodities.

Surveys

Surveys are difficult to conduct in insecure areas as they are done by teams outside of the community, they need involvement of many vehicles, and the community may not want to participate in the survey. In 2024, six districts completed prevalence surveys, or 14% of the overall target.

Facial Cleanliness (F) & Environmental Improvement (E)

As F & E is also key to achieving elimination, the regional trachoma program remained focused on implementing health education activities in communities and in schools. Normally, the School Trachoma Program (STP) reaches more than 8,900 primary schools in the region and has been implemented since 2017 with great success. However, STP activities were largely affected by insecurity in 2024—schools were closed due to active fighting, damage to the buildings, and some schools being used as military camps. Four water points were constructed in selected schools in hyperendemic areas to enhance the STP programming. School WASH committee training was conducted in eight primary schools, training 70 participants. The committees were trained in basic water point maintenance and monitoring activities to assess water point functionality and maintenance needs. Additionally, the pre-grade STP materials, which were piloted in 2023, were revised in 2024 and will be used in 2025 once schools reopen and training is possible.

Notable Achievements

While the program could not conduct as many activities as expected, there were still notable accomplishments, including the completion of MDA, surveys, surgeries, and water provision, despite insecurity. Additionally, the Program integrated TT screening into other activities to increase TT services, even if active TT outreach was limited. The Program also conducted a pilot of a lateral flow assay (LFA) test for serology at the Amhara Public Health Institute (APHI), as well as hosted collaborative APHI-Carter Center Research Activities Dissemination Workshop, which included many participants from the region and throughout Ethiopia to share research findings and lessons learned through the work conducted in Amhara.

Programmatic Challenges & Mitigation Measures

The insecurity highly impacted SAFE interventions. Currently, there are 72 districts eligible for MDA but have been delayed because of insecurity; of those districts, 52 districts (72%) have not received MDA in 24-36 months, and eight districts (11%) have not received MDA in at least 36 months. To address this, the Program will continue the alternative approaches implemented for MDA in 2024 to conduct activities in relatively secure areas; the Program may also consider whether enhanced treatment strategies are suitable in some of these areas to address the delays and help get Amhara closer to elimination. Many districts (95) in the region are considered persistent, which the region plans to address by implementing alternative strategies for MDA and surveys. This may include the expansion of the Child MDA strategy, assessing the impact of this approach where appropriate; and continuing to collect *Ct* and serology where possible and appropriate to better understand persistent trachoma.

Program Plans for 2025

Surgery (S)

- Operate 19,599 TT cases
- Train 56 new IECWs
- Retrain 47 IECWs
- Train 467 IECWs on epilation

Antibiotic Therapy (A)

- Distribute 14,417,527 doses of azithromycin, including doses distributed during child MDA in 18 districts
- Distribute 278,629 doses of tetracycline eye ointment (TEO)

Facial Cleanliness (F) & *Environmental Improvement (E)*

- 100% of schools submit quarterly activity reports
- Complete construction of 20 water points

Amhara, Ethiopia – TT Prevalence: Adults ≥ 15 Years

Baseline (2007)

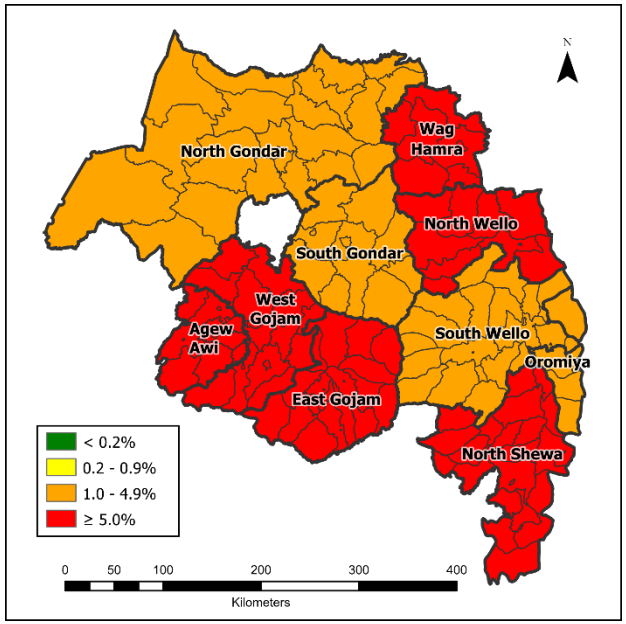


Figure 1 – Estimated TT prevalence at baseline

2015

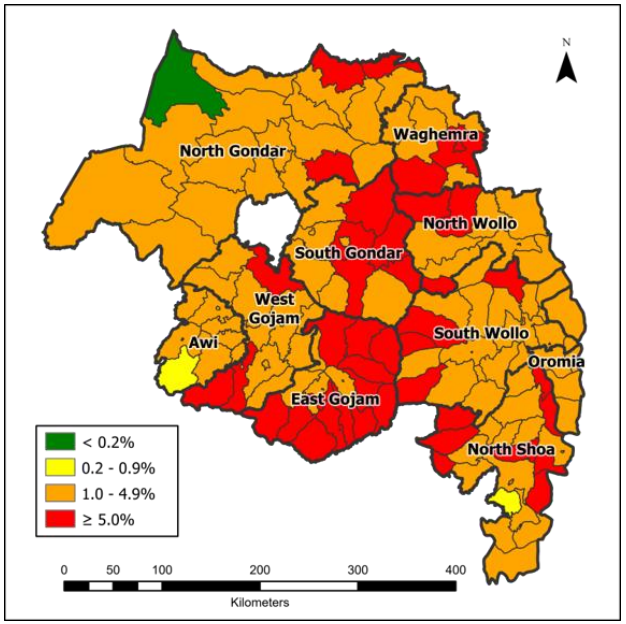


Figure 2 – Estimated TT prevalence through 2015

2024

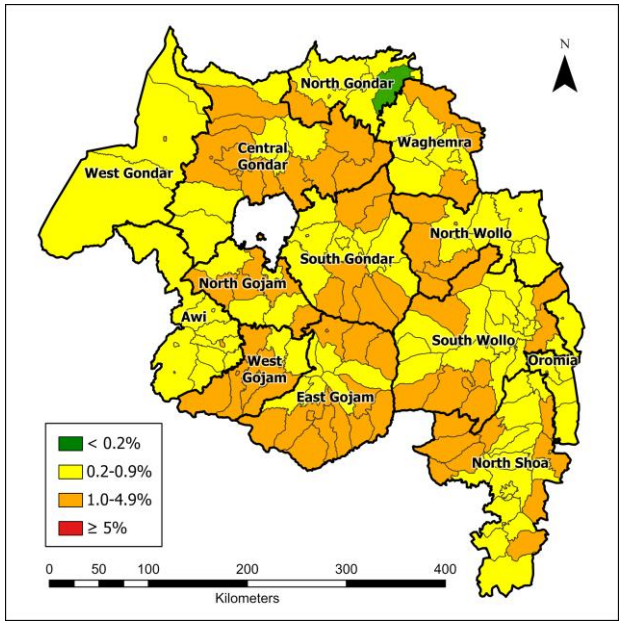


Figure 3 – Estimated TT prevalence through 2024

Amhara, Ethiopia – TF Prevalence: Children 1–9 years

Baseline (2007)

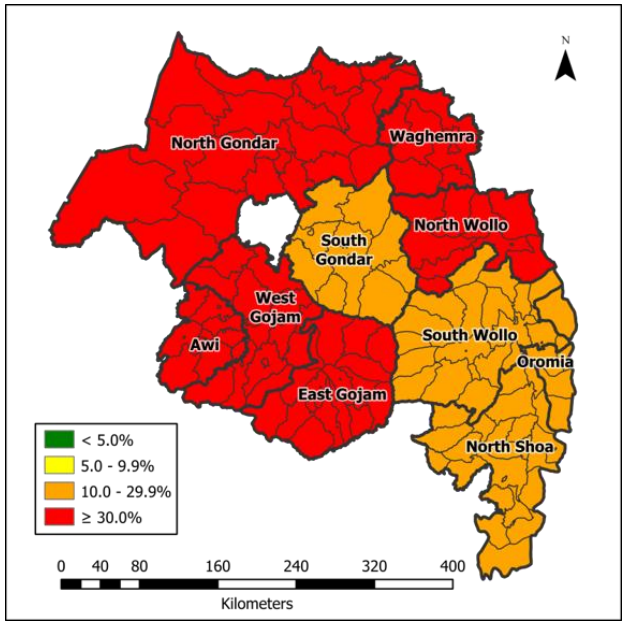


Figure 4 – Estimated TF prevalence at baseline

2015

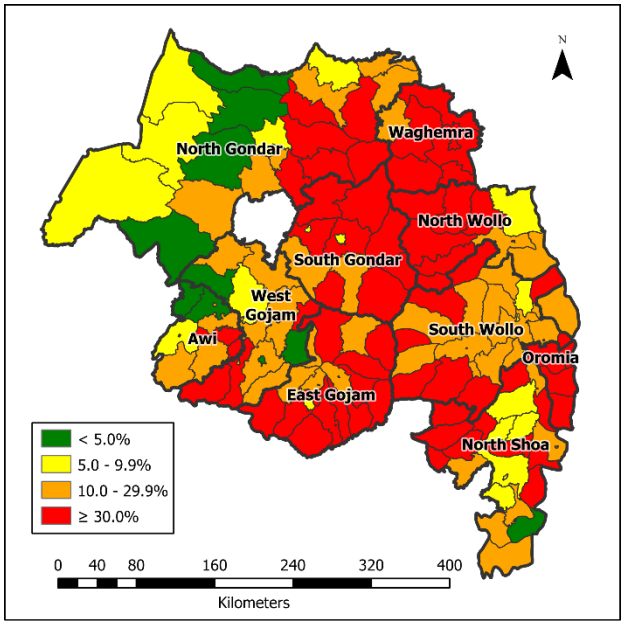


Figure 5 – Estimated TF prevalence through 2015

2024

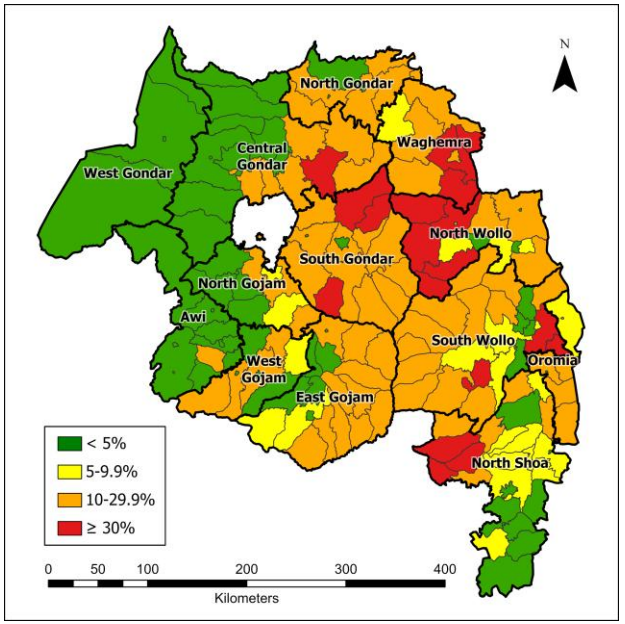


Figure 6 – Estimated TF prevalence through 2024

Amhara, Ethiopia – MDA Activities

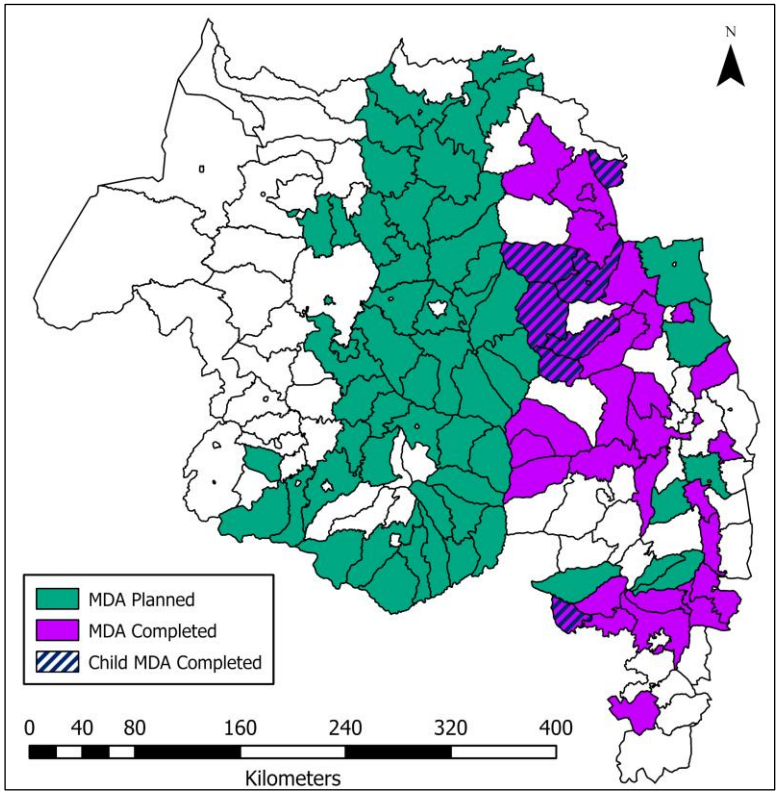


Figure 7 – Completed MDA in 2024

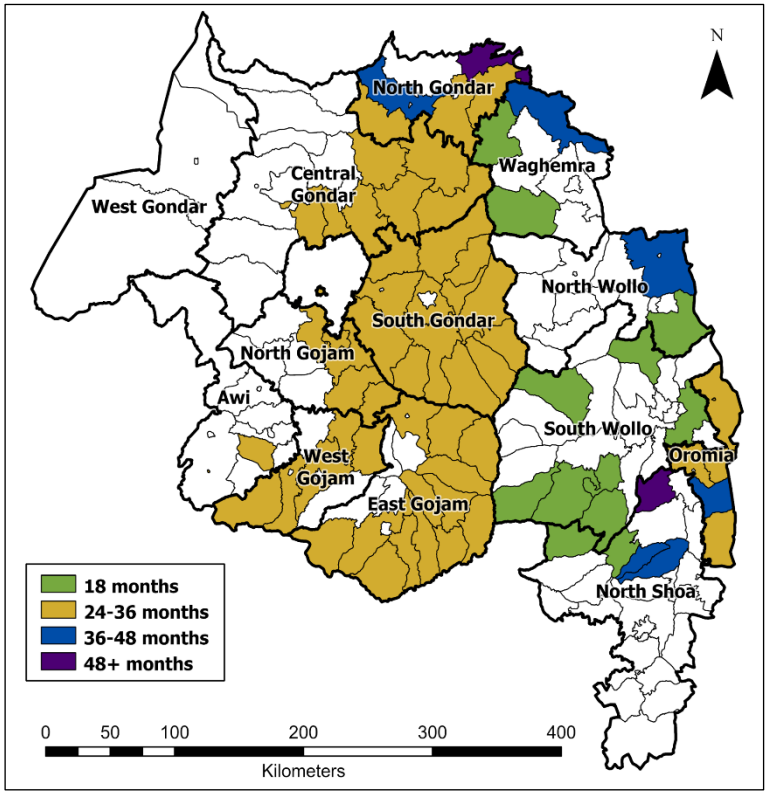


Figure 8 – Delayed MDA in 2024

SAFE in Niger

Presented by Dr. Ibrahim Almou, National Coordinator, National Eye Health Program, Ministry of Health – Niger

Background

The National Trachoma Task Force was established in Niger in 1999 by the National Eye Health Program (*Programme National de Santé Oculaire* – PNSO) to address the high levels of trachoma found in baseline surveys conducted between 1997-1999. During these baseline surveys, results indicated that 44% of children aged one to nine years had TF, and 1.7% of women ages 15 years and older had signs of TT. In 2002, district-level population-based prevalence surveys found that 62 of the 72 health districts were endemic for TF, leading to the implementation of the SAFE strategy to address the trachoma burden. At the end of 2024, 31 of the 62 endemic districts had fulfilled the elimination thresholds after receiving interventions, leaving 31 districts endemic for TF and/or TT. Many districts have been subdivided into smaller evaluation units (EUs) for implementation purposes, and as such, the 31 endemic districts may not be endemic in their entirety. Of the 96 EUs ever endemic in the country, only five are still endemic for TF, while 42 are endemic for TT. Despite challenges such as political instability and natural disasters, the PNSO remains resolute to achieve its goal to eliminate trachoma as a public health problem in Niger by 2027.

Table 1. Program Achievements in 2024

Indicator	Achieved (% of Target)	
	National	Carter Center-Assisted
# of persons operated	2,625 (32.8%)	918 (45.9%)
# of women operated	1,718	591
# of EUs which started case finding	22	8
# of surgeons retrained	75	14
# of surveys conducted	24 (88.9%)	5 (100%)
# of sanitary platform latrines built	2,553	2,553 (42.6%)
# of block latrines built	22	22 (91.6%)
# of teachers trained in information, education and communication	120	120 (100%)
# of radio messages broadcast	42,868	20,968

Surgery (S)

Due to the extensive efforts by the PNSO to reduce the prevalence of TT in Niger, by December 2024, 34 districts were no longer considered endemic for TT, with most endemic areas for TT found in the regions of Diffa, Dosso, Maradi, and Zinder. In 2024, the Program conducted 2,625 surgeries, including 1,718 (65%) women operated. The PNSO also supported quality assurance activities by retraining 75 surgeons using the HEADSTART method, as well as implementing a seven to 14-day surgical follow-up protocol to ensure a systematic approach for patient care.

With support from The Carter Center and Helen Keller International, in May 2024, the PNSO piloted a new case-finding approach (*ratissage*) whereby local community volunteers (*relais*) are trained to conduct house-to-house case finding, screening all individuals ages 15 years and older for signs of TT. The individuals identified as potential TT cases are later screened by ophthalmic technicians (OPT) for confirmation and surgery. Following the successful pilot, the *ratissage* strategy was adopted for national scale-up in all TT-endemic EUs. Between August and December of 2024, 22 EUs began implementing the *ratissage* strategy, resulting in the training of over 231 health catchment heads and 9,217 *relais*. Although results are still being compiled, 1,713 TT cases have been confirmed via the *ratissage* approach.

Antibiotic Therapy (A)

By the end of 2024, nearly all EUs in Niger had fallen below the 5% elimination threshold for TF, with only five EUs remaining above the 5% threshold. All five EUs still endemic for TF are between 5-9.9%, three of which are eligible for MDA. Although the PNSO did not conduct MDA for trachoma in 2024, azithromycin was distributed to children ages one month to five years as part of the *Azithromycine pour la Vie des Enfants au Niger: Implémentation et Recherche* (AVENIR) project. As AVENIR overlaps with EUs still pending trachoma MDA, the Program is coordinating closely with the AVENIR team for their 2025 activity planning.

Surveys

In 2024, the Program completed 24 surveys, including five TISs and 14 TSS, with the support of Helen Keller International through Act to End NTDs West. In 84% of these surveys, the districts remained below the 5% TF elimination threshold; one EU was found to be recrudescent at TSS (Madaoua 1). Five TT-Only surveys were also conducted with support from The Carter Center; one district was found to have TT below the 0.2% elimination threshold, while the other four remained above 0.2% and will require full documented *ratissage* to demonstrate the TT burden has been addressed.

Facial Cleanliness (F) & Environmental Improvement (E)

The PNSO, with support from The Carter Center, constructed a total of 2,553 household sanitary platform (SANPLAT) latrines and 22 school block latrines in 2024. The Program also supported trachoma sensitization activities in schools, including training 120 schoolteachers and distributing school hygiene kits to 76 primary schools. At the community level, 14 radio broadcasters were trained on health education messages, with over 42,000 radio transmissions broadcast across the trachoma endemic regions of Niger.

Programmatic Challenges and Mitigation Efforts

Niger has experienced a period of political instability since July 2023. When coupled with a catastrophic 2024 rainy season and mass population displacement, considerable challenges exist to implement field-based activities. To address this, the PNSO actively engages with local leaders and stakeholders to assess the situation and explore mitigation strategies. In addition to these challenges beyond trachoma, the Niger program is also impacted by persistent and recrudescent districts, along with fluctuating survey estimates, particularly related to TT. As a solution, the Program is engaging with partners to incorporate complementary indicators in upcoming surveys, as well as performing

complete documented *ratissage* where TT estimates are above the elimination threshold.

Program Plans for 2025

Surgery (S)

- Operate 4,000 TT cases, 2,000 with Carter Center assistance
- Finish *ratissage* in 34 EUs, 11 with Carter Center assistance

Antibiotic Therapy (A)

- Distribute 503,887 doses of azithromycin and 15,584 doses of TEO during MDA

Facial Cleanliness (F) & *Environmental Improvement (E)*

- Construct a total of 2,500 SANPLAT latrines, all with Carter Center assistance

Surveys

- Complete 6 surveys (five TSS and one TIS)

Niger – TT Prevalence: Adults ≥ 15 years

Baseline (2002)

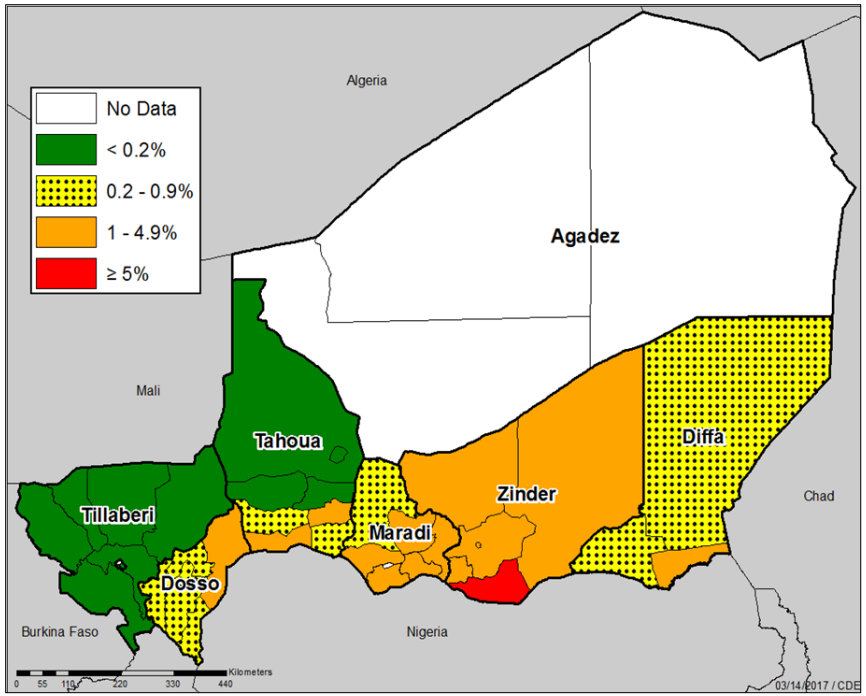


Figure 1 – Estimated TT prevalence at baseline

2024

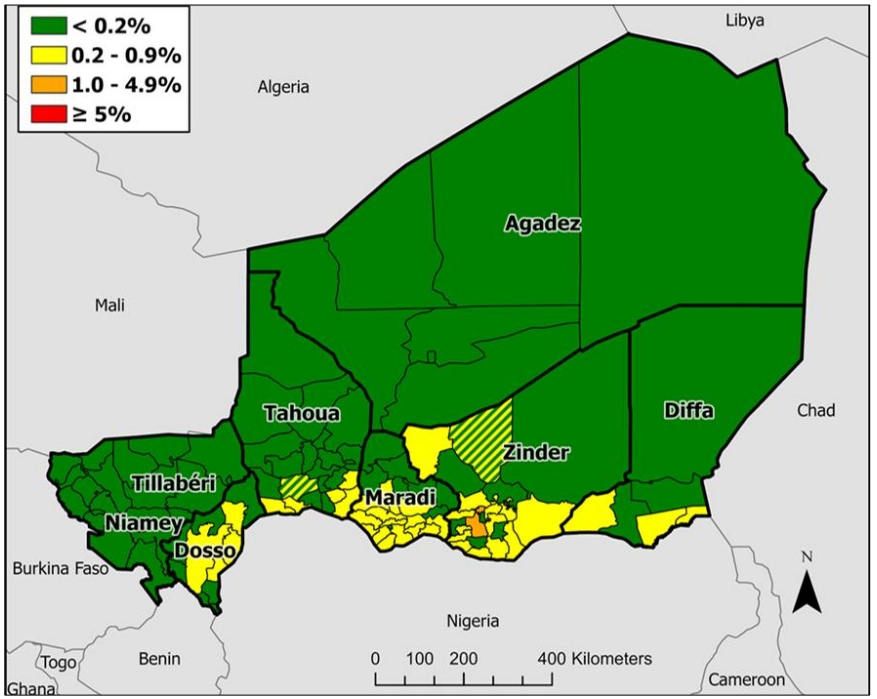


Figure 2 – Estimated TT prevalence through 2024

Niger – TF Prevalence: Children 1–9 years

Baseline (2002)

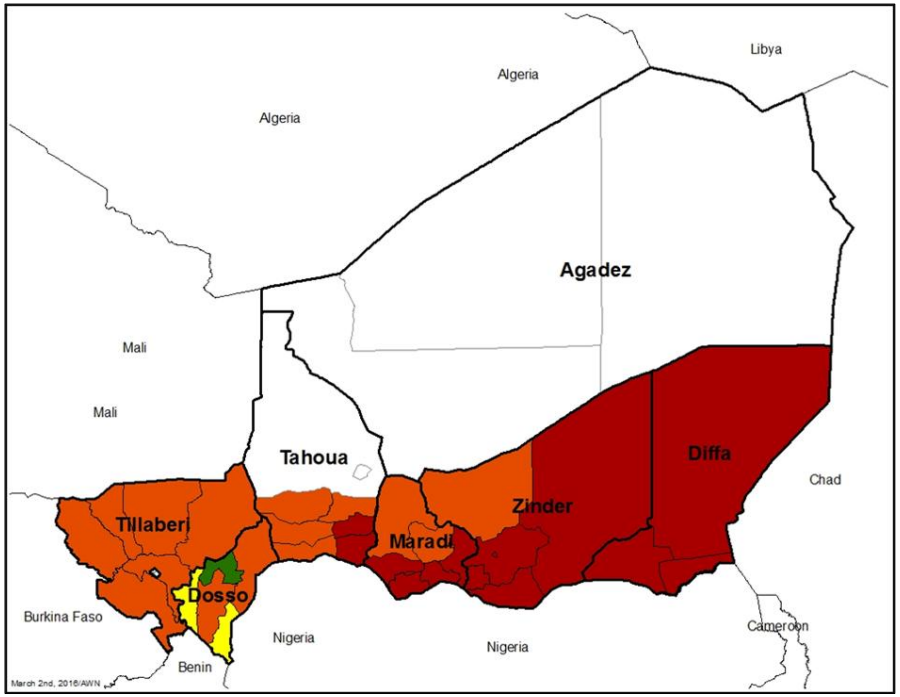


Figure 3 – Estimated TF prevalence at baseline

2024

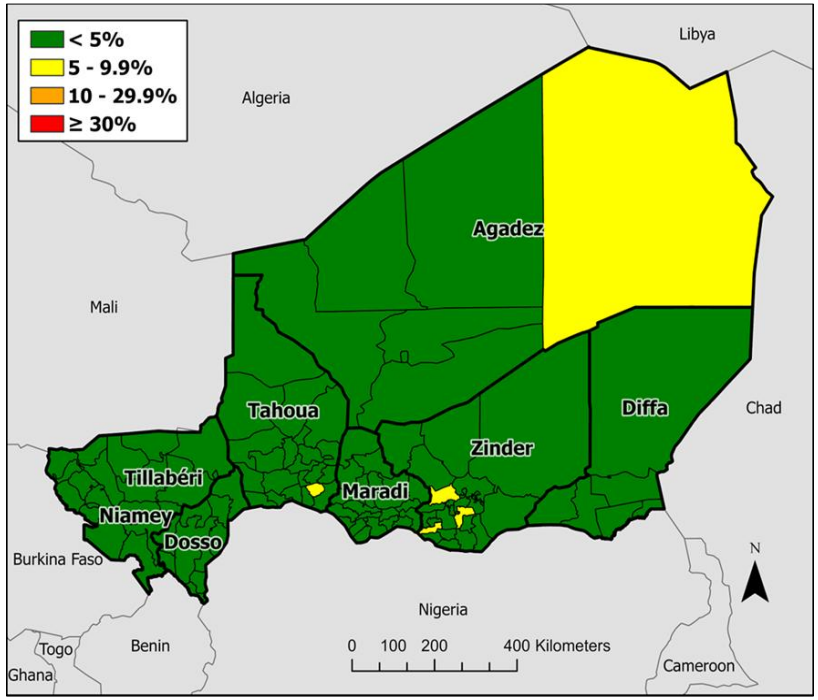


Figure 4 – Estimated TF prevalence through 2024

Niger – Ratissage and Survey Activities

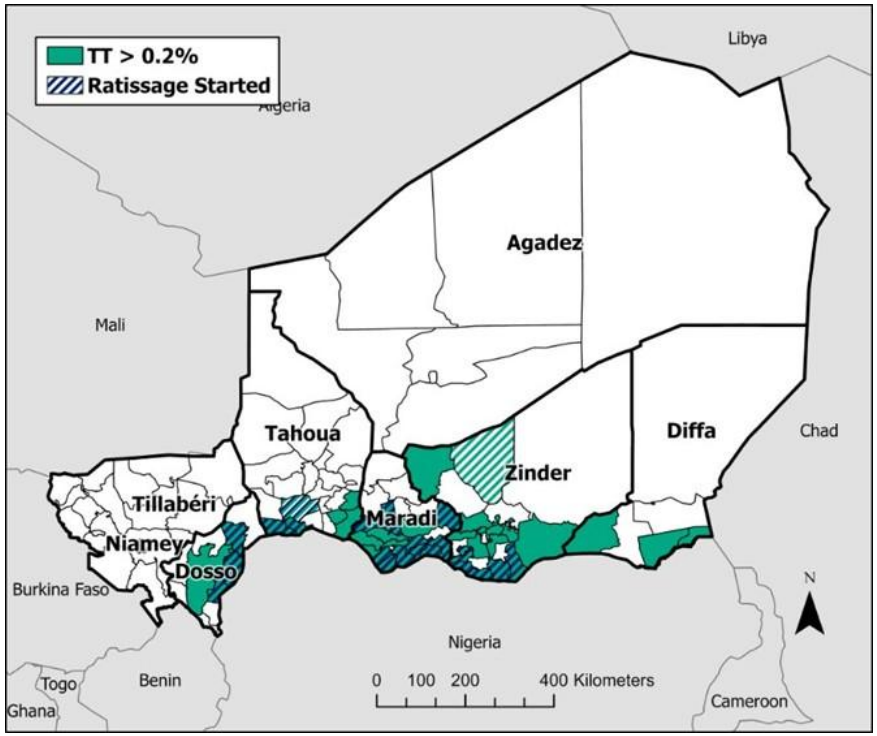


Figure 5 – Ratissage Started in 2024

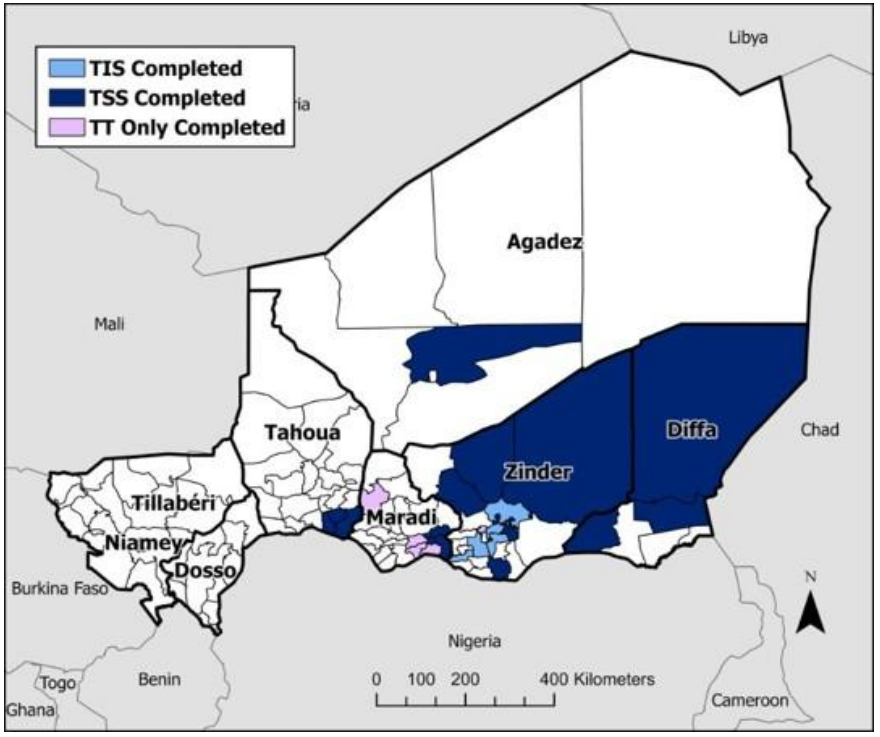


Figure 6 – Surveys Completed in 2024

SAFE in South Sudan

Presented by Mr. Yak Yak Bol, Director for Preventive Chemotherapy-Neglected Tropical Diseases (PC-NTDs), Ministry of Health, South Sudan

Background

In 2011, South Sudan became the world's youngest country after gaining independence from Sudan. It is a landlocked country divided into 10 states and three administrative areas, with a population exceeding 14.2 million. While South Sudan is diligently working to make progress across all sectors, the country faces significant public health challenges, including being endemic to 19 out of 21 WHO-recognized NTDs. Five of these NTDs require preventative chemotherapy, among them trachoma, the world's leading cause of infectious blindness.

Trachoma prevalence surveys conducted between 2021 and 2024 revealed that South Sudan – particularly in the eastern portion of the country – was highly endemic for trachoma. During this period, the country recorded some of the highest trachoma prevalence levels worldwide, with a baseline survey in one county finding over 50% TF in children one to nine years, and 4% TT in adults 15 years and older. Furthermore, due to decades of civil war as South Sudan fought for independence from Sudan and then periods of insecurity since independence in 2011, the medical infrastructure in South Sudan is limited, resulting in millions of people having little-to-no access to health services. Despite these considerable obstacles, the Program demonstrated numerous successes in 2024.

Table 1. Program Achievements in 2024

Indicator	National		Carter Center-Assisted	
	Target	Achieved	Target	Achieved
# of persons operated	4,500	5,423 (121%)	1,500	2,557 (161%)
# of women operated		3,721		1,848
# of surgeons trained/retrained	24	18 (75%)		
# of doses of azithromycin distributed during MDA	1,753,570	1,457,571 (83%)	569,651	433,812 (76%)
# of doses of TEO distributed during MDA	43,839	117,129 (267%)	14,240	34,520 (242%)
# of villages with health education	4,000	4,632 (116%)	2,916	2,121 (73%)
# of latrines built	12	17 (142%)	10	15 (150%)
Surveys	6	4 (67%)	4	3 (75%)

Surgery (S)

2024 recorded the most TT surgeries conducted in one year in South Sudan's history, with 5,423 individuals receiving TT surgery. Of those operated, The Carter Center supported the provision of

surgery to 2,557 people, 1,848 of whom were women. These incredible outcomes can be attributed to the collaboration between CBP, the MOH, and The Carter Center, who partnered to integrate cataract and TT surgeries simultaneously, and thus stimulated demand and expanded access to various eye care services. This partnership, along with cataract surgeries provided by CBM, allowed for cataract surgery to be performed on 21,462 eyes.

The Program engaged in partnerships with local non-governmental organizations (NGOs), such as community-based women's groups and the Tuach Riek Gai Foundation, to support mobilization. To ensure surgical quality and output, CBM supported the training of 18 health workers in Bentiu State Hospital by an ophthalmologist and two cataract surgeons. Finally, in 2024 the Program observed children with TT during multiple surgical camps in Jonglei state, with the condition being documented in 66 children ages three to 11 years old. Due to their age, they were unable to receive surgery in an outreach setting, and the Program is working to provide surgical services to these children in a hospital setting.

Antibiotic Therapy (A)

The Program administered 1,457,571 doses of Pfizer-donated azithromycin, 433,812 doses with Carter Center assistance. There were 117,129 doses of TEO distributed by the Program, 34,520 doses provided with assistance from The Carter Center. The program took extra steps to ensure all communities were reached during MDAs, such as renting boats to reach islands in Unity state, traveling far distances to reach cattle camps, and integrating MDA with veterinary vaccination campaigns.

Facial Cleanliness (F) & Environmental Improvement (E)

Despite limited funding for F & E activities in 2024, the Program persevered through collaborations and novel solutions. The Program constructed 17 latrines, 15 of which were constructed with Carter Center support, with some latrines constructed using locally sourced materials. Additionally, the Program maintained behavior change and communication, and health education in 4,632 villages as part of MDA and surgical activities.

Surveys

In 2024, out of the six prevalence surveys targeted, the Program conducted four surveys. Of these, three were completed with support from The Carter Center. Among the four surveys were two baseline surveys. This resulted in the completion of the national trachoma map, a landmark achievement for the Program. Finally, as part of operational research, the baseline survey in Ikotos county, Eastern Equatoria State, integrated serological surveillance through dried blood spot (DBS) collection from over 3,000 individuals.

Other Notable Achievements

The completion of trachoma mapping in South Sudan has enabled the Program to accurately target interventions and plan resource allocation. The mapping results laid the groundwork for the August 2024 workshop to develop a Trachoma Action Plan (TAP) for the Republic of South Sudan. In addition, the Program participated in a Supply Chain Management training facilitated by ITI as well

as achieved record-breaking numbers in both the provision of TT surgeries and individuals treated during MDA campaigns.

Programmatic Challenges & Mitigation Efforts

South Sudan faced challenges in 2024. Poor reverse logistics from the counties and drug delays caused challenges in timely MDA implementation, exacerbated by inaccurate population estimates. Flooding was another barrier to program implementation as the population became displaced, further complicating the Program's effort to track population movements and impacting coverage. Insecurity also interrupted MDA, surgery, and survey activities.

To mitigate these challenges, the Program developed alternate plans and shifted focus to surgery and surveys when drug was not available. To ensure that activities are carried out safely, the Program monitors the security situation and implements activities when safely feasible. In addition, the Program adopted a modeled population from the National Bureau of Statistics, which, when combined with historical treatment data, allowed for improved MDA population projections. Finally, the MOH and partners continue to advocate for local resource mobilization from donors to support SAFE activities in all endemic counties.

Program Plans for 2025

Surgery (S)

- Operate 7,906 TT patients, 3,300 with Carter Center assistance
- Train 24 TT surgeons

Antibiotic Therapy (A)

- Distribute 3,302,995 doses of azithromycin, 1,762,691 with Carter Center assistance
- Distribute 66,060 doses of TEO, 35,254 with Carter Center assistance

Facial Cleanliness (F) & *Environmental Improvement (E)*

- Conduct health education in 3,900 villages with Carter Center assistance
- Construct seven latrines, five with Carter Center assistance

Surveys

- Conduct 13 surveys, three with Carter Center assistance

South Sudan – TT Prevalence: Adults ≥ 15 Years

Baseline (1999 – 2024)

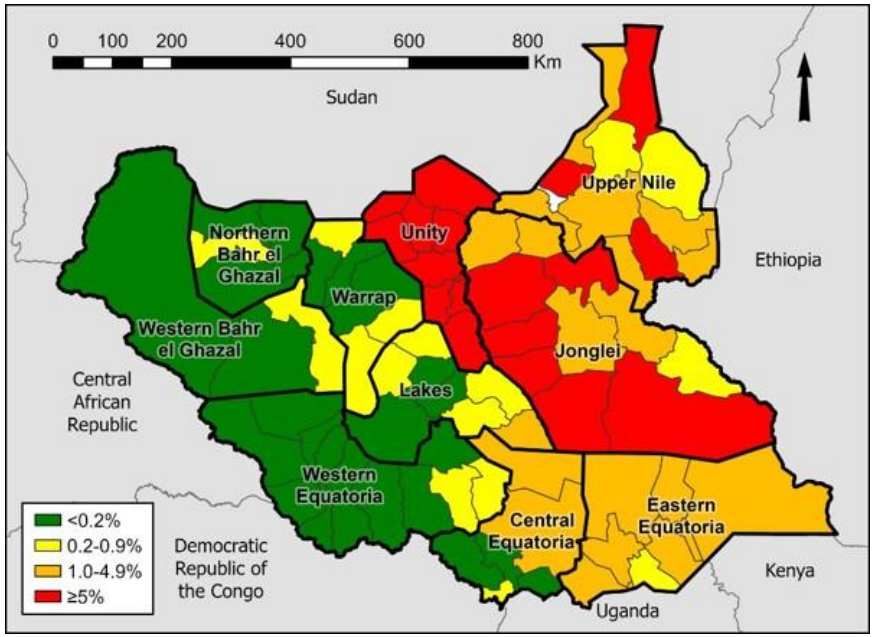


Figure 1 – Estimated TT prevalence at baseline

2025

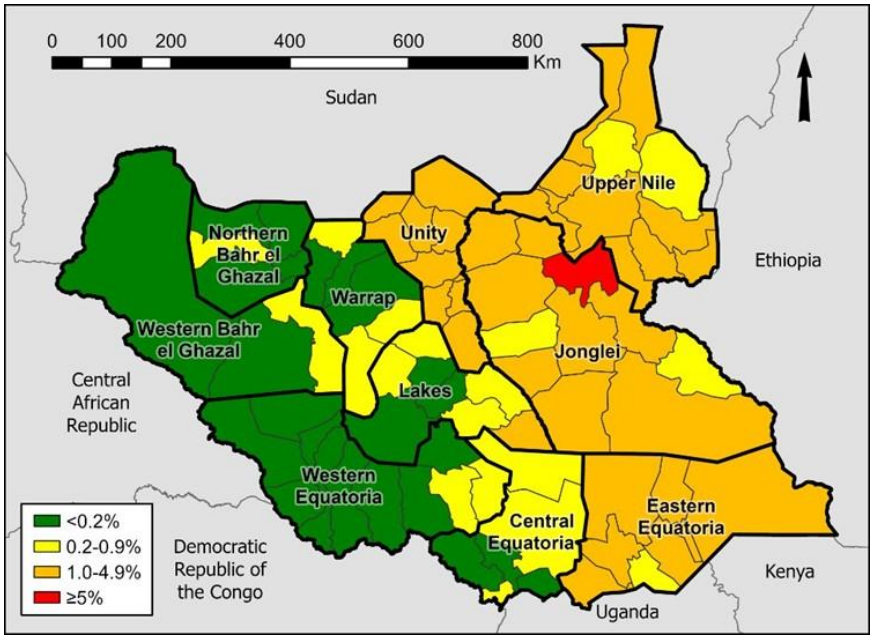


Figure 2 – Estimated TT prevalence through 2025

South Sudan – TF Prevalence: Children 1–9 years

Baseline (1999 – 2024)

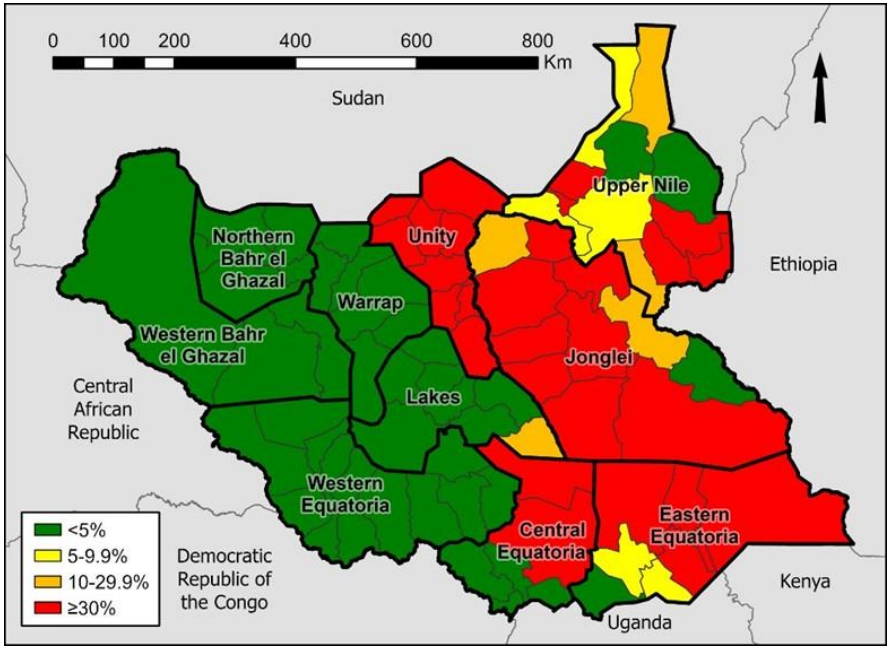


Figure 3 – Estimated TF prevalence at baseline

2025

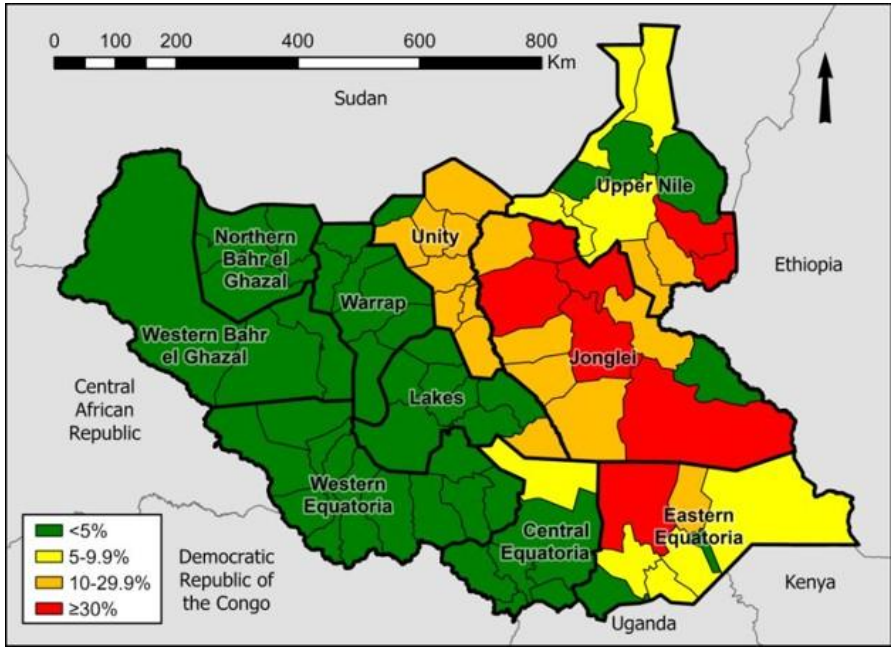


Figure 4 – Estimated TF prevalence through 2025

South Sudan –Survey Activities

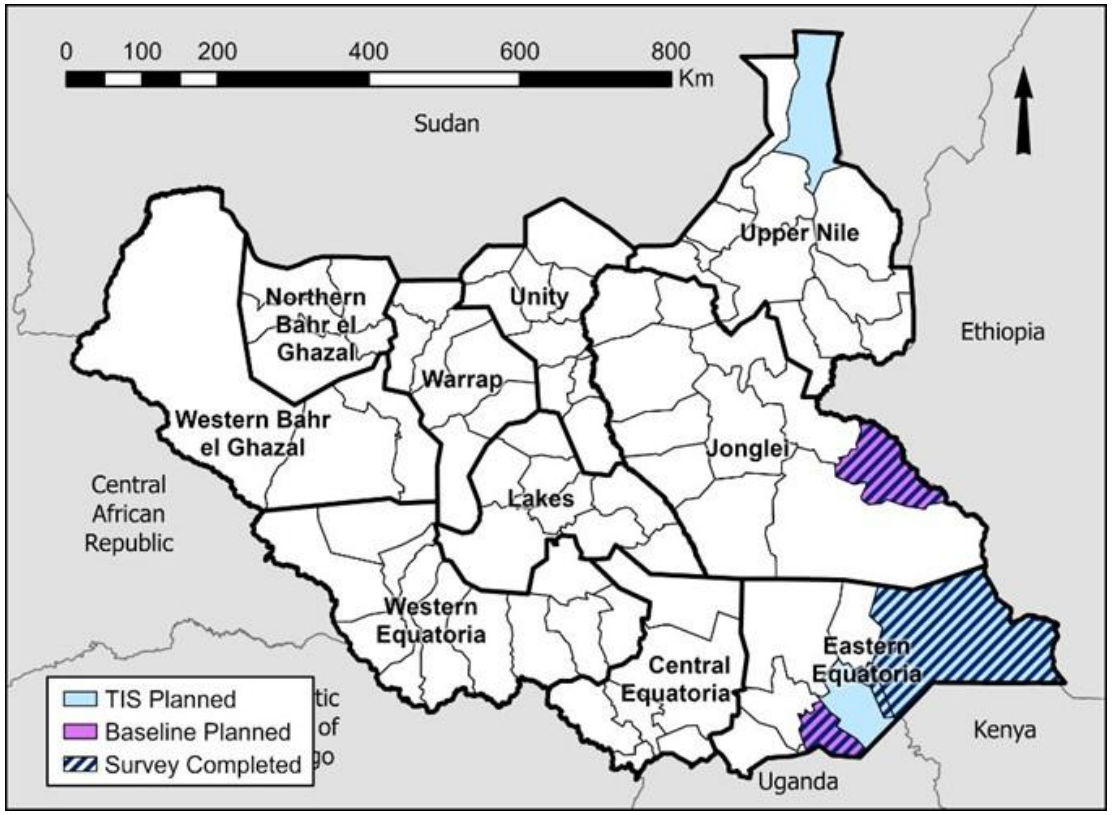


Figure 5 – Surveys Completed in 2024

SAFE in Sudan

Presented by Dr. Sara Lavinia Brair, Senior Country Representative, The Carter Center, on behalf of Dr. Balgesa Elshafie, Sudan National Coordinator for Trachoma Control Program, Federal Ministry of Health, Sudan

Background

The Federal MOH has been working to eliminate trachoma as a public health problem in Sudan for decades with the goal of reaching elimination by 2030.

On 15 April 2023, a civil war between the military government of Sudanese Armed Forces (SAF) and the paramilitary Rapid Support Forces (RSF) began in Khartoum state then gradually expanded to 11 states. As a result, over 12 million people have been displaced, with 8.8 million of these displaced internally. Additionally, at least two-thirds of hospitals located in conflict-affected areas are out of service and insecurity has made the delivery of health care services challenging. As of February 2025, SAF had liberated four states from RSF and some displaced citizens were returning to secure states. Despite the suspension of programmatic activities within Sudan, representatives of the Program attended three events during 2024: 1) Joint Annual Meeting of the Eastern and Southern Africa NTD/ Trachoma Cross-Border Partnership in Lusaka, Zambia; 2) Eastern Mediterranean Regional (EMR) Trachoma Alliance Meeting and the EMR meeting of the International Agency for the Prevention of Blindness in Riyadh, Saudi Arabia; and 3) Tropical Data training in Hawasa, Ethiopia.

Table 1. Program Achievements in 2024

Indicator	National		Carter Center-Assisted	
	Target	Achieved	Target	Achieved
# of persons operated	7,400	28 (0.4%)	2,100	0 (0%)
# of women operated		17		0
# of surgeons trained/retrained	30	0 (0%)		
# of doses of azithromycin distributed during MDA	637,100	0 (0%)	637,110	0 (0%)
# of doses of TEO distributed	13,002	0 (0%)	13,002 (0%)	0 (0%)
# of villages with health education	562	0 (0%)	562	0 (0%)
Surveys	25	0 (0%)	5	0 (0%)

Surgery (S)

The National Program conducted 28 TT surgeries during calendar year 2024, 17 of which were performed on women. Most eye care workers have relocated from Khartoum to the various states.

Antibiotic Therapy (A)

The National Program planned to distribute 637,100 doses of azithromycin and 13,002 doses of TEO, with The Carter Center's assistance in Gedarif and Red Sea states. Due to the civil war, insecurity, and a lack of drug in-country, no MDAs were conducted. Despite this, the Program, in partnership with The Carter Center, began preparation for implementing MDAs in 2025. This included the production of MDA materials such as dosing poles, identification of new drug storage facilities outside of Khartoum, and coordination with ITI on a test shipment.

Facial Cleanliness (F) & Environmental Improvement (E)

The 2024 F & E targets to reach 562 villages with health education during MDA and surgery camps were not met. However, hundreds of trachoma prevention posters, leaflets, and stickers were produced in anticipation of the resumption of trachoma activities in 2025.

Surveys

Due to insecurity, no planned surveys were conducted.

Programmatic Challenges and Mitigation Strategies

The civil war which broke out in April 2023 was still ongoing as of February 2025. The fighting resulted in all Program activities being suspended throughout 2024. The spread of conflict has, in turn, led to economic hardships, a rise in inflation, and an increase in Program costs. The impact on the TCP and the population numbers in endemic localities is unclear. Given the insecurity in Khartoum and looting of The Carter Center Khartoum office, a new Carter Center office was established in Kassala state. The Carter Center will focus its resources in Gedarif and Red Sea states where there is less fighting.

Program Plans for 2025

Surgery (S)

- Operate 400 TT patients with Carter Center assistance

Antibiotic Therapy (A)

- Distribute 591,224 doses of azithromycin with Carter Center assistance
- Distribute 12,000 doses of TEO with Carter Center assistance

Facial Cleanliness (F) & *Environmental Improvement (E)*

- Provide 400 villages with health education

Surveys

- Conduct one impact survey with Carter Center assistance

Sudan – TT Prevalence: Adults ≥ 15 years

Baseline (2022)

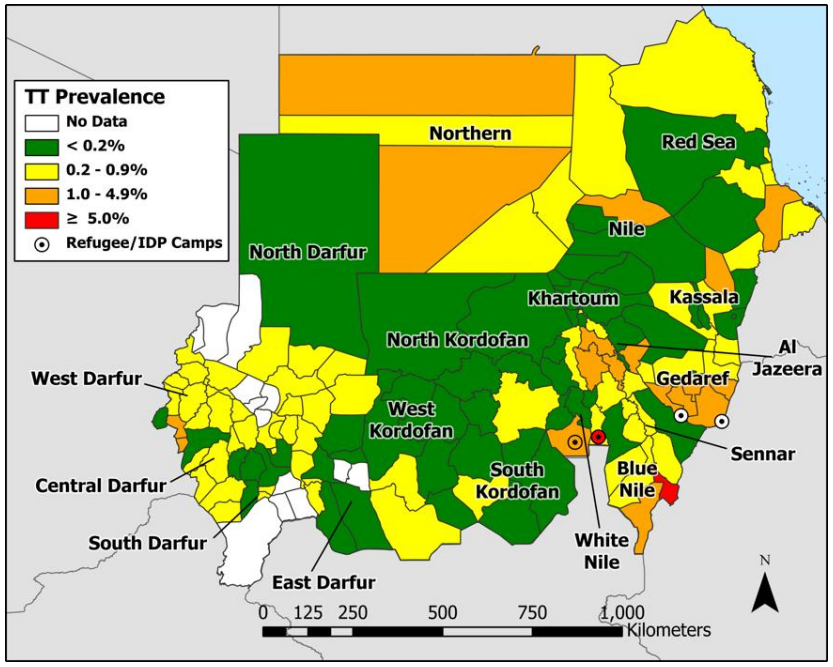


Figure 1 – Estimated TT prevalence at baseline

2024

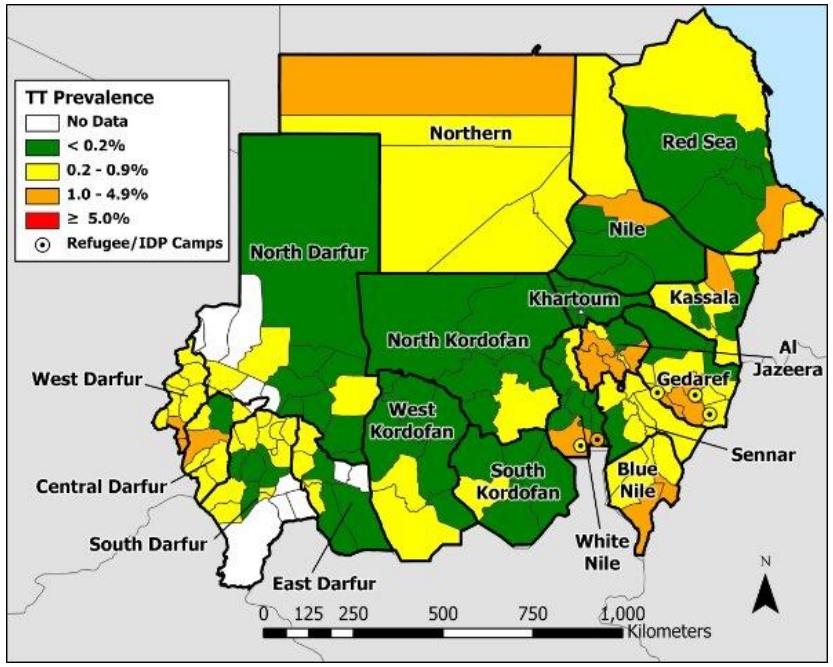


Figure 2 – Estimated TT prevalence through 2024

Sudan – TF Prevalence: Children 1 – 9 Years

Baseline (2022)

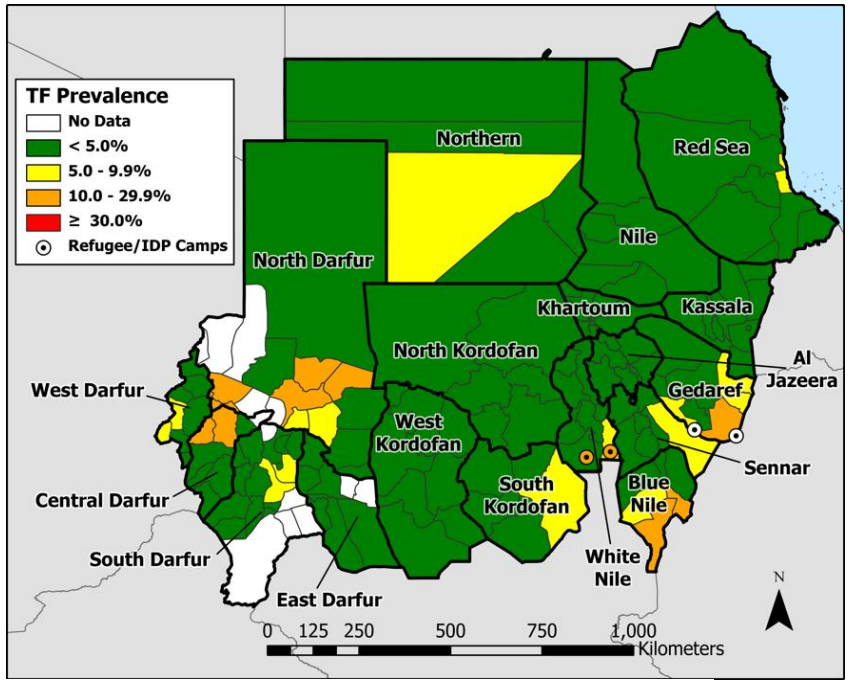


Figure 3 – Estimated TF prevalence at baseline

2024

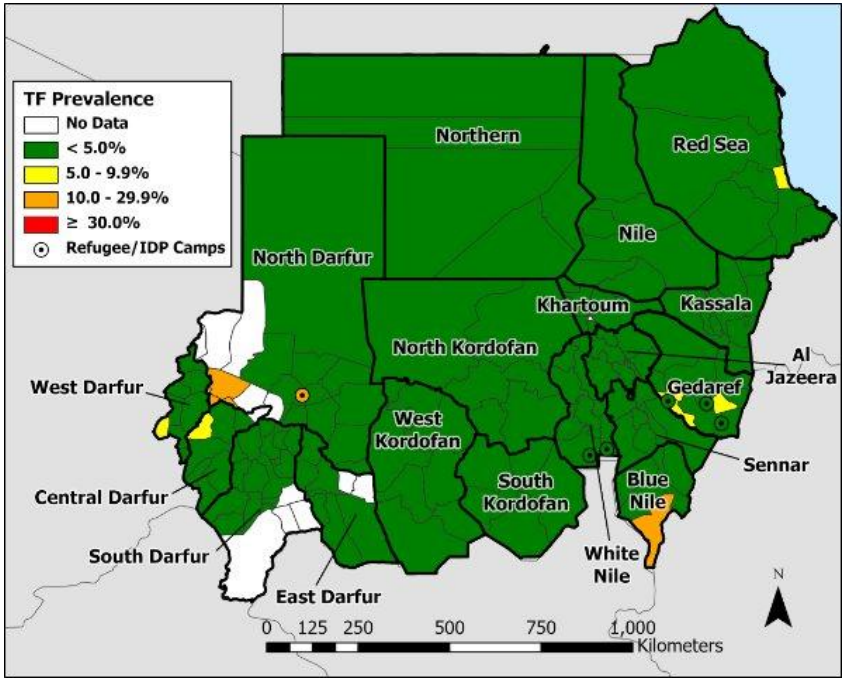


Figure 4 – Estimated TF prevalence through 2024

Table 1. Summary of National Data from Trachoma Control Programs (Carter Center-Assisted Countries)					
National Data as Reported for 2024					
Indicators	**Niger**	**Sudan**	**South Sudan**	**Ethiopia***	**Total**
Surgery					
Surgeries	2,625	28	5,423	N/R	**8,076**
2024 Target	8,000	7,400	4,500	N/R	**19,900**
Percent Coverage	32.8%	0.4%	120.5%	N/R	**40.6%**
Antibiotics					
Azithromycin					
Doses	N/R	0	1,457,571	N/R	**1,457,571**
2024 Target	N/R	637,100	1,753,570	N/R	**2,390,670**
Percent Coverage	N/R	0.0%	83.1%	N/R	**61.0%**
Tetracycline Eye Ointment					
Doses	N/R	0	117,129	N/R	**117,129**
2024 Target	N/R	13,002	43,839	N/R	**56,841**
Percent Coverage	N/R	0.0%	267.2%	N/R	**206.1%**
Facial Cleanliness and Health Education					
Villages with Health Education	N/R	0	4,632	N/R	**4,632**
2024 Target	N/R	562	4,000	N/R	**4,562**
Percent Coverage	N/R	0.0%	115.8%	N/R	**101.5%**
Environmental Improvements					
Latrines	N/R	N/A	17	N/R	**17**
2024 Target	N/R	N/A	12	N/R	**12**
Percent Coverage	N/R	N/A	141.7%	N/R	**141.7%**
Surveys					
Achieved	N/R	0	4	N/R	**4**
Target	N/R	25	6	N/R	**31**
Percent Coverage	N/R	0	66.7%	N/R	12.9%
N/R=Not Reported					
N/A=Not Applicable					
Totals only include countries and districts where data are available					
*TCC Supports the Amhara region of Ethiopia. Ethiopia National data are not reported here					

Table 2. Carter Center-Assisted Implementation of SAFE (Carter Center-assisted output)					
Summary of Interventions per Country, January - December 2024					
Indicators	**Niger***	**Sudan**	**South Sudan**	**Ethiopia-Amhara**	**Total**
Surgery					
Persons operated for TT	918	0	2,557	7,570	**11,045**
2024 Target	NR	2,100	1,500	34,845	**38,445**
Percentage	NR	0.0%	170.5%	21.7%	**28.7%**
Antibiotics					
Doses of antibiotics distributed	N/A	0	463,979	4,412,769	**4,876,748**
2024 Target	N/A	637,110	583,891	16,177,100	**17,398,101**
Percentage	N/A	0.0%	79.5%	27.3%	**28.0%**
Facial cleanliness and health education					
Villages with ongoing health education	N/R	0	2,121	N/R	**2,121**
2024 Target	N/R	562	2,916	N/R	**3,478**
Percent Coverage	N/R	0.0%	72.7%	N/R	**61.0%**
Environmental improvement					
Household latrines constructed	2,553	N/A	15	N/A	**2,568**
2024 Target	N/R	N/A	10	N/A	**10**
Percentage	N/R	N/A	150%	N/A	**150.0%**
Surveys					
Trachoma Prevalence Surveys	5	0	3	6	**14**
2024 Target	N/R	5	4	44	**53**
Percentage	N/R	0.0%	75.0%	13.6%	**26.4%**
N/A=Not Applicable					
N/R=Not Reported					
Totals only include countries and districts where data are available					
*TCC does not assist MDA implementation and distribution activites but TCC does assist in purchasing TEO for MDA					

Table 3. National Trachoma Control Program Annual Targets 2025 (Carter Center-Assisted Countries)						
Targets§ as Reported, February 2025						
Indicators	**Niger**	**Sudan**	**South Sudan**	**Amhara - Ethiopia***	**Ethiopia**	**Total****
Surgery						
Persons to operate for TT	4,000	400	7,906	19,599	N/R	**31,905**
Antibiotics						
Doses of azithromycin to distribute during MDA†	503,887	591,224	3,302,995	14,417,527	N/R	**18,201,363**
Doses of TEO to distribute during MDA	15,584	12,000	66,060	278,629	N/R	**372,273**
Facial cleanliness						
Villages to reach through health education	N/R	400	3,900	N/R	N/R	**4,300**
Environmental improvement						
Household latrines to construct	2,500	N/R	7	N/A	N/R	**2,507**
Surveys						
Surveys to conduct	6	1	13	N/R	N/R	**20**

N/A = Not Applicable

N/R = Not Reported

§All targets are subject to change

†Antibiotic targets do not reflect ITI-approved allocations of azithromycin

*Includes doses to be distributed during child MDA in 18 woredas

**Totals only include countries where data are available

Table 4. Cumulative Carter Center-Assisted Implementation of SAFE					
Cumulative Interventions per Country, 1999-2024					
Indicators	**Niger**	**Sudan**	**South Sudan**	**Ethiopia-Amhara***	**Total**
Persons operated for TT	92,024	13,089	14,677	809,345	**929,135**
Doses of antibiotic distributed (MDA)	4,331,365	9,053,129	5,648,185	218,916,079	**237,948,758**
Villages with ongoing health education	N/R	562	2,121	N/R	**2,683**
Household latrines constructed	195,643	0	646	3,336,513	**3,532,802**
*TCC only supports the Amhara region of Ethiopia					
N/R = Not Reported					

Table 5. Summary of Carter Center-Assisted Programs Activity Plans, Accomplishments, and Challenges 2024-2025				
Country	**2024 Plans**	**2024 Accomplishments**	**Challenges**	**2025 Plans**
Ethiopia (Amhara)	•34,845 TT surgeries •Train 44 new TT surgeons •Retrain 50 TT surgeons •Distribute 15,856,569 doses of azithromycin •Distribute 320,531 doses of TEO •100% F&E schools reporting quarterly •Construct 20 water points	•7,570 TT surgeries •Operated 4,782 women •Distributed 4,330,294 doses of azithromycin •Distributed 82,475 doses of TEO •Conducted 6 prevalence surveys	•Insecurity •Persistent and recrudescent districts	•19,599 TT surgeries •Train 56 new TT surgeons •Retrain 47 TT surgeons •467 IECWs on epilation •Distribute 14,417,527 doses of azithromycin •Distribute 278,629 doses of TEO •100% F&E schools reporting quarterly •Construct 20 water points
Niger	•2,000 TT surgeries •Train 120 surgeons •Construct 6,000 latrines •Construct 24 block latrines •Conduct 5 TT-only surveys	•918 TT surgeries •Operated 591 women •8 EU started Casefinding •14 surgeons retrained •Conducted 5 prevalence surveys •Constructed 2,553 latrines •Constructed 22 block latrines •120 teachers trained on IEC •Broadcast 20,968 radio message	•Insecurity •IDPs •Climate change •Implementation of field activities •Persistent and recrudescent districts	•2,000 TT surgeries •Finish ratissage in 11 EUs •Construct 2,500 latrines •Conduct 6 prevalence surveys
South Sudan	•1,500 TT surgeries •Distribute 569,651 doses of azithromycin •Distribute 14,240 doses of TEO •Health education in 2,600 villages •Conduct 2 surgical outreach camps •Construct 10 latrines •Conduct 4 prevalence surveys	•2,416 TT surgeries •Operated 1,848 women •Distributed 433,732 doses of azithromycin •Distributed 30,247 doses of TEO •Health education in 2,121 villages •Constructed 15 latrines •Conducted 3 prevalence surveys	•Insecurity •IDPs and refugees •Delayed arrival of azithromycin shipments •Climate change	•7,906 TT surgeries •Train 24 TT Surgeons •Distribute 1,762,691 doses of azithromycin •Distribute 35,254 doses of TEO •Health education in 3,900 villages •Construct 5 latrines •Conduct 13 prevalence surveys
Sudan	•2,100 TT surgeries •Distribute 637,110 doses of azithromycin •Distribute 13,002 doses of TEO •Health education in 562 villages •Conduct 5 prevalence survey	•No activities due to war	•Insecurity •IDPs and refugees •MOH staff located in different parts of the country •Limited access to most of Sudan for TCP •Hyper inflation increasing program costs	•400 TT surgeries •Distribute 591,224 doses of azithromycin •Distribute 12,000 doses of TEO •Health education in 400 villages •Conduct 1 prevalence survey

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

National Program data as presented for January - December 2024

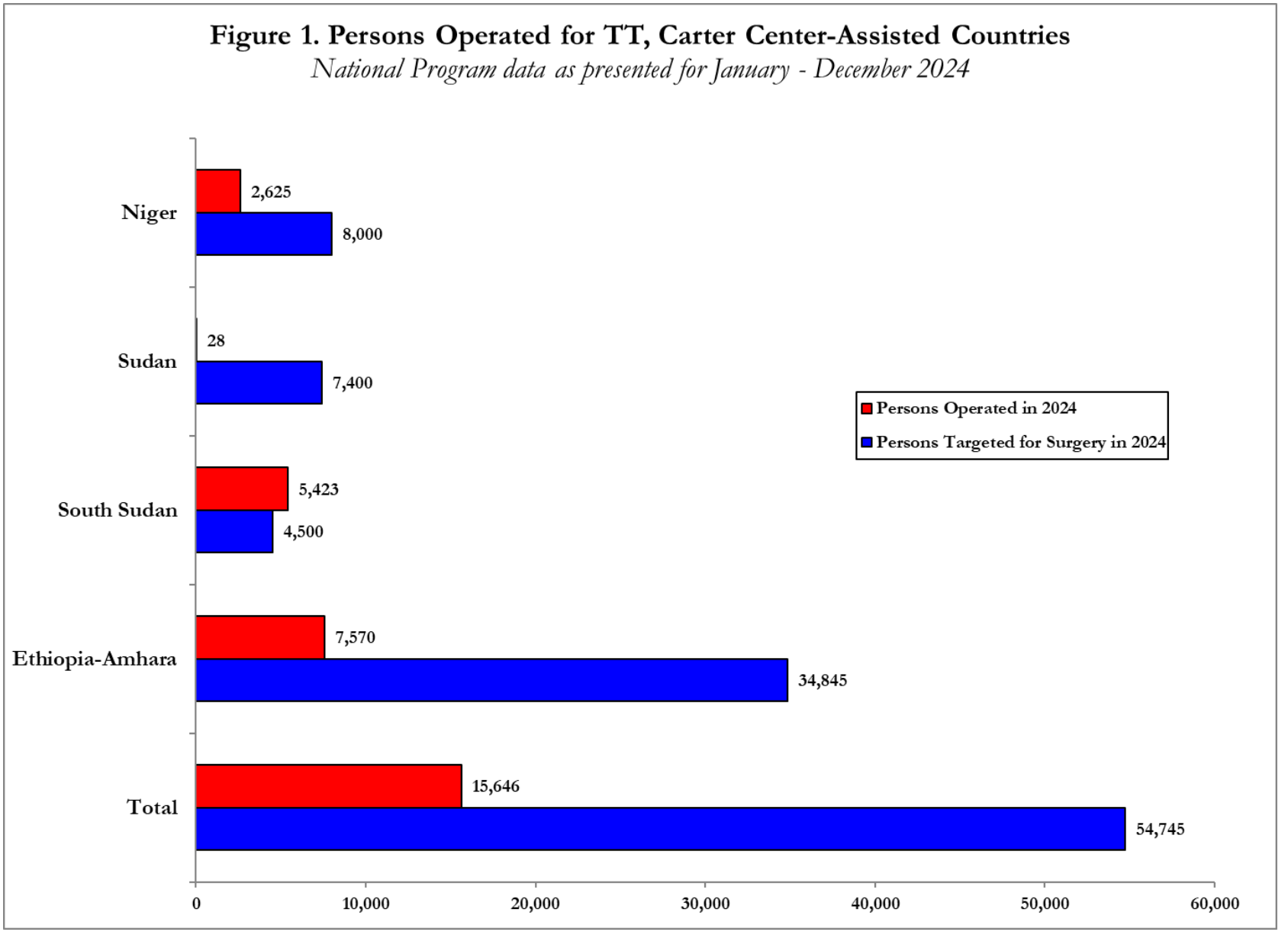
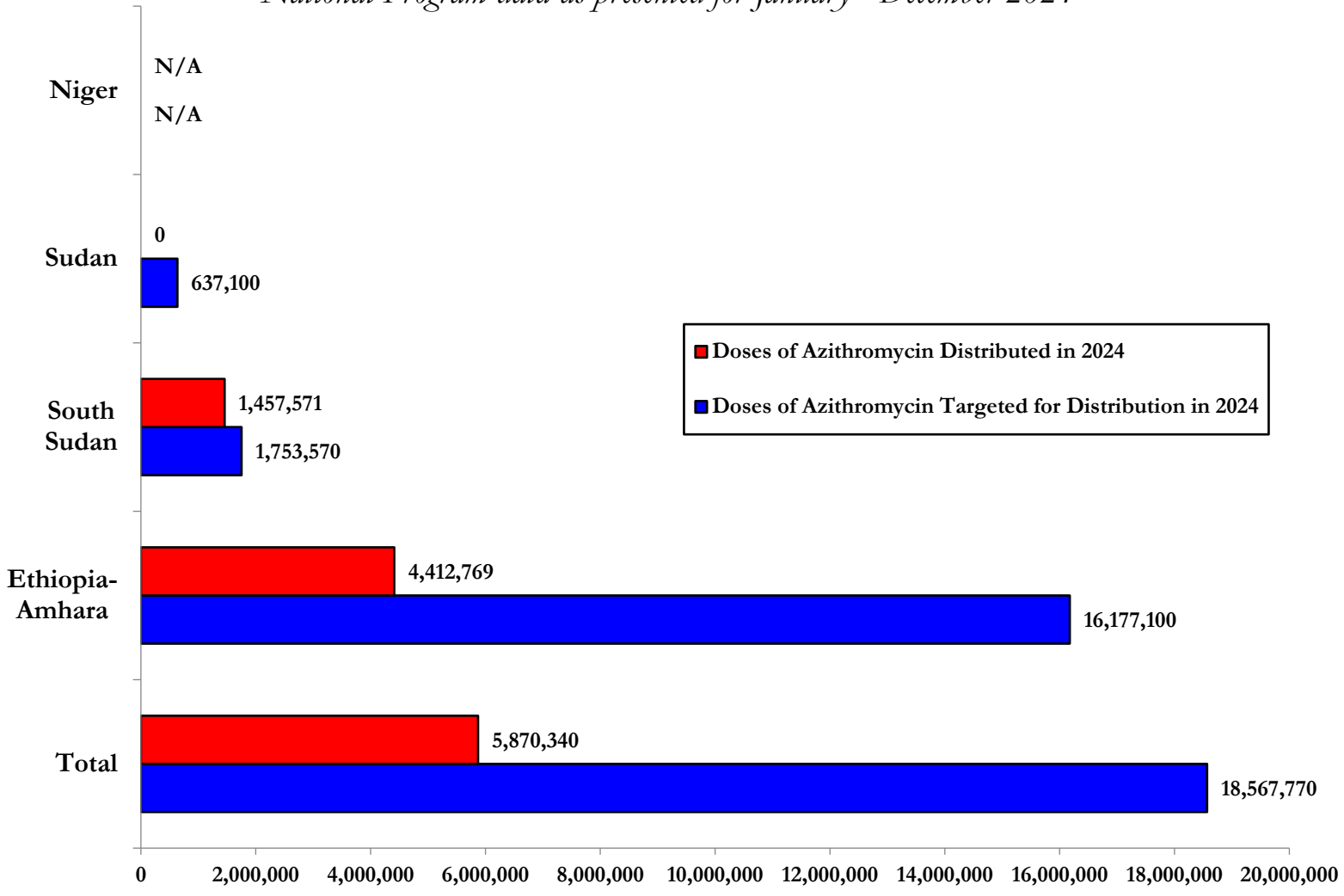


Figure 2. Azithromycin Distribution, Carter Center-Assisted Countries

National Program data as presented for January - December 2024



SWIFT II WASH Indicators Over Time

Presented by Ms. Dionna Wittberg, Senior Research Coordinator, Francis I. Proctor Foundation

The WASH Upgrades for Health in Amhara II or WUHA II was a two-arm, parallel-group, cluster-randomized trial in 40 rural communities in Wag Hemra Zone (Amhara Region, Ethiopia) from 2019-2024. Clusters were randomly assigned (at a 1:1 ratio) to receive WASH intervention and antibiotics or antibiotics alone. We examined whether comprehensive WASH intervention and annual antibiotics were more effective than annual antibiotics alone for trachoma control. The WASH intervention consisted of both hygiene infrastructure improvements (community water point, household wash stations, and soap distribution) and WASH education and promotion by 20 study hygiene promotion workers, as well as local leaders and primary school teachers. A household WASH survey was completed annually by 33% of randomly selected households in all 40 clusters. In the 20 intervention clusters, we saw evidence of improved WASH infrastructure and hygiene behaviors (observation and self-report) over the course of the study. However, the dual challenges of COVID and conflict in the study area impacted the implementation and uptake of the study.

A Longitudinal Study of Trachoma Infection Clearance and Re-Acquisition in a Persistently Hyperendemic Setting (ATIRA)

Presented by Mikiyas Gebremichael, Ph.D. Student and Research Project Manager,
London School of Hygiene and Tropical Medicine and Eyu-Ethiopia

Community-wide treatment using azithromycin is highly effective against ocular *Chlamydia trachomatis* (*Ct)* infection and has contributed to eliminating trachoma as a public health problem in many settings. However, trachoma is still highly endemic in many parts of Ethiopia despite more than 10 years of the SAFE strategy, including mass azithromycin distribution. The reason why such persistent trachoma still exists in Ethiopia despite these considerable elimination efforts is unknown. To achieve the goal of trachoma elimination by 2030, a better understanding of the contributors to persistent trachoma is crucial.

We are conducting a longitudinal study in Argoba district, in the South Wollo zone of the Amhara region. According to a TIS in 2020, the district had a 41% TF prevalence among children ages one to nine years and a *Ct* infection prevalence of 16% among children ages one to five years; this is despite more than 10 rounds of annual MDA. Clinical examination of the conjunctiva and swabbing for *Ct* infection were conducted at baseline. After community-wide azithromycin treatment, the children are monitored monthly for one year. The analysis will primarily explore i) *Ct* infection clearance within one month ii) *Ct* infection acquisition within 12 months, and iii) behavioral, environmental, nutritional, and socio-cultural factors associated with infection clearance and acquisition.

The baseline examination was conducted in September 2024 with 52 sub-villages (clusters) randomly selected from a possible 92 with probability proportionate to population size. A total of 2,086 children ages one to nine years were enrolled. Community-wide MDA was conducted in October 2024, and monthly follow-ups continued thereafter. Baseline *Ct* infection and TF prevalence were 10.6% and 36.4%, respectively.

The remaining activities of the study include completing the monthly follow-up visits, conducting observational qualitative studies to investigate behavioral factors influencing infection clearance and acquisition, performing serological tests, and completing a macronutrient analysis to explore its potential impact on *Ct* infection dynamics.

Costing for Ethiopia: Enhanced MDA and Surveys

Presented by Ms. Kim Jensen & Mr. Tim Jesudason, Associate Director, Trachoma Control Program, The Carter Center – Atlanta, & Health Economics and Communications Consultant, Partners in Global Health Ltd

Cost analysis of integrating infection and serological monitoring into trachoma prevalence surveys

The Amhara region of Ethiopia is greatly impacted by trachoma persistence and recrudescence, with all 108 currently endemic districts defined as persistent or recrudescent. As a result of a December 2021 informal consultation of endgame challenges, there was a renewed interest in considering *Ct* infection and serological monitoring, as these provide more objective measures to the clinical signs of TF. As the interest in using complementary indicators expanded, The Carter Center and ARHB wanted to assess the process and cost to implement such activities. To date, The Carter Center and ARHB have incorporated *Ct* monitoring into 374 surveys and serology monitoring in 16 surveys, of which 70 surveys from 2022 and 2023 were included in the cost assessment of standard prevalence surveys and those with complementary indicators.

This study estimated the financial and economic costs of conducting standard trachoma surveys and assessed the additional costs of including infection and serology testing. A bottom-up micro-costing analysis was conducted from the payer perspective, following the Global Health Cost Consortium Reference Case. All resource inputs, including donated items and laboratory services, were quantified in collaboration with partners.

Preliminary results show the average financial cost per district for standard surveys was $12,537. This increased by 47% to $18,379 with infection testing, and by 82% to $22,833 when both infection and serology testing were included. Corresponding financial costs per cluster were $418, $613, and $763, respectively. A scenario analysis was conducted assessing the financial and economic costs of incorporating only serology into standard prevalence surveys; preliminary results show a cost per district of $17,176, or $573 per cluster.

Economic costs, which account for the value of donated resources and lab operations, are a significant consideration in these activities. Abbott has been a dedicated supporter of the *Ct* testing activities in Amhara for many years, donating the m2000 machine and reagents required to conduct the polymerase chain reaction (PCR) testing; the United States Centers for Disease Control and Prevention (CDC) provides the supplies and testing for the DBS and the multiplex bead assay used for serological testing; Tropical Data is supported by a consortium of partners to provide the data collection platform, protocol review, and data analysis of standard prevalence surveys. Some of these contributions are included in the current results of the economic cost analysis, while support for Tropical Data is forthcoming.

Preliminary results from our economic cost analysis were slightly higher. Standard surveys cost $12,542 per district, increasing by 74% to $21,830 with infection testing, and by 168% to $33,570 when both infection and serology were included. Per cluster, economic costs were $418, $728, and $1,119, respectively. The scenario analysis of the economic costs of incorporating only serology shows a per district cost of $25,751 or $858 per cluster.

This study will be useful to provide an estimate for budget allocation and decision-making, though costs will vary based on testing capacity; these results are context specific and provide estimates for

testing specific to Amhara, where the existing in-country infrastructure for *Ct* infection testing using the m2000 in country was available. Results from additional costing studies in other contexts would provide a range of costs and approaches for incorporating complementary indicators to determine whether and where infection and/or serology should be included.

The results of this analysis will be finalized in the coming months.

The cost of annual and MFTA MDA for trachoma in two districts in Amhara, Ethiopia

As a result of a 2021 WHO informal meeting on endgame strategies, country programs were advised to consider alternative strategies to address the challenge of persistent and recrudescent trachoma, including MFTA MDA.

In response, the MOH of Ethiopia, which accounts for 59% of the global trachoma burden, established the "child MDA" strategy whereby one round of standard community-wide MDA was conducted followed by an additional treatment to children six months to nine years, four to six weeks later. The Carter Center and ARHB implemented the child MDA pilot study in two hyperendemic districts, Lasta and Wadilla, in 2023 to inform the feasibility and cost of implementing the strategy.

This study estimated the cost of child MDA using a bottom-up micro-costing analysis; financial and economic costs were documented in an Excel database from a payer perspective and applying the Global Health Cost Consortium Reference Case and Global Health Cost Consortium Principles and Methods Checklist.

The total financial cost of the MDAs in Lasta and Wadilla was $106,288, which corresponds to a financial cost per person treated of $0.41 and a financial cost per treatment of $0.32. In Lasta, 168,175 people were treated at a financial cost of $61,908, which corresponds with a cost per person of $0.48 and cost per treatment of $0.37. In Wadilla, 169,248 people were treated at a total financial cost of $44,380. This results in a unit cost of $0.34 per person treated and a cost per treatment of $0.26. This information is useful for program managers and funders when considering the cost of implementing or expanding the child MDA strategy in similar contexts. Additionally, perhaps in time with further analysis, we can understand the cost-effectiveness of this MFTA strategy.

While not presented, the study also assessed economic costs for implementing MDA, which accounts for the value of donated medicines and labor. The distribution of hundreds of millions of treatments is done with the help of community volunteers who support health workers during MDA; these costs are reflected as economic costs in the manuscript. Additionally, the significant impact of the Pfizer donation of azithromycin, which is managed by ITI, is also reflected in the economic costs and is included in the final results. This contribution makes MDA possible in Amhara, throughout Ethiopia, and throughout the global program.

South Sudan Baseline Results with Complementary Indicators

Presented by Mr. Nicholas Presley, Associate Director, Trachoma Control Program, The Carter Center – Atlanta

The presentation provided an overview of baseline trachoma surveys from Eastern Equatoria State, South Sudan. The state is divided into eight counties, five of which had historically high baseline prevalences for trachoma. As of 2022, three counties did not have baseline trachoma prevalence data, limiting the MOH's ability to plan and target interventions.

Starting in 2023, baseline surveys were conducted in the three counties of Ikotos, Magwi, and Torit. Complementary indicators were piloted during these surveys, including serological monitoring of trachoma antibodies through DBS sample collection for all surveyed individuals over the age of one. In addition, *Ct* infection monitoring through ocular swabs was performed in Torit for children ages one through nine.

The clinical graded results found a TF prevalence in children one to nine years of 0.8% in Magwi, 6.1% in Ikotos, and 7.3% in Torit, with Magwi being below the elimination threshold of TF<5%. TT prevalence was higher than the elimination threshold (TT<0.2%) in all three counties, indicative of historical transmission. Seroconversion rates (SCRs) for children one to five years old ranged from 1.7 in Magwi to 7.0 in Torit. Infection results from Torit revealed a *Ct* prevalence of 1.4%, further implying ongoing transmission is occurring in Torit.

The findings emphasize the need for continued SAFE interventions in Torit and Ikotos counties. Although Magwi's TF prevalence was under the 5% threshold and will only require S, F, and E interventions until a TT<0.2% prevalence is reached, it's SCR was hard to classify and near what would be expected from low levels of transmission. Further analysis of the DBS samples for other infections – such as malaria, NTDs, and others – will help develop a holistic understanding of public health priorities in these counties.

MDA in South Sudan's Cattle Camps: Reaching Special Populations

Presented by Mr. Lochebe Boniface, Senior Program Officer, Trachoma Control Program, The Carter Center – South Sudan

In Eastern Equatoria State of South Sudan – particularly the counties of Kapoeta East County (KEC) and Kapoeta North County (KNC) – pastoral communities partake in seasonal migration, which poses challenges for health program outreach due to poor road conditions, unreliable population estimates, and insecurity. The MOH's TCP includes temporary cattle camps in their MDA planning, with community drug distributors traveling to these cattle camps to distribute antibiotics. As these cattle camps often move and depend on seasonality, locating them requires a high level of community trust, often with community representatives guiding the teams to the camps.

Starting in 2023, additional information was collected during MDAs to develop a greater understanding of population mobility dynamics and the role of cattle camps for achieving high MDA coverage. Findings from KEC (Oct-Dec 2023) indicated that excluding camps would miss a significant portion of the population, with 11.8% of treatments during the MDA campaign occurring in temporary camps, of which 37.9% were for children under the age of 15 years. In KNC, seasonal differences in camp locations were noted. During the dry season (January 2024) camps tended to be further from the communities, more abundant (N=58), and more populous (7.4% of treatments). In comparison, during the late rainy season (September 2024) there were fewer camps (N=8) which tended to be closer to the home communities and with a smaller proportion of the population (<1% of treatments). An ODK based questionnaire was piloted during the September MDA in KNC and found that pastoralists on average spent multiple months away from home and would visit >3 camps during their travels.

These findings emphasize the importance of understanding seasonal migration for planning MDAs in Eastern Equatoria State. In addition, as climate change may increase migration frequency and distance, community trust is essential for accessing these camps.

Locating Pastoralist Populations in Northern Tanzania

Presented by Dr. Will Oswald, Senior Epidemiologist, Research Triangle Institute, International

The Maasai of northern Tanzania are traditionally pastoralists, necessitating a nomadic lifestyle in pursuit of water and forage for livestock. Maasai *boma*—settlements or encampments—can be hard to reach with disease control activities, increasing the population's risk for NTDs. Our objective was to use satellite imagery and geospatial artificial intelligence to rapidly create an up-to-date and spatially referenced sampling frame for a population-based survey of *boma* residents. We aimed to validate our sampling frame and estimate the prevalence of trachoma and STH infections. We conducted a cross-sectional survey in two district councils. We created a sampling frame by applying deep neural network architectures to recent satellite imagery to geolocate *boma* across the study area and then randomly selected 33 clusters using grid-based sampling. To validate the sampling frame, we enumerated undetected *boma* and confirmed detected *boma*. Within occupied *boma*, we conducted household surveys until we reached 30 children ages one through nine years per cluster. Among consenting residents, we conducted trachoma examinations, collected DBS, collected conjunctival swabs from children less than six years old and female caregivers of young children, and collected stool samples from children ages six to 14 years. Conjunctival swabs were tested for the presence of *Ct* using nucleic acid amplification testing. DBS were analyzed for evidence of prior infection by a panel of pathogens. Stool samples were analyzed for the presence of STH and a panel of enteropathogens using Taqman array cards. We will present sampling frame validation results and preliminary prevalence estimates for trachoma. Our results will demonstrate whether this approach may prove a useful tool to help health programs locate and guide disease control and elimination activities for these hard-to-reach populations.

Persistent Trachoma in Al Rahad, Sudan

Presented by Mr. Emmanual Ackah, Graduate Assistant, Trachoma Control Program, The Carter Center – Atlanta

A trachoma prevalence survey conducted in 2009 revealed that the prevalence of TF among children one to nine years in Al Rahad locality, Sudan, was 7.1% (95% CI: 5.4, 9.2). Despite four rounds of MDA, TF prevalence remained endemic and above the established TF elimination threshold. This situation prompted an exploration of *Ct* infection as a complementary indicator to assess the burden of trachoma infection in Al Rahad. The objective of this study was to determine the prevalence of TF and *Ct* infection in Al Rahad following four MDA rounds and to determine the trachoma prevalence over time (2009-2023) in this endemic region (Figure 1). In 2017, a total of 924 children were enrolled across 25 clusters and 514 households, with 866 (93.7%) being swabbed for infection testing. Among children ages one to nine years, TF prevalence was found to be 6.3% (95% CI: 4.0, 10.0), while the prevalence of *Ct* infection was recorded at 0.8% (95% CI: 0.2, 3.1). Notably, *Ct* infection prevalence in children ages one to five years was 1.1% (95% CI: 0.3, 4.4). Of the 25 clusters examined, 13 exhibited a prevalence of TF, with two of those clusters also demonstrating a prevalence of *Ct* infection. Although *Ct* infection prevalence was low, its use as a complementary indicator provides valuable insights into ongoing transmission and the effectiveness of trachoma control measures. To achieve elimination targets, MDA should continue alongside strengthened surveillance, improved WASH interventions, and targeted strategies in persistent transmission areas.

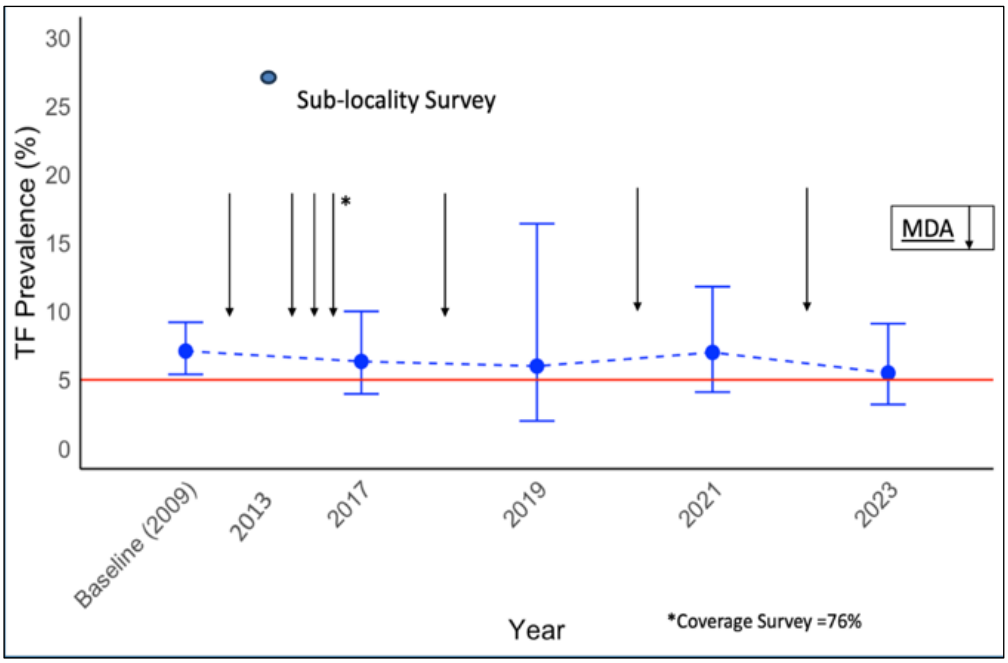


Figure 1: TF Prevalence from 2009 (Baseline) to 2023 in Al Rahad, Sudan, following multiple rounds of MDA

Impact of SAFE in South Sudanese Refugee Camps in Sudan

Presented by Ms. Anne Marie Dye, Rollins Earn and Learn Student, Trachoma Control Program, The Carter Center – Atlanta

Background

The South Sudan civil war, which began in December 2013, led to the mass displacement of refugees into neighboring countries, including Ethiopia, Kenya, Uganda, and Sudan. By mid-2022, Sudan was home to over 1.1 million refugees, the majority from South Sudan. Unlike typical refugee settings, most of these individuals lived outside formal refugee camps. Of those living in refugee camps, many South Sudanese refugees resided in refugee camps in White Nile State, particularly in Al Jabalain and Al Salam localities. A baseline trachoma survey conducted in 2017 in these camps showed a TF prevalence of over 10% among children ages one to nine years and a TT prevalence greater than 0.2% among those ages 15 years or older. These findings led to the implementation of the SAFE strategy, including: three annual rounds of MDA, surgical interventions reaching 482 patients, and health education integrated into MDA and surgery campaigns. In 2023 impact surveys were conducted to assess the prevalence of trachoma in refugee camps in Al Jabalain and Al Salam after three years of intervention.

Methods

To estimate the prevalence of trachoma, cross-sectional, multi-stage cluster-random surveys were conducted in refugee camps within the two localities. In Al Jabalain, there were three refugee camps with a total population of 18,883 individuals with 623 households surveyed. In Al Salam, there were seven refugee camps with a total population of 38,972 with 656 households surveyed. Survey sampling combined multiple camps within each locality to form one sampling frame for each locality. Trained and certified graders assessed clinical signs of trachoma, and household WASH indicators were also recorded.

Results

The prevalence of trachoma in the surveyed refugee camps was as follows:

- TF in children one to nine years:
    - 2.5% (95% CI: 1.3 – 3.8) in Al Jabalain
    - 3.9% (95% CI: 1.9 – 7.6) in Al Salam
- TT in individuals ages 15 years and older:
    - 3.3% (95% CI: 1.1 – 9.2) in Al Jabalain
    - 1.6% (95% CI: 0.9 – 2.8) in Al Salam

Notably, WASH access was high in both localities, a key factor in reducing trachoma transmission.

Conclusion & Recommendations

These were the first refugee camp baseline and impact surveys supported by The Carter Center, and they demonstrate the success of trachoma interventions in these settings. TF prevalence reduced below 5% among children ages one to nine years in both localities. As a result, MDA can be stopped. However, TT prevalence remained above 0.2%, indicating that surgical interventions must continue to manage trichiasis cases. Additionally, sustained WASH access and health education will be critical

to maintaining progress. Finally, a surveillance survey should be considered after two years, if refugee camps are accessible, to monitor trends and ensure continued impact.

The Utility of Integrated Serological Monitoring

Presented by Dr. Sophie Bérubé, Research Associate, Johns Hopkins University

Vulnerability to infectious disease is often the result of multiple co-circulating pathogens within individuals and geographic areas. The ability to measure past individual- and population-level exposure to a wide range of pathogens could help identify regions with a high burden of infectious disease. This information can then be used to target specific vertical interventions that might impact groups of pathogens with similar exposure routes and risk factors, as well as targeting horizontal interventions that could have a larger impact on infectious disease burden overall. Since antibodies persist after infection, measuring these with multiplexed serological assays offers the opportunity to elucidate an individual or population's past exposure to dozens of pathogens from a single cross-sectional sample. We examine data from two cross-sectional cluster-based serosurveys, one in Zambezia Province, Mozambique (N=1,292) and the other in North Darfur, Sudan (N=8,322). These surveys measured serological responses across a total of 19 pathogens including malaria, NTDs, vaccine preventable diseases, SARS-CoV-2, and enteric pathogens. First, we identified a group of co-occurring pathogens, such as mosquito-borne pathogens including malaria, lymphatic filariasis and dengue, that tend to co-occur in individuals and spatially suggesting a role for integrated control strategies that target groups of pathogens. Second, we used cluster-based seroprevalence estimates to create an overall vulnerability score for each cluster. From these scores we identified regions with a high burden of a range of infectious diseases. We found high levels of fine-scale spatial heterogeneity in the level of vulnerability across clusters consistent with previously described focal transmission patterns for many of the pathogens studied in the survey. Finally, we identified specific antigens, including many NTDs, whose serological responses across clusters were highly correlated with overall vulnerability. These antigens may be good candidate sentinel markers of overall vulnerability to a wider range of pathogens, the understanding of which may greatly improve integrated surveillance programs. Taken together, these results show the utility and potential of serological data from multiple pathogens for informing infectious disease control strategies.

Serology for Use in Trachoma Surveillance

Presented by Dr. Everlyn Kamau, Post Doctoral Fellow, University of California, San Francisco

Trachoma is targeted for global elimination as a public health problem by 2030. Measurement of IgG antibodies in children is being considered for surveillance and programmatic decision-making. There are currently no guidelines for applications of serology, which represents a generalizable problem in seroepidemiology and disease elimination. We collated *Ct,* plasmid gene protein 3 (Pgp3), and *CT*694 IgG measurements (63,911 children ages one to nine years) from 48 serosurveys, including surveys across Africa, Latin America, and the Pacific Islands to estimate population-level SCRs along a gradient of trachoma endemicity. We propose a novel, generalizable approach to estimate the probability that population *Ct* transmission is below levels requiring ongoing programmatic action or conversely is above levels that indicate ongoing interventions are needed. We provide possible thresholds for SCRs at a specified level of certainty and illustrate how the approach could be used to inform trachoma program decision-making using serology.

Recrudescence and Persistence Study

Presented by Mr. Mohamed Bah, Associate Public Health Advisor, Neglected Tropical Diseases Support Center, The Task Force for Global Health

The NTDs Support Center at the TFGH selected six proposals from 44 submissions to address persistent and recrudescent trachoma. Studies in Cameroon, Ethiopia, Kenya, Nigeria, Uganda, and Zambia followed a standardized methodology, incorporating country-led trachoma surveys, laboratory analyses, and domestic elimination strategies. Key objectives included clinical examinations of TF in children ages one to nine years, collection of DBS and ocular swabs from children ages one to five years to assess ongoing transmission, and evaluation of the concordance between TF prevalence, Pgp3 serology, and *Ct* infection.

In Kenya, Kajiado and Narok counties exhibited variable transmission patterns. Kajiado had low *Ct* infection but higher TF prevalence and seroprevalence, while Narok showed mixed results. The Kenya Trachoma Advisory Group recommended continued MDA in Kajiado and parts of Narok South, with potential redefinition of EUs based on infection patterns.

Ethiopia's study found discordance between TF prevalence and serology, complicating programmatic decisions. *Ct* infection was detected in Bore (1.6%) and Sebeta Hawas (1.4%), leading to extended MDA rounds, while Cheha and Boloso Bombe transitioned to surveillance. Further *Ct* analysis will guide the next steps for Kimbibit and Hulbareg.

In Uganda, results supported stopping MDA, as TF prevalence was low (<5%), though increasing Pgp3 seroprevalence in Nebbi East raised concerns. With low *Ct* infection levels confirmed, Uganda is integrating trachoma surveillance into routine health programs while maintaining F&E interventions.

Zambia found minimal transmission, as PCR detected no *Ct* infection. While TF prevalence and serology results varied, consistently low SCRs supported transitioning to surveillance without further MDA while maintaining SAFE strategy components.

In Nigeria, Binji's serology data aligned with TF results, confirming no ongoing public health concern. Silame initially exceeded the stop-MDA threshold but later showed no need for additional MDA after one round and a TIS in December 2024. Ongoing ocular swab analysis will guide future decisions.

Findings from this operational research highlight the importance of integrating serology and PCR into impact and surveillance surveys for more objective program assessments. Future steps include a multi-country analysis, a webinar on the importance and application of these indicators, and cost-effectiveness evaluations to inform global trachoma elimination strategies.

Outputs from Kigali Trachoma Meeting

Presented by Dr. Katie Gass, Director of Research, Neglected Tropical Diseases Support Center, The Taskforce for Global Health

This presentation summarized the findings from a technical meeting on Persistent and Recrudescent Trachoma held in Kigali, Rwanda January 23 and 24, 2025. The meeting convened principal investigators and co-principal investigators from a multi-country operational research study, as well as trachoma experts, to discuss the use of serology and PCR testing in programmatic decision-making in districts with persistent and recrudescent trachoma. The presentation highlighted some important logistical challenges for trachoma programs to consider when determining whether to add one or more of these additional indicators to a standard TIS or TSS, including allowing for extra time to order and clear supplies through customs, community sensitization, training, and supervision. Key takeaways from the meeting include the usefulness of both serology and PCR data as additional indicators in TISs and TSSs; the need to consider local capacity, feasibility, and how the data will be used when deciding whether adding one or more of these indicators; the challenge of interpreting PCR results in the absence of a threshold; the demonstrated utility of additional tools (e.g. coverage surveys, data deep dives, focus group discussions, the leave-no-one-behind tool, etc.) for identifying the potential causes and actions to remedy the persistent trachoma; and the importance of considering the local context when using these data to make decisions.

New Serological Diagnostic

Presented by Dr. Marco Biamonte, Chief Executive Officer, Drugs & Diagnostics for Tropical Diseases

Trachoma programs rely exclusively on ophthalmological inspection, looking for signs of TF in children ages one to nine years. Because MDA is stopped once TF prevalence in children falls below 5%, *without requiring complete elimination of the pathogen*, a sensitive and specific measure of exposure to *Ct* will be critical at the end of programs to enable prompt interventions should the disease reemerge. In those situations, TF will be an inadequate indicator due to its low sensitivity and its low specificity.

WHO has called for new tests for the surveillance of trachoma and published a Target Product Profile specifying the characteristics that a new test should meet. Thanks to an investment of $1.9M from the Global Health Innovation Technology fund, we aim to deliver such a test within two years. Our consortium includes CDC (test inventor), The Carter Center (evaluations in regional lab), MBL (manufacturer of critical biological reagents), DDTD (test developer) and Big Eye Diagnostics (test manufacturer).

The test will detect antibodies to Pgp3, the best biomarker available to date. Pgp3 has been extensively validated at CDC with over 100,000 data points, and recommendations have been recently published, describing how to use Pgp3 seroprevalence data to guide program decisions in resuming MDA (or not).

We propose to deliver a Pgp3 test in both a dipstick and cassette format. The dipstick is meant to be used with DBS in a lab, while the cassette is intended to be used with whole blood in the field. The two formats will be compared head-to-head in late 2025. Besides sheer performance, economic considerations and population acceptance will be used to prioritize one format over the other. Manufacturing procedures will be developed for the preferred format by Q3 2026. In parallel, a feasibility study will be conducted to determine if reagents used for an already established multiplex bead assay can be lyophilized to enable transportation in the absence of a cold chain.

Science of Azithromycin for Mortality

Presented by Dr. Simon Brooker, Deputy Director, Neglected Tropical Diseases, Gates Foundation

On the basis of the impressive results that emerged from the *Macrolides Oraux pour Réduire les Décès avec un Oeil sur la Résistance* (MORDOR) trial, in 2020, the WHO published guidelines for MDA of azithromycin to children under five years of age. One of these recommendations was biannual MDA among one to 11-month-old children in settings where infant mortality exceeds 60 per 1,000 live births or under-five mortality (U5M) rate exceeds 80 per 1,000 live births. Simon Brooker presented updates and progress from the portfolio of projects in the Resiliency for Children through Azithromycin (REACH) program. In Niger, the AVENIR trial assessed the mortality benefits of targeting MDA of azithromycin to one- to 11-month-old children instead of one to 59-month-old children, per WHO guidelines. The results replicated MORDOR findings by showing that bi-annual MDA of azithromycin to one- to 59-month-old children in high mortality settings can reduce child mortality by ~14%. However, the study was unable to demonstrate a significant mortality benefit when only administering to one- to 11-month-old children. Overall, this suggests that MDA of azithromycin to one to 59-month-olds may be more impactful than the current WHO guidelines for MDA of azithromycin to one to 11 months only. The CHATON trial in Burkina Faso evaluated the efficacy of integrating azithromycin into routine healthcare visits for infants one to 11 months in preventing mortality. The study was unable to demonstrate that individual-level distribution of azithromycin to infants during well-child visits prevented mortality when compared to placebo, further supporting the hypothesis that the mechanism of azithromycin for prevention of mortality may be via community-level treatment of pathogens and when administered to the entire one to 59-month-old cohort. Building on the available evidence, scale-up of biannual MDA targeting one to 59 months is being scaled up throughout Mali and Niger and in 16 states in northern Nigeria, with a potential to save up to 144 thousand lives.

Geographical Overlap: Trachoma & Mortality

Presented by Ms. Kristen Renneker, Research Informatics Analyst, Lead, International Trachoma Initiative

Child survival and trachoma: assessing the potential overlap: Kristen Renneker presented the results of an analysis determining the potential overlap between child survival and trachoma MDA programs. Two areas of overlap were assessed: 1) Areas where MDA rounds for child survival and trachoma could potentially be coordinated, and 2) Areas where MDA for child survival may impact validation of elimination of trachoma as a public health problem. A total of 105 districts with a population of 15.1 million were identified where MDAs could potentially be coordinated (i.e., areas where TF ≥5% and U5M > 80). A total of 47 districts with a population of 9.8 million were identified where MDA for child survival may impact trachoma elimination validation (i.e., areas waiting for a TSS with U5M > 80). A limitation of the analysis was a lack of standardized sub-national child mortality data, and these analyses will continue to be refined if and when such data becomes available.

WHO Perspective on Trachoma Surveillance Under Mortality Programs

Presented by Dr. Amir Bedri Kello, Medical Officer, Trachoma,
World Health Organization – Regional Office for Africa

According to the United Nations Inter-Agency Group for Child Mortality Estimation report, there were 4.9 million under-five deaths in 2022, of which 2.3 million occurred during the first month of life and 2.6 million children died between the ages of one to 59 months. The Sustainable Development Goal 3.2 target for U5M is to reduce the mortality rate to 25 deaths per 1,000 live births by 2030.

The MORDOR I trial conducted in Malawi, Niger and Tanzania from 2014-2017, where biannual mass administration of azithromycin was given to children have demonstrated a 13.5% reduction in U5M. The largest reductions were registered in infants ages one to five months and those living in areas where the U5M mortality rate was the highest. In Niger, there was an 18.1% reduction.

WHO published a guideline in 2020 based primarily on the data from MORDOR I trials that recommended consideration be given to MDA of azithromycin to children one to 11 months of age for prevention of childhood mortality in sub-Saharan African settings in which infant mortality is > 60 per 1,000 live births or U5M is > 80 per 1,000 live births respectively, and infant and U5M rates, adverse effects and antibiotic resistance are continuously monitored, and implementation of existing child survival interventions, including seasonal malaria chemoprophylaxis where recommended, is concurrently strengthened. This guideline is to be updated after two to three years from publication based on emerging evidence.

Some of the areas that could benefit from mass administration of azithromycin to reduce child mortality overlap with an ongoing trachoma elimination effort, which may impact program planning. Current trachoma program requirement is once a TF prevalence has reached under 5% at TIS to wait for two years without antibiotic pressure before conducting TSS to check for recrudescence. This requirement poses a challenge for countries to decide whether they must defer MDA for child survival until TSS is completed. Since one cannot completely avoid use of antibiotics during this two-year period as there could be individual antibiotic use for other infections as well as MDA with sulfadoxine, an antibiotic effective also against *Ct*, for seasonal malaria chemoprophylaxis, it is ethically imperative that one should prioritize saving lives of vulnerable children. Thus, prioritizing mass administration of azithromycin for eligible children would not impact the validation of a country for elimination of trachoma as a public health problem.

Expanding ITI into Child Survival

Presented by Ms. PJ Hooper, Interim Director, International Trachoma Initiative & Chair, International Coalition for Trachoma Control

With a new grant from the Gates Foundation, ITI is applying our comprehensive platform to act as stewards of the azithromycin for child survival through the REACH Network, initially focusing on Mali, Niger, and Nigeria.

Key deliverables include establishing an efficient donation management system, developing indicators to track progress, and creating data-driven tools for decision-making and monitoring. An independent advisory panel is being formed to provide guidance on the safe, effective, and equitable use of azithromycin for child survival.

ITI and the Trachoma Expert Committee (TEC) have reviewed the geographic overlap between trachoma and child survival MDA programs and encourages national health ministries to explore integration where feasible. However, recognizing both the opportunities and challenges, TEC recommends commissioning a white paper to analyze the programmatic impact, cost, safety, supply chain, and operational feasibility of integrating MDA efforts.

Looking ahead, ITI and TEC remain committed to supporting collaboration between the trachoma and child survival communities and engaging in discussions on optimizing these life-saving interventions.

WHO/ESPEN Updates

Presented by Dr. Amir Bedri Kello, Medical Officer, Trachoma,
World Health Organization – Regional Office for Africa

The Expanded Special Project for Elimination of NTDs or ESPEN was established in 2016 by the World Health Organization – Regional Office for Africa (WHO/AFRO) as a public-private partnership in collaboration with Member States, donors, pharma and NTD partners. Its mission is to contribute towards disease burden reduction in the African Region through control and elimination of the five most prevalent NTDs amenable to preventative chemotherapy-neglected tropical diseases (PC-NTDs): lymphatic filariasis, onchocerciasis, SCH, soil-transmitted helminthiases and trachoma. These PC-NTDs account for nearly 90% of the NTD burden in the region.

ESPEN focuses on five main strategic priorities: i) scaling up MDA to achieve 100% geographic coverage; ii) scaling down MDA toward PC-NTD elimination when elimination thresholds are reached; iii) Strengthening information systems for evidence-based, implementation-level decision-making; iv) Promoting effective use of donated medicines through improved supply chain management and v) Advancing progress on sustainability through efforts to enhance country ownership and strengthen health systems.

The African Region is the hardest hit by trachoma. As of April 2024, about 93 million people lived in areas at risk in the WHO African Region, accounting for 90% of the global trachoma burden. There are approximately 1.1 million cases of TT in the African Region, which is 73% of the global burden. Ethiopia, one of the countries supported by The Carter Center, is the most affected by trachoma worldwide. Ethiopia has 64.1 million people living in at-risk areas (60% of the global burden) and bears 28% of the global TT burden.

There has been significant progress in trachoma control in the WHO African Region. Currently, the number of countries that are endemic for trachoma and are known to require interventions are 20. To date, six countries (Botswana, Burundi, Guinea-Bissau, Mauritania, Namibia and Senegal) are thought not to require interventions and claimed to have eliminated trachoma as a public health problem. Botswana, Burundi, Guinea-Bissau, Mauritania and Senegal have officially submitted their trachoma elimination dossiers to WHO/AFRO for validation, which are under review. Further six countries have achieved elimination of trachoma as a public health problem in the WHO African Region: Ghana (June 2018), Gambia (April 2021), Togo (May 2022), Malawi (September 2022), Benin and Mali (May 2023).

ESPEN's support for trachoma control includes provision of technical support as well as financial support to fill gaps depending on availability of budget to surveys, MDAs, TT surgery as well as technical support for trachoma elimination dossier development and finalization. The African Region's priorities include supporting the completion of baseline mapping, achieving FGC for MDA and TT surgery, addressing persistent and recrudescent districts, and reaching special populations and insecure areas. Additionally, focus is on fostering cross-border collaborations, aiding countries with trachoma elimination dossiers, and establishing post-validation surveillance guidelines.

Research & Development Blueprint

Presented by Dr. Anthony Solomon, Chief Scientist, Neglected Tropical Diseases, World Health Organization

The WHO's Research and Development (R&D) Blueprint aims to help accelerate the control, elimination, and eradication of NTDs by encouraging global prioritization and coordination of R&D work. A globally collaborative process using an adapted Child Health and Nutrition Research Initiative methodology has been constructed to produce: (1) agreed lists of R&D priorities for each NTD, and for the four cross-cutting themes identified in the NTD road map 2021–2030, and (2) systems for dissemination, implementation, and monitoring and evaluation of the agreed priorities. This is intended to result in greater shared awareness of R&D priorities; increased investment and impact; strengthened coordination and capacity-building; reduced research waste; enhanced agility in response to emerging challenges; and faster translation of innovations into real-world applications. The process is overseen by a Steering Group, co-chaired by WHO's Dr. Ibrahima Socé Fall and Sir Jeremy Farrar, with results to be published in 2025. Everyone working in the NTD ecosystem is invited to volunteer as a contributor. More details and the link to volunteer can be found at bit.ly/RDBPNTD.

International Trachoma Initiative Update

Presented by Ms. PJ Hooper, Interim Director, International Trachoma Initiative & Chair, International Coalition for Trachoma Control

Over the past year, ITI has experienced significant changes while continuing to make critical progress toward trachoma elimination. A major milestone was Pfizer's transition to a new azithromycin manufacturer, Alembic, based in India. This shift enabled ITI to meet all demand by the end of 2024 at an 80% allocation, ensuring a steady supply of the medication to meet countries' needs. As a result of Pfizer's increased production, the TEC was able to increase allocations for 2025 shipments back to the original 95% of the target populations. Labeling changes now reflect "Azithromycin – For Donation to ITI," maintaining bioequivalence to Zithromax® while adhering to FDA approval standards.

ITI has also revised the Zithromax® Management Guide (now renamed the Azithromycin Management Guide), reflecting changes in drug terminology, modified treatment strategies, and using complementary indicators for measuring trachoma progress. This updated guide is set for release in April 2025.

ITI has also introduced a new review process to streamline the drug request review by TEC, enhancing country engagement and focusing discussions on programmatic challenges.

Despite these changes, ITI remains consistent in its support, shipping nearly 40 million treatments in 2024 to 13 countries, bringing the total distributed since 1999 to over 1.1 billion doses. Ethiopia continues to be the largest recipient, and over 95% of donations have gone to the African region.

Pfizer Update

Presented by Miss Julie Jenson, Director, International Product Donations, Pfizer Inc.

Pfizer highlighted their ongoing efforts and updates to support trachoma elimination through 2030. Julie Jenson shared the completed label change from Zithromax® and Azithromycin for the tablet and powder for oral suspension bottles, and a new supplier for tablets. Because of the changes implemented last year, in 2025, Pfizer is working to meet 95% of ITI demand for trachoma. Additional manufacturing changes are under review for 2026 and will be shared at the June TEC meeting.

International Coalition for Trachoma Control (ICTC) Update

Presented by Ms. Michaela Kelly Director, Neglected Tropical Disease Program Delivery, Sightsavers & Vice Chair, International Coalition for Trachoma Control

ICTC was established in 2004 as a platform of collaboration for the trachoma community. ICTC's coalition structure comprises of 42 voting members, including implementing organizations, research, and academic institutions, and 14 observers, including donors, WHO, and non-implementing partners that have an interest in the work of ICTC and trachoma programs. The purpose of the member-elected governance team, the Executive Group, and secretariat is to support and operationalize ICTC's Strategic Plan.

The current ICTC Executive Group includes PJ Hooper from ITI as Chair, Michaela Kelly from Sightsavers as Vice Chair, and Dr. Angelia Sanders from The Carter Center as Immediate Past Chair. In 2024, an election was held for the position of Vice Chair, and Dr. Sarity Dodson from the Fred Hollows Foundation was elected from the member vote. The Executive Group is due to rotate roles in the second quarter of 2025. ICTC wishes to recognize the substantial impact Angelia Sanders has made during her time in the Executive Group, as well as extend our sincere thanks to The Carter Center for supporting Angelia in her role over the last six years. The ICTC Executive Group continues to be supported by the secretariat, comprised of Sangjan Newton from Sightsavers as part-time Project Manager and Tim Jesudason to support special projects and partnerships.

In 2024, ICTC celebrated its 20th year of existence. Over the last two decades, ICTC has:

- Produced key advocacy resources, such as 2020 INSight.
- Received two major partnership initiatives – the Department for International Development SAFE Program and The Queen Elizabeth Diamond Jubilee Trust Trachoma Initiative – totaling over £20 million towards the scale-up of the SAFE strategy from 2014-2019 in Africa and the Pacific.
- Played a key role in advocating for the inclusion of trachoma in the Vision for the Commonwealth campaign in 2018.
- Continued to develop tools and technical resources to support SAFE strategy implementation. To date, ICTC has published 15 preferred practices and toolkits, and endorsed one material. We are excited to announce the publication of the new ICTC "Training Photographers for Trachoma Prevalence Surveys" preferred practice, as of February 2025.
- Published key communications, such as contributing to the Trachoma Matters series in the Community Eye Health Journal. ICTC has published 15 articles as part of this series, which strengthens the collaboration and coordination between trachoma stakeholders and national eye health systems. ICTC continues to publish its annual data sheets and infographics, providing progress updates about the global trachoma program and resources for the trachoma community to use in advocacy efforts.

Each year, ICTC's membership identifies and contributes to annual priorities for the coalition to move forward. These include participation in task teams on specific topics, working together on advocacy opportunities and resource mobilization, and documenting preferred practices.

Looking to the Year Ahead

- ❖ Publication of results from the ICTC Gap Analysis task team's efforts to identify gaps within the global trachoma program.
- ❖ Continuing advocacy to sustain momentum of political will.
- ❖ Developing new preferred practices, including one on Special Populations.
- ❖ Update existing ICTC preferred practices and publishing annual data sheets and infographics
- ❖ Continue supporting ICTC membership advocacy efforts and address recommendations on priority areas requiring technical resources and cross-learning.

ICTC Gap Analysis Task Team

This task team was developed to support ICTC's strategic plan by conducting a gap analysis of the global trachoma program, to better understand the resources required to reach global elimination by 2030. This information will be utilized in two ways:

- To provide a global estimate of resources required for elimination to support fundraising and advocacy.
- To regularly provide a district-level update of gaps and funding required for the following 12 months, highlighting where there is an urgent lack of financing or other resources.

The outputs of the gap analysis will inform our advocacy and communications materials and activities, raising awareness of gaps among trachoma stakeholders and mobilizing resources through the development and use of key messages and evidence-based technical resources informed by the gap analysis. The task team approached the analysis by subdividing into four groups: surgery, MDA and surveys combined, F&E, and operational research priorities.

The task team had been on track to publish the results of their analysis in early 2025. However, since the announcement of the funding freeze to the U.S Agency for International Development, the task team re-visited the figures that had previously been calculated, to account for any resulting changes in the funding landscape. Methodologies used, assumptions made, and caveats were presented, along with preliminary revised estimates. Feedback was received from meeting participants, which will be incorporated during the write-up of the publication. ICTC will publish the results in early April.

2025 Trachoma Control Program Review Recommendations

Ethiopia Recommendations:

1. Considering the burden of trachoma and delays related to insecurity in Amhara, the Program should consider prioritizing MDA to maintain gains with antibiotic pressure in all accessible areas.
2. Considering the burden of trachoma and delays related to insecurity in Amhara, the Program should consider scaling the Child MDA approach to more districts while maintaining quality implementation and ensuring adequate treatment coverage.
3. The Program should continue to use increased monitoring around districts implementing the Child MDA approach to better assess the impact of this new intervention; this may include coverage surveys and additional survey time points along with the collection of complementary indicators.
4. Due to the delays in implementing surveys because of insecurity, the Program should consider prioritizing MDA for additional years in districts expected to be above the 5% elimination threshold, without waiting for the survey in those districts.
5. The Program should consider the Wait and Watch approach where possible to make the best use of implementation funding and available drugs.
6. The Program should continue to utilize the LFA serology test to maintain laboratory capacity within the APHI.
7. The Program should seek to collaborate with partners to expand costing work for standard and enhanced survey implementation to establish cost estimates, which include financial and economic costs, that are representative of the varied contexts in which surveys may be implemented.
8. As the National Program has finalized epilation guidelines for PTT and minor TT management, the Program should consider approaches to assess uptake of the epilation strategy, which may include quantitative assessments around distributions of forceps, epilation training, and impact on TT management outputs, as well as qualitative discussions with implementers and recipients of epilation themselves.
9. As the National Program has finalized the TT case finding FGC guidelines, FGC should be scaled up, where appropriate, so that once a district achieves the FGC threshold, it will be considered "finished" for active TT outreach and can transition to managing future TT cases within the existing health system.

Niger Recommendations:

1. To minimize the number of suspected TT cases lost to follow-up and the time between *relais* screening and OPT confirmation, the National Program should prioritize completing OPT confirmation and surgery activities as soon as possible after *relais* screening. Close

collaboration with district and regional health authorities through microplanning should be a prerequisite for *ratissage* implementation.

2. Given the large number of EUs planned for *ratissage* scaleup, the National Program should prioritize reviewing existing data and processes to identify lessons learned and improve efficiency in the confirmation and surgery steps.

3. When surveys find TT estimates to be below the elimination threshold, the National Program should consider excluding the collection or analysis of TT in future surveys. Additionally, if FGC through *ratissage* has been completed in an EU but further surveys are required, the National Program should consider excluding the collection and/or analysis of TT survey data.

4. Upon completion of *ratissage* in an EU, the National Program should perform a data audit to ensure all required information is adequately captured and available for the development of their elimination dossier.

5. The National Program should ensure that *24-hour* and *seven to 14-day* post-surgical follow-ups are conducted for all TT patients and that the data from the follow-ups is systematically collected and reviewed.

South Sudan Recommendations:

1. To better understand the endgame epidemiology of trachoma in Eastern Equatoria State, the National Program should consider the inclusion of complementary indicators to upcoming TISs in the state. These complementary indicators could include the collection of DBS for serological monitoring and/or conjunctival swabbing for *Ct* infection monitoring.

2. Building on the successful collaboration with the Juba Public Health Laboratory during the baseline surveys in Eastern Equatoria State, the National Program should engage with academic and partner organizations to explore opportunities to develop local-level capacity within the laboratory for the analysis of DBS and/or conjunctival swabs for trachoma surveillance.

3. To address ongoing challenges with delays in post-MDA inventory reports and data quality, and the resulting delays in shipments and MDAs, the National Program should consider a cascaded supply chain training down to the county level and increased national-level supervision during reverse logistics.

4. The National Program should develop a TT patient follow-up plan beyond the *24-hour* post-surgical follow-up.

5. The National Program should develop a TT surgeon audit plan and pilot this plan on/with at least three surgeons.

6. To address workforce constraints, the National Program should develop a strategy to re-open the Juba Teaching Hospital Ophthalmic Clinical Officer Program.

7. The National Program should collect more detailed data on TT in children to better understand disease dynamics.

8. The National Program should pilot the provision of TT surgery to children, with appropriate measures, and document lessons learned to increase provision over time.
9. The National Program should consider partnering with the MOH Eye Care Department to hold a two-day TT surgery-focused meeting to strengthen the "S" component of the SAFE strategy.
10. As part of trachoma outreach activities, the National Program should pilot the provision of reading classes during field activities.
11. Based on the high endemicity of some counties in South Sudan, the National Program should consider conducting MFTA MDAs, if such MDAs are financially and logistically feasible.
12. To avoid delays in drug shipments and allocation, the National Program should work with implementing partners and county health departments to ensure the timely reporting of antibiotic stock to the national level.
13. Upon finalization, the National Program should disseminate the national TAP to key stakeholders.

Sudan Recommendations:

1. The National Program should identify how to provide TT surgical services in the states and localities where TT surgeons are now living, given the significant displacement (from Khartoum).
2. It is recommended that the National Program include TT case finding as part of MDAs scheduled to be conducted in Gedarif state.
3. The National Program should consider including serology in the four localities scheduled for TISs in Red Sea and Gedarif states.
4. The National Program should continue to analyze data and produce manuscripts and presentations to better understand the current epidemiology of trachoma in Sudan.

Trachoma: The Disease

Trachoma, the world's leading cause of infectious blindness, is caused by repeated infections of the conjunctiva (the lining of the eye and eyelid) by the bacterium *Ct*. As of April 2024, the WHO estimates that 1.5 million people, the majority of whom are women, are blind due to trachoma, and another 103 million people are at risk of blindness or severe visual impairment due to trachoma in 39 countries.[1] 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. 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: i) by contact with hands, towels, and clothing or ii) by flies, which are attracted to ocular and nasal discharge. As individuals are repeatedly infected with *Ct*, 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, physically abrades the cornea, and can lead to corneal opacity and blindness if not corrected.

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 GET2020 Alliance, which brought international non-governmental development organizations, donors, and researchers together to work collectively in controlling trachoma. The World Health Assembly (WHA) adopted resolution WHA51.11 in 1998, targeting the global elimination of trachoma as a public health problem. In addition, with support from the Edna McConnell Clark Foundation and WHO, the SAFE strategy was created to control trachoma through community-based interventions. The SAFE strategy stands for: Surgery to correct TT, the advanced, blinding stage of the disease; Antibiotics to clear *Ct* infection; and Facial cleanliness as well as Environmental improvement to reduce transmission. In 2004, ICTC, a coalition of NGOs, donors, academic institutions, and other partners, was created to support the GET2020 Alliance 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 TEO, the previously recommended therapy. Pfizer Inc., manufacturer of azithromycin, maintains a commitment to supporting the GET2020 Alliance goal of eliminating trachoma as a public health problem by the year 2030. Since the beginning of the donation in 1998, more than one billion doses of azithromycin have been donated by Pfizer Inc. and managed by ITI. The existence of the donation program has served to invigorate national trachoma programs and reinforce global support for the elimination of trachoma. In 2016, WHO published the dossier template for the validation of the elimination of trachoma as a public health problem. 21 countries fulfilled the criteria to be validated by WHO to have eliminated trachoma as a public health problem.

[1]WHO, Weekly Epidemiological Report, Published July 12th, 2024.

TT and TF Thresholds for Disease Elimination

The achievement of the ***elimination of trachoma as a public health problem*** is defined by the WHO through two proxy indicators:

1) a prevalence of TT "unknown to the health system" of <0.2% in adults ages ≥15 years (approximately one case per 1,000 total population); and
2) a prevalence of TF in children ages one to nine years of <5% in each (formerly) endemic district.

Through WHA resolution 51.11, trachoma can be eliminated as a public health problem through the implementation of the WHO-endorsed SAFE strategy. The surgery, or S component, should be offered to any individual that is diagnosed with TT to benefit from the surgical treatment. The surgery component also includes case finding activities, which are recommended when prevalence of TT is ≥ 0.2% among individuals who are ≥15 years old. The A, F, and E components of the strategy are recommended for areas in which TF prevalence is ≥5% in children of ages one to nine.

To meet the criteria mentioned above, population-based prevalence surveys, amongst other activities, must be conducted in districts (enumeration units) suspected of being endemic at baseline and then at specified intervals after the start of interventions. Below are the success indicators and procedures often used to determine whether a district or region has achieved thresholds for the elimination of trachoma as a public health problem:

Trachoma Impact Survey: Must be conducted at least six months after final implemented MDA. If the TF prevalence threshold has been met, the district enters a two-year hold period (no MDA required).

TT activities: If TF prevalence threshold is met, but not TT threshold, then the program must conduct case searching and management activities.

***Trachoma Surveillance Survey*:** At the conclusion of the two-year hold period, after the final impact survey, a surveillance survey is undertaken. If TT and TF thresholds are met, then the district is considered as "transitioned" and no longer warrants interventions. If thresholds are not met, then the district is re-enrolled in TT activities and MDA as appropriate.

***Persistent Trachoma*:** According to the recent WHO endorsed "Informal Consultation on Endgame Challenges for Trachoma Elimination (2021)", persistent trachoma is defined as an enumeration unit with at least two impact surveys at which $TF_{1–9}$ is ≥ 5%, without ever having had a $TF_{1–9}$ < 5%.

Recrudescent Trachoma: According to the same endgame challenges report, recrudescent trachoma is defined as an enumeration unit with at least one surveillance survey at which $TF_{1–9}$ is ≥ 5%.

The Endgame Challenges Informal Consultation included several recommendations to address the problems of persistence and recrudescence. These include the delivery of MFTA MDA, with the possibility that additional MDA rounds be delivered just to demographic subgroups with the highest prevalence of conjunctival *Ct* infection. For districts with lower levels of trachoma, a wait and watch approach was recommended whereby a program discontinues MDA and continues surveillance if there is a justifiable expectation that $TF_{1–9}$ will regress to <5%. In terms of monitoring, the

consultation recommended the inclusion of collection of samples to monitor conjunctival *Ct* infection and exposure to *Ct* infection.

Eyes on the Future: Navigating the Path to Elimination

The Twenty-Sixth Annual Trachoma Control Program Review
The Carter Center
February 24 – 25, 2025

Monday, February 24

08:00 *Shuttles depart hotel for The Carter Center*

08:30 – 09:00 Breakfast
30 mins

09:00 – 09:10 Meeting Management, & Chairperson Welcome
10 mins
MYT & Dr. Angelia Sanders
Senior Associate Director, Trachoma Control Program
The Carter Center – Atlanta

09:10 – 09:20 President Carter Tribute
10 mins
Ms. Kelly Callahan
Director, Trachoma Control Program
The Carter Center – Atlanta

09:20 – 09:30 Health Programs Update
10 mins
Dr. Kashef Ijaz
Vice President, Health Programs
The Carter Center – Atlanta

09:30 – 09:45 Trachoma Control Program Overview
15 mins
Ms. Kelly Callahan
Director, Trachoma Control Program
The Carter Center – Atlanta

09:45 – 10:55 Global Trachoma Partners Updates
75 mins

09:45 – 09:55 World Health Organization/ESPEN Updates
10 mins
Dr. Amir Bedri Kello
Medical Officer, Trachoma
World Health Organization – Regional Office for Africa

09:55 – 10:05 Research & Development Blueprint
10 mins
Dr. Anthony Solomon
Chief Scientist, Neglected Tropical Diseases
World Health Organization

10:05 – 10:15 International Trachoma Initiative Update
10 mins
Ms. PJ Hooper
Interim Director
International Trachoma Initiative

10:15 – 10:25 Pfizer Update
10 mins
Miss Julie Jenson
Director, International Product Donations
Pfizer, Inc.

10:25 – 10:45 International Coalition for Trachoma Control Update
20 mins
Ms. Michaela Kelly
Director, Neglected Tropical Disease Program Delivery,
Sightsavers & Vice Chair,
International Coalition for Trachoma Control

10:45 – 11:00 Q&A
15 mins

11:00 – 11:20 Break
20 mins

11:20 – 12:20 South Sudan SAFE Update (Q&A)
60 mins
Mr. Yak Yak Bol
National Coordinator, Preventative Chemotherapy-Neglected Tropical Diseases
Ministry of Health – South Sudan

12:20 – 12:40 South Sudan Baseline Results with Complementary Indicators (Q&A)
20 mins
Mr. Nicholas Presley
Associate Director, Trachoma Control Program
The Carter Center – Atlanta

Eyes on the Future: Navigating the Path to Elimination

The Twenty-Sixth Annual Trachoma Control Program Review
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12:40 – 2:10 Group Photo & Lunch
90 mins

2:10 – 2:25 MDA in South Sudan's Cattle Camps: Reaching Special Populations
15 mins
Mr. Lochebe Boniface
Senior Program Officer
The Carter Center – South Sudan

2:25 – 2:35 Locating Pastoralist Populations in Northern Tanzania
10 mins
Dr. William Oswald
Senior Epidemiologist
Research Triangle Institute, International

2:35 – 2:45 Q&A
10 mins

2:45 – 4:10 Complementary Indicators for Trachoma Monitoring
65 mins

2:45 – 3:00 Serology for Use in Trachoma Surveillance
15 mins
Dr. Everlyn Kamau
Post Doctoral Fellow
University of California, San Francisco

3:00 – 3:15 Recrudescence and Persistence Study
15 mins
Mr. Mohamed Bah
Associate Public Health Advisor
Neglected Tropical Diseases Support Center
The Task Force for Global Health

3:15 – 3:30 Outputs from Kigali Trachoma Meeting
15 mins
Dr. Katie Gass
Director of Research,
Neglected Tropical Diseases Support Center
The Taskforce for Global Health

3:30 – 3:50 New Serological Diagnostic
20 mins
Dr. Marco Biamonte
Chief Executive Officer
Drugs & Diagnostics for Tropical Diseases

3:50 – 4:10 Q&A
20 mins

4:10 – 4:20 Closing Remarks
10 mins
Dr. Angelia Sanders
Senior Associate Director, Trachoma Control Program
The Carter Center – Atlanta

4:20 – 6:20 Reception
120 mins
Museum Lobby

6:20 *~Depart The Carter Center for the hotel~*

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

Eyes on the Future: Navigating the Path to Elimination

The Twenty-Sixth Annual Trachoma Control Program Review
The Carter Center
February 24 – 25, 2025

Tuesday, February 25

8:00 *Shuttles depart hotel for The Carter Center*

08:30 – 09:00 Breakfast
30 mins

09:00 – 09:10 Meeting Management, & Chairperson Welcome
10 mins
MYT & Dr. Scott Nash
Senior Associate Director, Trachoma Control Program
The Carter Center – Atlanta

09:10 – 10:25 Sudan Updates
75 mins

09:10 – 09:35 Sudan SAFE Update (Q&A)
25 mins
Dr. Sara Lavinia Brair for Dr. Balgesa Elshafie
Senior Country Representative, The Carter Center, Sudan &
National Coordinator for Trachoma Control Program
Federal Ministry of Health – Sudan

09:35 – 09:45 Persistent Trachoma in Al Rahad, Sudan
10 mins
Mr. Emmanuel Ackah
Graduate Assistant, Trachoma Control Program
The Carter Center – Atlanta

09:45 – 09:55 Impact of SAFE in South Sudanese Refugee Camps
10 mins
Ms. Anne Marie Dye
Rollins Earn and Learn Student, Trachoma Control Program
The Carter Center – Atlanta

09:55 – 10:10 Utility of Integrated Serological Monitoring
15 mins
Dr. Sophie Bérubé
Research Associate
Johns Hopkins University

10:10 – 10:25 Q&A
15 mins

10:25 – 10:45 Break
20 mins

10:45 – 11:30 Niger SAFE Update (Q&A)
45 mins
Dr. Ibrahim Almou
Director, National Eye Health Program
Ministry of Health – Niger

11:30 – 12:00 Ethiopia SAFE Update (Q&A)
30 mins
Eshetu Sata
Trachoma Program Manager
The Carter Center – Ethiopia

12:00 – 12:45 Amhara SAFE Update (Q&A)
45 mins
Mr. Adisu Abebe
Neglected Tropical Disease Case Team Leader
Amhara Regional Health Bureau

12:45 – 2:15 Lunch
90 mins

2:15 – 2:30 SWIFT II WASH Indicators Over Time
15 mins (Q&A)
Ms. Dionna Wittberg
Senior Research Coordinator
Francis I. Proctor Foundation

2:30 – 2:50 ATIRA Study (Q&A)
20 mins
Mr. Mikiyas Gebremichael
Epidemiologist & Researcher
London School of Hygiene and Tropical Medicine

Eyes on the Future: Navigating the Path to Elimination

The Twenty-Sixth Annual Trachoma Control Program Review
The Carter Center
February 24 – 25, 2025

2:50 – 3:15 *25 mins* Costing for Ethiopia: Enhanced MDA and Surveys (Q&A)
Ms. Kim Jensen & Mr. Tim Jesudason
Associate Director, Trachoma Control Program, The Carter Center – Atlanta &
Health Economics and Communications Consultant, Partners in Global Health Ltd

3:15 – 3:30 Break
15 mins

3:30 – 4:30 Azithromycin for Mortality Prevention
60 mins

3:30 – 3:45 *15 mins* Science of Azithromycin for Mortality
Dr. Simon Brooker
Deputy Director, Neglected Tropical Diseases
Gates Foundation

3:45 – 3:55 *10 mins* Geographical Overlap: Trachoma & Mortality
Ms. Kristen Renneker
Research Informatics Analyst, Lead
International Trachoma Initiative

3:55 – 4:05 *10 mins* WHO Perspective on Trachoma Surveillance Under Mortality Programs
Dr. Amir Bedri Kello
Medical Officer, Trachoma
World Health Organization – Regional Office for Africa

4:05 – 4:15 *10 mins* Trachoma Expert Committee/International Trachoma Initiative Implications & Roles
Ms. PJ Hooper
Interim Director, International Trachoma Initiative, Chair, International Coalition for Trachoma Control

4:15 – 4:30 *15 mins* Q&A

4:30 – 4:45 *15 mins* Closing Remarks
Ms. Kelly Callahan
Director, Trachoma Control Program
The Carter Center – Atlanta

4:45 *~Depart The Carter Center for the hotel~*