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Neglected Tropical Disease Control Program

Semi-annual Report

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Neglected Tropical Disease Control Program

Semi-annual Report, April 1, 2010–September 30, 2010

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List of Acronyms

AOTR	Agreement Officer Technical Representative
APOC	African Programme for Onchocerciasis Control
APS	Annual Program Statement
CDC	Center for Disease Control
CNTD	Centre for Neglected Tropical Diseases
FOG	Fixed obligation grant
GNNTD	Global Network for Neglected Tropical Diseases
HKI	Helen Keller International
IMA	IMA World Health
ITI	International Trachoma Initiative
IRs	Intermediate Results
LATH	Liverpool Associates in Tropical Health
LF	Lymphatic Filariasis
LOA	Letter of Authorization
M&E	Monitoring and Evaluation
MDA	Mass Drug Administration
MOH	Ministry of Health
NGO	Non-Governmental Organization
NTD	Neglected Tropical Disease
PCT	Preventive Chemotherapy
PDCI	Partnership for Disease Control Initiatives
RFA	Request for Application
RTI	RTI International
SCI	Schistosomiasis Control Initiative, Imperial College, London
STH	Soil-Transmitted Helminthiasis
TAG	Technical Advisory Group
USAID	United States Agency for International Development
WHO	World Health Organization

1. Summary

Program Planning, Management and Reporting

During the first four years the Program received \$61,964,320 in funding. Less than 18% of total Program funds have been expended for overall management of the Program and its grants, monitoring and evaluation and reporting, documentation of best practices, technical advisory group meetings and advocacy activities.

Direct Implementation of Integrated NTD Control

In Year 4, the NTD Control Program successfully delivered approximately 162 million treatments to 69 million people, exceeding the Program's 5-year targets in the fourth year alone. The Program provided support for integrated NTD control programs in the following countries during Year 4: Bangladesh, Burkina Faso, Cameroon, Ghana, Guinea, Haiti, Mali, Niger, Nepal, Philippines, Senegal, Sierra Leone, Southern Sudan, Tanzania, Togo, Uganda, and Viet Nam.

Ten country programs conducted MDAs during Year 4 with support from the Program (Burkina Faso, Cameroon, Ghana, Haiti, Mali, Niger, Sierra Leone, Southern Sudan, Togo, and Uganda). In addition, specialized technical assistance for program planning was provided to Bangladesh, Philippines, Senegal and Viet Nam. Overall, country programs exceeded the targeted 80% program coverage rates, and achieved average coverage rates of over 85% of the targeted population eligible for treatment. The Program facilitated the delivery of over \$685 million worth of donated drugs during Year 4 and supported the training of nearly 390,000 workers at central, regional and district levels.

The Program worked with WHO to initiate development of an Integrated NTD Program Managers Course to develop the capacity of program managers and technical advisors at country and regional levels in support of integrated NTD PCT strategies and treatment guidelines.

During Year 4 we developed and tested the Funding Gap Analysis Tool to allow countries to fully cost out their national plans of action and to make rational resource allocation decisions. The tool combines budget and cost data with epidemiologic and demographic data, and allows planners and managers to estimate the total cost of the national integrated plan, estimate the value of in-kind contributions of government and local partners and forecast drug and resource requirements.

Grants Administration for Country Programs

During Year 4 no grants competitions were conducted, however, new country activities were initiated in Tanzania and Guinea. A letter of authorization was provided for IMA World Health to support NTD control activities in Tanzania at the request of USAID.

During Q4 of Year 4, the IMA was authorized to negotiate a full grant agreement, and undertake stakeholders meetings, work plan and budget development for NTD control program activities in Tanzania. In addition RTI undertook negotiations with Helen Keller International (HKI) to start-up activities in Guinea, which have been delayed due to civil unrest and an evacuation order by the USAID mission. Senior Grants Manager, Allison Campbell, departed the Program and was replaced by Ms. Margaret Davide-Smith in mid-October 2010.

Technical Advisory Group

During Year 4, the Program co-sponsored two TAG meetings building on meetings of technical experts already planned by global partners:

- **Integrated Mapping of NTDs. Dakar, Senegal - December 15-17, 2009.** The meeting was co-hosted by the African Regional Office, WHO and the NTD Control Program.
- **Assessment and Treatment of NTDs in Non-rural settings in Africa, Decatur, GA -March 2-5, 2010,** co-hosted by the Task Force for Global Health.

In addition, NTD Program staff participated in technical expert consultations hosted by WHO and other partners.

Documentation and Dissemination of Program Lessons

During the reporting period the Program conducted a range of activities to highlight program success and share experience to date. Specific activities included updating of Program website and development of e-Newsletter, tools and reports and a number of publications, including a paper accepted by the American Journal of Tropical Medicine and Hygiene: *Integrated Implementation of Programs Targeting Neglected Tropical Diseases (NTDs) Through Preventive Chemotherapy (PCT): 1. Proving the Feasibility at National-Scale.* Mary Linehan, Christy Hanson, Angela Weaver, Margaret Baker, Achille Kabore, Kathryn L. Zoerhoff, Dieudonne Sankara, Scott Torres, Eric A. Ottesen.

Advocacy and Resource Mobilization

The NTD Control Program's advocacy and resource mobilization efforts in Year 4 focused on strengthening, developing, and implementing country-level sustainability plans for NTD control.

Monitoring and Evaluation

The focus of M&E activities during Year 4 was to document Program results, to provide support to grantees and country programs for implementation of Program M&E requirements and M&E activities, and to develop international M&E tools, standards and guidelines.

A cost study conducted in Haiti was completed during Year 4. The manuscript, Costs of Integrated Mass Drug Administration for Neglected Tropical Diseases in Haiti, has been submitted for publication in the American Journal for Tropical Medicine and Health.

A model post-elimination LF surveillance system in Togo was developed and documented, through a fixed-obligation grant to HDI.

Key Lessons Learned and Best Practices

During Year 4 the Program made significant strides in formalizing best practices for program start up, implementation, monitoring and reporting. By working closely with WHO and other global partners, the Program's experience and successful implementation strategies have been widely discussed and largely adopted as global best practices.

2. Program Planning, Management, Monitoring and Evaluation, and Reporting

2.1 Program Planning

Program planning in Year 4 expanded on the work completed as part of an August 2009 meeting of all grantees aimed at streamlining the work planning process. Successful field visits to assist with work plan development in Q1 demonstrated that grantees and country counterparts appreciated and benefited from more direct communication in the final stages of work plan development. To build on this best practice, we asked all grantees to submit draft work plans prior to the August meeting, allowing the Program staff time to review prior to arrival. Country teams met to discuss and revise the work plans during the August meeting, resulting in quicker understanding of issues and concerns and more rapid completion of the individual country work plans during Y4. The process had the added benefit of strengthening the working relationships between Program partners, and an increased sense of shared commitment to the Program's goals.

2.2 Program Management

Personnel

In the second half of Year 4, several staff changes took place: Scott Torres departed to take an international position, and was replaced by Philip Downs; Kathryn Crowley was hired as a Country Program Coordinator to provide backstopping support to grantees; Allison Campbell, Senior Grants Manager, departed the Program to accept a position with the State Department, and Ruth Yohannes took over as Interim Grants Manager. Rebecca Mann, M&E Assistant, was hired for a half-time position (shared with ITI) to develop and manage a database to ensure that selected information from the Program

databases are linked and can interact effectively with the drug information available in the donation programs.

Expanding Partnerships

During Year 4 the Program continued to strengthen its close working relationships with key stakeholders and global NTD partners to assure the Program's access to key expertise and close collaboration in planning and allocation of NTD resources. As a result, in Year 4 the Program was able to make a significant contribution to the global dialogue on NTD control and the development of international standards and norms for integrated NTD control. Examples include the following:

- WHO and the Program jointly developed a standard Roll-out Strategy for country programs. This strategy is described in detail in Section 9, Key Lessons Learned and Best Practices, and represents the result of successful collaboration between USAID's Program and WHO during the past four years, to work together to develop and endorse a standard approach to supporting country programs.
- The Program worked closely with WHO to develop a Program Managers' Training Course, described in Section 3 below. The course is a strong collaborative effort that will result in the formalization of international best practices for NTD PCT implementation, incorporating the experiences of the NTD Control Program as well as WHO norms and guidelines.
- The Program has expanded its relationship with DFID-funded CNTD program for LF. Specifically, in Nepal, Bangladesh, Sierra Leone and other countries where the USAID and DFID funding are available, work planning is jointly conducted to assure complementarity and avoid duplication. In Bangladesh, a joint planning visit was conducted by NTD Control Program and CNTD staff, and the support from each program was identified and agreed upon for specific activities in support of the national plan.
- We strengthened collaborative relationships with the drug donation partners, focusing on coordination of drug donation applications and logistics and work plan data, data management and flow, program monitoring and costing, and establishing the priorities for operational research for the evidence base for decisions on stopping MDAs and post-MDA surveillance.
- We have continued the ongoing collaboration with the Global Network for Neglected Tropical Diseases (GNNTD) to share results and best practices for advocacy. Several country program success stories developed by our country programs were posted in GNNTD's "End the Neglect" Blog which shares information about NTD control activities.

Cost Efficiencies

Demonstrating cost efficiency is a critical mandate of the NTD Control Program. Analysis of expenditures during the first four years of the Program show that RTI has successfully achieved the cooperative agreement mandate of assuring that at least 80% of program funds are spent on country program implementation. Less than 18% of total Program funds have been expended for overall management of the Program and its grants, monitoring and evaluation and reporting, documentation of best practices, technical advisory group meetings and advocacy activities. During Year 4 RTI continued to seek cost-effective ways to manage the Program's funding.

During Year 4 RTI directly procured essential NTD drugs not available on a large scale through donation programs (PZQ and ALB for STH). RTI charges no overhead fee on procurement of these commodities, thus assuring cost-efficient management of funds for the drug procurement.

In Uganda RTI utilizes fixed obligation grants as a cost-saving strategy, dramatically reducing the management and labor costs, and shifting MDA implementation costs to grants, to which overhead fees are not applied.

RTI, in discussion with USAID, also provided direct financial management and technical assistance to country programs, such as funding for IEC activities in Bangladesh, funding gap analysis in Senegal and other direct implementation activities, in place of establishing grantees in all countries as a cost-efficient approach to supporting national programs' needs.

And finally, Dr. Ottesen's joint appointment with RTI and the Task Force provides significant cost-efficiencies to the Program. Dr. Ottesen attends a broad range of meetings on behalf of his Gates-funded program activities, and is able to use his presence to represent the interests of the NTD Control Program at greatly reduced travel cost, while assuring the Program's representation and participation in a much wider range of critical meetings.

2.3 Program Reporting

Financial Reports

RTI submitted financial reports in accordance with 22 CFR 226.52.

Annual Work Plan

The Year 4 Work Plan was submitted September 1, 2010. Comments for USAID were incorporated into a revised draft which was submitted on October 1, 2010.

Semi-Annual Program Reports

The Semi-Annual Program Report for the period October 1, 2009-March 30, 2010 was submitted April 30, 2010. A final version was submitted on June 9, 2010, incorporating comments from USAID.

Additionally, the NTD Control Program management team briefed the USAID AOTR and other relevant USAID staff on Program progress on a regular basis, and prepared bi-weekly or monthly NTD Control Program Updates for USAID to share with Missions in participating countries.

Table 1. Program Planning, Management and Reporting Achievements

Program Planning, Management, M&E, and Reporting Benchmarks	Apr	May	June	July	Aug	Sept
Program Planning						
Comprehensive pipeline analysis completed					X	
Year 4 Work plan submitted to USAID						X
Country Program work plans submitted and reviewed					X	X
Program Management						
Senior Grants Manager Position vacated, new Grants Manager hired (to start October 15, 2010)				X		
Country Coordinator position vacated (Torres) and re-filled (Downs)			X			
Senior Drug Specialist position vacated					X	
Reporting						
Semi-Annual Report submitted to USAID	X					
SF 269 and SF 272 reports submitted to USAID	X			X		

3. Direct Implementation of Integrated NTD Control

3.1 Overview

The Program provided support for integrated NTD control programs in the following countries during Year 4: Bangladesh, Burkina Faso, Cameroon, Ghana, Guinea, Haiti, Mali, Niger, Nepal, Senegal, Sierra Leone, Southern Sudan, Tanzania, Togo, Uganda,

and Viet Nam. Highlights of Year 4 achievements are summarized below. Note that at this time all data are preliminary and based on reported coverage information. Data will be updated and finalized during Q1 of Year 5.

3.2 Coverage of mass drug administration

Ten country programs conducted MDAs during Year 4 (Burkina Faso, Cameroon, Ghana, Haiti, Mali, Niger, Sierra Leone, Southern Sudan, Togo, and Uganda), for a total of 162 million treatments delivered and 69 million people treated. Overall, country programs exceeded the targeted 80% program coverage rates, as indicated in Table 2, and achieved average coverage rates of over 85% of the targeted population eligible for treatment.

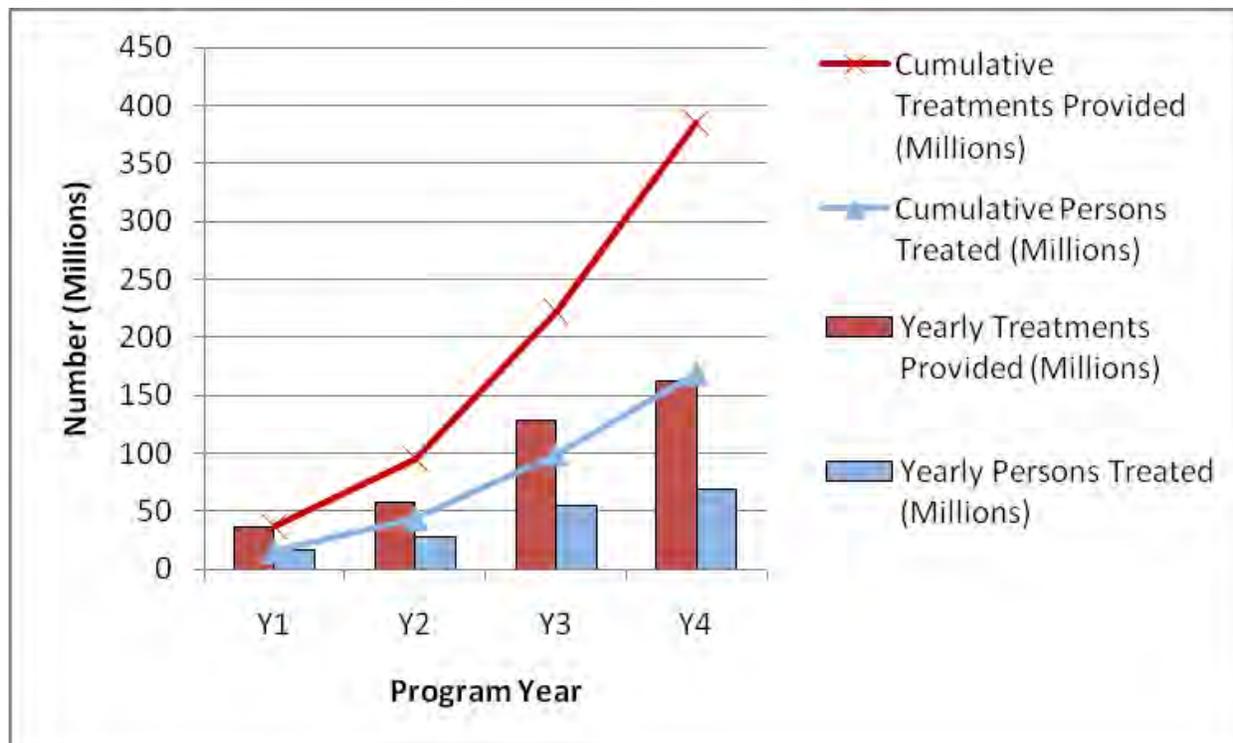
Table 2: Results of USAID-Supported MDA in Year 4

Country	Drugs Delivered	# Districts Treated	# Persons Treated (millions)	# Treatments Delivered (millions)	Program Coverage % (Range across drug packages)*
Burkina Faso	IVM, ALB, PZQ, Zithro/Tetra	63	12.6	32.3	85->100
Cameroon	IVM, ALB, PZQ, MBD	178	6.0	11.9	89-97
Ghana	IVM, ALB, PZQ, MBD	112	9.7	19.1	75-89
Haiti	DEC, ALB	76	3.6	7.2	100
Mali	IVM, ALB, PZQ, Zithro/Tetra	59	10.6	30.7	64-89
Niger	IVM, ALB, PZQ, Zithro/Tetra	33	7.3	18.5	80-93
Sierra Leone	IVM, ALB, PZQ, MBD	14	4.5	11.5	86-96
South Sudan	PZQ, ALB, Zithro/Tetra	3	0.15	0.17	60-94
Togo	IVM, ALB, PZQ	15	1.1	2.0	81-95
Uganda	IVM, ALB, PZQ, Zithro/Tetra	61	13.4	28.7	74-98

*The denominator is the total eligible population targeted, which is sometimes subject to underestimates that can result in coverage calculations to exceed 100%.

Cumulatively, the NTD Control Program has supported MDA to approximately 168 million people with 385 million treatments during the first 4 years of the Program, as indicated in Figure 1.

Figure 1. NTD Control Program Scale-Up: Years 1-4



3.3 Additionality

During Year 4, the NTD Control Program achieved significant additionality in all of the following areas:

- mapping of new geographic areas
- number of people treated
- number of treatments provided
- number of implementation units (geographic) targeted for treatment

Summary statistics are presented in the tables below showing the progress made in each of the first three years of the Program.

Mapping of new geographic areas. The Program supports the disease prevalence mapping required to meet the requirements of the drug donation programs, and to identify target populations for intervention. The following mapping activities were carried out with NTD Control Program funding during Year 4:

Burkina Faso: 4 districts were mapped for trachoma with USAID support.

Cameroon: USAID-support enabled mapping of 64 districts for LF, 63 districts for schisto and STH, and 26 districts for trachoma. In addition, other, non-USAID funding supported mapping of LF in 60 districts.

Ghana: During Year 4, USAID supported mapping of schisto and STH in 91 districts in order to validate the predictive risk-mapping conducted in Year 3.

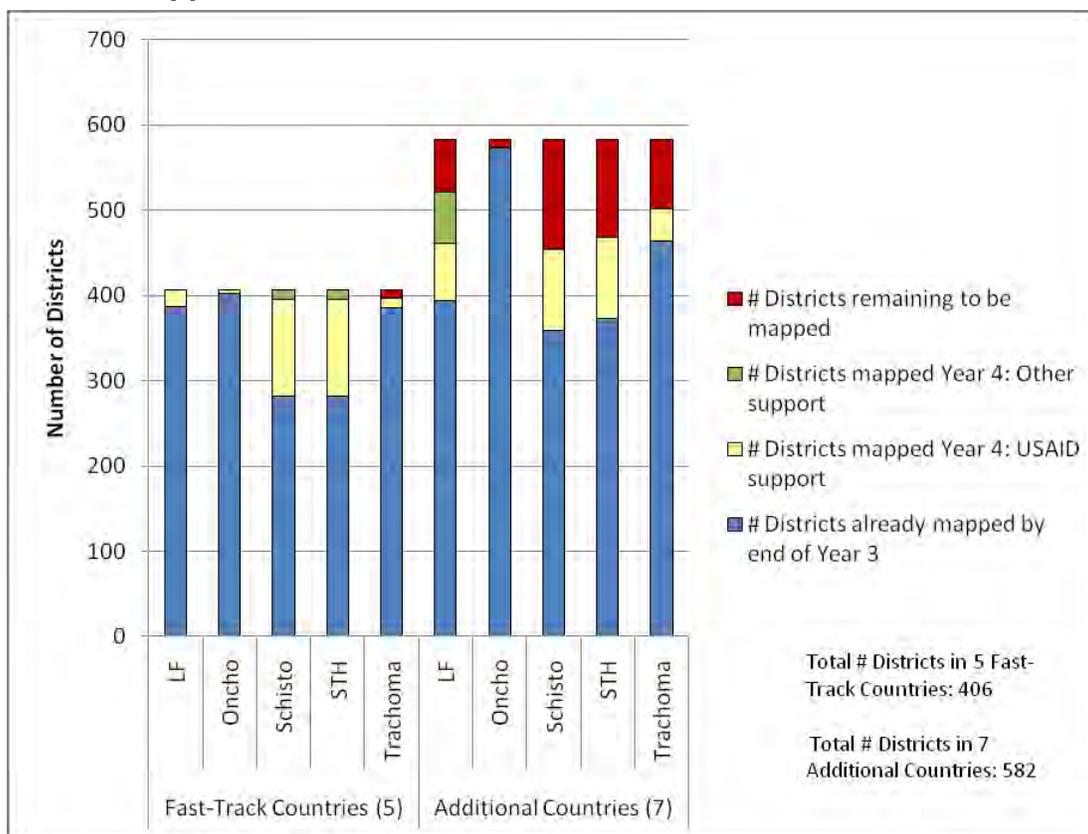
Southern Sudan: 3 districts were mapped for LF, 3 for schisto and STH, and 1 for trachoma with USAID support.

Togo: During Year 4, USAID supported mapping of schisto and STH in 29 districts and trachoma in 14 districts.

Uganda: USAID-support enabled mapping of LF in 14 districts, oncho in 4 districts, schisto and STH in 22 districts, and trachoma in 8 districts. In addition, other funding supported mapping of schisto and STH in 11 districts.

Figure 2 shows the progress made in Program countries in completing the necessary mapping by disease, to assure that co-endemic NTDs are properly targeted and drug donations can be obtained. USAID funding has made a major contribution to the evidence base for NTD control programs over the life of the Program. Schistosomiasis remains the disease that most needs mapping in the Program countries.

Figure 2. Number of districts mapped Year 1-4 and remaining districts to be mapped



As indicated in Figure 2, the NTD Control Program has made substantial contributions to the evidence base of disease distribution through support of mapping activities. Mapping is nearly complete in the 5 fast-track countries, and the NTD Control Program and other partners have made progress diminishing the gap in the additional 7 countries (Bangladesh, Cameroon, Haiti, Nepal, Sierra Leone, Southern Sudan, and Togo). Countries embarking on scaling-up NTD activities should continue to prioritize completion of mapping for all endemic diseases.

Number of people treated. During Year 4, 69 million people were treated. This exceeds the life of project goal of 40 million people treated over five years. Cumulatively over 168 million additional person contacts (cumulative persons treated) are attributable to USAID funding in the last four years.

Number of treatments provided. The number of treatments for Year 4 was over 162 million; the cumulative number of treatments for the first four years is approximately 385 million.

Number of districts targeted for treatment. During Year 4, the total number of districts treated was 614, a substantial increase from the total of 106 districts in Year 1, 155 in Year 2, and 317 districts in Year 3.

Additionality and national scale up was also achieved during Year 4 through increased drug donations from the pharmaceutical partners, sustained increased and commitment by governments, and increased numbers of donors and resources mobilized.

Drug Donations. The Program supported the delivery of over \$685 million worth of donated drugs during Year 4. The value of donated drugs provided to country programs during Year 4 is presented in Table 3 below. In addition to the major donation programs, country programs were able to obtain drug donations as follows: Albendazole was donated mainly by GSK, with other contributions from the NTD Control Program, UNICEF (Uganda and Togo), World Food Program (Uganda), World Vision and Saint Andrews Clinic for Children (Sierra Leone), OMVS (Mali). Ivermectin was donated by the Mectizan Donation Program/Merck. Praziquantel was procured by the NTD Control Program and donated by OMVS in Mali. Diethylcarbamazine was procured by the NTD Control Program. Zithromax was donated by ITI/Pfizer. Mebendazole was donated by Children Without Worms/J&J (Cameroon, Uganda), World Vision (Uganda), and UNICEF (Sierra Leone), Deworm the World (Ghana, Sierra Leone), and Medical Research Council (Sierra Leone).

Table 3. Drug Donations to National NTD Programs Year 4 by Country

Country	Total Value of Donated Drugs
Burkina Faso	\$120,182,337
Cameroon	\$21,065,498
Ghana	\$20,869,740
Haiti	\$387,900
Mali	\$138,091,776
Niger	\$140,001,458
Sierra Leone	\$34,063,985
Southern Sudan	\$38,678,462
Togo	\$13,267,030
Uganda	\$158,995,308
TOTAL	\$685,603,494

Government Commitment. During Year 4, the Program supported countries to conduct a funding gap analysis, which facilitated the quantification of the contribution of national governments for NTD control as well as the contributions of other donor. Government contributions are shown in Table 4 below.

Table 4. Government Contribution for National NTD Control during Year 4 as reported by funding gap analysis

Country	Value of Government Commitment (Preliminary)
Burkina Faso	\$2,387,899
Cameroon	\$1,005,528
Ghana	\$291,730
Haiti	\$16,600
Nepal	\$3,595,879
Niger	\$170,983
Sierra Leone	\$617,545
Southern Sudan	\$70,616
Togo	\$344,145
Uganda	\$524,855

3.4 Capacity Building

During Year 4, the Program supported the training of nearly 390,000 workers at central, regional and district levels, including MOH staff, teachers, supervisors and drug distributors in preparation for MDA. Table 5 shows the number trained by country programs with USAID support.

Table 5: Number of Persons Trained with Support from USAID, Year 4

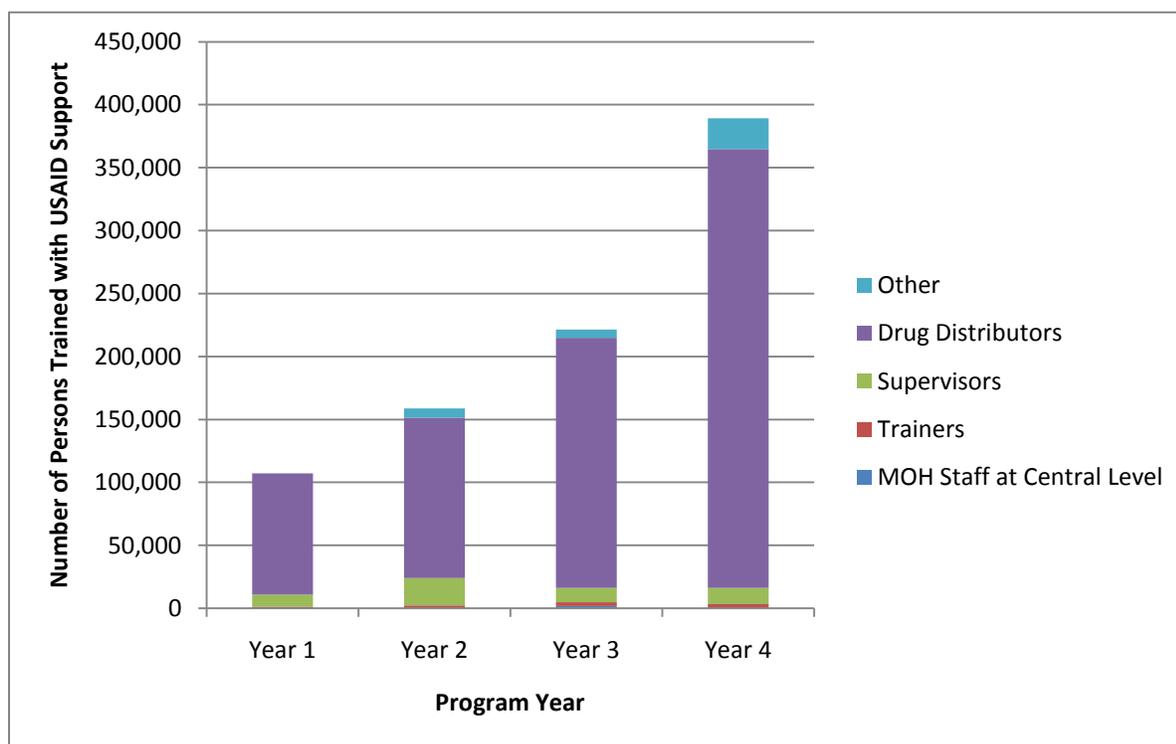
Country	# Health Care Workers Trained
Burkina Faso	23,074
Cameroon	23,889
Ghana	30,765
Haiti	17,101
Mali	32,304
Niger	41,382
Sierra Leone	62,944
South Sudan	759
Togo	7,199
Uganda	149,797

The variation in numbers trained among countries reflects the different approaches and implementation strategies employed by country programs, as well as the progress towards national coverage. For example, Uganda has dramatically scaled up training of teachers to in an effort to establish a sustainable strategy for Uganda for continuing cost-effective treatment of school age children in the post- LF elimination phase of the national program. Each teacher was responsible for treating his/her own class in order to minimize the disruption in the school's daily routine. By training all teachers in schools, not all teachers will need to be retrained in subsequent years, and this will keep the training costs down. In addition, if teachers are transferred to new areas, they will have already received the necessary training to distribute medicines.

Many of these individuals have been trained more than once, thereby strengthening the delivery system. This also creates cost-efficiencies, as refresher trainings tend to require less time than first-time trainings.

Figure 3 indicates the substantial increase in the number of persons who received training through the support of USAID over the first four years of the NTD Control Program. The vast majority are community drug distributors, thereby building community participation and ownership of NTD activities.

Figure 3. Health Care Workers in Training Programs Supported by USAID



Integrated NTD Control Training Course for Program Managers. The Program has continued to work with WHO to develop a training curriculum for NTD Country Program Managers. The Integrated NTD Program Managers Course will be organized by WHO and with the assistance of the Program to develop the capacity of program managers and technical advisors at country and regional levels in support of integrated NTD PCT strategies and treatment guidelines. The course will build on the existing experience developed by WHO and NTD Control Program, especially the last four years of supporting the scale-up of integrated NTD control programs globally. The course will assure that program managers are equipped with the skills and knowledge to plan and manage successful integrated NTD control programs in compliance with WHO guidelines.

During the reporting period several planning and course development meetings were conducted, including:

- July, 2010: M Linehan met with Dr Francesco Rio, WHO and Dr. Marco Albonico, WHO Consultant to finalize the Course Description and overall organization. Additionally, the course modules were determined.
- September, 2010: M Linehan met with Dr Francesco Rio, WHO, and Program consultants Dr. Marco Albonico, Deborah Cocorullo, and Dr. Lisa Adams to refine topics to be addressed in each module and determine a list of trainers and

facilitators, mostly NTD experts to recruit in support of curriculum development and facilitation of the training.

3.5 Drug Procurement and Management

System Monitoring and Assessment

During the reporting period in-depth assessments were conducted to develop drug management profiles for Uganda and Tanzania. These assessments were a collaborative effort by Ministry of Health, Program, medical stores, and other essential staff; and provided an opportunity for participants to gain a more comprehensive understanding of current practices and needs of the country as well as the requirements of the Program.

Vertical programs such as NTD conduct separate functions from the general public systems for health commodities management. While the public systems for health commodities management may be well-documented, the separate functions necessary to implement mass drug administration for NTD are not. These assessments document the NTD drug management cycle and systems for each country, beginning with the drug donation application through clearance to storage and in-country distribution to the community level, as well as inventory practices for redistribution of remaining drug supplies in support of subsequent mass drug administration for NTD. The assessments also identify critical roles and responsibilities for each step in the cycle and highlight possible bottlenecks, potential for risk of loss due to insufficient systems, and opportunities for capacity building to strengthen drug management practices.

NTD Control Program Drug Procurement

A tender for the procurement of DEC, PZQ and ALB for Year 5 of the Program was initiated by RTI, through its corporate procurement team, in compliance with USAID and RTI procurement requirements and the terms of the Program's drug waivers (Table 6). During the reporting period the Program developed and implemented a drug management system to track the functional components of the procurement cycle from drug selection to procurement through to delivery to the country. The system has resulted in a set of practices to ensure the timely availability of adequate quantities of drug packages procured by the Program. It also allows the Program to monitor progress toward expected date of delivery of the drugs to the country; and quickly mitigate any issues that could impact on-time delivery.

Table 6. Drug Procurement for Reporting Period by Drug

Country	PZQ	ALB	DEC
Mali	8,287,444		
Uganda	6,480,000	4,500,000	
Cameroon	5,861,540		
Ghana	9,515,380		
Niger	4,523,000	590,897	
Burkina Faso	8,230,167		
Sierra Leone	4,337,605		
Haiti			20,300,000
Tanzania	3,750,000		
Togo	3,649,500	1,055,089	
TOTAL	54,634,636	6,145,986	20,300,000

3.6 Development of Tools for Integration

Funding Gap Analysis Tool (FGAT). Based on early Program experience, it became clear that donors and global policy makers require better information about the cost of implementing integrated NTD control activities to better forecast the resources that will be required to reach Millennium Challenge goals, WHO NTD disease control and elimination goals, and the national goals of endemic countries. During Year 4 we developed and tested the Funding Gap Analysis Tool to allow countries to fully cost out their national plans of action and to make rational resource allocation decisions. The Program supported current country partners and grantees to conduct a national gap analysis during Year 4. Each country has found the FGAT to be a very useful planning tool, and particularly valuable in quantifying the governments' contribution and commitment to NTD control. The tool combines budget and cost data with epidemiologic and demographic data. The tool allows planners and managers to estimate the total cost of the national integrated plan, estimate the value of in-kind contributions of government and local partners and forecast drug and resource requirements. The FGAT provides a total budget projection as well as identifying the funding gap which donors—including USAID—can support.

We worked closely with WHO to implement the FGAT in Viet Nam and Senegal. Our successful collaboration resulted in WHO's endorsement of the FGAT as key part of the Roll-out Strategy, as described in Section 9, Best Practices. A data base of the results is being developed to facilitate analysis of the results across country programs. Based on the experience during Year 4, we have engaged a consultant to further improve the tool, especially to streamline the data entry, and make the software interface easier to use. The FGAT is available on the Program website, along with a users' manual (in English and French).

Guide for Integrated Mapping. In collaboration with USAID and WHO, we prepared an Operational Guide for Integrated Mapping of NTDs based on recommendations resulting from a technical expert meeting held in Dakar Senegal in December 2009. The guide provides recommended approaches to integrated mapping to decrease duplication, increase efficiency and maximize the use of limited resources while respecting WHO recommended guidelines for disease specific indicators and thresholds. The Guide will be finalized in Q1 of Year 5.

3.7 Technical Assistance

The Program provided technical assistance to support grantees and country counterparts in work plan development, survey protocol and mapping, post-MDA survey implementation and reporting, data analysis and data collection and reporting against Program indicators. Specific technical assistance provided during the reporting period is included in Table 7.

In addition to support to national programs for MDA, the Program provided specific, limited technical assistance to select other countries in support of national NTD control programs. Specifically:

Bangladesh

During Year 4 the Program provided limited support for IEC activities in support of the national-scale MDA targeting LF and STH. In addition, the program supported a technical meeting held February 2-4, 2010 to review the progress of the national Neglected Tropical Disease Program. As a result joint planning for technical assistance to Bangladesh has been on-going with CNTD, including plans for assessing impact of LF MDA on elimination, and developing a five-year national plan of action.

Philippines

In year 4 the Program conducted a visit to the Philippines to conduct a situation analysis. It was determined that the Philippines has achieved national level scale-up for LF and has conducted 5-7 rounds in all at-risk areas. The Program provided limited support in preparation for a funding gap analysis which was conducted in October 2010.

Viet Nam

In Viet Nam the Program conducted a joint visit in February 2010 with WHO to conduct a situation analysis. It was determined that Viet Nam has already eliminated LF and the trachoma. The Program provided technical assistance for a funding gap analysis in June 2010, conducted jointly with WHO.

Senegal

At the request of the USAID Mission in Senegal, the Program provided technical assistance to the Senegal MOH for a funding gap analysis in September 2010.

Table 7. Technical Assistance Provided during Reporting Period

Country	Assistance Provided	Technical Advisors
Bangladesh	Technical Team visited Bangladesh in Jan 2010 to evaluate the status of LF elimination activities and propose next steps	Ottesen, Bradley, Weaver, Zoerhoff
Burkina Faso	Gap analysis	Kabore, Goldman
Cameroon	Support for mapping and program start-up, implementation of FGAT	Kabore, Goldman
Ghana	Gap analysis	Yohannes, Van Dalen (WV)
Guinea	Situation Analysis	Karam
Haiti	Gap analysis	Brady, Kabore, Downs
Indonesia	WHO/Indonesia MOH stakeholders meeting for LF elimination	Ottesen
Mali	Review of the implementation of LF sentinel sites surveillance	Kabore
Nepal	Stakeholders meetings, start-up meetings, planning for MDA, Gap analysis	Linehan, Doherty, Zoerhoff, Brady, Albonico
Niger	Gap analysis	Nelson, Crowley
Philippines	Baseline data gathering, preparation for gap analysis	Linehan, Brady, Zoerhoff
Sierra Leone	Gap analysis	Crowley, Van Dalen (WV)
South Sudan	Gap analysis	Downs
Tanzania	Implementation of FGAT; planning and start-up meetings	Kabore, Linehan, Downs
Togo	Gap analysis	Goldman, Crowley
Uganda	MDA supervision and reporting; gap analysis and work plan development for Y5, drug audit, FOGs	Torres, Downs, Doherty, Yohannes
Viet Nam	Initial visit to evaluate status of NTD program and MOH interest in collaboration; baseline data gathering; gap analysis	Linehan, Montresor (WHO), Campbell, Ajima (WHO)

4. Grants Administration for Country Programs

4.1 Overview

During Year 4 all work plan benchmarks for grants administration were achieved during the reporting period. Senior Grants Manager, Allison Campbell, departed the Program to accept a position with the State Department, and Ruth Yohannes took over as Interim Grants Manager. Margaret Davide-Smith replaced Ms Campbell in mid-October 2010, providing support to the grants management component of the Program.

4.2 Issuance of Grants

During Year 4 no grants competition was conducted, however, new country activities were initiated in Tanzania and Guinea.

The grants management team secured a letter of authorization for IMA World Health to support NTD control activities in Tanzania at the request of USAID. During Q4 of Year 4, IMA was authorized to undertake stakeholders meetings and commence work plan and budget development for NTD control program activities in Tanzania prior to negotiating a full grant agreement with RTI. In addition RTI undertook negotiations with HKI for start-up activities in Guinea, which have been delayed due to civil unrest and an evacuation order by the USAID mission.

4.3 Management Support and Supervision of Awarded Grants

During Year 4 RTI conducted on-going monitoring of grant partners for compliance to OMB Circular A-133 audit requirements for US organizations or A-133 equivalent audit requirements for non-US organizations.

4.4 Cost Share

On a semi-annual basis RTI International receives and reviews cost share reports for the grant partners to monitor that the 10% cost share requirements are being met. All partners are reporting cost share although some are behind on meeting the target and will receive reminders that the target must be met by the end of grant agreement.

4.5 Support to Country Programs

In July the NTD Control Program Specialist conducted a site visit to Uganda to conduct a drug supply chain management audit and a FOG review. Results from the site visit have proven effective in issuing FOGs to 40 districts in Year 4 with much clearer coordination and record-keeping between field and home offices. In addition the information gained

from visiting the National Medical Stores, district medical storage facilities and local freight forwarders proved invaluable in creating an effective mechanism for tracking program drug procurements in country.

Furthermore during the reporting period the Senior Grants Manager and Deputy Finance Grants Manager were trained on the financial gap analysis tool and provided technical assistance to Viet Nam and Ghana during the reporting period.

Table 8. Grants Administration Benchmarks and Achievements

Grants Administration Activities	April	May	June	July	Aug	Sept
Monitor grants and compliance with audit requirements	X	X	X	X	X	X
Prepare Letter of Authorization for IMA to provide support to Tanzania					X	X
Visit to Viet Nam to support gap analysis			X			
Visit to Ghana to support gap analysis	X					
Provide support to Uganda for FOGs				X		
Undertake negotiations with HKI for support of NTD activities in Guinea				X	X	

5. Technical Advisory Group

There continues to be a great deal of discussion among NTD expert committees to resolve some of the ongoing challenges with large-scale implementation of NTD control programs as well as other issues surrounding the integration of the different disease-specific components. The Technical Director and other Program staff actively participated in these deliberations, both because the outcomes are of immediate relevance to the Program and because the experience of the NTD Control Program informs the broader global health community through providing empirical evidence for what works very well and what works less well.

During Year 4, the Program co-sponsored two TAG meetings building on meetings of technical experts already planned by global partners. These meetings provided the NTD

Control Program with valuable technical guidance, while benefiting from the cost-efficiencies of co-hosting and cost-sharing the travel and meeting expenses.

Integrated Mapping of NTDs. Dakar, Senegal - December 15-17, 2009. The meeting was co-hosted by the African Regional Office, WHO and the NTD Control Program. Sixteen technical experts attended the meeting.

This meeting provided an assessment and suggested approach to integrated mapping of the targeted NTDs. WHO's established disease specific indicators and thresholds are not altered by these recommendations, as it is essential that the recognized, principal disease-specific objectives be maintained in integrated NTD programs. The purpose of developing an integrated approach to mapping is to allow countries with multiple diseases to maximize the effectiveness of the limited human, financial, and logistical resources available for mapping. It should be clear, however, that not all elements of disease-specific mapping can be 'integrated'. Integration should be considered as attitude, not a formula – an effort to identify those elements of disease-specific mapping activities that might be amenable to being integrated and then to determine how these elements can be feasibly linked. The term "mapping" is used to refer to data collection that is conducted at the beginning of NTD control or elimination programs for the purpose of determining if a public health action (preventive chemotherapy intervention) is required.

It was clear that potential 'conflicts' in current disease-specific mapping guidelines make development of integrated mapping strategies particularly challenging. Countries will differ in their need for integrated mapping because of the variable patterns of disease endemicity between countries and because even not all regions within a country require mapping for the same diseases. While "one size fits all" for the first stages of integrated mapping (the historical assessments), the second stage (on-the-ground mapping) must be individualized, with specific plans determined by careful review and consultation among the national health workers and other experts well apprised of each of the disease-specific WHO guidelines and requirements.

Assessment and Treatment of NTDs in Non-rural settings in Africa, Decatur, GA - March 2-5, 2010. The purpose was to develop guidelines for program managers regarding the assessment of NTDs in urban areas, to identify effective drug delivery strategies to increase coverage and compliance in urban MDAs, and to determine operational research needs specific to urban settings. Participants in the workshop included NTD program managers from 8 African countries, in-country NGOs/partners and other regional & global collaborators. In addition, 21 program managers from 19 countries provided input through a questionnaire distributed prior to the workshop. Suggestions to improve NTD mapping specifically in non-rural areas include:

- smaller implementation units to confirm the absence of certain NTDs in urban areas
- identification of transmission foci, vector breeding grounds and vector density for targeting the vector populations

- studies of both a younger age group (6-7 years) of children and an older group (last class in primary school) to identify community antigenemia prevalence
- sampling to represent multiple levels of socioeconomic and economic development

In order to assess and treat NTDs in non-rural settings, NTD control programs should:

- ensure the proper selection and training of drug distributors (including teachers),
- consider increasing MDA duration to improve coverage rates
- require directly observed treatments to increase compliance rates
- solicit target groups, such as non-enrolled school children, to participate in school-based MDA activities on the day of MDA treatment
- use appropriate multi-sectoral health promotion to increase community participation and support.

Key researchable questions were identified as

- potential use of hospitals records to indicate disease prevalence,
- effect of population migration on the effectiveness of urban MDAs
- determination of treatment cost effectiveness in urban areas vis a vis rural areas

5.1 Technical Expert Consultations

In addition, NTD Program staff participated in technical expert consultations hosted by WHO and other partners, including the following:

Lymphatic Filariasis

- Global Alliance to Eliminate LF – 6th Biennial Meeting, May 2010 in Seoul, Korea. E. Ottesen represented the NTD Control Program and its integrated activities. Presentation (EAO): “Health Impact: the first 8 years of the GPELFF”.
- WHO/AFRO LF Program Managers Meeting & Regional Programme Review Group (RPRG). May 2010. Bamako, Mali. E. Ottesen represented the NTD Control Program and its integrated activities.
- WHO Working Group to Develop Strategic Plan for LF Elimination by 2020, May 2010. Geneva Switzerland. E. Ottesen served as Chair for the 2-day meeting.
- WHO Consultation on Guidelines for Stopping MDA and post MDA Surveillance for Elimination of LF. September 2010. Geneva, Switzerland. E. Ottesen served as Chair for 2-day meeting focused on finalizing WHO guidelines.
- WHO/SEARO RPRG meeting for LF elimination. April, 2010. Jakarta, Indonesia. E Ottesen represented the NTD Control Program and its integration with LF activities.

- MEC/AC Consultation on Targeting LF and Oncho in Loa-endemic regions. April 2010. Atlanta, GA. E Ottesen represented the NTD Control Program and its integration with LF activities.

Onchocerciasis

- (MDP) Mectizan Expert Committee/Albendazole Coordination 41st meeting in Atlanta, April 2009 & 42nd meeting in Seattle, October 2009.

Soil-Transmitted Helminths

- (Children Without Worms) Mebendazole Advisory Committee, 6th meeting – Atlanta, June 2010.

Trachoma

- WHO/PBD GET2020 Global Scientific Meeting on Trachoma Elimination. July 2010 Baltimore MD. E. Ottesen served as Chair for the 2-day meeting formulating guidelines for trachoma treatment and elimination.
- International Trachoma Initiative – Technical Expert Committee. June 2010 in Atlanta, GA. E. Ottesen represented the NTD Control Program and its integrated activities.

Integrated NTD Control

- Working Group Meeting on Programming Needs for Monitoring and Evaluation in Neglected Tropical Disease Control Programmes in WHO African Region. April 2010. Addis Ababa, Ethiopia. K Zoerhoff participated in discussion to identify M&E needs and tools for NTD control; share NTD Control Program's M&E system and tools
- Strungmann Forum on "Disease Eradication in the Context of Global Health in the 21st Century". August 2010. Frankfurt, Germany. E. Ottesen served as Chair at the 4-day session on "Critical factors for assessing the feasibility of eradication and how they should be monitored"
- CDC International Conference on Emerging Infectious Diseases. July 2010. Atlanta, GA. E. Ottesen served as Chair for the session: "Malaria and Neglected Tropical Diseases" and gave the presentation: "Evaluating the Impact of Programs Targeting the NTDs"
- WHO M&E Working Group. June 2010. Geneva Switzerland. M Linehan served as Co-chair for the sub-committee and served as Rapporteur.

6. Documentation and Dissemination of Program Lessons

During the reporting period the Program conducted a range of activities to highlight program success and experience, and share experience to date. Specific activities are detailed below.

6.1 Program Website and e-Newsletter

- During this reporting period, the *NTD Control Program web site* underwent several updates, including new country pages, country success stories, updated program tools and other resources. The NTD website (<http://ntd.rti.org>) posts a range of new features, including regularly updated NTD-related news posts; pages highlighting work done in each of the countries in which the NTDCP is being implemented; summarized data reported from the field; opportunities for grant-seeking organizations; and links to pertinent country and program materials.
- *Semi-annual NTD Control Program Newsletter* was published in May 2010 highlighting three stories: Haiti's MDA after the Earthquake, the NTD Funding Gap Analysis Tool, and the outcomes of the March 2010 Technical Advisory Group Workshop on Assessing & Treating NTDs in Non-rural Settings in Africa
- The program prepared 12 draft country profiles for USAID to be used to update the USAID NTD Program website and develop Country Profile Information Sheets for each country where USAID supports NTD Control.

6.2 Development of Tools and Reports

- *Funding Gap Analysis Tool*. The FGAT was further refined during the reporting period in response to feedback from technical advisors.
- *English and French language User Guide for the Funding Gap Analysis Tool*. An English and French language User Guide has been printed and posted to the Program website.
- *Assessment and Treatment of NTDs in "non-rural" Settings in Africa*. Meeting Report from the Technical Advisory Group Workshop held March 2-5, 2010 at the Task Force for Global Health in Decatur, GA.
- *Integrated Mapping of Neglected Tropical Diseases: Developing an Operational Guide*: Report from a Technical Expert Meeting co-sponsored with the World Health Organization and convened in Dakar, Senegal, December 15-17, 2009

6.3 Publications

Publications during this reporting period include –

- Linehan M., Hanson C., Weaver A., Baker M., Kabore A., Zoerhoff K., Sankara D., Torres S., Ottesen E. Integrated Implementation of Programs Targeting Neglected Tropical Diseases (NTDs) Through Preventive Chemotherapy (PCT): 1. Proving the Feasibility at National-Scale, Accepted for publication in AJTMH, 10/10.
- Koroma J. B., Peterson J., Gbakima A. A. Nylander F., Sahr F. Zhang Y., Ricardo J. Soares Magalhães and Hodges M. Geographical distribution of intestinal schistosomiasis and soil-transmitted helminthiasis and preventive chemotherapy strategies in Sierra Leone (10-PNTD-RA-0994R2 re-submitted to PLoSNTDs 6/22/10, 8/13/10 and 8/23/10)
- Koroma J. B., Heck E., Vandi, M. Sonnie M., Hodges M., MacArthur C., Sankara D.P. The Burden of Trachoma in the Five Northern Districts of Sierra Leone (submitted to J. Of Ophthalmic Epidemiology 5/6/10, revision requested)
- Hodges M., Koroma, J.B., Kennedy N., Sonnie M., MacArthur C., Cotter E., Conteh A., MacCarthy F. Neglected Tropical Disease Control in the Context of Post-War Sierra Leone (INHE-D-10-00045 submitted to International Health 6/21/10, revision requested and re-submitted 9/7/10)
- Hodges M., Mary Hodges, Koroma M., Baldé M.S., Turay H., Aliou Bah I.F., Divall M., Winkler M., Zhang Y. Current status of schistosomiasis and soil-transmitted helminthiasis in Beyla, Forest Guinea (submitted Transactions of Royal Society of Tropical Medicine and Hygiene 7/26/10 TRSTMH-D-10-00272)
- Hodges M., Smith S.J., Fussum D., Koroma J.B., Conteh A., Sonnie M., Sesay S. and Zhang Y. High coverage in mass drug administration for lymphatic filariasis in the urban Western Area, Sierra Leone (submitted Parasites and Vectors 8/27/10 Manuscript ID 2010369564427613)
- A. Koukounari, S. Touré, C.A. Donnelly, A. Ouedraogo, B. Yoda, C. Ky, M. Kaboré, E., Bosqué-Oliva¹, M.G. Basáñez, A. Fenwick, J.P. Webster. Risk factors for urinary schistosomiasis and active trachoma in Burkina Faso before preventative chemotherapy: implications for monitoring and evaluation of integrated control programmes. Submitted for publication
- Robinson E, Kur L, Ndyaba A, Lado M, Shafi J, Kabare E, McClelland RS, Kolaczinski J (2010) Trachoma Rapid Assessments in Unity and Northern Bahr-el-Ghazal States, Southern Sudan. PLoS ONE 5 (10):e13138
- Clements ACA, Kur LW, Gatpan G, Ngondi JM, Emerson PM, et al. (2010) Targeting Trachoma Control through Risk Mapping: The Example of Southern Sudan. PLoS Negl Trop Dis 4(8): e799. doi:10.1371/journal.pntd.0000799
- Kabatereine NB, Malecela M, Lado M, Zaramba S, Amiel O, et al. (2010) How to (or Not to) Integrate Vertical Programmes for the Control of Major Neglected Tropical Diseases in Sub-Saharan Africa. PLoS Negl Trop Dis 4(6): e755. doi:10.1371/journal.pntd.0000755

- Kolaczinski JH, Hanson K, Robinson E, Picon D, Sabasio A, et al. (2010) Integrated Surveys of Neglected Tropical Diseases in Southern Sudan: How Much Do They Cost and Can They Be Refined? *PLoS Negl Trop Dis* 4(7): e745. doi:10.1371/journal.pntd.0000745

6.4 Presentations

Program staff attended a variety of relevant forums to present the Program's experience, results, and lessons learned during the reporting period.

- On April 17, Katie Zoerhoff presented *Integrated Control of Neglected Tropical Diseases* at Yale's Unite for Sight conference in New Haven, CT
- On April 29, Katie Zoerhoff presented *Integrated Control of Neglected Tropical Diseases* at RTI's Innovation and Commercialization Showcase held in Research Triangle Park, Durham, NC
- April 2010, Abdel Direny, IMA presented at the GAELF meeting in Seoul Korea the experience of the Haiti NTD Control Program.
- On August 1, 2010, RTI presented the poster *Effective Sampling Methodologies for Program Evaluation in Developing Countries* at the 2010 Joint Statistical Meetings (JSM) in Vancouver, BC, Canada. This poster received the best poster award from the Survey Research Methods Section poster competition.
- In September 2010, Dr Amadou Garba, SCI Niger, presented orally to the Royal Society of Tropical Medicine and Hygiene annual meeting in Liverpool, UK. His presentation gave a summary of the progress of the Niger NTD Control program to date. Dr Garba was then invited by the WHO to Geneva where he presented the findings from Niger on a small study investigating the efficacy and safety of treating under 5 year olds with praziquantel syrup, this was co-funded by the WHO and SCI.
- On September 21, 2010, Jan Kolaczinski, Malaria Consortium presented *Co-implementation of health interventions: Challenges and lessons from Southern Sudan*, in Decatur, GA
- On September 21, 2010 Dr Eric Ottesen presented *Integrated Control of Tropical Diseases: the Elimination of Lymphatic Filariasis* at the Institute of Medicine meeting on Causes and Impacts of Neglected Tropical and Zoonotic Diseases held in Washington DC.
- On September 28, 2010, Katie Zoerhoff presented the *NTD Control Program Monitoring and Evaluations Framework* at the Consultative Meeting on Impact Evaluation of NTD Control Efforts hosted by USAID.
- On October 1, 2010, Timothy Finn, Malaria Consortium, presented *Support to the MoH Integrated Neglected Tropical Disease Control Program* at the USAID Health Sector Implementing Partner's Meeting

- On October 8, Jennifer Leopold, RTI and Michel Pacque, USAID led a session entitled *Seven Neglected Tropical Diseases - \$500 million in free drugs* at the Annual USAID Mini-University hosted by George Washington University.

6.5 Success Stories from Country Programs

The Program finalized a number of Success Stories drafted and approved by the Country Programs. These stories are available for download on the Country Pages of the Program website. Several of these stories have also been featured on EndtheNeglect.org, a blog for the Global Network for Neglected Tropical Diseases.

- Haitian Community Leaders Fight Neglected Diseases and Inspire Change
- Governor of Bamako Motivates Others to Participate in the Neglected Tropical Disease Control Program in Mali
- Role of Community Directed Drug Distributors in Combating Neglected Tropical Diseases in Sierra Leone
- Community Group in Mali's Segou Region Takes Ownership of NTD Treatment Efforts
- Making an Impact: Treating and Preventing Lymphatic Filariasis in Niger
- Thousands Treated in Isolated Communities of Southern Sudan
- Mapping Trachoma in Unity State: Securing Treatment for More than One Million Southern Sudanese
- Sierra Leone: Providing Meals to School Children before Praziquantel Treatment for Schistosomiasis
- The Neglected Tropical Disease Control Program Treats in War-torn Northern Uganda

7. Advocacy and Resource Mobilization

The NTD Control Program's advocacy and resource mobilization efforts in Year 4 focused on the strengthening, developing, and implementing country-level sustainability plans for NTD control. Highlights of advocacy activities leading to increased government commitment conducted during Year 4 are presented below. Country specific advocacy activities are presented in Appendix B: Country Summaries.

The **Uganda** Ministry of Health is committed to integrated NTD control, as was recently reaffirmed by the Director General of Health Services, who emphasized to partners the need to integrate for cost efficiency and sustainability at the opening and closing of the Uganda Onchocerciasis Elimination Expert Advisory Committee meeting in Kampala. At the central level, the Government is providing all the personnel for technical and support supervision; office accommodation and utilities; vehicles; laboratory space and equipment. District governments have traditionally made in-kind contributions to NTD

control, through personnel who implement the program, but this year two districts, Oyam and Gulu, have also included cash contributions toward NTD activities. These districts are optimistic that their support will scale up over time.

In **Sierra Leone**, commitment to NTD control and elimination has been both programmatic and financial. In 2010, an NTD module was incorporated into the Maternal and Child Health Aide training curriculum, ensuring that staff at the primary health care level recognize and know how to respond to NTDs. This cadre provides care to patients at public health units, and forms the bulk of health staff throughout the country. Furthermore, the Ministry of Health and Sanitation (MOHS) recently completed the FGAT, revealing that the Government is contributing more than \$100,000 for central-level salary and transportation costs and over \$500,000 for district-level salary costs. The Chief Medical Officer of the MOHS was very impressed with the tool and hoped that other departments within the MOHS could adapt the tool for program management.

The Ministry of Health (MOH) in **Cameroon** recently organized a national meeting on the integration of health activities at the community level. This meeting outlined the Ministry's commitment to put into place a platform to support the effective integration of health activities, including NTDs, at the community level. The MOH committed to provide funding to support NTD days in each region, the production of treatment registers and social mobilization materials, and the implementation of Community Self-Monitoring in selected communities. Advocacy efforts with the Ministry of Health resulted in the recruitment of a full-time NTD Focal Point to coordinate NTD activities within the Ministry.

In **Ghana** high level advocacy efforts with Members of Parliament whose constituencies fall within the onchocerciasis hyper-endemic areas included educational visits and a field trip to MDA sites to observe and interact with volunteers and communities affected by the disease. This resulted in pledges by MPs to collaborate with the NTD program. Ongoing efforts to engage the media have successfully raised the profile of NTDs, resulting in greater recognition among the general public and increased prominence within the Ghana Health Service. Continuous advocacy will focus on encouraging local government authorities to contribute to funding MDAs in their districts.

8. Monitoring and Evaluation

8.1 Overview

The focus of M&E activities during Year 4 was to generate Program results, to provide support to grantees and country programs for implementation of Program M&E requirements and M&E activities, and to develop international M&E tools, standards and guidelines. Appendix G provides a description of the development of the NTD Control Program's M&E approaches and tools. Specific activities during the reporting period included:

Generate Program Results

During this reporting period, Year 3 Program results were finalized and incorporated into a manuscript for publication through the *American Journal for Tropical Medicine and Hygiene* and other fora for dissemination. In addition, a preliminary report of Year 4 results has been compiled.

The NTD Control Program and RTI statisticians worked with grantees to obtain clean datasets for analysis of the post-MDA coverage survey data. The primary purpose of these surveys was to validate coverage that is reported through the MDA coverage form. Many challenges were encountered during this process, including unclean datasets with missing data, misunderstandings of information needed for proper data analysis, and recognition that the data was not always collected according to the protocol. This resulted in delayed submission of the data, substantial back-and-forth between the grantees and RTI staff, and a lack of confidence in the validity of the data. Through this process, it was recognized that the costs of conducting the survey and analyzing the data were greater and more time-consuming than the benefits would provide, and that the primary purpose of the survey would not be achieved.

The Program has responded to requests for information from USAID.

Provide Support to Grantees & Country Programs

Throughout the reporting period, RTI provided support to grantees in their M&E implementation and reporting requirements, including the Year 4 and Year 5 work plans, semi-annual reports, baseline forms, MDA coverage forms, and post-MDA coverage survey results. Technical guidance has been provided through email, telephone and in-person communication.

Training was provided to HKI-Cameroon, HDI-Togo, RTI-Nepal, and IMA-Tanzania staff on the Program's M&E system and tools.

The NTD Control Program supported a situation analysis conducted by WHO representative Dr. Marco Albonico in Nepal as part of the data collection to inform the National Plan of Action. In addition, a situation analysis was conducted in Bangladesh in preparation of the technical assessment team visit in February 2010. The analysis provided a clear presentation of work done to date and progress toward elimination, as well as highlighting specific technical assistance needs for future support. Lastly, situation analyses were carried out in Guinea and Bangladesh, which will serve to inform decisions regarding future NTD activities.

A consolidated tool was developed to streamline the MDA Coverage Form and the Baseline Form data in order to allow program managers to more easily recognize trends in coverage, identify problem areas, and become aware of LF- and trachoma-endemic districts should be assessed through stopping-MDA surveys and impact studies. This tool is currently being finalized, and tools with pre-populated historical data will be shared with grantees in Year 5.

Develop International M&E Standards and Guidelines

Program staff started developing tools to monitor training of drug distributors, supervision, and SAEs. These tools will be finalized in Year 5, and will be shared with grantees and available for countries' use through dissemination on the Program website.

Program staff continued work with WHO to finalize international standards and norms for integrated monitoring and evaluation guidelines for NTD control. In April 2010, Katie Zoerhoff, the Program's M&E Associate, participated in the Working Group Meeting on Programming Needs for Monitoring and Evaluation in Neglected Tropical Disease Control Programmes in WHO African Region, in order to identify M&E needs and tools for NTD control, and to share NTD Control Program's M&E system and tools. In addition, the Program's Operations Director served as a co-chair on the sub-committee "Monitoring of disease-specific indicators" in the WHO M&E working group.

Katie Zoerhoff worked with Maggie Baker (Georgetown University) and PJ Hooper (Task Force for Global Health) on data analysis to determine the impact of integrated approaches to NTD control on the resources available for disease-specific programs, with LF, onchocerciasis, schistosomiasis, and trachoma, and STH programs. Preliminary results will be presented at the ASTMH conference in November 2010.

8.2 Haiti Cost Study

The cost study conducted in Haiti was completed during Year 4. The manuscript, *Costs of Integrated Mass Drug Administration for Neglected Tropical Diseases in Haiti*, is currently being submitted for publication in the American Journal for Tropical Medicine and Health. The study found a decrease in cost per person after Haiti implemented its integrated MDA. Manuscript abstract is included below.

Mass drug administration for lymphatic filariasis in Haiti began in 2000, with the treatment of 105,750 persons at a cost per person of US\$2.23.

Subsequently, Haiti's Ministry of Public Health and Population Neglected Tropical Disease (NTD) program has partnered with IMA World Health and Hôpital St. Croix to implement MDA for LF and soil-transmitted helminths in a population of approximately 8 million. We conducted a cost analysis of the NTD program, collecting data from 9 of 55 communes participating in the May 2008--April 2009 MDA. Methods included analyzing partner financial records and conducting retrospective surveys of personnel. In the nine communes, 633,261 individuals were treated at a cost of US\$0.62 per person when cost of donated drugs was included (economic cost) and US\$0.41 per person treated when excluding donated drug costs (program cost). This decrease in cost per person treated is the result of both cumulative implementation experience and economies of scale.

8.3 Operations Research to Improve Integrated Program Performance

LF Surveillance in Togo. During Year 4 the Program continued support for the development of a model post-elimination LF surveillance system in Togo, through a fixed-obligation grant to HDI. This system will be evaluated in Togo, and is expected to provide a good model other countries who are reaching interruption of LF transmission. During the reporting period the final reports on the model surveillance system were provided to the Program. A summary of the system is provided below:

Once transmission of LF is interrupted by five or more rounds of MDA, and the interruption has been verified, WHO recommends on-going, passive surveillance for LF order to monitor LF transmission. While WHO suggests populations in which passive surveillance may be conducted, details of how to organize such a system have not been provided. In Togo, one of the first sub-Saharan African countries to have interrupted endemic transmission of LF via coordinated MDAs, a system of lab-based surveillance was developed to monitor districts where transmission was interrupted after seven rounds of MDA.

The Program supported the development of a protocol for an alternative surveillance system through the national blood bank network, developed with technical assistance from the CDC and the Mectizan Donation Program (MDP). The protocol is based on a centralized system of blood testing in which blood donated at all collection centers in the country will be tested at national certification centers. Testing will be done with either rapid diagnostic immunochromatography tests (ICT) or with a commercially available ELISA antigen tests. The ICT cards, in particular, are simple and rapid tests that require minimal training, so that the system will not incur large labor costs. Positive tests will be repeated and positives will be reported to the LF coordinator for follow-up.

Table 9. Monitoring and Evaluation Benchmark and Achievements Year 4

M&E Activity	Q1	Q2	Q3	Q4
Finalize report of Year 3 performance results	X			
Development of preliminary report of Year 4 performance results				X
Analyze MDA coverage validation survey data	X	X		
Provided support to grantees in their M&E implementation and reporting requirements	X	X	X	X
Provide training to country program teams	Nepal	Togo, Cameroon	Tanzania	
Situation analysis	Nepal	Bangladesh	Guinea	Indonesia
Development of consolidated tool		X	X	
Development of tools to monitor training of drug distributors, supervision, and SAEs				X
Finalize international standards and norms	X	X	X	X
Implement methodology to determine the impact of integrated approaches to NTD control on the resources available for disease-specific programs		X	X	X
Haiti Cost Study completed, report prepared and manuscript drafted for publication		X	X	X
Togo post-elimination strategy completed			X	

9. Key Lessons Learned and Best Practices

9.1 Overview

During Year 4 the Program made significant strides in formalizing best practices for program start up, implementation, monitoring and reporting. By working closely with WHO and other global partners, the Program's experience and successful implementation strategies have been widely discussed and largely adopted as global best practices. As reported in Section 6: Documentation and Dissemination of Best Practices, publication of program experience is being undertaken. Summarized below are the lessons learned and best practices for M&E, country program roll-out and implementation strategies, as well as persistent challenges that future integrated program efforts are likely to encounter.

9.2 Monitoring and Evaluation Lessons Learned

Over the past four years of implementation, the NTD Control Program has acquired lessons learned around monitoring and evaluation:

- Grantees with a staff member who are able to dedicate time to M&E are more likely to respond timely with accurate data.
- M&E training for grantees is necessary even when grantees are staffed with highly qualified, well-educated individuals.
- Governments frequently have limited resources and/or capacity for coordinated data management of integrated NTD activities. It is recommended that technical assistance be provided to country programs for data management in order to strengthen the country's M&E system as well as to improve the quality of reporting to the Program.
- The benefits of validating Program treatment data do not outweigh the costs of implementing national post-MDA coverage surveys. Coverage surveys in select districts with unexpected reported coverage are a more effective use of limited resources.
- National censuses often produce inaccurate population estimates and should be complemented with registration of targeted populations when possible.
- The standardized M&E tools that were used to meet initial Program needs of demonstrating additionality enabled the Program to make comparisons across countries and time and provide prompt and timely information to USAID that demonstrated strong performance against Program performance indicators. Future tools to assess impact should similarly aim to clearly demonstrate results while facilitating comparison.

9.3 Program roll-out and implementation best practices

Step-wise process towards laying the groundwork for effective NTD programs

During the first four years of operation the NTD Control Program has developed and refined a strategy for implementing country programs, with a number of key steps and activities that contribute to establishing well-designed, government-led, cost-efficient, effective, integrated NTD control programs. The following approaches have been adopted by WHO and endorsed as a standard approach for roll-out of NTD control programs in order to reach global targets for elimination and control. Program tools, guidelines and best practices are posted on the Program's website.

Three critical activities are necessary for effective integrated program planning and resource allocation. Ideally they should be carried out as part of the groundwork prior to initiating programs; but as experience has shown during the first 4 years of the NTD Control Program (when supported countries were initially at different stages of program

development), these activities still are extremely valuable even after programs have already begun:

- **Country Situation analysis.** Establishing a detailed, up-to-date, standardized compilation of the existing evidence for NTD prevalence and related research and control activities is an essential first step for planning integrated programs. The situation analysis is particularly valuable in defining a baseline for stakeholders in the early planning for integration, in advocating for donor support, and in identifying potential partners for research, implementation and technical assistance. The situation analysis includes a thorough literature review on NTD research and control activities in the country, along with identification of existing expertise and resources available. Optimally the analysis is prepared by a team of local disease-specific experts and academics, engaging a cadre of technical stakeholders early in the process and encouraging their involvement in the planning at the earliest stages. Although the situation analysis can be time consuming, having accurate and complete information and engaged local expertise results in significant time-savings at later stages in the process of program start up.
- **National Plan of Action (POA) for Integrated NTD Control.** Once the situation analysis is complete, it will be clear that there are some areas where program implementation can begin immediately and others where additional NTD prevalence information is necessary (i.e., mapping). Thus, the initial POA (ideally with a 5-year timeframe) must include the progressive roll-out of both implementation and mapping program elements; then, as mapping is completed, the national POA can be revised yearly. Such a five-year National Plan of Action should be developed by the government with its stakeholders and key partners in NTD control, and with full endorsement by WHO which has created a standardized framework for these plans. It is only with this national POA that a rational and comprehensive approach can be established to meet the program's funding needs.
- **Funding Gap Analysis.** The NTD Control Program has developed a Financial Gap Analysis Tool for integrated NTD control programs. The analysis provides a standard detailed presentation of the costs of implementing integrated NTD control activities in accordance with international guidelines and the country's national plan, as well as the existing resources available from government and other donors. It is particularly valuable in recognizing the contribution governments make toward national NTD control, by quantifying their appreciable inputs of largely in-kind resources such as staff time, existing systems and materials. The funding gap is identified, providing country programs and potential donors with clear information about what is required to achieve the national program's goals for elimination or control. The funding gap analysis tool provides an essential base for scale-up plans and resource allocation, as well as a valuable

tracking tool for cost-efficiencies over time and changes in government commitment.

Rolling out the integrated NTD program

- **National Stakeholders Meeting.** To present both the National Plan of Action (based on the situation analysis) and the results of the funding gap analysis, a meeting of all stakeholders – including the drug donation programs and other potential donors – should be convened by the MOH and endorsed by WHO. The meeting lays out the national plan of action, clarifying financial and technical gaps, and reaffirming the government’s leadership and ownership of a fully-costed integrated NTD control strategy for the country. The stakeholders meeting is an important opportunity to provide a transparent presentation of funding requirements, roles and responsibilities and program scale-up targets to all concerned parties. Even in settings where partners already have strong working relationships, the stakeholders meetings regularly enhance these partnerships both with various levels of the government ministries and with other implementing partners. Most country programs have institutionalized annual stakeholders meetings both to report back to partners on treatment results and to develop annual work plans.
- **Establishing Clear Roles and Responsibilities for Partners.** The challenges inherent in combining (or even coordinating) multiple disease-specific programs in a country are all too apparent. Therefore, developing consensus among the partners with respect to their goals in NTD control, clarifying the government’s priorities for NTD programs, and identifying the roles and responsibilities of the implementing partners are essential for program success. While an agreed Plan of Action and a successful stakeholders meeting are important steps in defining these roles, clarification of the flow of funds and the associated responsibilities is also essential. Indeed, the degree of transparency (understanding) of this flow of funds and responsibilities is often a principal determinant of the effectiveness with which the partnership functions and therefore deserves significant attention.
- **Disease Mapping.** In order for countries to plan for implementation most effectively and to apply for essential drugs the endemic NTDs need to be mapped accurately and in accordance with WHO guidelines. In many countries mapping for one or more diseases is not complete so that national implementation scale-up cannot be accurately planned for or budgeted. Determining the extent of disease burden and distribution is a critical initial step for all country programs, and the need for disease mapping should be clearly defined in the situation analysis.
The NTD Control Program has successfully supported national mapping efforts that have permitted rapid scale-up of treatment, especially in areas previously unmapped for trachoma and schistosomiasis. Mapping, conducted in accordance with WHO guidelines and the drug donation programs, should be undertaken as

early as possible and should be implemented in a manner which strengthens local capacity and supports the government commitment to NTD control.

Effective management elements for integrated NTD programs

- **Central Coordinating Mechanism.** A central level coordinating mechanism, such as a steering committee of disease-specific program managers (*i.e.*, NTD Task Force), has proven to provide a critical forum for planning, problem-resolution and advocacy. The significant challenges of integrating strong and independent disease-specific programs can be overcome through the strong leadership of a higher level government colleague who can mobilize the efforts of a team of previously independent program managers to achieve rapid, highly cost-effective integration. Central coordinating mechanisms, meeting 2-4 times per year, have been institutionalized in all implementing countries as a means of assuring representation for all appropriate disease-specific programs, as well as other government stakeholders, such as the Ministry of Education.
- **Simple Monitoring and Results Reporting.** Systems for simple, standard integrated results monitoring have been developed and implemented in each country setting, tracking disease-specific treatment goals as well as ‘integration indicators’ for total population treated and combined treatments provided. As a result, managers and donors have prompt, regular semi-annual reports on progress toward goals by country and disease target that can be shared with district level stakeholders as well as among country programs. Integrated reporting and monitoring forms have facilitated the ability of program managers to understand the requirements of the other endemic NTDs, and have encouraged joint participation by disease-specific program managers in the monitoring process.
- **Annual Work Plan Development.** Ideally, country teams reconvene each year to develop a detailed annual work plan and budget. The process of developing the plan reinforces integrated planning, joint discussions about where cost-efficiencies can be made, understanding of the requirements and priorities of individual disease programs, and produces a detailed plan and budget to which all the team can commit. Modifications of the National Plan of Action or changes in the NTD Funding Gap that bear on the implementation activities and strategy can also be accommodated during these Annual Work Plan sessions.

Persistent Challenges

The progress to date has highlighted several persistent challenges that need to be urgently addressed by the global NTD community to assure that countries committed to control and elimination of NTDs can successfully achieve success.

- **Mapping the NTD diseases globally.** It is essential that the global extent of the NTDs be documented and quantified through standard rapid assessment techniques in order to forecast the required drug quantities required, allocate

existing resources appropriately and to provide appropriate information to decision-makers about the additional resources that will be required to control and eliminate these diseases. A single, up-to-date data base containing the evidence for disease prevalence and geographic distribution that can be shared by donors, implementers and country managers will greatly enhance the global effort to coordinate and streamline activities.

- **Limited human capacity and expertise.** Currently there is not enough technical expertise globally or at country level to implement integrated NTD control activities in all at-risk settings. In order to achieve the global targets for elimination and control it will be necessary to rapidly train a cadre of program managers qualified to lead the activities in their respective countries. An International NTD Program Managers Course to assure high quality standardized knowledge among implementers and incorporating the effective implementation strategies developed by the NTD Control Program and other successful integrated models is a key activity planned for Year 5.
- **Clearer technical guidelines for Schistosomiasis control and elimination.** Current WHO guidelines outline strategies for control of Schistosomiasis, but do not describe strategies for elimination. Guidelines for mapping disease remain open to interpretation and lack standard approaches. Based on the experience of countries such as Egypt and China, which have successfully eliminated schistosomiasis, clearer guidelines and strategies need to be developed. As integrated NTD control activities demonstrate the ability of countries to achieve national scale PCT and donor interest in NTD elimination increases, successful Schistosomiasis control will require greater clarification of what optimal Schistosomiasis control activities would look like, and what resources (including the essential drug) will be required to achieve elimination.
- **Verification of LF elimination.** Several countries are on the brink of LF elimination and require clear guidance for how to certify that interruption of LF transmission has been achieved. A WHO approved verification process would allow countries to be recognized for their achievement and would free up resources which could be used for other public health problems.
- **Clearer policy for STH control in post-LF elimination settings.** Currently STH disease burden is reduced where PCT for LF is provided on a national scale. As LF is eliminated in many countries, the platform for providing anthelmintics—as well as the donation of albendazole—disappears. There is little hope that the necessary sanitation requirements will be in place to eliminate transmission, so most countries face a challenge controlling STH over the longer term. Integrated PCT strategies have yet to provide clear guidance for how to manage this long-term problem, which may best be addressed through schools, rather than health systems, given the target population is school-aged children.

10. Activities Planned for the Next Six Months

Program Planning, Management, and Reporting

- Hire Senior Grants Manager (Margaret Davide-Smith)
- Obtain one-year no-cost extension to assure support to countries during transition to new funding mechanisms
- Work with USAID and Track 2 awardees to assure smooth transition of selected countries to new funding mechanisms

Direct implementation

- Conduct gap analysis in Philippines, Mali
- Participate in planning meetings in Indonesia with WHO
- Review and finalize country work plans
- Support Stakeholders meeting in Tanzania
- Provide technical assistance for sentinel sites in Nepal (LF and STH)
- Support MDAs in Haiti, Ghana, Nepal, Sierra Leone, S. Sudan, Tanzania, and Uganda
- Monitor production, shipments and clearance of procured NTD medicines to Program Countries to meet scheduled MDAs
- Collaborate with WHO to prepare for Program Managers Training Course pilot training course in Q2

Grants Management

- Monitor all partners to A-133 audit standards, cost share, VAT reporting and other USG sub-recipient compliance issues
- Close out grants for selected countries transitioning to Track 2

TAG

- Participate in selected technical meetings for global policy, including LF elimination strategy development, schistosomiasis program policies, coordination of drug donation scale up planning strategies

Document Dissemination and Monitoring and Evaluation

- Populate NTD Control Program web site
- Produce semi-annual NTD Control Program newsletter
- Attend ASTMH and GHC roundtable presentations, November 2010
- Submit manuscript of program best practices
- Conduct analysis of FGAT results across countries

Advocacy & Resource Mobilization

- Provide TA for country strategy development and implementation as requested

Monitoring and Evaluation

- Finalize Year 4 data
- Provide training and support to Track 2 M&E advisors
- Provide on-going support to grantees and country programs