



Sierra Leone

FY 2017

Control of Neglected Tropical Diseases

Annual Work Plan

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Submitted to: Bolivar Pou,
Project Director,
END in Africa Project
FHI 360
bpou@fhi360.org

Submitted by: Helen Keller International

For further information, please contact:
Stephanie Palmer,
NTDs Program Manager,
HKI
spalmer@hki.org



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Acronyms and Abbreviations

ALB	Albendazole
APOC	African Program for Onchocerciasis Control
CBM	Christoffel BlindenMission
CDD	Community Drug Distributor
CDTI	Community Directed Treatment with Ivermectin
CHA	Community Health Assistants
CHO	Community Health Officer
CHW	Community Health Workers
DHMT	District Health Management Team
DMO	District Medical Officer
DPC	Directorate of Disease Prevention and Control
DQA	Data Quality Assessment
DSA	Disease Specific Assessment
EU	Evaluation Unit
EVD	Ebola Virus Disease
FAQs	Frequently Asked Questions
FHI360	Family Health International
FP	Focal Person
FPSU-L	Filariasis Programme Support Unit-Liverpool
FY	Fiscal Year
GoSL	Government of Sierra Leone
HD	Health District
HKI	Helen Keller International
HTR	Hard to Reach
IEC	Information, Education and Communication
IVM	Ivermectin
JSI	John Snow Incorporated
KAP	Knowledge, Attitude and Practice
LF	Lymphatic Filariasis
MCHA	Maternal and Child Health Aide
MDA	Mass Drug Administration
M&E	Monitoring and Evaluation
MF	Microfilaremia
MoHS	Ministry of Health and Sanitation
MRU	Mano River Union
NEC-ADR	National Expert Committee for Adverse Drug Reactions
NGO	Non-Governmental organization
NID	National Immunization Day
NSAHP	National School and Adolescent Health Program
NTD	Neglected Tropical Disease
NTDFP	Neglected Tropical Disease Focal Point
NTDP	Neglected Tropical Disease Program
Oncho (or OV)	Onchocerciasis
PCT	Preventive Chemotherapy
PCT NTDs	Neglected Tropical Diseases targeted through Preventive Chemotherapy
PHU	Peripheral Health Unit

Pre-TAS	Pre- Transmission Assessment Survey
PZQ	Praziquantel
RWA	Rural Western Area
SAC	School Aged Children
SAE	Serious Adverse Event
SCH	Schistosomiasis
SCM	Supply Chain Management
SLPB	Sierra Leone Pharmacy Board
SOP	Standard Operational Procedures
STH	Soil Transmitted Helminthes
TA	Technical Assistance
TAS	Transmission Assessment Survey
TF	Trachomatous Inflammation, Follicular
TIPAC	Tool for Integrated Planning and Costing
USAID	United States Agency for International Development
UWA	Urban Western Area
WA	Western Area
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

COUNTRY OVERVIEW

Administratively, Sierra Leone is divided into the Western Area (WA) and three provinces: Northern, Southern and Eastern. The three provinces are further divided into 12 health districts (HDs); the WA is divided into rural (RWA) and urban (UWA), where the capital, Freetown, is located. Excluding the WA, Sierra Leone has about 14,413 villages with populations ranging from 100-500 inhabitants (2004 population census). There are 149 chiefdoms in the 12 HDs of the three provinces that are governed by traditional paramount chiefs, while the WA is subdivided into 30 wards headed by councilors.

The Ministry of Health and Sanitation (MoHS) is divided into medical and management services. Under the medical service there are 14 directorates including the directorate of Disease Prevention and Control (DPC), which oversees the national neglected tropical disease program (NTDP). Each of the 12 HDs and the WA have a District Health Management Team (DHMT) led by a District Medical Officer (DMO) that coordinates all health activities. The DHMTs have focal persons (FP) for each disease program, including one for neglected tropical diseases (NTDs). There are 1,258 Peripheral Health Units (PHUs) throughout the country that are staffed by different cadres of health workers: Community Health Officers (CHOs), Community Health Assistants (CHAs), Maternal and Child Health Aides (MCHAs) and nurses who oversee approximately 29,000 volunteer Community Drug Distributors (CDDs). These CDDs are the backbone of all the NTDP activities in rural areas. While in the rural areas CDDs serve as volunteers within the NTDP; in the WA, there are no volunteer CDDs and the NTD drugs are distributed by paid community health workers (CHWs) for a fixed number of days (normally five days).

In addition to the END in Africa project (funded by United States Agency for International Development (USAID)), which provides the main support to the NTDP in Sierra Leone through Helen Keller International (HKI), the following partners have historically contributed or currently contribute to the NTDP, though not all of those described below currently support the NTDP. Table 1 summarizes those organizations currently providing support.

- The African Program for Onchocerciasis Control (APOC) provided technical and financial support to the mapping and Community Directed Treatment with Ivermectin (CDTI) for control of onchocerciasis (oncho) from 2005 to 2014. However, APOC funding for NTDs in Sierra Leone ended in calendar year 2014 and the END in Africa project covered the FY15 and FY16 gaps that APOC was unable to fund. Even though APOC support has exclusively been for oncho control (training of health workers and CDDs and supervision of MDA in hyper- and meso-endemic communities), the funds are pooled with those for overall integrated NTD activities. APOC provided approximately \$100,000 per annum.
- Sightsavers has also supported CDTI for onchocerciasis control post-war since 2002. Activities supported include training of CDDs and monitoring and supervision of MDA. Financial support provided is approximately \$20-30,000 per annum. Sightsavers operates on different financial timeframes from USAID (January-December against October-September); therefore, their commitments for FY17 will not be known until January 2017.

- TOMS Shoes and HKI established an innovative partnership in FY13 that resulted in the donation of shoes to all CDDs and their dependents as motivation for three years (FY13, FY14 and FY15).
- From FY10 to FY14, the Liverpool Center for Neglected Tropical Diseases (now known as the Filariasis Programmes Support Unit-Liverpool (FPSU-L)) supported the refurbishment of the NTD laboratory in Makeni and operational research for the endemic NTDs on an ad hoc basis. There is no pledged support for FY17 at this time.
- Johnson & Johnson through a Ghanaian consultant (Dr. S.D. Mante) has trained/retrained 70 doctors, mostly from the Northern Province, on surgical procedures for hydrocele. However, there is no pledge for support in FY17.
- Over the years, the NTDP has received both cash and in-kind donations through HKI for a second round of de-worming of school-aged children (SAC) on a sub-national basis. Funds in FY10 came from the World Food Program and in FY11 and FY12 from the World Bank's Fast Track Initiative through the Ministry of Education, Science and Technology (MEST). The Mebendazole/Albendazole used in these deworming campaigns has been donated from various sources: The Saint Andrews Clinic for Children-Sierra Leone, De-worm The World, Feed The Children, and World Vision-Sierra Leone. In FY2013, SABIN vaccine institute also supported a second round of deworming for SAC in RWA. Other support was provided by UNICEF in FY15 for a second round of deworming of SAC in the 12 provincial districts in September 2015. WA was not included because MDA for LF-STH was already planned to take place in October 2015.

Table 1: NTD partners working in country, donor support and summarized activities

Partner	Location (Regions/States)	Activities	Is USAID providing direct financial support to this partner? (Do not include FOG recipients)	List other donors supporting these partners/ activities
HKI	National level, all 14 HDs	Provide direct overall technical assistance to the MoHS in advocacy, strategic planning, implementation, supervision, M&E and capacity building	Yes	None
Sightsavers	12 HDs for Oncho only	Provide financial support for training of health staff and CDDs, and supervision of MDAs	No	DFID

National NTD Program Overview

Lymphatic filariasis (LF)

Mapping with Immunochromatographic test (ICT) cards in 2005 showed that all 14 HDs are LF endemic and baseline LF microfilaria (Mf) surveys were performed in 2007 and 2008.¹ Geographic MDA coverage of 100% for LF was achieved in 2010 with inclusion of the urban settings in WA and the 12 provincial districts. Drug distribution is conducted through campaign strategies with CHWs in the WA² and CDDs

¹ Koroma JB, Bangura MM, Hodges MH, et al. Lymphatic filariasis mapping by Immunochromatographic Test card and baseline microfilaria survey prior to mass drug administration in Sierra Leone. *Parasit Vectors*. 2012; 5(10). doi:10.1186/1756-3305-5-10

² Hodges MH, Smith, SJ, Fussum D, et al. High coverage of mass drug administration for lymphatic filariasis in rural and non-rural settings in the Western Area, Sierra Leone. *Parasite Vectors* 2010; 3(120). doi:10.1186/1756-3305-3-120.

supported by MCHAs-in-training in the 12 provincial districts. An impact assessment³ in 2011 and a Pre-TAS in 2013 for LF both showed a reduction in mf prevalence. In the Pre-TAS, 12 HDs were paired into 6 evaluation units (EUs) due to the small district population sizes, in which each EU shared a sentinel site in one HD and a spot-check site in the other HD. Four of the six EUs (made up of the HDs of Bo + Pujehun, Kambia + Port Loko, Tonkolili + Kono and Bonthe + Moyamba), had mf prevalence <1% and qualified for TAS in FY15⁴, but TAS did not take place due to the Ebola outbreak in 2014-2015⁵. The NTDP made the decision to not conduct TAS in FY16, as communities were still recovering from the Ebola outbreak and may not readily participate in surveys required blood samples, as this is associated with Ebola. However, the NTDP now believes that TAS can be conducted and have planned them for FY17.

The two EUs that failed the pre-TAS include Bombali + Koinadugu and Kailahun + Kenema. This was due to the fact that at least one site in each EU had mf prevalence >1%. Two additional MDAs have been completed in FY14 and FY15 for all districts, and a third MDA in FY16 is currently ongoing in all 12 HDs. The four HDs that 'failed' the pre-TAS are scheduled for their second pre-TAS in FY17. All these four HDs share borders with Guinea and/or Liberia where full scale-up of MDAs to 100% geographic coverage has not yet been achieved by their national NTDPs. Although the Ebola outbreak hindered the cross-border control efforts with Guinea and Liberia, HKI will organize a cross border meeting for Sierra Leone, Guinea and Liberia through END in Africa funding to deliberate and draw on concrete solutions from FY17 onwards. Both the RWA and UWA in the WA will have completed six rounds of effective MDA by the end of FY16; pre-TAS will also be conducted in these two HDs in FY17.

USAID support for LF activities started in 2008 with baseline mf survey in 8 of 14 HDs, and all subsequent Disease Specific Assessments (DSAs) have been supported exclusively by USAID. USAID is also the main donor for LF MDA activities (advocacy, training, social mobilization, CDD motivation, distribution of logistics etc.), although other partners, such as APOC and Sightsavers, whose support are mainly for onchocerciasis, have also provided (APOC) or continue to provide (Sightsavers) support for the integrated treatment. The USAID support for LF activities covers the entire 14 HDs.

Onchocerciasis

Studies conducted between 2003 and 2005 using skin snip with financial and technical support from APOC, showed that 12 HDs had meso-endemic (mf prevalence ≥ 20 and <60%) and hyper-endemic (prevalence $\geq 60\%$) areas with an estimated at-risk population of three million that had to be treated with ivermectin (IVM). The WA (RWA and UWA) and the Island of Bonthe were not endemic for oncho (though the rest of Bonthe district is). From 2002-2006, CDTI was implemented in 8,451 meso-endemic and hyper-endemic villages. Albendazole (ALB) was added to the strategy in six districts in 2007 and to all 12 HDs in 2009. After five rounds of MDA, an impact assessment was conducted by the NTDP in 2010 with technical and financial support from APOC that showed significant reduction in oncho prevalence within the 12 endemic HDs. In

³ Koroma JB, Sesay S, Sonnie M, et al. (2013) Impact of Three Rounds of Mass Drug Administration on Lymphatic Filariasis in Areas Previously Treated for Onchocerciasis in Sierra Leone. *PLOS Negl Trop Dis*. 2013; 7(6):e2273. DOI: 10.1371/journal.pntd.0002273.

⁴ National Neglected Tropical Disease Program. (2007) Report on Pre-transmission assessment survey in 12 health districts in Sierra Leone (unpublished report).

⁵ This assessment was approved by the RPRG and would have been conducted in FY15 but was postponed to FY16 due to the Ebola outbreak.

order to make a decision about oncho MDA after LF MDA, which is projected to stop in 2018, another impact assessment survey is proposed in FY17 to determine the prevalence status in 12 HDs and the need for IVM MDA in hypo-endemic areas that have benefitted from MDA for LF since 2008.

Schistosomiasis

Prior to the USAID funding in 2008, there was no schistosomiasis (SCH) control program in Sierra Leone, although evidence from earlier studies indicated that both intestinal and urinary forms of SCH were prevalent in the northeast. Mapping in 2008-09 found moderate to high prevalence of *Schistosoma mansoni* in seven HDs (Kono, Koinadugu, Kenema, Kailahun, Bo, Bombali and Tonkolili)⁶ with 1.8 million people at risk, and low prevalence in the five coastal districts (Port Loko, Kambia, Moyamba, Pujehun and RWA). It also showed that *S. haematobium* was endemic in 3 districts (Bo, Bombali and Kono). The entire Bonthe district and UWA had zero prevalence. In 2009, annual MDA started targeting only SAC in six endemic HDs and scaled up in 2010 to include all SAC and at-risk adults in the seven highly or moderately endemic HDs (any adult living in the rural areas of these seven HDs) according to the national plan for morbidity control. In 2012 an impact assessment showed that the overall prevalence of *S. mansoni* had decreased by 67.2% (from an overall prevalence of 49.7% to an overall prevalence of 16.3%)⁷.

In May 2016, a prevalence assessment for SCH using Kato-Katz and urine filtration technique was conducted in 12 HDs. The results (by range) are shown in the table below. During the national review meeting held in June 2016, data were discussed and decisions made about FY17 treatment. It was agreed that mean prevalence will be used to determine the strategy within a district since 5 to 6 sites (which do not cover all chiefdoms) were sampled per district.

District	SCH Prevalence Data by Range		
	Baseline 2008/09	Midterm 2012	Impact (or re-evaluation) 2016
Kailahun	22.0 -73%	2.0-22.0%	2.0-58.0%
Kenema	3.0-97.0%	4.0-44.0%	2.0-86.0%
Kono	50.0-93.0%	6.0-42.0%	0.0-14.0%
Bombali	0.0-68.0%	2.0-26.0%	4.0-46.0%
Kambia*	0.0-6.7%	-	0.0-2.0%
Koinadugu	13.3-93.3%	2.0-50.0%	14.0-52.0%
Port Loko*	0.0-8.3%	-	0.0-12.0%
Tonkolili	3.0-90.0%	2.0-66.0%	4.0-48.0%
Bo	0.0-65%	2.0-33.0%	0.0-15.0%
Bonthe*	0.00%	-	0.00%
Moyamba*	0.0-1.7%	-	0.0-2.0%
Pujehun*	0.0-4.2%	-	0.0-2.0%
Western Rural Area*	1.0-19.0%	-	0.0-2.0%
Western Urban Area*	0.00%	-	0.00%

*Districts that have not been treated for SCH.

⁶ Koroma JB, Peterson J, Gbakima AA, et al. Geographical Distribution of Intestinal Schistosomiasis and Soil-Transmitted Helminthiasis and Preventive Chemotherapy Strategies in Sierra Leone. *PLOS Negl Trop Dis*. 2010; 4(11): e891. DOI: 10.1371/journal.pntd.0000891.

⁷ Sesay S, Paye J, Bah MS, et al. *Schistosoma mansoni* infection after three years of mass drug administration in Sierra Leone. *Parasit Vectors*. 2014; 7(14). doi:10.1186/1756-3305-7-14.

Soil Transmitted Helminths

Mapping in 2008 using Kato-Katz method showed moderate to high prevalence of STH in 12 HDs⁸. One round of MDA-STH for everyone above five years of age is implemented through LF MDA under the END in Africa project. The second round of STH MDA for SAC only is partly implemented by health workers/CDDs during the MDA for SCH and partly by school teachers in HDs not treated for SCH. However, the second round of STH MDA has not been conducted in each district every year because it is dependent on available funding and the timely arrival of drugs. The second MDA for STH has so far been made possible by the donation of mebendazole to HKI between FY2009 and FY2013. In FY2011, FY2012 and FY2013 the second MDA for STH was also conducted in 8, 12 and 1 HDs, respectively, by school teachers. In FY14, a second round MDA was scheduled to happen in 12 HDs alongside the SCH MDA, however, this activity did not happen due to the Ebola outbreak. Since 2005, HKI has supported the nutrition program of the MoHS to conduct a biannual de-worming of children 12-59 months old with funds from the Canadian Department for Foreign Affairs, Trade and Development. This de-worming is integrated with Mother and Child Health Weeks that include vitamin A supplementation, distribution of long-lasting insecticide-treated nets and polio, measles and/or yellow fever vaccinations. In FY17, this activity is expected to continue with funding from the “Seeing is Believing” project.

Prevalence assessments for STH using Kato-Katz thick smear were conducted in April 2016 in the 14 HDs to determine future STH treatment needs, given the fact that LF treatment is projected to stop by 2018. The results are shown in the table below.

District	Prevalence Data for Any STH Infection	
	Baseline 2008	Impact 2016
Kailahun	49.8%	12.4%
Kenema	53.3%	6.6%
Kono	40.0%	17.4%
Bombali	25.2%	28.3%
Kambia	35.8%	10.0%
Koinadugu	68.5%	20.0%
Port Loko	53.3%	12.2%
Tonkolili	33.3%	33.2%
Bo	73.3%	8.2%
Bonthe	62.7%	34.7%
Moyamba	72.3%	27.4%
Pujehun	53.6%	21.8%
Western Rural Area	41.7%	13.9%
Western Urban Area	41.7%	9.6%

⁸Koroma JB, Heck E, Vandy M, et al. Epidemiology of Trachoma in the Five Northern Districts of Sierra Leone. *Ophthalmic Epidemiol.* 2011; 18(4):150-157. DOI: 10.3109/09286586.2011.594204.

Trachoma

Mapping was conducted with USAID funds in 2008 in the five northern HDs that border districts in Guinea where trachoma was known to be endemic. Prior surveillance reports from the MoHS suggested that trachoma may be a public health problem in these border HDs. The prevalence of trachomatous inflammation-follicular (TF) in children aged 1–9 years in all mapped districts was <5% and MDA with azithromycin was not warranted in line with WHO guidelines. The prevalence of trachomatous trichiasis (TT) in persons ≥15 years was <1% among those studied and so interventions for TT were also not conducted. Although training to identify TF and TT cases in the communities has been integrated in the annual training of trainers (ToT) for MDA-LF-onchocerciasis, no surveillance has yet been put in place for trachoma. The National Eye Care Program and Christoffel BlindenMission (CBM) can provide trichiasis surgery when cases are referred for treatment. However, payment is based on a cost-recovery mechanism and the fees may not be affordable for most of those affected. The NTDP is planning to include trachoma surveillance and outreach surgical camps for TT in the next Master Plan for 2016-2020.

Table 2: Snapshot of the expected status of the NTD Program in COUNTRY as of September 30, 2016

		Columns C+D+E=B for each disease*			Columns F+G+H=C for each disease*				
		MAPPING GAP DETERMINATION			MDA GAP DETERMINATION		MDA ACHIEVEMENT	DSA NEEDS	
A	B	C	D	E	F		G	H	I
Disease	Total No. of Districts in COUNTRY	No. of districts classified as endemic**	No. of districts classified as non-endemic**	No. of districts in need of initial mapping	No. of districts receiving MDA as of 09/30/16		No. of districts expected to be in need of MDA at any level: MDA not yet started, or has prematurely stopped as of 09/30/16	Expected No. of districts where criteria for stopping district-level MDA have been met as of 09/30/16	No. of districts requiring DSA as of 09/30/16
					USAID-funded	Others			
Lymphatic filariasis	14	14	0	0	14	0	0	0	Pre-TAS: 6 TAS1: 8
Onchocerciasis		12	2	0	12	0	0	0	12
Schistosomiasis		12	2	0	7	0	5	0	0
Soil-transmitted helminths		14	0	0	14	0	0	0	0
Trachoma***		0	14	0	0	0	0	0	0

Note: Please see the SCH prevalence data in the table on page 9.

PLANNED ACTIVITIES

NTD program Capacity Strengthening

Currently there are three key areas that need capacity building within the NTDP. These include ability to mobilize resources, M&E capacity and supply chain management capacity.

Resource Mobilization: The NTDP does not currently have the capacity to mobilize enough resources to conduct its activities on its own. This is evident with the fact that the government has not been able to provide funding for activity implementation. Currently, USAID through the END in Africa project and Sightsavers are the only donors to the program. However, with support from Deloitte and END in Africa, the NTDP and HKI recently received training on the Tool for Integrated Planning and Costing (TIPAC). The tool was updated and funding gaps were identified especially in the area of morbidity control. As a way of overcoming this situation, the NTDP plans to seek technical assistance (TA) from Deloitte to help build its capacity to mobilize resources from the private sector (e.g. banks) and identify opportunities for strategic social partnership in FY17. This will help strengthen the NTDP's ability to mobilize resources locally even when international donor funding ends, and also to support activities without a donor (such as LF morbidity management).

Also, the MoHS is taking strides to incorporate CDDs into an umbrella body called "Community Health Workers program." Since CDDs operate on a voluntary basis for the NTDP, this initiative by the MoHS will also help sustain the NTD program because their inclusion into this program will be based on a monthly stipend provided by the GoSL. This will also help minimize CDD attrition as they will be utilized by multiple programs and gain more recognition in their communities. CDDs are well positioned to become health educators and community mobilizers for Water, Sanitation and Hygiene (WASH) activities, which would help sustain the success of the NTDP.

In FY14, the NTDP planned to engage the parliamentary health committee to advocate for increased government support. Unfortunately, due to the Ebola outbreak, this did not happen, as everyone was focused on the fight against the virus. In FY17, the NTDP plans to engage the members of parliament and the "Health for all" coalition (a coalition of civil society organizations involved in health activities) to help mobilize government support for additional resources. The experience gained from the TIPAC resource mobilization will help to advocate for more government support.

The amount funding secured from private sector organizations, increase in government support, number of CDDs incorporated into the CHW program, and the reduction in attrition will be used to measure the success of these activities.

M&E Capacity: Monitoring the capacity of the national program has been an ongoing process, especially during independent monitoring of MDA and training of the various health workers involved in NTD activities. All trainings follow a pre- and post-test to determine the effectiveness of the training as well as the understanding of the training topics. During independent monitoring, an evaluation exercise is conducted to assess the knowledge of health staff following the training received during the Pre-MDA activities. Questionnaires are developed for CDDs, PHU staff, NTD focal persons, and community stakeholders with input from the national program to determine the effectiveness of the trainings and community sensitization meetings. Results from these evaluation exercises are presented during annual review meetings and the gaps in training and community meetings discussed in-depth and recommendations made for subsequent training sessions. The NTDP and partners will continue to

undertake joint monitoring and supportive supervision during trainings, community meetings, and MDA to ensure that issues discussed are well understood by participants.

In FY14, the NTDP conducted its first training of district laboratory technicians to carry out diagnosis of LF using Mf thick smear. This training will help the national program prepare for post-MDA surveillance for LF. Meanwhile, the NTDP will continue to advocate to the MoHS to include NTD surveillance in the national disease surveillance system through series of stakeholders' meetings. This will help the early detection/prevention of recrudescence of the disease once MDA stops. Transition and post-elimination strategies are a key element in the most recent integrated NTD five-year Master Plan (2011-2015) and will be further strengthened in the next five-year NTD master plan (2016-2020).

Furthermore, an M&E training workshop on DQA, the integrated NTD database, the use of WHO drug requisition and reporting forms was conducted in August 2016. This training will help address M&E gaps within the national program. In FY17, the training received in FY16 will be cascaded to all NTD focal points in all 14 HDs. In addition, implementation of the DQA will be conducted with TA from FHI360.

Data quality assessment (DQA) training for NTD staff at the national level will be rolled out to NTD focal persons, district M&E officers, and chiefdom supervisors to ensure quality data is reported at all levels. After the cascade training, the national program will be able to conduct a DQA without external technical assistance. Following the DQA, recommendations will be made from the findings. It is expected that there will be improvements in the quality of the data being reported at all levels following implementation of the recommendations. The next DQA will enable us to determine if there has been an improvement in the quality of the data reported.

In addition, the NTDP will advocate for the inclusion of NTDs in the national curriculum of health institutions so that all graduating medical students and nurses have a good knowledge about NTDs before they are posted at hospitals and peripheral health units in the country. In the last quarter of FY16, the NTDP plans to hold a national advocacy workshop with all heads of health training institutions to agree on the development of a curriculum for NTDs. The outcome of the workshop will pave a way for hiring a consultant to develop the curriculum in FY17.

The number of NTDP staff and laboratory technicians receiving training and the successful implementation of the DQA and conduct of appropriate diagnosis will indicate an improvement in the capacity of staff. The timely identification of recrudescence of the disease and a positive result from the follow up DQA will indicate impact of these capacity building activities.

Additionally, the pre-and post-test conducted after training exercises can measure the level of understanding of the participants.

Supply chain management capacity: During the NTD supply chain management workshop organized by Management Sciences for Health (MSH) in Ghana in FY16, one of the key action points was to incorporate NTD drug management into the country's general supply chain management so that government can effectively manage NTD drugs for sustainability. This is likely not feasible, given the fact that a

representative from the central warehouse, said that the cost of doing this would be 3% of the total value of the drugs. One other aspect of drug management is proper storage of drugs, and following the training, the NTDP requested assistance of two air conditioning “split” units and two fans to provide proper ventilation for the NTD warehouse in Makeni. HKI has already provided the air conditioning units and fans.

Another process to ensure capacity strengthening of the national program is that HKI plans to send staff on a regular basis to work with the NTDP staff, especially with completing application for drugs, TIPAC, and other M&E forms. To ensure proper financial management, HKI’s finance team will also pay regular visits to the NTDP and in the field to provide support to the finance department for proper and sustainable financial management. Following the FOG training received in FY14, there had been significant improvement in milestone reporting and management of the FOGs in general. There has been no major issue with milestone reporting in the past 2 fiscal years, with the exception of occasional late reporting of milestones by some districts, which may delay payments. The effectiveness of the visit to NTDP by HKI staff will be determined based on the number of successful drug applications, updating TIPAC and also timely reporting of milestones by all districts. Also, a reduction in the contact hours will also help to determine the impact of this exercise.

Project Assistance

The MDA activities target at-risk populations for each of the four PC NTDs endemic in Sierra Leone, aiming for equitable and high coverage for both males and females. However, social mobilization on market days is aimed at reaching more women, because they make-up the majority of the traders in the markets. Markets are the best occasion to reach large number of women in rural settings. Furthermore, over 80% of PHU staff, all the MCHA-Training Coordinators (included in the ToT for MDA-LF-Oncho-STH in 12 HDs), and all the MCHA-trainees who perform MDA in the urban setting are females. During community meetings, females are encouraged to serve as CDDs to replace their male counterparts who left to seek employment, especially within the new mining/industrial sector. There has been a significant increase in the proportion of female CDDs: from 16.7% to 24.8% in five years. Improving this proportion in hard-to-reach (HTR) communities is challenged by low female literacy rates, high domestic responsibilities for women and the requirement of spousal permission for women to accept such responsibilities.

Attempts have been made to recruit more female independent monitors. However, recruiting an equal proportion of female independent monitors is also challenging due to concerns regarding their personal safety in HTR communities and some cultural practices that limit activities of women in rural areas. Most of these HTR communities can only be accessed on a motorcycle, many of which are driven by male ex-combatants⁹ who are still seen as threats to women by communities. Since 2013, the proportion of female independent monitors has been approximately 30% compared to less than 15% when this activity began in 2010.

Strategic Planning (Location in Budget: ODC Lines 179-181, FOG Line 135) **Total cost for activities in this section: \$22,400**

⁹ Sierra Leone had a civil war between 1991 and 2002; most of the ex-combatants took up professions like bike riding for commercial purpose.

The NTDP, with technical assistance from HKI and the WHO, developed a five year NTD Master Plan, 2011-2015, which covered 4 strategic priorities: 1) strengthening of government ownership, advocacy, coordination and partnerships; 2) building capacity to plan for results, resource mobilization, training and financial sustainability; 3) scaling-up access to interventions, mobilizing domestic and partner resources to address the non-MDA treatment and 4) enhancing M&E for NTDs, disease surveillance, data management and operational research. In FY16, the NTDP, in collaboration with the WHO and HKI, has planned hold a workshop in August 2016 to invite stakeholders, DHMTs, and senior MoHS staff from the Directorate of Disease Prevention and Control (DPC) to develop a new five-year strategic plan (2016-2020) according to new WHO guidelines with technical assistance from Deloitte. This plan will prioritize post-MDA surveillance for NTDs, cross border control strategies for NTDs and a policy for morbidity management. As in previous years, in FY17, HKI will work together with NTDP to create the following year's work plan (FY18) for END in Africa support.

An annual NTD meeting reviews the targets achieved and discusses recommendations from independent monitors, lessons learned and examples of 'best-practice' from the previous year's activities. Stakeholders at various levels are encouraged to give opinions on how NTD activities can be better planned and implemented based upon experience. Following the review meeting, the annual NTD work plan is developed by the NTDP in collaboration with HKI and other NTD partners in a series of micro planning meetings conveyed to agree on the target population for each MDA. Modified strategies and timeframes need to conform to the NTDP workplan to mitigate factors such as delays in funding, late arrival of drugs, and unforeseen competing MoHS activities or emergencies, such as the cholera epidemic in FY12 and the Ebola outbreak in FY14.

The NTD task force meeting, which is organized twice yearly, will be conducted at the directorate of disease prevention and control with participation of key stakeholders such as WHO, Sightsavers, the national program manager for malaria, and other senior MoHS staff to discuss NTD guidelines and MDA strategies for FY17.

As the country is approaching 12-15 rounds of effective treatment for oncho, there is the need to set up a committee to look at the possibility of elimination by 2020, as per new WHO guidelines. The NTDP is planning to hold twice yearly meetings to discuss progress toward oncho elimination and decide when to stop MDA for oncho. Key stakeholders will be WHO, Sightsavers, DPC and HKI. Sightsavers has committed to supporting these meetings and discussions have been held to identify an external expert to join the committee, though the NTDP has not yet asked a particular expert to join.

With technical and financial support from the END in Africa project/Deloitte, the NTDP staff, representatives from the leprosy program, directorate of disease prevention and control, and the Director of Finance, and HKI NTD staff received training on the Tool for Integrated Planning and Costing (TIPAC) in March 2016. In FY17, a workshop will be held with support from Deloitte and FHI to update the TIPAC with program output and to sensitize stakeholders in the MoHS on the importance and use of TIPAC as an advocacy tool.

NTD Secretariat (Location in Budget: ODC Lines 183-185)**Total cost for activities in this section: \$67,640**

Maintenance and fuel costs of existing NTDP vehicles have been included in the NTDP operations budget. Available funds have made regular maintenance of the NTDP vehicles possible and have enhanced the NTDP staff's capability to supervise the activities at all levels. At the district level, the cost of hiring of motorcycles have also been included in the budget. Funds are also regularly made available to both NTDP and National School and Adolescent Health Program (NSAHP) secretariats to support administrative running costs including office supplies, computers and accessories, internet running cost and fuel for office generator.

Advocacy for Building a Sustainable National NTD Program (Location in Budget: ODC Lines 187-188, FOG Lines 138-143)**Total cost for activities in this section: \$79,630**

Advocacy in the context of NTDs in Sierra Leone is conducted at various levels. Below are the plans for FY17 in building advocacy for a sustainable national NTD program.

Government-to-government advocacy in FY17 will be enhanced through the Mano River Union (MRU) Secretariat prioritizing cross-border control and synchronized scaled-up MDAs in neighboring Guinea and Liberia. The MRU comprises Sierra Leone, Liberia, Guinea and Cote D'Ivoire and was established with the goal of fostering economic cooperation and other regional developmental goals, including NTD control. The MRU annual meetings on NTDs are held in rotation to facilitate collaboration and coordination between MoHs and partners. The risk of cross-border recrudescence of NTDs and synchronizing MDAs in the border communities will be addressed in the next MRU meeting to develop a regional NTD strategy and define roles and responsibilities for risk-mitigation. This meeting has not taken place since Sierra Leone hosted in 2013 due to the 2014-2015 Ebola outbreak. It is expected that this meeting will recommence in FY17. The major discussions have been strategies for implementation of cross border MDA such as synchronized MDAs. It is expected that the next meeting will lead to concrete conclusions on implementation of these strategies, there is a risk of recrudescence of disease in Sierra Leone unless the neighboring districts (Guinea and Liberia) step up effective MDA, especially along the border communities since FY17 will probably be the last MDA for most districts.

In addition, cross border meetings will be held between the NTDFPs of the seven districts bordering on Guinea and Liberia, as well as representatives from those NTDPs with supervision of NTDP and partners just prior to the MDAs. The purpose of these meetings is to ensure that Sierra Leoneans currently on the other side of those borders are mobilized to return to Sierra Leone to receive treatment, since MDA has not been scaled up to full national coverage in either Guinea or Liberia.

Special advocacy will be held in FY17 with technical assistance from Deloitte to help the NTDP on how to solicit local funds from private institutions such as the banks, mining companies, mobile phone companies and other business entities to address morbidity management for LF, which was identified during the

TIPAC training as the major funding gap and also to look at possibility of supporting other MDA activities such as post MDA surveillance surveys, implementation of a passive surveillance system, and health surveys when support from the current donor ends. Since current donors in SL are not targeting this aspect of LF elimination, it is hoped that these private institutions will help the national NTDP address this gap through their corporate social responsibility.

Over the years, GoSL support to the NTDP has been limited to administrative support. Sierra Leone as a post-conflict country has always been challenged with numerous health issues (including, but not limited to, high infant and maternal mortality, high prevalence of malaria, disease epidemics such as a cholera outbreak in 2012 and the recent Ebola outbreak) and available government resources are not sufficient to address all of these needs. However, in FY17 the NTDP will strategically target political support through the Minister of Health and Sanitation and the Parliamentary Budget Oversight Committee for Health for an increased GoSL input into the national NTD budget beyond administrative and salary costs to include funding for activities, such as MDAs and morbidity management. A meeting with the parliamentary budget oversight committee was scheduled in FY14 but could not take place due to the Ebola virus outbreak. In FY16, the GoSL pledged USD \$6,700 to the NTDP for morbidity management. However, the GoSL is yet to fulfill that commitments to the NTDP. HKI in collaboration with the national program will continue to advocate to the MoHS for disbursement of allocated NTD-funds.

For the LF-STH and oncho MDA in the 12 provincial HDs, advocacy meeting will be held with stake holders at the district level. Religious leaders are well respected by members of the community so their support will be required to improve community participation. Paramount chiefs are the traditional heads of the chiefdoms within the districts and their inclusion is very crucial for the success of any program. Civil society organizations (e.g. health for all coalition, the media, women and youth groups (market women, bike riders) will also be targeted during the advocacy at district level to enhance participation of their pairs in the NTD program.

LF MDA in the WA will be launched at the national level by a formal presentation of the ALB and IVM to the Minister of Health and Sanitation or one of his deputies for the attention of the GoSL and will be reported nationally in the media. This will raise awareness on the huge contributions being made towards NTD control globally and within Sierra Leone. The launch will also target other senior MoHS officials, local authorities and GoSL dignitaries, including the Minister of Education and Parliamentarians as keynote speakers. The pre-MDA press briefing for journalists will be led by the Minister of Information and reported on social media, radio and in newspapers (two of which are available on-line). This will raise awareness of the degree of external support the NTDP receives and demonstrate that the GoSL also needs to show equal interest.

Since 2011, private medical professionals in the WA have collaborated with the NTDP during MDAs by participating in the distribution of IVM and ALB for LF elimination and also completing the necessary tally sheets as instructed by the NTDP. In FY17, the NTDP and HKI will work to reach more medical practitioners through their professional body, called the Sierra Leone Medical and Dental Association, to increase

awareness among more medical practitioners who will further help in sensitization of their patients about the benefits of participating in MDAs, as well as the management of Severe Adverse Events (SAEs).

Since workers within the mining sector are more likely to miss MDAs conducted within communities for the PC NTDs, the NTDP has to establish collaborations with mining companies to ensure that their workers are treated by their medical staff during the period of MDAs in these communities. The country of origin of staff have not been recorded in the past. However, in FY17, the NTDP will modify treatment forms sent to those companies that incorporate country of origin for the foreign workers in particular. This collaboration was established with Sierra Rutile in FY13 and with African Minerals in FY14. In FY17, more efforts will be made by the respective DHMTs to add Timis Mining (formerly London Mining) and Addax Bioenergy in this list so that their medical providers can join in the distribution of PC NTD medicines.

HKI, with funding from END in Africa, will assist the NTDP to roll-out a curriculum on NTDs that will be used in medical and nursing schools. The objective is to ensure that new cadres of health workers who begin to work at PHU or district-level health facilities are aware of NTDs and understand the control and elimination mechanisms. This will make them more effective in the implementation of these activities and may reduce the need for training in the future.

The success of the advocacy steps highlighted above will be measured based on the following:

- MDA coverage showing number of Sierra Leoneans treated on the border villages in neighboring countries.
- Additional amount provided by GoSL to support NTDP for salaries, MDA activities, morbidity and other administrative costs.
- Attendance list showing number of stakeholders attending the MDA launch in WA.
- Number of newspapers publishing information on MDA following press briefing.
- Number of private practitioners participating in MDA.
- MDA coverage showing number of mine workers treated during MDA.

The key issues discussed in these meetings will be determined by administering evaluation questionnaires to the participants especially at the district and chiefdom level to ascertain their effectiveness.

Social Mobilization to Enable NTD Program Activities (Location in Budget: ODC Lines 190-191, FOGs Lines 145-147)

Total cost for activities in this section: \$183,181

Social mobilization is conducted at various levels. At the national level, advocacy meetings are organized for the NTDP to share information on planned activities with decision-makers within the MoHS and also with parliamentarians, medical professionals, Non-Governmental Organizations (NGOs) and Community-Based Organizations (CBOs). At the district level, councilors and/or the city mayors are encouraged to integrate NTD activities into their budgets and annual work plans. At chiefdom and village levels, the PHU staff hold pre-MDA village meetings attended by traditional leaders, section chiefs, headmen, religious leaders and local teachers. Also at the village level, the services of town criers, who work on a volunteer

basis, are utilized to convene sensitization meetings at the request of the village chief and also inform the people about the availability of the MDA drugs and the need for every eligible person to comply with the treatment.

Lessons learned from the recent past suggest that some communities listen to religious leaders more than traditional leaders, as they are considered closer to God and their messages in line with God's will. This was also evidenced during the Ebola outbreak, as community compliance with Ebola prevention messages increased when the religious leaders were engaged by a local NGO "FOCUS 1000" to lead community sensitizations efforts. The NTDP has continuously used the services of religious leaders and traditional heads in all social mobilization activities to raise awareness about NTDs and during MDAs. The high reported annual MDA coverage and reduced prevalence of NTDs are indication that the social mobilization activities have been largely effective.

Social mobilization activities have been evaluated in the past by independent monitors. Results from these evaluations has helped the national program to address gaps in social mobilization activities. In FY15, results from the independent monitoring of MDAs for both LF-Oncho-STH in the 12 HDs and SCH in 7 HDs showed that community leaders knew the signs and symptoms of LF, Oncho STH and SCH. From the analysis of the community sensitization meetings for LF-Oncho in 12 HDs, 78% of the community members knew the vectors that transmit LF and Oncho and 58% knew at least three of the exclusion criteria for MDA. 66% of community members heard about MDA from health workers and 28% via radio. Coverage results from the independent monitoring is explained below under the M&E section (see Table 5).

Religious leaders and tribal heads again will be specifically targeted in FY17 and encouraged to participate in awareness-raising prior to and during MDAs to help maintain/improve compliance to treatment. In addition, social mobilization on market days within border districts will specially target the traditional cattle-herders who migrate between Guinea and Sierra Leone. Social mobilization is organized by PHUs on market days because this is the only time the cattle herders will be in the same place and they can receive treatment during MDA regardless of their country of origin.

Television, public mega-screens and social media (Facebook) are used for LF MDA in the WA: a short animation film was produced in FY11, and a short comic sketch produced by 'Wan-Pot'¹⁰ in FY12 was modified in FY13, FY15, FY16 and will be revised and used again in FY17. Youth groups will also be contracted to make street announcements. Also as a way of improving social mobilization for the MDA WA, a group of students from universities were used to support the program in social mobilization activities targeting tertiary institutions to help raise awareness of NTDs among their colleague students in FY16. These medical students will be targeted again to volunteer in FY17 to continue to raise awareness about NTDs in tertiary institutions in the country.

¹⁰ Arguably the most popular theater group in Sierra Leone.
<https://www.youtube.com/watch?v=Z5PfcRdv4k>
<https://www.youtube.com/watch?v=Btzt5-V7Dng>

The NTDP and partners will continue to develop private sector partnership with telecommunication providers such as Airtel and /or Africell that may be willing to extend their corporate social responsibilities and distribute free SMS messages to their subscribers, especially during the period of the SCH MDA in schools and LF MDA in the WA. This attempt has been made in previous MDA campaigns but has not been successful. However, the program will continue to advocate for this to happen in FY17.

Radio broadcasting has been and will be used again as a complementary and cost-efficient strategy. Community radio stations and the commercial 'Star Radio' transmit nation-wide and will continue to disseminate well-tailored, pre-tested messages through interactive, live, panelist broadcasts. Position statements will be prepared in advance to ensure that key NTD messages are repeatedly delivered in various forms during each broadcast by the various panelists. These programs also include the use of the information found in the Frequently Asked Questions (FAQs) to ensure consistency of messaging¹¹ and jingles translated into main local languages (Mende, Temne, Limba, Krio, Kissi, Loko and Kono), which have been revised to include issues about MDA in the post-Ebola context. The FAQs can be used as an anchor by the interviewer to address public concerns on NTDs and also respond to questions and concerns that listeners might send by SMS or voice calls. The revised FAQs and position statements are written in English but discussed in the local language Krio during radio discussion and will also be disseminated during community meetings before and during MDAs.

The media used in social mobilization depends on the population. During the war, Sierra Leoneans developed the culture of listening to radios, and it is the most common medium of communication. In the capital both TV and radios are used, as people can access these facilities everywhere (offices, homes, streets). In the villages, town criers are normally used because they are the main medium of communication for meetings and other information. These people are well known in their communities and information from them is considered to be from the stakeholders. Independent monitoring also helps to identify which practices are appropriate for each population. The effectiveness of this approach was evaluated during the independent monitoring of the three MDAs in FY15 and the results showed that over 40% of individuals who heard about MDA did so via radio broadcasts and town criers. This same strategy of evaluating the effectiveness of social mobilization and trainings will be utilized in FY17.

Social mobilization via community meetings have been very instrumental to the overall success of the NTDP. The community meetings are conducted with participation of key stakeholders who have strong influence in their communities. For instance, the paramount chief of Kissi Tongi in Kailahun district was once a CDD. He has been very instrumental in the chiefdom to ensure high compliance during MDA.

Social mobilization in FY17 will also focus on specific areas that DSAs will be performed. The reason for this is because the surveys will entail blood collection and with the post Ebola trauma still in the minds of communities, there is concern that these activities may create panic if the communities are not properly

¹¹ FAQs are printed pages listing common questions received about NTDs and the medications used to treat them, along with a factual response to counter misconceptions about the diseases and drugs)

sensitized. Therefore, social mobilization with specific messages will be conducted prior to the DSAs to inform communities about the survey procedures and the possibility of stopping MDA.

Also, sensitization of the population on scaling down or stopping MDA in some districts will form part of the key messages in FY17. Since 8 districts will undergo TAS, communities should be informed about the survey results and a positive result should be celebrated as triumph. This will gather support from political heads and DHMTs who would want to achieve stop-MDA criteria.

Table 3 Social Mobilization/Communication Activities and Materials Checklist for NTD work planning

Category	Key Messages	Target Population	IEC Strategy (materials, medium, activity etc.)	Where/when will they be distributed	Frequency	Is there an indicator/mechanism to track this material/activity? If yes, what?	Other Comments
MDA Participation	<i>MDA will take place in all communities in the 14 health districts from 1st – 30th April 2017</i>	<i>Community members (SAC and adults)</i>	<i>Banners</i> <i>FAQs and leaflets</i>	<i>Hung in 122 locations for 2 weeks before MDA in the WA only</i> <i>Distributed in all community meetings for both MDA LF-Oncho-STH in 12 HDs and LF-STH in the WA</i>	<i>Once annually, prior to MDA</i>	<i># of persons participating in the MDA, tracked via treatment registers and independent monitoring results.</i>	<i>In FY17 we will include questions of these materials in our independent monitoring for the MDA SCH in 7 districts and MDA LF-STH-Oncho</i>
	<i>The drugs provided are free and safe</i>	<i>Community members</i>	<i>Radio</i>	<i>34 local and commercial radio stations. 1 week pre and during MDA campaign</i>	<i>Jingles in 8 local languages aired 2 times per day (morning and night) during peak hours</i>	<i># of times messages aired on radio during reference period - social mobilization reports</i> <i>% of audience who recall message- Post event coverage survey</i>	

			<i>Television</i>	<i>3 TV stations (SLBC, Star TV and AYV). 10 days pre and during LF-STH MDA campaign in the WA</i>	<i>Panel discussions and airing of video clip on TV for 10 days pre and during MDA campaign in the WA</i>	<i># of times video clip aired on TV</i> <i>% of people who recall seeing the video clip - Post event coverage survey</i>	
	<i>Some side effects are as a result of the dying Mf</i>	<i>Health workers and supervisors</i>	<i>Integrated training manual</i>	<i>District level health workers and supervisors' trainings</i>	<i>Integrated training manuals will be distributed in all trainings</i>	<i># of training manuals disseminated during reference period - training attendance list in the social mobilization report</i>	
	<i>Drugs handed out at school are safe and keep you healthy and free of worms</i>	<i>School aged children</i>	<i>SCH-STH leaflets</i>	<i>Head teachers and school supervisors</i>	<i>Training manual will be distributed in all primary schools</i>	<i># of training manuals disseminated during reference period - training attendance list in the report</i>	
<i>Other</i>	<i>Promoting visibility of NTDP</i>	<i>General public</i>	<i>MDA bulletin</i>	<i>Sierra Leone Medical and Dental Association annual conference</i>	<i>Distribution of brochure during conference</i>	<i># of brochure distributed to key stakeholders - copy of the bulletin to be attached to the semi-annual reports</i>	

Training (Location in Budget: ODC Line 193, FOGs Lines 149-155)

Total cost for activities in this section: \$289,470

Yearly training/refresher training for MDA will be provided for health personnel in a cascade format. Pre- and post-tests are administered to ensure that participants acquire the knowledge and skills being taught. The quality of training is further assessed during independent monitoring using questionnaires designed to assess knowledge, attitudes and practices (KAP). Details of planned trainings/refresher trainings for FY17 is shown in Table 4 below. Lessons learned include the fact that the annual trainings/refresher trainings are required due to transfer of staff to new positions, attrition, recruitment and selection of new CDDs. As a way to minimise the number of trainings, supervisors are encouraged to rotate the PHU staff

who attend training activities so that even with transfers they will still have knowledge of NTDs. The inclusion of NTDs into the teaching curriculum will help increase knowledge of NTDs control among all graduating personnel.

A training is planned for the end of FY16 for national-level staff on monitoring and evaluation tools, such as data quality assessment (DQA), the NTD integrated database, and the WHO joint reporting and request form. This training will be rolled out to NTD focal persons, district M&E officers, and chiefdom supervisors to ensure quality data is reported at all levels. After the cascade training, the national program will be able to conduct a DQA without external technical assistance. Following the DQA, it is expected that there will be improvements in the quality of the data being reported at all levels. A workshop will also be held with support from Deloitte to teach NTDP staff and HKI on the use of the TIPAC to mobilize resources from private firms, such as banks. This will help the national program raise funds to fill gaps in the NTD control program.

Table 4: Training targets

Training Groups	Training Topics	Number to be Trained			Number Training Days	Location of training(s)	Name other funding partner (if applicable, e.g., MOH, SCI)
		New	Refresher	Total trainees			
<i>Training of Trainers</i>	<i>MDA LF-oncho-STH</i>	8	43	51	1	<i>Bo</i>	Sightsavers
<i>Supervisors</i>	<i>MDA SCH-STH</i>	1	63	64	1	<i>Kenema and Makeni</i>	
<i>PHU staff</i>	<i>MDA SCH-STH</i>	12	523	535	1	<i>7 HD</i>	
	<i>MDA LF-oncho- STH</i>	318	832	1,150	1	<i>12 HD</i>	
	<i>MDA LF & STH</i>	40	110	150	1	<i>RWA & UWA</i>	
<i>CHWs</i>	<i>MDA LF STH</i>	720	1650	2370	1	<i>RWA&UWA</i>	
<i>CDDs</i>	<i>MDA LF oncho & STH</i>	<i>TBD</i>	<i>29000¹²</i>	<i>29000</i>	1	<i>All PHUs in 12 districts</i>	Sightsavers
<i>Independent monitors*</i>	<i>MDA LF-oncho-STH, SCH & STH; LF-oncho in WA</i>	65	20	85	1	<i>HKI conference hall</i>	
<i>Team Leaders and Technicians*</i>	<i>LF TAS</i>	16	0	16	3	<i>NTD Lab Makeni</i>	
<i>Technicians*</i>	<i>LF Pre-TAS</i>	24	0	24	3	<i>NTD Lab Makeni</i>	
<i>Technicians*</i>	<i>Oncho Epidemiological survey</i>	24	0	24	3	<i>NTD Lab Makeni</i>	
<i>District NTD Focal Points and M&E staff</i>	<i>M&E and DQA cascade training</i>	26	0	26	5	<i>Multiple sites TBD</i>	
<i>NTDP & HKI</i>	<i>Training on use of TIPAC report for resource mobilization</i>	11	0	11	3	<i>Wussum Hotel</i>	

¹² The exact number of CDDs who are new or returning cannot be determined at this time; generally, it depends on the number of CDDs who decide to continue to work for the NTDP.

<i>District NTD Focal Points and Independent Monitors</i>	<i>mHealth</i>	<i>0</i>	<i>24</i>	<i>24</i>	<i>1</i>	<i>HKI conference hall</i>	
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**M&E Training; please see M&E section for description.*

Mapping (Location in Budget: Not budgeted)

Mapping for all targeted PC NTDs has been completed, including hypo-endemic oncho villages; there are no gaps. No mapping is required in FY17.

MDA Coverage and challenges (Location in Budget: ODC Lines 196-197, FOGs Lines 158-163)

Total cost for activities in this section: \$599,022

In FY17, the planned MDAs include:

- LF/STH MDA: in 14 HDs targeting 5,969,970 million persons
- OV MDA through LF MDA: in 12 HDs targeting 2,902,347 million persons
- SCH MDA: in 7 HDs targeting 721,446 school aged children (SAC) and 1,484,006 at-risk adults

The MDA for LF in the WA is performed by CHWs via both static health facilities/outreach posts/community meeting points and by a street-by-street ‘campaign’ over five days. This is scheduled to take place in May/June 2017 alongside the LF-oncho-STH MDA in 12 districts.

In the 12 rural HDs, the LF-oncho-STH MDA will be implemented over a period of 6-8 weeks by volunteer CDDs in rural settings using the house-to-house distribution method. This is supplemented through distribution conducted by MCHAs-in-training in urban town settings of the 12 provincial HDs. In FY17, it was agreed that MDA will be done in May/June 2017 for all 12 HDs, even though 8 districts will undergo TAS in FY17, in order to ensure that districts do not skip a year if they do not pass TAS and because the logistics system will have started by the time TAS results are known. In the mining areas, MDA will be carried out by the mining companies’ medical staff at the same time in FY17 to ensure coverage, especially of males outside their census-villages.

MDA-SCH will be implemented by health workers assisted mostly by school teachers in June 2017 lasting 7 days as both a community and a school-based campaign in 7 HDs. The second round of STH will be conducted in 6 HDs (Bombali, Bonthe, Moyamba, Koinadugu, Tonkolili and Pujehun) based on the discussion of the national review for SCH/STH held in June 2016. However, USAID funds are not being solicited for this activity; instead, other funders will be sought and actual implementation will be dependent on the availability of funding and drugs.

Hard-to-Reach (HTR) communities in Sierra Leone are located in remote locations requiring boat-hiring for riverine fishing villages or motorcycle-hiring in areas inaccessible by roads but also in over-crowded, sometimes insecure, urban slums. These communities require special social mobilization targeting the leaders of civil society groups, such as motorcycle riders’ associations, ex-combatants and drivers’ unions,

with tailored messages for dissemination. In addition, reaching employment-seeking-migrants within the mining/industrial sector requires collaboration and coordination with medical providers within the mining companies so they include MDAs for PC NTDs as part of the care they provide to their workers.

Seven of the 12 HDs share borders with neighboring MRU countries: Kambia, Kono, Koinadugu, Bombali (with Guinea), Kailahun (with Liberia and Guinea), Kenema and Pujehun (with Liberia). Although the NTDP in Liberia has conducted 2 MDA rounds for LF, both Liberia and Guinea have yet to reach 100% geographical coverage for LF. Synchronization of MDAs for NTDs in the border communities has also not been achieved in the 3 MRU countries. To help improve NTD control along these borders, pre-MDA cross border meetings are planned for FY17 to discuss the cross border MDA activities, including discussion on the estimated border population who are likely to cross over into Sierra Leone during MDAs. These populations are estimated based on the available data from DHMTs used during polio campaign which are synchronized with the neighboring countries. The extra number of doses will be added to the allocation according to the village census in these border villages. In addition to house-to-house distribution, LF MDA on market-days, similar to the urban platform, is also proposed to reach people crossing into Sierra Leone for trade. The market days usually last for 1-3 days and during market days that fall within the MDA period traders and visitors in the border markets will be sensitized on eligibility/exclusion criteria, dosage and clear information that the drugs should be taken only once, and then treated.

According to NTDP reports, all MDAs in every district since 2010 have surpassed the minimal required epidemiological and programmatic coverage for all targeted PC NTDs. The NTDP reports have also been corroborated by reports of the independent monitoring conducted during MDAs that has so far shown very minor differences between reported coverage and coverage provided by the independent monitors (see below in “Lessons learned” for further details). The independent monitoring is usually also planned to purposefully bias HTR communities. There is need for more in-process independent monitoring of MDAs to help improve coverage in chiefdoms that are very difficult to access during MDAs and since coverage may be variable within a district, to determine whether there are areas with lower coverage that can be better targeted via advocacy or social mobilization activities.

Lessons learned from previous MDA rounds incorporated to improve coverage in all districts

The most important lesson learned from previous MDAs is the proper use of the ‘window of opportunity’ and independent monitoring. “Window of opportunity” refers to timeframes for implementation of MDAs agreed by all stakeholders in Sierra Leone that are based on observations made during past MDAs and knowledge of the traditional practices of the populations being targeted. The window of opportunity should be respected whenever possible. If, for whatever reason, that is not possible, like in the case of the Ebola outbreak, then the NTDP and partners should prepare a contingency plan, even if that requires some flexibility by the donor. Most commonly, this would involve moving the MDA from one fiscal year into the beginning of the next.

There are 3 MDA windows of opportunity in-country discussed by disease:

LF-Oncho-STH MDA in 12 HDs: The October-November timeline is when CDDs can volunteer: after the rainy season and before the harvest, Christmas and traditional festivities. Synchronization of LF MDA for this timeline has been agreed by the MRU-NTD forum. Delayed approval of NTD budgets or late arrival of drugs compound MDA challenges and can compromise coverage. As shown in the table below, in FY11 and FY12, independent monitoring found 78% and 74% overall coverage, respectively. However, in FY13, the timeframe for the LF-Oncho-STH MDA in 12 HDs timeframe was ‘staggered’ due to the national elections and was further challenged by the cholera epidemic. Health workers were focusing more on the cholera epidemic and the public was nervous about the quality of the water they had to drink when taking NTD medicines. In FY14, LF-Oncho-STH MDA in 12 HDs started late due to late approval of the NTD budget. In FY15, the MDA was rescheduled eight months later (May/June 2015) due to the Ebola outbreak. And in FY16, the MDA was pushed forward two months (May 2016) due to the late arrival of drugs.

NTDP Reported Coverage vs. Independent Monitoring Results (2011-2015)						
Year	MDA 12 HDs		MDA SCH		MDA WA	
	NTDP Results	IM Results	NTDP Results	IM Results	DHMT-WA Results	IM Results
2011	80%	78%	82%	85%	81%	79%
2012	79%	74%	81%	81%	79%	75%
2013	81%	69%	80%	72%	82%	82%
2014	MDA deferred due to Ebola Virus Disease					
2015	77%	75%	79%	74%	78%	79%

LF-STH MDA in the WA was attempted in 2009 using the CDTI+ strategy but coverage was found to be extremely low (23%). This was principally due to massive internal displacement during the war and post-conflict migrations into non-rural settlements that do not have clear community boundaries, leadership or assigned health centers. As a result, the MDA strategy was changed in the WA, copying the national immunization day approach used for mass polio immunization campaigns taking place at the time. The WA has 30 administrative zones. Within each zone, CHWs are selected, trained by the PHU staff as drug distributors, assigned and given per-diems to perform MDA in designated streets on a day-to day basis.

LF-STH MDA in the WA should ideally be performed pre-rains: June. However, the late arrival of ivermectin in 2011 necessitated its deferment to post-rains: September. In FY12 LF-STH MDA in the WA was brought forward to early September due to the national elections and the perceived threat of insecurity. It was, however, seriously challenged by heavy rains during three out of the five days of the campaign. As a result, additional days and strategic public locations were added to allow the DHMT-WA to ‘catch up’ using special teams. In FY14 LF-STH MDA in the WA was missed entirely due to the Ebola outbreak. In FY17 MDA will be implemented in May/June after the Pre-TAS.

SCH MDA in 7 HDs: It was anticipated in 2009 that school-going children in heavily parasitized communities would experience minor adverse events if praziquantel was given during school, as many would not have

eaten that morning¹³. As a result, funds were distributed to head-teachers to feed their school children on the day of the MDA. When distributing to 'at-risk' adults, both the public and the health workers were informed that food must have been taken before praziquantel was administered.

The window of opportunity for SCH MDA is in June prior to the closure of schools for the rainy season. In FY13, this was postponed to September due to the late arrival of PZQ in the country and this posed many challenges to the DHMTs who have to cope with multiple programs in the calendar-year. As shown in the above table, coverage from independent monitoring was FY11: 82%, FY12: 81%, FY13: 73%, FY15: 74%. Like MDA for LF-STH in the WA, in FY14, MDA for SCH was missed entirely due to the Ebola outbreak. In FY16 MDA was scheduled for June/July but has been delayed until October to ensure that it will not be disrupted by heavy rains.

Sierra Leone did a coverage survey in 2009 alongside Statistics Sierra Leone but this is expensive and takes time to plan. In-process and end-process independent monitoring in Sierra Leone was modelled on the WHO recurrent polio campaigns in 2010 and is vital in a post-conflict setting where population denominators are inaccurate. It is performed in both randomly selected clusters (enumeration areas) taken from the national population census (2004) and additionally in purposefully selected clusters known to be either HTR from recent campaigns (NTDs, vitamin A supplementation or vaccinations) or those expected to have particular challenges in the current MDA. The in-process results are relayed via HKI to the NTDP and onwards to the DHMTs as those challenges can be quickly resolved. End-process results are helpful to validate coverage especially in HTR locations where the NTD burden is highest and MDA distribution is weakest.

Specific messages that will now be included in the IEC strategy

Independent monitoring not only provides a quantification of coverage but also qualitative data on the public's perception of NTDs and MDA. Suspicion especially amongst young adults that the drugs are contraceptives and would make them infertile or decrease their fertility was reported. Males were sometimes worried about the effect of NTD treatments on their potency, and some teenage girls sometimes think that NTD medicines can help abort unwanted pregnancies. Fear of communities to take MDA drugs because they are misconstrued as Ebola medicine has also been raised. For example, in Kailahun, some residents thought the dose pole was used to measure people's heights for the production of appropriate sizes of Ebola burial plastic bags. The FAQs that were updated for the FY16 MDA will be revised to address these fears among community members and will be incorporated into the integrated training manual so that misconception surrounding NTD drugs can be addressed at all levels.

Monthly live, interactive national radio panel discussions are intensified in different radio stations several days before and during MDA and response is provided to questions that are phoned-in or sent by SMS

¹³Hodges MH, Dada N, Warmlesley A, et al. Mass drug administration significantly reduces infection of *Schistosoma mansoni* and hookworm in school children in the national control program in Sierra Leone. *BMC Infect Dis.* 2012; 12(16): 1471-2334. doi:10.1186/1471-2334-12-16.

messages to address the public's concerns and squash rumors that sometimes arise during MDA. The development of standard FAQs on NTD transmission, control, and prevention and their use for all social mobilization events has contributed immensely to the public understanding and acceptance of NTD activities. These FAQs are disseminated by the media to correct misconceptions and advise community leaders how to facilitate community participation. The FAQs are revised to address new public concerns, which can adversely affect MDA-coverage, such as cholera in FY12 and Ebola in FY15 and FY16.

Additionally, the use of screens in public locations to show the 'Wan Pot' video drama on NTDs also helped sensitize the public for MDA in the WA. This will be revised and used in FY17.

Expected challenges with meeting future coverage targets, and how they will be addressed

The outbreak of Ebola Virus Disease (EVD) in May 2014 had a significant impact on the three MDAs; SCH MDA and LF-STH MDA in the WA were both missed in FY14. TAS scheduled for September 2014 was postponed to November 2016. The FY16 Oncho-LF-STH MDA scheduled for March was rescheduled to May 2016 due to the late arrival of IVM and ALB in the country. Because these activities were rescheduled, TAS and Pre-TAS will be conducted in January and March 2017, respectively. The FY17 MDA is scheduled for May/June (as in FY16) due to the different surveys scheduled for the second quarter of FY17.

While districts overall may have achieved the minimum required epidemiological and programmatic coverage, coverage may vary within a district. Among the 4 HDs that failed the pre-TAS, 3 HDs have LF mf prevalence $\geq 1\%$. Each of these HDs has unique MDA challenges.

First, Kailahun district experiences cross border migration for trade, farming, schooling and MDA. As the NTDPs in Guinea and Liberia have not reached 100% geographic coverage for NTDs, there is an influx of people from Liberia and Guinea when there is MDA in Sierra Leone.

Next, Bombali shares border with Guinea and had the highest LF mf prevalence in Sierra Leone at baseline: 6.9%. Sella Limba chiefdom has the highest levels of elephantiasis and deep-rooted traditional beliefs¹⁴ regarding witchcraft which can affect the MDA compliance. It is believed that "Elephantiasis is sickness God has brought" to punish the wicked. In FY14, FY15 and FY16 special advocacy meetings were conducted by the NTDP, HKI and some members of the DHMT in the Kamakwie chiefdom headquarter town that was attended by various stakeholders who pledged increased commitment to NTD activities. In FY17 this meeting will be held including the establishment of community self-monitoring groups to ensure that communities comply with treatment.

Finally, Koinadugu district also shares border with Guinea and has the worst terrain and road network in the country. It can take some PHU staff days to travel to the district headquarters, Kabala, for training/refresher training. Some areas are only accessible by motorcycles which are both expensive and

¹⁴ Sonnie, MS et al. Traditional Beliefs Affecting Elephantiasis in Sella Limba Chiefdom, Bombali District, Sierra Leone (unpublished manuscript).

risky. It is also difficult for the PHU staff to reach all their catchment villages to join the CDDs to mobilize communities. During the raining seasons many communities become inaccessible. The extensive border with Guinea is used by traditional cattle herders who bring their cattle into Sierra Leone. Using an innovative MDA on market days in FY17 can help reach these cattle herders who may reside in Guinea but frequently travel to Sierra Leone or vice versa.

Table 5: USAID supported coverage results for FY15/16 ** and targets for FY17

NTD	# Rounds of annual distribution (add additional rows for different treatment frequencies)	Treatment target (FY15/16) # DISTRICTS	# Districts not meeting epi coverage target in FY15/16* (explain reasons below)	# Districts not meeting program coverage target in FY15/16* (explain reasons below)	Treatment targets (FY15/16) # PERSONS	# persons treated (FY15/16)	% of treatment target met (FY15/16) PERSONS	FY17 treatment targets # DISTRICTS	FY17 treatment targets # PERSONS
LF	6-8 rounds	14	None	None	5,697,303	5,485,299	96.3%	14	5,969,970
OV	10	12	None	None	2,769,787	2,642,193	95.4%	12	2,902,347
SCH	0-6*	7	None	None	2,599,156	2,294,321	88.3%	7*	2,205,452
STH	6-8***	14	None	None	5,697,303	5,485,299	96.3%	14	5,969,970
TRA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note:

*According to WHO guidelines only program coverage applies for SCH. The figures presented here are FY15 MDA results. FY16 treatment data will be updated in the second semiannual report. Also, the percent of treatment target shown is for FY15 program coverage.

**Number of rounds depend on the prevalence of the disease in a particular community. Only high prevalence communities (≥50%) have annual MDA

***Each disease receives one annual round of MDA with support from USAID. The NTD's policy is to treat STH twice per year; however, this is dependent on the availability of funds from different organizations that have been supporting the second round of deworming.

Treatment for SCH in FY17 will target 7 HDs. During the SCH/STH review meeting held in June 2016, the following decisions were made for FY17:

- Treatment strategy will now be based on district-wide average because only few chiefdoms were sampled per district with the exception of Kenema where MDA will continue based on chiefdom level prevalence results.
- For those chiefdoms that were not assessed in 2016, the “high” impact prevalence result in that district will be applied across those chiefdoms that were high at baseline within a given district. This same rule will be applied in chiefdoms with “moderate” and “low” prevalence. SCH MDA will be conducted in 7 HDs (Kailahun, Kenema, Bombali, Koinadugu, Port Loko, Tonkolili and Bo).
- A supplementary assessment will be conducted in Kenema (10 sites) and Port Loko (4 sites) before the closure of schools in FY16.
- For STH, 14 districts will continue to receive one round of treatment under MDA for LF-Oncho in FY17.
- A second round of MDA for STH will only target the 6 HDs that remain above the 20% prevalence threshold for any STH infection (Bonthe, Moyamba, Pujehun, Bombali, Tonkolili and Koinadugu). This second round deworming will depend on the availability of funding and drugs.

Drug and Commodity Supply Management and Procurement_(Location in Budget: ODC Line 199, FOGs Lines 165-166)

Total cost for activities in this section: \$23,503

Following annual training/refresher training, CDDs conduct a village census using the village register. The data are collated by the PHU in-charge, compiled by district NTD FPs and then forwarded to the national NTDP. The results of the eligible village census data are used to request the quantity of drugs needed for MDA. In FY16, these data, as well as a contingency quantity for cross-border migrants in 7 HDs and the available stock in store will be used to update the TIPAC. The report of the TIPAC will then be used to quantify the drug need for drug need for FY17. During MDA, the CDDs will administer the drug based on the census data but will also add new members to the register who were not present during the census and administer the drugs to them also. If drug shortages are identified (for example, in Kailahun and Kambia due to MDA-migration, in rapidly urbanizing settings, such as the WA, or mining communities within Bombali, Tonkolili and Port Loko) then additional supplies are requested by the PHU in-charge which are delivered by the focal persons.

Sierra Leone did not participate in the training organized by WHO for drug application using the new forms. Technical assistance was included in the FY16 budget to hold a training session for the M&E officer at the end of the fourth quarter. After this training, the NTDP will start using the WHO Joint Request of Selected Medicines forms for the FY17 drug application.

According to the current Supply Chain management (SCM) of the NTDP, all drugs arriving in-country are transported to the warehouse in Makeni without passing through the Central Medical Stores (CMS). This was a concern raised by Management Sciences for Health (MSH) during the NTD SCM workshop in Accra in February 2016. MSH recommends that all drugs must go through the CMS for onward distribution to the respective districts. However, the NTDP is currently evaluating this recommendation, given the fact that the CMS has stated that they will charge the program 3% of the total value of the drugs. In addition, another issue was with storage conditions; to assist with this, HKI purchased two air conditioner split units and two giant fans to help with ventilation.

Post-MDA, drugs remaining are brought to the PHU staff by the CHWs. The PHU staff quantify and document the remaining stock for all catchment villages and return the stock to the district pharmacist. The remaining stock/drugs are collected from the district medical store by the NTDP staff from the various districts and brought to the NTDP central warehouse in Makeni. These drugs are again quantified by the NTDP storekeeper, checked for expiry date, documented, and packed accordingly.

Empty cups, which are normally reused by the communities for domestic purposes following the completion of MDA, are returned to the PHUs based on recommendations from John Snow, Inc. (JSI) to be used during subsequent drug distribution. However, MSH now recommends the destruction of all empty cups/bottles after MDA. The Sierra Leone Pharmacy Board (SLPB) has a written standard operating

procedures (SOP) for the destruction of open bottles/cups. In FY17, the NTDP will write formerly to the SLPB for the destruction of empty bottles/cups after every MDA.

Health staff and CDDs are trained to conduct directly observed treatment and follow WHO guidelines on exclusion criteria, common side effects, and recognition and response to serious adverse events (SAEs). During social mobilization, communities are informed about minor adverse events. Persons with SAEs are referred by the CDDs to the PHU for management. The PHU staff report to the DHMT and immediately onwards to the NTDP using reporting systems established by WHO and the SLPB. The NTDP will immediately inform HKI and WHO if an SAE is reported, and HKI will inform FHI360. Since 2011, the monitoring and management of SAEs was expanded to include the National Expert Committee for Adverse Drug Reactions (NEC-ADR). This body is comprised of physicians and public health specialists, pharmacists from SLPB, pathologists, and representatives from WHO and NGOs led by the MoHS and is charged with the responsibility of monitoring for SAEs during all MDAs for NTDs and immunization campaigns. The role of NEC-ADR will be expanded in FY17 to cover MDA for SCH in 7 HDs.

The major challenges identified in the supply chain management in FY15 involved the handling of drugs by the NTD focal persons. It was observed the district pharmacists are not well-implicated in the drug management at the district; instead, it is the NTD focal persons who are in-charge. Also the reverse logistics are expected to come through the district pharmacist but this is not the case in many districts. As recommended by MSH during the supply chain management training, all NTD drugs from the central store in Makeni will be transported directly to the district drug store handled by the district pharmacists. All reverse logistics will also take this format.

Supervision (Location in Budget: ODC Line 201, FOGs Lines 168-169)

Total cost for activities in this section: \$98,338

Support to NTDP for supervision

Supervision of the NTDP is conducted on several levels: an NTD Task Force oversees the master planning process and monitors the NTDP to ensure quality control. At the district level, the cost of hiring motorcycles and providing fuel is included in the district budgets to aid the NTD FP to effectively supervise activities. At PHU level, the cost of transportation for PHU staff to cover her/his catchment villages has been included in the budget, including transportation cost for village social mobilization, CDDs training and MDAs. Technical support from the END in Africa project will be provided during planning and implementation of the TAS, Pre-TAS and Onchocerciasis epidemiological assessment in FY17.

WHO guidelines, MoHS regulations and monitoring mechanisms

During the annual NTD Taskforce meeting, the issue of current WHO and MoHS regulations are discussed as applicable to the national context. As a technical assistance organization, HKI's key functions for the END in Africa project are to provide technical and financial support to the NTDP. The HKI NTDP Coordinator works closely with the national NTDP Manager and other senior MoHS staff to ensure

adherence to guidelines and regulations: for example, modification of exclusion criteria for the LF MDA, which in the local context was extended from 1 to 2 weeks' post-partum due to the high maternal mortality rate in Sierra Leone, as the NTDP wanted to avoid the NTD drugs being blamed for these deaths. HKI will work with FHI360 to ensure the NTDP is represented in international technical NTD meetings scheduled in FY17. Also, an Oncho elimination committee will be formed in FY17 with Sightsavers' support with the objective of discussing the possibility of stopping MDA in 2020 in line with the new WHO guidelines for elimination. In addition, the STH task force committee will be reactivated with participation of all partners involved in STH/ deworming program in the country to help provide informed decision on the direction of STH control in the country.

Actions that identify and address potential issues/bottlenecks during MDAs

Supportive supervision uses supervisory checklists/post-tests for national, district and community levels to ensure program quality. Training of trainers (DHMTs), advocacy meetings and training of PHU-in-charge at the district level is supportively supervised by the NTDP and HKI. PHU activities are supervised by the DHMTs and activities at community level (social mobilization, training of CDDs and implementation of MDA) are supervised by PHU staff and monitored by the DHMTs, with spot checks by NTDP and HKI. Inadequate performance is always reported to an employee's line supervisor, DHMT and/or the national NTDP for remedial action. The DHMTs and community leaders supervise training of CDDs/CHWs and conduct spot checks at community level. During MDA the PHU staff ensure that CDDs/CHWs adhere to the following treatment guidelines: (a) the correct use of dose poles; (b) strict observation of the exclusion criteria for treatment; (c) correct recording of doses administered in the village register or tally sheet by gender; (d) proper supply chain management to detect and report any stock outs; and (e) proper identification/referral of SAE cases and reporting of SAEs to the appropriate health authorities. Supportive supervision of health staff and CDDs or CHWs gives the opportunity to evaluate if the health workers are doing the activities correctly and correct underperformance or malpractice on site. Supervision also helps motivate CDDs/CHWs as they can see and appreciate the interest shown in what they do. Deputy District Directors of Education and School inspectors supervise the second STH MDA when and where it is performed independently of the SCH MDA with back up from the NSAHP, DHMT and HKI. MDA is supervised using supervisory check lists by staff at all levels: national, district and community.

Independent monitors are selected from the SLPB, Statistics Sierra Leone, University of Sierra Leone and Njala University, to conduct both in-process and end-process monitoring of MDA modelled on the WHO sampling framework¹⁵. The in-process monitoring serves as a way to immediately troubleshoot problems, such as low coverage, shortage of drugs and other supplies, and community resistance to participation in the MDA. Both random and purposive sampling is employed for in-process monitoring. It is important to focus on areas that historically have lower coverage and that are hard to reach, so in these cases, purposive sampling is used to ensure that enough sites in this category are included. However, it is also important to assess those sites that have historically performed well and to ensure that monitoring covers a wide geographic spread and is representative of the entire population being targeted; therefore,

¹⁵ WHO. Immunization coverage cluster survey: reference manual. 2005; Geneva: WHO: WHO/IVB/04.23.

random sampling can be used as well. Independent monitoring enables the DHMTs to focus on weak aspects/areas of implementation for improved coverage as these are reported directly to them in person or by phone for remedial action in real time. Coverage data is collected via mobile applications using Android phones. The webhost account administrator at HKI receives, sorts, cleans, queries where necessary, and reports in-process coverage results daily to the NTDP for distribution by email to all DHMTs. The end process monitoring is conducted immediately after the MDA campaign to independently estimate post-MDA program coverage. Cluster random sampling using probability proportionate to size is used for end-process monitoring since this is the phase of IM that will estimate program coverage. The results of the end-process monitoring are used for comparison with the reported MDA coverage and also to recommend ways to achieve improved coverage in the next round of MDA. The independent monitoring has been very effective in helping to achieve effective programmatic coverage.

All aspects of preparation for MDA need to be monitored and these are performed annually by HKI-staff independently of the NTDP, and the results shared with the NTDP and DHMTs at the annual NTD review meeting. Community leaders and influencers will serve as community monitoring agents in chiefdoms with persistent LF mf prevalence $\geq 1\%$ in FY17.

Debriefing of independent monitors. After each round of in-process and end-process monitoring of provincial activities they are debriefed at the HKI office together with representatives of the NTDP. Qualitative reports from their field trip are discussed at length and recorded by the HKI-NTD team together with their recommendations for future MDAs. For MDAs in the WA, daily debriefing on the in-process monitoring occurs at the DHMT office at 6 pm. In-process monitoring has contributed immensely to avoiding pockets of low coverage, especially in HTR areas and identifying underperforming CDDs, PHU staff and/or DHMTs. It is timely and cost-effective since it enables program implementers to activate corrective measures without delay. Funds for the independent monitoring and the supervision conducted by HKI are located in the other direct costs.

How data collection is followed through pre-established procedures and protocols

Data are collected by the CDDs/CHWs in their registers in accordance with WHO guidelines and tally sheets for MDA in the urban setting. These are collated by the PHU-in-charge and checked by the NTDFP. The National NTD Supervisors tour the districts to collect these collated reports and assist with the checking and if necessary visit PHU to cross-check directly or obtain delayed reports. All the data collection tools are based on indicators described in WHO guidelines and the donor. HKI will continue to work with the NTDP to adhere to all WHO guidelines including the adoption of the new WHO joint drug request and joint report forms. Data quality will be improved by the utilization of mobile applications to send summary reports initially from district to national level but in the longer term from PHU to district level. This was first introduced by HKI to the NTDP in FY13 and the NTDFPs received further training in FY14 and FY16. Further support will be required in FY17 to establish this.

Issues encountered during MDA and how they could be overcome

Each MDA encounters unique barriers which are often predictable from previous independent monitoring debriefings or a general understanding of the MoHS and the pressures due to additional programs and emergencies it is encountering. In-process monitoring is able to identify these barriers swiftly and help the NTDP and DHMTs justify and focus whatever additional support is required within days. In 2010, the launch of the universal distribution of long-lasting insecticide-treated nets occurred at the start of the LF-oncho-STH MDA in 12 HDs and kept both PHU staff and volunteers pre-occupied. In-process monitoring clearly demonstrated after 6 weeks that coverage had not reached effective levels and MDA was extended for a further month.

The absence of key health personnel due to transfer, leave (annual, sick or otherwise) and attendance at international or national meetings in the month prior to MDA, when organization of MDAs needs to be finalized and roles and responsibilities of other health staff confirmed, can have a profound impact on coverage in the district affected. The DHMTs are encouraged to roll out the MDA training to all PHU staff such that trained health staff will always be available even in the event of transfer and other reasons for absence of their colleagues. This can be achieved by rotating personnel who are nominated to attend the training and not limited to the health personnel 'In-charge' of the health facilities. The adoption of the NTD training curricula into MCHA training curricula will provide the opportunity for the MCHA-in-training to learn about NTDs even before they (MCHAs-in-training) are posted to the health centers after the completion of their course. MCHA constitute over 80% of PHU staff in all the 14 HDs.

Drug shortages occur at some PHUs in the WA. This was due originally to internal displacement during the war. Currently, most of these 'displaced' families have elected to permanently stay in the WA but move around looking for space and affordable accommodation. There may also be a rapid influx of people within the WA when social mobilization regarding MDA is highly effective resulting in internal MDA-migration from other districts. Within the WA, both supportive supervision and independent monitoring with daily debriefing of the DHMT-WA enable drug shortages to be corrected overnight. As the WA is the commercial center of Sierra Leone, many persons visit for trade on a regular or infrequent basis and may 'elect' to participate in MDA as they may have missed the MDA round in the provinces. Thus the DHMT-WA is supplied with a generous buffer stock of drugs and the NTDP is on stand-by to re-supply them if necessary as was the case in 2010. Drug shortages at the new mining communities due to employment-seeking migration has occurred and again the DHMTs in the affected districts (Bombali, Tonkolili and Port Loko) are resupplied by the NTDP or distribution within the district is re-organized by the DHMTs.

Negative rumors can spread quickly during an MDA and need to be quickly reported by the PHU staff or independent monitor to the DHMT. Rumors vary from the side effects to be encountered during MDAs to fears of impotency, infertility or cholera during the rainy season. Domestic disputes between health workers/CDDs and their families or local politics can also set off negative rumors and fears as evidenced during the Ebola outbreak. The NTDFP visits the affected community and reports back to the DMO who may also visit the affected community and/or address the district through the community radio the same day. This rapid investigation and response has been highly effective at resolving issues in both the

provinces and the WA, maintaining the momentum of the MDA and achieving effective coverage. Further modification of IEC materials, advocacy, social mobilization and radio discussions will be implemented to achieve effective coverage.

In the past, there have been a lot of compliance issues because of the side effects. In a bid to improve this situation, the NTDP determined that it needed to train CDDs and health workers on what the actual side effects are and what community members might expect if they take the drug. Consequently, health workers and CDDs are trained on recognition and management of common side effects and referral of SAEs, and there are now few issues with compliance.

Short-Term Technical Assistance (Location in Budget: Not budgeted at country level)

Total cost for activities in this section: \$0

Table 6: Technical Assistance request from END in Africa

Task-TA needed (Relevant Activity category)	Why needed	Technical skill required; (source of TA (CDC, RTI/HQ, etc.))	Number of Days required and anticipated quarter	Funding source (e.g., country budget, overall budget, CDC funding)
Internal support (e.g., RTI/HQ, USAID, CDC)				
TA to update the TIPAC for FY17 (Strategic Planning)	<i>The NTDP has indicated they cannot do the updating of the tool on their own</i>	<i>TIPAC Expertise (FHI 360/Deloitte)</i>	<i>1 week, Q2</i>	<i>USAID/FHI 360 – Deloitte budget</i>
**TA to train NTDP & HKI to use TIPAC report for resource mobilization	<i>The NTDP has expressed the need to use the report of the tool to solicit funds from private organizations.</i>	<i>TIPAC Expertise (FHI 360/Deloitte)</i>	<i>3 days, Q2</i>	<i>USAID/FHI 360 – Deloitte budget</i>
External support* (e.g., hired consultants)				

**At this time, no needs for external support/consultants have been identified.*

- **TIPAC:** The TIPAC will need to be updated to reflect Sierra Leone’s FY17 data, and as such the National NTDP is requesting external support for this effort.
- **Resource Mobilization:** The NTDP currently only has two main donors (the END in Africa project and Sightsavers). Given that the NTDP has needs for additional funding for activities that are not part of the scope of either of these projects/donors (such as management for lymphedema and hydrocele cases and passive surveillance), the NTDP will require the skills to help mobilize and manage additional resources.

Monitoring & Evaluation (Location in Budget: ODC Lines 205-210, FOGs Lines 172-174)

Total cost for activities in this section: \$320,422

Data Quality Assessments and National NTD database roll-out

The NTDP with technical assistance from the END in Africa Project will hold a training workshop at the end of the fourth quarter of FY16 to strengthen their data management, create a national NTD database, and

train their staff on its use and maintenance. In addition, this workshop will cover DQA methodology. In FY17, the NTDP will hold its first DQA with technical support from End in Africa. The NTDP will then hold a workshop to enter the data into the NTD database. The DQA will help improve the quality and consistency of data and reporting at all levels, and the database will ensure that all data are compiled in one place, which will ensure consistency of data reporting, assist with populating drug applications, and help the NTDP prepare its elimination dossiers for LF and Oncho. Preliminary results of a national population census that was conducted in December 2015 show that the country is well over 7 million people. It is anticipated that the census results will be made official to the public before the end of the year, which will help improve planning and reporting.

Disease Specific Assessments

In FY17, DSAs will be conducted based on WHO guidelines: TAS in 8 HDs (Bo, Bonthe, Moyamba, Pujehun, Tonkolili, Port Loko, Kambia and Kono) and Pre TAS in 6 HDs (Bombali, Koinadugu, Kailahun, Kenema, Western Area Rural and Western Area Urban). The TAS and pre-TAS will now take place in January and March 2017, respectively to allow communities to fully recover from post-Ebola trauma and also to regain confidence in the health system after the damaging relationships between the population and health sector due to EVD. However, pre survey activities, such as listing of primary schools for TAS in 8 HDs and sensitization in communities for all the DSAs will be conducted in the first quarter of FY17.

An epidemiological survey for onchocerciasis will also be conducted in FY17 using OV-16 to determine the impact of MDA in hypo, meso and hyper endemic communities after twelve rounds of treatment. This survey was planned in FY14 as well but was deferred due to the EVD outbreak. In addition, operational research has been proposed in HDs¹⁶ in April 2017 to compare the sensitivity and specificity of the OV-16, FTS and the BIPLEX. If it is carried out, this operational research study will be funded by the NTD Task Force and CDC.

Laboratory technicians and other field personnel will be trained on the filed protocols and laboratory technics prior to each DSA according to the approved protocol. See Table 4 above for details on the type and number of personnel who will be trained for each survey.

M&E challenges, inaccurate denominators, getting DSA results out, MOH approvals

The 2004 national population census was conducted two years after the end of the civil conflict in Sierra Leone¹⁷ when many Sierra Leoneans were either internally or externally displaced. Since then, much internal migration and rapid urbanization has occurred. This has been a challenge to the government and every partner working in the country. The NTDP has therefore been dependent on the village census that is conducted annually by CDDs in the rural areas. In the urban areas the program had relied on WHO

¹⁶ If this operational research is conducted, it will be conducted in concertation with the TAS 1 surveys in the EU of Bo-Pujehun. END in Africa would cover the operational costs of the TAS 1; funding from another USAID source, either through the Task Force for Global Health or CDC, would cover the additional costs for the operational research.

¹⁷ Civil conflict was between 1991 and 2002.

estimated numbers that have been used during National Immunization Days (NIDs) for polio, measles and yellow fever vaccinations. The FY17 work plan will use updated CDD census and WHO estimates for urban towns to serve as a reference point for program planning. However, the final results from the census that was done in 2015 will be used once it is made available to the public.

To ensure high quality DSA results, HKI NTD staff will participate in field work including microscopy (where applicable) and data analysis. Also, NTD country team and partners will seek the assistance of FHI360 and HKI-HQ and RO to help develop protocols consistent with WHO guidelines for DSAs. MoHS approval for NTD DSAs and the ensuing publications relating to these DSAs has not been problematic.

The HKI questionnaires, administered to community leaders, CDDs, PHU staff, DHMTs and community members to assess the extent and quality of activities performed are revised annually. The mobile phone application used to collect data will be used again in FY17 to strengthen independent monitoring and electronic reports of milestones met from FOGs.

Mhealth

In FY13, Mhealth was introduced to NTD focal persons so that they can send district data to the M&E Officer of the NTDP. Since the application works best using Android smart phones, the NTD FPs will be trained on the use of this application so that district data will be sent immediately to facilitate easy reporting of drug coverage and milestones achieved for FOGs.

In addition, the independent monitors use these smart phones for daily reporting during both in- and end-process monitoring. In FY17, this technology will continue to be used to facilitate timely reporting and swift actions during MDAs.

Table 7: Reporting of DSA supported with USAID funds that did not meet critical cutoff thresholds*

NTD	Number of endemic districts	Type of DSA carried out (add extra rows as needed for each type)	Number of DSAs conducted with USAID support	Number of EU that did not meet critical cutoff thresholds
Lymphatic filariasis	14	NA	NA	NA
Onchocerciasis	12	NA	NA	NA
Trachoma	NA	NA	NA	NA

Table 8: Planned Disease-specific Assessments for FY17 by Disease—list for all implementers in the states/regions/areas where END in Africa is working, and note those supported with USAID funds. It is not necessary to list for the entire country. If the numbers don't match the workbooks, please explain why.

Disease	No. of endemic districts	No. of districts planned for DSA	Type of assessment	Diagnostic method (Indicator: Mf, ICT, hematuria, etc.)
Lymphatic Filariasis	14	8	TAS 1	FTS
Lymphatic Filariasis	14	6	Pre-TAS	FTS
Onchocerciasis	12	12	Impact of MDA	OV-16

Note: All DSAs will be funded by USAID

Planned FOGs to local organizations and/or governments

Table 9: Planned FOG recipients—include for all subpartners as well.

FOG recipient (split by type of recipient)	FOG #	Activities	Target Date to USAID
NTDP	1	<ul style="list-style-type: none"> Annual review meeting Advocacy Meetings for PCT LF-Oncho-STH in 12 HDs Cross-border meeting for 7 HD prior to LF-Oncho-STH MDA Social mobilization for LF-Oncho-STH MDA in 12 HDs Training of Trainers: LF-Oncho-STH in 12 HDs Training and Refresher Training for PHU staff for LF-Oncho-STH in 12 HDs LF-Oncho-STH MDA in 12 HDs SCH MDA in 7 HD MCHA-MDA LF-Oncho-STH in 12 HDs Distribution of drugs and other logistics LF-Oncho-STH MDA in 12 HDs Collection, Analysis and Reporting LF-Oncho-STH in 12 HDs 	Oct 2016
NTDP	2	<ul style="list-style-type: none"> Advocacy and social mobilization for SCH MDA in 12 HDs NTD Curriculum Development for Tertiary Education Training Institutions Social mobilization for SCH MDA in 12 HDs Training of supervisors for SCH MDA in 7 HDs Training and refresher training of PHU staff for SCH MDA in 12 HDs Training and refresher training of CDDs Feeding of schoolchildren prior to SCH MDA in 12 HDs Supervision and Materials for hard to reach areas Distribution of Logistics and Drugs for SCH MDA in 12 HDs Collection, analysis and reporting for SCH MDA in 7 HDs LF Transmission Assessment Survey (8 districts) Pre-Transmission Assessment Survey (6 districts) Onchocerciasis Impact Survey (12 districts) 	Oct 2016
DHMT-WA	3	<ul style="list-style-type: none"> Advocacy in the WA (RWA and UWA) Advocacy with private practitioners Social mobilization in WA Training of PHU staff in WA Training of CHWs in WA LF-STH MDA in WA 	Oct 2016

Cross-Portfolio Requests for Support

The major gap in Sierra Leone is the lack of funds for LF morbidity management if the NTDP is to achieve LF elimination by 2020. This gap accounted for 39% (\$760,306) of the total cost for NTD activities, as per the March 2016 update on TIPAC, using data included in the TIPAC at that time. This gap calculation included assessment of the morbidity situation, hydrocele surgery and lymphedema management (using burden estimates from 2010).

In 2010, the CDDs estimated the backlog of people living with hydrocele or lymphedema as 23,500 and 8,300, respectively. These numbers were obtained from reports from the annual census conducted by CDDs before each MDA in each community. Also in 2012, reports from PHU staff at health facilities showed that 4,341 persons had lymphedema while 11,104 persons had hydrocele. Previous support from Johnson & Johnson was limited to the training of the doctors to perform hydrocele surgery and the 200 surgeries

performed as part of the training. Since LF-sufferers have little or no disposable income to pay for transportation to a surgical center, doctors' expenses, and surgical consumables, few hydrocele surgeries are currently being performed. In FY16, the Chief Medical Officer indicated the need for the MoHS to support NTD-morbidity management, proposing that hydrocele surgeries could be performed free by the district medical superintendents. However, this has not been achieved due to the lack of funds from other sources. In order to help LF sufferers, the NTDP will require support from other partners for provision of surgical consumables, and for referrals. HKI and NTDP will continue to advocate with the NGO liaison office of the MoHS for support from other NGO partners working with disabilities.

It is worth noting that it has been more than 5 years since the last assessment of cases by CDDs. Currently the NTDP believes that few new cases have occurred while some of those previously affected might have died or moved, and some other existing cases may not have declared themselves or may not have been identified. Also, the data reported include general lymphedema and hydrocele that may not necessarily be related to LF.

In order to get an accurate estimate of lymphedema and hydrocele patients in the country, the NTDP would like to conduct an assessment to determine the current backlog of people suffering from lymphedema and hydrocele in the country and better understand the distribution of these cases to better plan for services.

The national program plans to train CDDs to conduct the assessment in communities throughout the country in FY17, if funding is made available. This is because each community has a CDD who distributes the drugs to inhabitants and there are higher chances that he/she can identify the patients. Also the results will be more reliable and will reflect the total number in the country rather than an estimate.

Following the burden assessment, the NTDP and HKI Sierra Leone will use these data to advocate for support for hydrocele surgery and lymphedema care from other sources.

In order to conduct this morbidity assessment, the CDD MDA training would need to be increased to 2 days (from the 1 day currently budgeted) to ensure sufficient time to cover the lymphedema and hydrocele identification. In addition, new community registers will be printed and distributed to all CDDs with modifications that will capture the morbidity data. Data collection is expected to take place during either CDD census or during MDA where each household will be visited by CDDs. The NTDP will require funding to cover the cost of training approximately 30,000 CDDs, 1,185 CHWs, and 1,020 MCH Aides-in-training and their allowances to collect the required data; printing of new community registers/forms; and cost for data entry, analysis and reporting. Please find below a breakdown of the proposed costs.

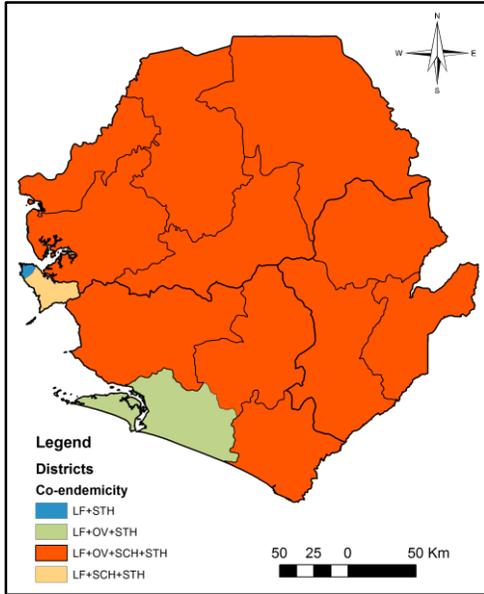
Morbidity Assessment for LF in Sierra Leone					
Training of Technicians					
Training Per Diem	Unit cost (SLL)	Number of personnel	Number of days	Amount SLL	Amount USD
MCH- Coordinators	100,000	12	1	1,200,000	198
PHUs	60,000	1,270	1	76,200,000	12,591
CHWs in Western Area	20,000	2,370	1	47,400,000	7,832
CDDs in villages	20,000	29,000	1	580,000,000	95,836
MCH Aides in urban towns	15,000	450	1	6,750,000	1,115
Subtotal -Training Per Diem				711,550,000	117,573
Materials - Stationeries					
Stationeries	Unit cost (SLL)	Number of Units		Amount SLL	Amount USD
Packet of Pens	25,000	100		2,500,000	413
Packet of Pencils	4,000	450		1,800,000	297
Printing of Registers	25,000	16,000		400,000,000	66,094
Subtotal - Stationeries				404,300,000	66,804
Field costs for survey					
Per diem Field Work	Unit cost (SLL)	Number of personnel	Number of Days	Amount SLL	Amount USD
CDDs	5,000	29,000	5	725,000,000	119,795
CHWs in Western Area	20,000	2,370	5	237,000,000	39,161
MCH Aides in urban towns	15,000	450	10	67,500,000	11,153
Subtotal – Per diem Field Work				1,029,500,000	170,109
TOTAL				2,145,350,000	354,486

Table 10: Cross-Portfolio Requests for Support

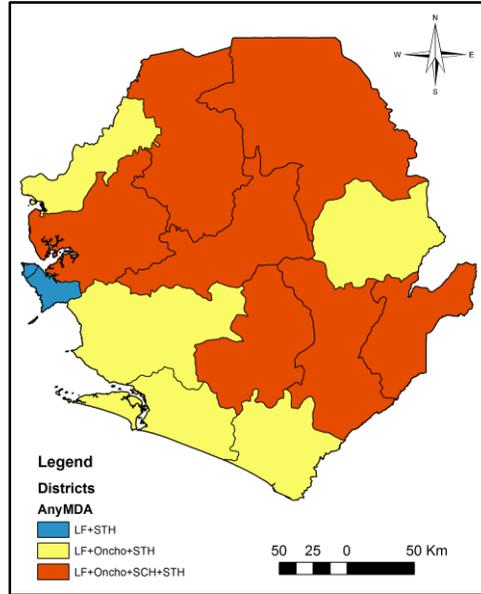
Identified Issue/Activity for which support is requested.	Which USAID partner would likely be best positioned to provide this support?	Estimated time needed to address activity
LF Burden Assessment	USAID's MMDP Project	3 Months

Maps

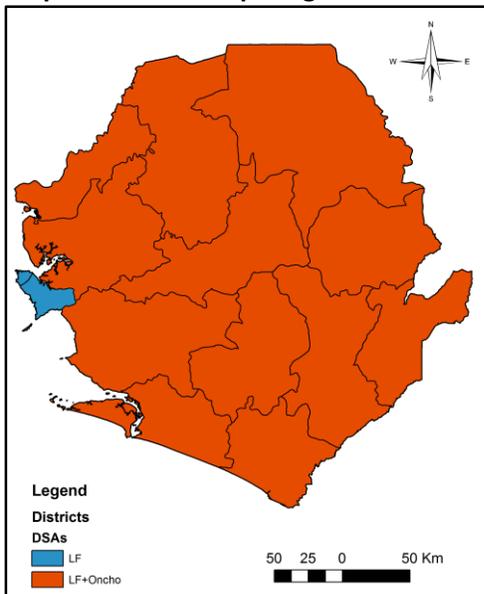
Map 1: Disease Co-endemicity



Map 2: MDAs for FY17



Map 3: Districts Requiring DSAs in FY17



Note: 8 districts will undergo TAS 1
 6 districts will undergo pre-TAS
 12 districts will undergo OV epi surveys

APPENDICES

1. **Country staffing/partner organization chart** (see Appendix 1)
2. **Work plan timeline** (see Appendix 2)
3. **Work plan deliverables** (see Appendix 3)
4. **Table of USAID-supported provinces/states and districts** (see Appendix 4)
5. **Program Workbook** (see Appendix 5)
6. **Disease Workbook** (see Appendix 6)
7. **Country budget** (see Appendix 7)
8. **Travel Plans** (see Appendix 8)
9. **SCH/STH Transition Plan** (see Appendix 9)