



**INTERAGENCY AGREEMENT**

**BETWEEN**

**THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT**

**AND**

**THE CENTERS FOR DISEASE CONTROL AND PREVENTION**

**Division of Parasitic Diseases**

**Neglected Tropical Diseases Work Plan**

**FY 2011**

**(Edited for website)**

## **BACKGROUND**

CDC scientists have been conducting laboratory and epidemiologic research on NTDs for more than 20 years. Current work includes a diversity of activities including, operational research on control and elimination strategies and documentation of program impact, assessment of elimination criteria and tool development and validation. Over the past few years, USAID and the Parasitic Diseases Branch at CDC have been working together to develop a shared agenda to advance the NTD control agenda, leading to a 50% reduction in 70% of the affected population including eliminating onchocerciasis in the Americas, eliminating LF globally, and eliminating trachoma. Tremendous progress to date has been achieved in scale up, yet much remains to be done and CDC has several key strengths that can contribute to better and more rapid outcome in reaching these goals. This includes operation and implementation research, technical assistance for heightened monitoring and evaluation, development of criteria for stopping MDA, and overall program guidance and support.

### **I. Program Objectives and benchmarks**

Objectives of Activities: (1) To accelerate efforts to control and eliminate NTDs. (2) To facilitate scaling up USG-supported NTD programs through technical assistance for mapping, and, as elimination programs progress, supporting transmission assessment surveys that serve as documentation that programs are successful and can be scaled back. (3) To improve M & E tools for measuring program impact and performance

Current work includes operational research on control and elimination strategies and technical assistance:

- Evaluation of the urine CCA point of contact test for diagnosis of schistosomiasis
- Development and Validation of Novel Assays of Filarial Exposure
- Assessment of the impact of MDA on LF prevalence in an area with fewer than 5 rounds of treatment
- Assessing the Optimal Frequency of De-worming
- Technical assistance to programs (focus on monitoring and evaluation)- recent work includes technical assistance to the Togo MOH for trachoma mapping
- Personnel for the development of elimination and intervention strategies
- Assessment of quality of life as a tool for measuring impact of treatment for schistosomiasis

## II. Activities

### Title Activity 1: Staffing Support

**Description:** Staffing Support

**Purpose:** CDC epidemiologist assignee to USAID, Atlanta-based PHA (technical) will provide technical and operational support for technical assistance and for operational research projects

**Timeframe:** October 2011-September 2012

**Expected results:**

- CDC epidemiologist assignee will work on USAID team to assist in furthering NTD elimination and control efforts in countries that are targeted in the USG NTD Initiative (and are aligned with the GHI NTD targets to reduce the prevalence of NTDs and to eliminate lymphatic filariasis and blinding trachoma) and will ensure that activities of both agencies are well-coordinated.
- Atlanta-based PHA (technical) will support technical assistance and operational research for the USG NTD program. The PHA will travel to the field to assist with logistics and data collection for the operational research projects outlined below and for the programmatic activity below (transmission assessment surveys). The PHA will monitor and track financial obligations; assist with the development of work plan and project reports; negotiate work with partners; and place orders for laboratory supplies.

### Title Activity 2: Support for CDC's Participation to Critical NTD Policy Meetings

**Description:** Key CDC staff will participate in critical bilateral or multilateral NTD policy meetings organized by WHO, AFRO, USAID, and other partners.

**Timeframe:** October 2011 – September 2012

**Expected results:** Through CDC's participation to these critical NTD meetings, CDC will:

- Contribute expertise towards evidence-based guidelines for global NTD programs, which advance GHI NTD targets
- Contribute expertise towards improved implementation and monitoring and evaluation of global NTD programs. CDC anticipates attending meetings of the Regional Program Review Groups in the different WHO regions
- Find opportunities to scale up operational research that identifies new strategies and better ways to implement them to accelerate progress towards NTD elimination and control (thus advancing the GHI NTD targets) and that better integrates and coordinates health strategies across health programs (in alignment with GHI principle of collaboration for impact)
- Support increased integration and coordination among country-level stakeholders, including partner country governments, other donors, and nongovernmental organizations.

Title Activity 3: Building Capacity for the Transmission Assessment Survey (TAS) for Lymphatic Filariasis

**Description:** CDC will: (1) Develop a training curriculum, in collaboration with WHO, to support capacity building for TAS; (2) Participate in the Regional Program Review Group (RPRG) meetings to identify, with international partners, countries/districts ready for TAS; (3) Conduct regional training in Africa for selected countries; and (4) Provide direct technical assistance to enhance government capacity during the first wave of TAS in 4 USAID-supported countries. Host governments would then have the capacity to conduct their own subsequent TAS (TAS is to be repeated 2-3 years later to confirm transmission has been interrupted). Countries to be decided based on discussions at RPRG meeting and in collaboration with USAID.

**Timeframe:** October 2011 – September 2012

**Expected results:** Elimination of lymphatic filariasis globally is one of the GHI NTD targets. This survey provides information on whether a country has lowered transmission to the point that they can stop MDA.

Title Activity 4: Lymphatic Filariasis: Expansion of Antibody Testing

**Description:** CDC is currently working to evaluate the performance of filarial antibody assays based on the new Wb123 larval antigen in collaboration with NIH. Ongoing and planned studies will define the relationship between development of antibody and acquisition of infection in children and the relationship between antigen and antibody prevalence. This will first be done with existing specimens that CDC already has and subsequently in transmission assessment surveys (TAS) that are being conducted in countries to be decided based on discussions at RPRG meetings and in collaboration with USAID. Resources are needed to support the field collection and lab costs for this project. Countries will be decided based on discussions at RPRG meeting and in collaboration with USAID, **Timeframe:** October 2011 – September 2012

**Expected results:** Laboratory tools are urgently needed for post-MDA surveillance – this antibody test is envisioned to be used for that purpose for LF.

Title Activity 5: Optimal Frequency of De-worming (continuation project)

**Description:** The purpose of this project is to assess once versus twice yearly therapy with albendazole/mebendazole in a country with high STH prevalence (>50%) and evaluate the additional impact on STH prevalence, intensity, and nutritional improvement in school-age children (SAC) in relation to cost. CDC has performed a site visit to Kenya to discuss implementation at the DSS site in western Kenya. A draft protocol has been written.

Preliminary estimates of STH prevalence in SAC appear to be high enough to justify twice yearly treatment – we are currently obtaining more precise estimates to confirm these rates.

**Timeframe:** October 2011 – September 2013

**Expected results:** This project will provide the evidence based for improved guidelines for STH programs within GHI, in alignment with GHI NTD targets to reduce the prevalence of targeted NTDs. WHO currently recommends twice yearly administration of mebendazole or albendazole to SAC in countries where the prevalence of STHs exceeds 50%, yet in areas with STH prevalence of 25-50%, once yearly treatment is recommended. However, these guidelines require validation. In addition, control programs need to know what degree of decrease in STH prevalence they can expect implementing a twice-yearly regimen. Given the costs associated with drug distribution, data are needed to better quantify the additional gains of twice yearly treatment in communities with varying STH prevalence rates.

Indicators will include both STH prevalence as well as morbidity markers (height, weight, and anemia).

#### Title Activity 6: Field-test Surveillance Methods in Lymphatic Filariasis Elimination Programs

**Description:** Methods for surveillance in LF elimination programs during and after MDA will be field-tested by completing an evaluation of the method currently used in Togo and implementing and evaluating surveillance systems nationally in three other countries. Each of the three countries would have both non-endemic areas and areas where MDA is conducted but transmission has not yet been stopped. In one, the Togo method will be replicated. In the other two, combinations of tests and target groups will be used. For example, in one, the presence of the parasite in the blood and blood examination for evidence of infection by measuring antibodies (using the newly developed antibody assay described above) might all be monitored among military recruits and hospitalized patients. In the other, these same tests might be monitored among university students, blood donors, and women making visits to health facilities for antenatal care. Each country experience would be published and a lessons-learned document would be written for USAID and WHO describing the experience of all four countries so that countries aiming for LF elimination can make an evidence-based decision on how to do the surveillance needed for certification of LF elimination.

**Timeframe:** October 2011-September 2014

**Expected results:** This project advances the GHI NTD target of elimination of LF. After MDA is stopped, LF elimination programs are advised to wait 5-6 years before requesting verification of elimination by an international team. During this period, programs are advised to conduct 1-2 additional transmission assessment surveys to ensure that the prevalence of infection remains low and, for the same reason, to monitor the prevalence of infection by on-going surveillance in selected groups, such as military recruits, university students, blood donors and hospitalized patients. To date, there has been limited field experience with such surveillance. In Togo, a sample of blood slides to diagnose malaria has also been examined for microfilaria. Additional field experience should ideally take place in

countries that have non-endemic areas as well as areas where MDA is being conducted but transmission has not yet been stopped. The surveillance systems introduced in these countries could then be evaluated by seeing if they show results consistent with the known distribution of infection and with the trend in infection prevalence expected as MDA continues.

#### Title Activity 7: Trachoma Antibody

**Description:** This activity will focus on developing and validating surveillance tools for trachoma based on the detection of antibody to the best bacterial diagnostic antigens (CPAF, Pgp3 and MOMP). Programmatically, such an assay would be used in the same way as the antigen assay is used in the LF program; that is, to verify the absence of transmission of infection to children. We will combine the three antigens in a multiplex (where we can test for all of them at once instead of having to run multiple tests which saves time and money) and then validate the assay by assessing sensitivity and specificity and the relationship between trachoma prevalence and antibodies- in children. Subsequently, we would test the assay in a setting where trachoma has been eliminated

**Timeframe:** October 2011-September 2013

**Expected results:** This project advances the GHI NTD target of elimination of blinding trachoma and is in accord with the GHI principles of innovation as such a test does not currently exist. Programmatic decisions for trachoma elimination programs are currently based on the prevalence of follicular inflammatory pathology in the conjunctiva of the eye (TF/TI). Simple clinical exams work well for decision making at the beginning of the programs; however, ocular pathology persists in the absence of detectable bacteria following repeated cycles of MDA. This poses a problem for programs in terms of making decisions about stopping MDA and carrying out post-MDA surveillance.

#### Title Activity 8: Effect of Albendazole and/or Praziquantel in Areas Co-endemic for Schistosomiasis and Cysticercosis

**Description:** Serious adverse events are being reported following albendazole use in Nepal and the Philippines. It is hypothesized that there may be underlying cysticercosis, and that treatment is leading to exacerbation of CNS lesions. CDC will assess epidemiological and clinical features of affected patients to determine the link to MDA and will set up surveillance to determine the burden of the problem

**Timeframe:** October 2011-September 2012

**Expected results:** This project addresses the GHI NTD target to reduce the prevalence of the targeted NTDs, which include schistosomiasis and the STHs. De-worming drugs for these diseases such as albendazole and praziquantel are components of the principal NTD strategy, MDA. If adverse events are occurring due to the drugs, it is critical that we find this out as soon as possible to make any necessary modifications to the NTD program to assure patient safety.