

**Stakeholders' Meeting: Presidential Initiative for Neglected  
Tropical Disease (NTD) Control**

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**Working Paper 1: *Monitoring and Evaluation  
of Preventive Chemotherapy Programs***

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## Contributors

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## Acronyms

HIV	human immunodeficiency virus
HMIS	health management information system
LF	lymphatic filariasis
M&E	monitoring and evaluation
MDA	mass drug administration
NTD	neglected tropical diseases
ONCHO	onchocerciasis
PCT	preventive chemotherapy
SAE	serious adverse experience
SCH	schistosomiasis
STH	soil-transmitted helminthiasis
USAID	U.S. Agency for International Development
WHO	World Health Organization

### Background

On February 20, 2008, President Bush challenged the world to reduce and eventually control and eliminate the burden of neglected tropical diseases (NTDs) as a major threat to health and economic growth in the developing world. The new Presidential Initiative for NTD Control ("the Initiative") calls for an increase in the United States' commitment to NTD control to \$350 million over five years.

Substantial progress has been made by both the World Health Organization (WHO) and by the USAID-funded NTD Control Program toward the development of standardized tools for the mapping of the burden of disease and the monitoring of drug coverage, serious adverse events (SAEs) and drug efficacy. These are important tools which should be part of basic, routine monitoring and evaluation (M&E) and continue to be refined and more widely distributed. However, the Initiative presents an opportunity to also take a more broad and strategic approach to M&E and go more in depth by measuring the impact of NTDs on issues of wider public health and development concern.

### Context

As governments and international agencies set priorities for public health and health research, evidence of the magnitude and trends of NTDs, and the impact of control programs are critical to decision making. Organizations that provide funding to preventive chemotherapy (PCT) programs also increasingly require comprehensive, high quality data on program performance to measure the impact of drug use on the burden of targeted diseases to justify their public health investments. Robust evidence is essential for attracting the resources required to combat NTDs and reduce the burden of disease. Key information required for global NTD control includes:

- Magnitude of the disease burden and its geographic distribution (mapping)
- Coverage rates of PCT for targeted populations
- Effectiveness of integrated implementation models
- Capacity of health systems
- Impact of mass drug administration (MDA) on NTD disease burden
- Evidence of impact on health and development indicators, e.g., Millennium Development Goals

Surveillance, monitoring and evaluation of NTDs and control programs using existing health management information systems are particularly challenging given the diversity of the epidemiology of the diseases, the campaign-driven nature of MDAs and the variety of distribution channels used (e.g. immunization campaigns, school-health programmes, community based interventions). Furthermore, health systems are notably overburdened and human resources are scarce where NTDs are prevalent. The development of tools for improved information gathering and utilization, including capacity development to utilize the tools, will enhance the evidence-base for decisions and disease monitoring.

### **Observed characteristics of preventive chemotherapy data**

A major task for control of NTDs is to expand coverage of packaged PCT interventions. The incomplete information on mapping status for prevalence and/or progress of PCT implementation for lymphatic filariasis (LF), soil-transmitted helminthes (STH), schistosomiasis (SCH), blinding trachoma and onchocerciasis (ONCHO) control poses a barrier to effective decision making. This paucity of data results from challenges experienced during data collection, reporting, validation and analysis [table 1]. Additionally, the absence of a national focal point or regional data managers in most instances further compounds the problem at various administrative levels.

**Table 1:**

	<b>Constraints</b>
1. Data collection	Multiple sources* Multiple methods Multiple recording forms
2. Data flow	Multiple channels Multiple systems
3. Data validation, compilation and analysis	Minimal or absent

\* Examples of sources of data: Ministry of Health, Ministry of Education, UN Agencies (e.g. WFP, UNICEF), NGOs (e.g. Save the Children Fund, APIS), academic institutions, research centres, projects (e.g. SCI)

In 2007, a situational analysis was conducted in all the WHO regions to review practices for monitoring and evaluation of PCT at country level. This on-line survey confirmed that there are many potential sources of PCT data available to mid-level and national programme managers. However, procedural elements that further impede PCT data collection and use included:

- Little or no synergistic effort (and integration) of data collection and sharing between NTD control programmes implementing PCT. Various programmes generally collect and report data programmatically, independent of and vertical to national data collection systems.
- Implementation data from other channels regularly distributing PCT is generally not reported into national data collection systems (e.g. data from nutritional campaigns, child health days, and supplementary immunization activities).
- A general lack of reporting of available case load numbers (morbidity) into available national reporting systems (HMIS). In some instances, HMIS have recently been restructured to exclude NTDs which were previously included.
- Drug distributors' data is perceived to be more reliable, though census estimates and projections are preferentially used in denominators for calculation of treatment coverage for national reporting.
- Though Ministries of Health have a plan for determining whether targets are being met, national plans are not using uniform methods to monitor progress.
- Recommended disease control-specific surveys presented in disease specific control guidelines are generally not implemented.

All public health programs require constant M&E to enable managers to monitor the quality of program performance and thereby modify interventions to meet the changing epidemiological environment. NTD surveillance must be strengthened to support expanding NTD prevention and control activities. NTD endemic countries need to be assisted with technology transfer and capacity building for: (i) mapping disease distribution and estimating populations in need of PCT; (ii) establishing sound pluri-annual operational plans (iii) routine monitoring of interventions and their scaling up, including coverage, SAEs/ pharmacovigilance and drug efficacy and; (vi) evaluation of the impact and efficiency of NTD control.

This paper outlines some of the key issues and challenges for monitoring and evaluating NTD control programs, based on the experience to date with mass PCT programs, and proposes various considerations for addressing these issues and challenges. The paper is divided into three sections:

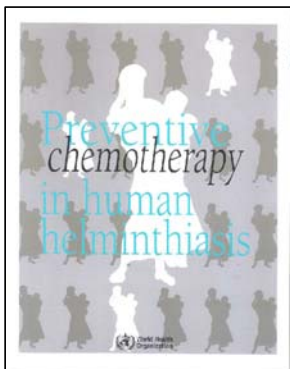
1. the first considers issues related to the collection of base-line data needed for sound decision making and the routine monitoring of gradually expanding operations;
2. the second focuses on measuring additional parameters such as various types of impact, efficiency of NTD control and sustainability; and
3. the third gives an operational example of currently ongoing M&E activities in USAID's NTD Control Program assisted countries.

## **Section 1: Collection of base-line data and routine monitoring of interventions**

### **Current tools and guidelines**

WHO recommends a strategy of PCT which targets a group of NTDs and at risk-populations rather than any given specific disease or infected individual, since NTDs tend to occur together in the same geographic cluster. PCT, even when deployed without other complementary interventions such as improved sanitation, vector control, and health promotion, can lead to a significant reduction of morbidity and transmission of helminthic diseases. WHO has developed several key guidelines and manuals for implementation, monitoring and evaluation for integrated PCT programs, which are summarized below.

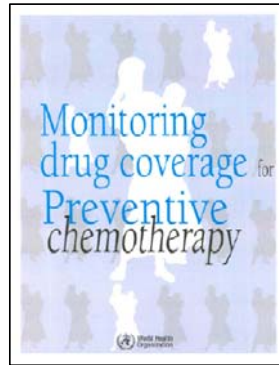
### ***Coordinated Use of Anthelmintic Drugs in Control Interventions- A Manual for Health Professionals and Programme Managers:***



This manual is intended to guide the coordinated implementation of regular, systematic, large-scale interventions that provide anthelmintic drug treatment as a core component of the joint and synergic control of helminthic diseases such as LF, ONCHO, SCH and STH. The manual focuses mainly on anthelmintic treatment, but other drugs used to eliminate other agents can be potentially associated to those mentioned in the manual; as a reference trachoma control through the SAFE strategy, combining drug treatment with hygiene and environmental management, can be associated with helminth control interventions to boost the overall health of affected communities.

***Monitoring drug coverage for preventive chemotherapy:***

This manual focuses on coverage by describing how data collectors at peripheral level, health workers and mid-level data managers can use the data they collect to assess progress, identify problems and take corrective action, in order to improve the program quality and success. The manual is designed to facilitate data integration and improve coordination of information management activities at field level, and promote collaboration between the diverse groups contributing to the global control of helminthiasis. It describes how data collectors at peripheral level, health workers and mid-level data managers can use the data they collect to assess progress, identify problems and take corrective action, in order to improve the program quality and success



***Evaluation of drug coverage for preventive chemotherapy (under development):***

This is a complementary manual providing a survey methodology for evaluating reported drug coverage. Evaluation is a crucial component of the national control program for fine-tuning a national treatment strategy according to the local epidemiological situations. Coverage surveys are needed to validate reported coverage and to take advantage of cost-saving opportunities for integration. This manual provides guidance on how to plan a coverage survey for PCT, conduct the survey; analyze data, summarize and present the results. The potential use of standardized international surveys as an additional avenue for evaluation of PCT is also presented.

As summarized above, substantial progress has been made with respect to developing tools for monitoring and evaluating PCT. All of these tools go a long way toward establishing the necessary standardized guidelines for integrated NTD control.

However, there are a number of issues that need further development as global NTD control efforts expand. For example, as discussed in the working paper on country selection prepared for this meeting (working paper 4), some countries may be at a disadvantage when it comes to competing for funding through a demand-driven approach or consideration through a needs-driven approach due to gaps in information and strategic planning. In line with the tiered approach to country selection, countries may have the opportunity to apply for preparedness grants under the Initiative when the magnitude and geographical details of prevalence have not been mapped sufficiently to provide the evidence needed for the programming of safe and effective large-scale integrated MDA.

Although the primary monitoring indicator is coverage, denominators for each disease vary considerably and information for denominators comes from a variety of different sources (e.g., registers and census data) and each source is used idiosyncratically to obtain the coverage rate. Thus, there can be as much diversity in monitoring approaches between as there are within each disease entity. The monitoring indicators currently lack a common or standard definition, and this affects the comparability of data. As such, common planning can be impeded as many of the assumptions and baseline data to relate the five diseases to one another may be lacking. Disparities are also reinforced by different donor requirements regarding reporting forms and different definitions regarding target populations, for example, breakdown of school-age populations.

**What countries need to do (to be ready):**

In order to access the emerging opportunities to support scaling-up of national coverage, countries are advised to compile the following country-specific information:

- i. Prevalence mapping
- ii. A National plan of Action for 5 or 10 years – including an M&E plan with targets (see Annex 1).

Both of these issues, along with additional issues for consideration are outlined below.

**Mapping**

Mapping the geographical distribution of NTDs is integral not only to assessing spatial patterns in the infection and disease distribution but also to stratifying endemic areas by infection and/or disease rate. To date, different NTD control programs have undertaken such distributional mapping of disease endemicity with varying degrees of completeness. For diseases for which an elimination goal has been set (LF and ONCHO), geographical delineation of transmission risk areas is mandatory.

However, many areas presumed to be endemic remain unmapped or the available epidemiological data has not been updated for some time. Additionally, due to the non-integrated manner in which such mapping is conducted, the co-endemicity of NTDs is generally not well defined. To introduce or scale-up an integrated approach, it is therefore important to gather up-to-date epidemiological data for each endemic country, and generate the maps in a relational manner in accordance to the type of PCT intervention required (i.e. “what-to-do” maps). These maps enable program managers to tailor resources and recommended drug combinations of interventions according to disease epidemiology at sub-national levels, and - combined with demographic data - enable reliable forecasting of drug requirements.

Countries will need to be supported to undertake and maintain stipulated mapping requirements as an integral part of strategic planning for nationwide integrated NTD control. Rapid assessment mapping methods may be used (see Annex 2). Comprehensive mapping plans should be incorporated into the national plan of action cost estimates for the control or elimination of NTDs. In their absence, existing endemicity and prevalence maps should be used in the interim while mapping processes are completed.

**National Plan of Action**

Multi-year planning is a key management tool for national programme managers. Developing comprehensive multi-year plans presents an opportunity to consolidate existing plans into a single document that addresses national priorities. A National Plan of Action should outline the key elements countries should include in the plan of action when developing multi-year plans for scaling up PCT delivery. These national plans should list the minimum requirements for PCT in a country, detailing why, where and how activities will be implemented. Such plans must also incorporate M&E activities that enable the analysis of local problems and the formulation of tentative solutions with local stakeholders. Countries are being provided with a proposed standardized format (see Annex 1) to enable them to present the various activities related to implementation of NTD control that are the responsibility of national authorities and budget them accordingly.

## **Elements of routine M&E:**

### **1. Drug Coverage**

Although many process indicators can be monitored leading up to high coverage with the recommended drug packages, one can assume that - if high coverage is obtained and adequately documented in a routine context- the monitoring of these process indicators becomes accessory. The main challenges for the comprehensive monitoring of drug coverage in PCT are: (1) to obtain reliable estimates of people in need of the different drug combinations or packages (denominators, in line with disease-specific epidemiology; (2) to establish a national and nation-wide system of standardized reporting with optimal use of collected information at the each hierarchical level of the system and a smooth flow of aggregated information up to the central level; and (3) provide a simple methodology on how to conduct a post-MDA coverage survey in order to validate reported coverage rates whenever indicated.

### **2. Severe Adverse Events**

Although SAEs are rare in NTD PCT programs, their monitoring and adequate management is an important issue going forward. Side effects - and especially the lack of timely and appropriate management - can severely damage the ability of the programs to reach the required 75-80% coverage targets. Standard reporting guidelines have been established, but are often not adhered to.

### **3. Drug Efficacy**

Currently NTD control programs do not routinely undertake steps to assure drug efficacy. However, as programs expand and drug delivery becomes more wide-spread, standard guidelines for addressing potential drug resistance should be established, especially for treating STH. WHO is currently working with various NTD partners to develop guidelines for best practice in drug efficacy monitoring.

### **4. Disease-specific impact assessment**

Guidelines for periodic disease-specific impact assessment have been established by the various disease-specific programs and initiatives. Although such assessments may be beyond the capacity of personnel and systems which are routinely implementing and monitoring PCT, they are within the capacity of national (disease-specific) managers and laboratories and are essential to adapt the implementation strategy to a changing epidemiological situation (scaling down of interventions - either through more spaced or more targeted treatments, or ending PCT where elimination targets have been met). Further normative work is needed to determine best practice with regard to exit strategies in PCT (see also section 2)

### **Summary**

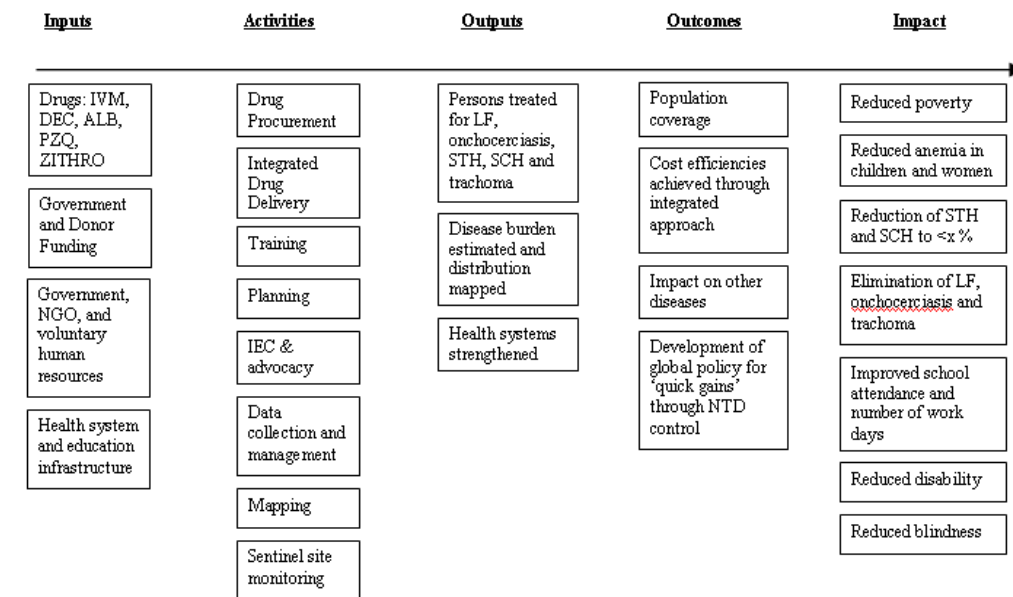
National programs need standardized technical guidelines that emphasize a coordinated, cost-effective approach to the implementation of elimination and control activities to provide a strong basis for measuring progress towards goals, assessing country needs, identifying gaps and recognizing priorities. Many tools have been developed, and are being refined and finalized. The next critical steps are operationalizing the guidelines to assure standard reporting across countries. A standardized format of Country Profile is proposed to summarize epidemiological data, PCT denominators and routine monitoring of interventions (see Annex 3)

**Section 2: Measuring additional parameters e.g. Impact, Efficiency and Sustainability**

There are significant opportunities for the Initiative to have an impact beyond control of NTDs, including impacting other health areas, education, and poverty reduction. It is clear from the breadth of activities taking place in countries in health and education that there are several promising areas for collaboration that should be pursued.

As integrated PCT programs scale up and more country programs are initiated and expanded, there is an opportunity to develop a strategic approach to global NTD control program M&E to allow NTD partners to track progress toward World Health Assembly and Millennium Development Goals. The value and cost-effectiveness of NTD control as a pro-poor strategy is increasingly recognized as a result of key research findings and successful program implementation in several countries. The availability of safe, effective treatments that can be integrated into streamlined annual mass distribution campaigns offers the public health community an important opportunity to significantly improve the health of the poor. Scaling-up implementation of recommended interventions could lead to sustainable decreases in poverty in some of the world's poorest countries. Further thought should be given to finding common indicators that go beyond measuring impact on disease and measure, for example, impact on school and workplace attendance. Figure 1 below outlines a proposed logical framework for a strategic approach for PCT programs that builds on established country systems and focuses on generating key information requirements of current donors and advocates for NTD control.

**Figure 1: Logic framework for the NTD Control Program**



**Other NTD activities (not included in matrix):**  
 LF morbidity control, eye surgeries, environmental control, vector control, hygiene, control for other NTDs e.g. trypanosomiasis.

Additional issues to be considered for measuring impact and sustainability are outlined below.

### **1. Measuring the Impact of Integration**

Integration of PCT programs is assumed to provide efficiency gains over individual disease control programs, therefore offering an opportunity to extend the reach of limited resources for NTD and achieve greater impact. In addition, integration is assumed to streamline service delivery for both providers and clients. On-going cost studies in several countries will provide evidence of the cost of integrated PCT implementation. However, NTD control programs have yet to establish conclusively whether integration is more cost-effective, or whether the assumed benefits of integration are being achieved. As integrated NTD control is being delivered through various models, it will also inform global policy to have assessments of the relative cost of implementation and effectiveness in achieving high rates of coverage of various models. USAID's NTD Control Program has encountered several key issues associated with M&E for integrated programs.

One such issue relates to impact assessments. There are major differences in how to evaluate and measure impact of PCT on disease burden. The current methodologies reflect the differing characteristics of the diseases rather than the common control strategy. Each has its own combination of biological and vector-related assessment techniques that require different technical, clinical, and epidemiological knowledge and skills. These represent a fairly high degree of specialization and expertise, which is often an incentive for vertical approaches rather than integrated approaches. However, it may be possible to integrate the logistics of evaluations by assigning the M&E activities to a common team and building capacity in local health facilities to undertake the microscopy analysis for impact assessments, including blood and stool examinations, as is being done by SCI in Uganda, Burkina Faso, and Niger.

More work is also needed to clearly demonstrate the comprehensive impact - both in terms of improvement in health and well-being and in terms of socio-economic benefits - of NTD control in general and PCT interventions in particular. Such information will greatly facilitate the economic analysis (cost-benefit, cost-effectiveness) of NTD control and integration.

### **2. Sustainability**

The Initiative is premised on the expectation that MDA is within the capacity and mandate of country counterparts, and within a limited period of time can result in the elimination or control of the targeted NTDs. To be sustainable, control programs must be nationally owned, and strategies must match the national health priorities and capacities. As control or elimination is achieved, resources can be reallocated to new settings or new diseases. For example, in 2008 the Ghana Health Service and the Carter Center conducted impact surveys in Ghana where Zithromax had been distributed for 3 or more consecutive years and were able to stop MDA targeting trachoma in many districts. M&E systems must document these critical aspects of sustainability: progress of the country program's implementation strategies, and identification of milestones at which control pressure can be diminished or end-point for PCT or elements of it when elimination targets have been achieved.

### **3. Systems Strengthening**

The ways in which a health system stands to be strengthened by PCT will depend on how it is planned and implemented. Potential measures include: making quality population data available within primary health care centers or for other health programs at community level; building human capacity; strengthening accounting systems; establishing cadre of school teachers and/or community volunteers who are used for other health programs; improving

communication between health workers and the community; strengthening laboratories; etc. Moving forward, greater efforts need to be made to measure progress toward capacity development and assuring leadership by the host country.

#### **4. Exit Strategies**

Country programs urgently need guidance for scaling down or ending PCT where elimination or control targets have been met. Burkina Faso and Ghana have both been providing PCT for more than seven years—the estimated period required for elimination. Although sentinel site data indicate that LF has not been eliminated everywhere in these countries, there is increased discussion involving the LF community and the drug donation programs about possible transition away from MDA to more targeted treatment where transmission continues (perhaps due to cross-border infection or migration of vectors or infected humans).

#### **5. Increased uptake of other public health interventions (e.g., bednets) and improvements in other disease burdens**

Integrated vector management is known to have an impact on skin diseases and there is some evidence that de-worming also impacts on malaria and HIV. Going forward, impact on skin diseases could be integrated into sentinel site monitoring. Information on HIV and malaria rates should be already available from other sources – however, it maybe hard to tease out the additional impact of NTD control if other malaria/ HIV specific control activities are also ongoing. Going forward a working group should evaluate these and other possible outcome measures to decide which ones are best to focus on and how they would be calculated.

### **Section 3: An operational example: M&E in USAID's NTD Control Program**

Since September 2006, and in-line with WHO's recommendations, USAID's NTD Control Program has focused on the distribution of therapeutic drugs whose impact on reducing infection prevalence has already been demonstrated as the primary means of reducing the global burden of NTDs. The NTD Control Program has developed a number of complementary M&E tools that are being used and assessed in its eight country programs, including:

- NTD Control Program M&E Plan: This document describes in detail the technical approach, context and specific indicators that will be used by the NTD Control Program to report to USAID on the progress toward the Programs performance goals.
- Semi-annual reporting forms: These forms provide a streamlined reporting format for grantees in accordance with the indicators laid out in the NTD Control Program M&E Plan and draws from the targets described in the annual country-specific workplan.
- MDA (PCT) reporting forms: These Excel forms give detailed instructions for grantees on how to complete the results of MDA campaigns. They are designed to provide consistent information across the NTD Control Program countries, including automatic calculation of various different types of coverage rates. Available in English and French, these Excel forms give detailed instruction on how they should be completed and are able to automatically calculate various different types of coverage rates, providing program managers with instant feedback. (Available in English and French).

- **Baseline reporting forms:** These forms collect information on disease distribution by districts, number of persons at risk of the different diseases and historical information on previous PCT campaigns.
- **Access database.** This database is designed to collect, analyze and produce reports based on information collected using the three instruments listed above, namely, semi-annual reports, PCT reporting forms, and baseline reporting forms.
- **Post MDA survey protocol.** This manual was designed to provide guidance on how to conduct a post MDA coverage survey in order to validate reported coverage rates. The survey was implemented in 4 countries and a report which includes results of these surveys as well as recommendations for improving the survey design and manual is being finalized. Available in English and French.
- **Cost study protocol for Haiti.** Based on a multi-country study, led by the Gates Foundation, the NTD Control Program has designed a study for measuring cost effectiveness, including cost per person treated. Data collection is now under way in Haiti. Available in English and French.

The NTD Control Program has prepared these tools in close collaboration with WHO. The program has based all tools on the existing guidelines established by WHO, and tailored them to report against USAID's reporting requirements and indicators. The NTD Control Program continues to refine and modify the tools to reduce duplication in reporting requirements for country program managers. It attempts to utilize the existing WHO country reports and adds only minimal additional requirements as needed.

## Synthesis and Discussion

### Implementation and in-country partnership

Partnerships between governments and institutions in the private and charitable sectors are proving quite indispensable in health-care delivery, regardless of gross national income per capita of a country. As with most health challenges, the control of NTDs using PCT requires strong partnerships across sectors, which are differently resourced and have different perspectives. At country level, various partners in NTD control are increasingly recognizing the need for joint planning, in direct collaboration with ministries of health and other sectors. Such in-country partnership can set and reach country-specific objectives.

Weakly coordinated partnership activities overburden developing countries with multiple delivery systems, cumbersome reporting requirements, duplication of efforts, which then result in poor program outcomes. Control of NTD will require coordination and sustainability on the part of both donors and national governments, and a standardized monitoring and evaluation mechanism for holding all partners accountable for meeting agreed commitments.

### Conclusion

Controlling NTDs is one of the more convincing ways to “make poverty history” through affordable, pro-poor, effective, and tested strategies. There are many people who do not have HIV or tuberculosis and have survived malaria, but are nonetheless permanently polyparasitized by debilitating, disabling, and sometimes fatal conditions. Despite the magnitude of suffering experienced by an estimated 1.2 billion affected by NTDs, these populations have low visibility, in part due to the paucity of data to accurately quantify the

problem in public health terms. This translates into a low profile for NTDs when public health priorities and health budgets are set.

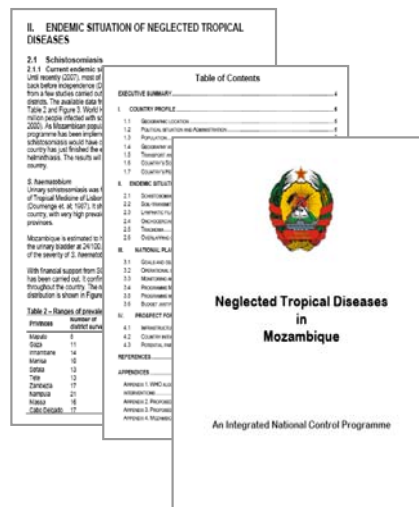
The integration of disease-control programs using PCT is a feasible and cost-effective way to improve the quality of life for millions of people. To be sustainable, control programmes must be nationally owned, strategies must match the national health priorities and capacities.

Existing delivery systems should be used in a complementary manner to increase operational efficiency, and donor agencies and NTD partners should be geared towards filling gaps and improving what is not yet within the capacity of national systems, rather than substituting these systems. Every effort should continue to be made to ensure that the necessary evidence is generated to guide best practice in terms of programme direction at country, regional and global levels.

## ANNEX I: National plan of Action

A standard national Plan of Action constitutes a concise summary (maximum 10 pages) with four main sections:

1. **Country specific background information:** required to understand the rest of the plan including:
  - i. brief history of NTD control in the country
  - ii. administrative country map
  - iii. basic demographic data
  - iv. population at-risk, by NTD disease
  - v. associated drug requirements, per year
2. **Situation analysis:** of 4 – 5 NTDs, depicting:
  - i. disease-endemicity maps
  - ii. related “what-to-do” maps, described as M, T interventions.
3. **Implementation procedures:** described in terms of:
  - i. Integration: coordination between NTD programmes, and other programmes delivering large-scale interventions to communities.
  - ii. Capacity building and health system strengthening
  - iii. Monitoring and evaluation
  - iv. Social mobilization
  - v. Workplan, with a timeline
4. **Budget summary:** showing:
  - i. decentralization, with specification of resource needs at different levels
  - ii. specification of projected drug requirements, for a period of 5 year or 10 years
  - iii. what resources already exist, as provided by government and other partners
  - iv. the deficit of resources required to enable the full implementation of the integrated POA.
5. **Annexes** showing how the information in the summary was generated



Though standardized, the above format is not prescriptive. The suggested categories would be developed and presented within the existing: (a) national health policies, development plans and poverty reduction strategies; and (b) administrative, planning, implementation and monitoring structures and processes in individual countries. Organizations and partners are encouraged to support the development of national plans in keeping with this format.

## Annex 2: Summary of disease-specific mapping methods

Disease	Rapid Assessment area	Rapid assessment unit	Tool	Surveyed population	Sample size per Rapid assessment unit	Indicators
Urinary schistosomiasis	Within a country, all areas where disease transmission is suspected	All schools in areas likely to be endemic	Questionnaire for history of macrohaematuria	School-age children	50 Children from the 3 <sup>rd</sup> – 5 <sup>th</sup> classes in each school	Prevalence of high infection
Soil-transmitted helminthiasis	Within a country, all areas where transmission is suspected (such areas should be divided ecologically homogenous zones)	5 schools in each ecological zone.	Kato-Katz stool examination	School-age children	250 (50 children from the 3 <sup>rd</sup> -5 <sup>th</sup> class of each of the 5 schools).	Prevalence and intensity of infection.
In addition to STH survey: intestinal schistosomiasis	Within a country, all areas where the disease is suspected	A sample of schools in each area.	Kato-Katz stool examination	School-age children	50 children from the 3 <sup>rd</sup> -5 <sup>th</sup> class of each of the schools	Prevalence and intensity of infection.
Lymphatic filariasis	Within a country, all areas where disease transmission is suspected based on altitude and previous reports and surveys.	At least 1 village or community per implementation unit (IU) selected randomly supplemented with additional villages at 50 km distance. Should all the random villages be negative, confirm in a check village from an area where transmission is highly suspected (IU)	Antigenaemia is the test of choice (immuno Chromotographic test – ICT)	Adults aged 15 years and older	110 persons, stop at 50 if prevalence higher than 20% (ie if 10 or more are positive in the first 50)	Based on prevalence of $\geq 1\%$ in any sample village, the IY is targeted for MDA)
Onchocerciasis	Within a country, areas showing uniform hydrology in relation to potential breeding sites for the <i>Simulium</i> vectors (called Biogeographical zones – BGZ)	A sample of high-risk and low risk villages and communities in each BGZ)	Clinical examination for the presence of onchocercal nodules	Adults aged 20 and older	50 males per village	Prevalence of onchocercal nodules ( $\geq 1\%$ in any sample village)
Blinding Trachoma	Within a country, all areas where disease transmission is suspected	District or village	Trachoma Rapid Assessment methodology	Children 1-9 years old (acute trachoma) and adults (trichiasis)	50 children per village (acute trachoma) and all adults (trichiasis) in the assessment unit	Number of TFTI children, number of TT cases

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### Annex 3: Example of a Country profile - Example, Ghana - summarizing base-line data and routine monitoring of interventions

GHANA
2006

The control of neglected tropical diseases represents a major challenge to those providing health-care services in the endemic countries. The purpose of this country profile is to provide public health professionals with the most recently available epidemiological information on diseases for which a strategy and tools to implement large-scale preventive chemotherapy exist.

This summary outlines the burden of targeted diseases and program implementation outcomes in Ghana.

**BASIC COUNTRY DATA**

Total population: 23,008,442  
 Population 1 – 4 years: 2,823,786  
 Population 5 – 14 years: 6,686,077  
 Population female 15 – 49 years: 6,678,000

Population at risk: LF<sup>1</sup>: 10,510,647  
 Population at risk: DOH<sup>2</sup>: 23,008,442  
 Population at risk: OTM<sup>3</sup>: 8,329,863  
 Population at risk: ONCH<sup>3</sup>: 2,900,000  
 Population at risk: Trachoma

Development status<sup>4</sup>: Non LDC  
 Income status<sup>5</sup>: LIC

**School enrollment data**  
 Gross enrollment rate  
 QRS enrollment ratio (gross)

Source: United Nations, Population Division, The World Population Prospects - the 2006 revision, New York, 2007.  
 UNESCO Institute of Statistics, 2003 Assessment.  
<sup>1</sup> Population at risk of infection. <sup>2</sup> Population at risk of endemicity. <sup>3</sup> United Nations classification. <sup>4</sup> World Bank classification.

PREVENTIVE CHEMOTHERAPY TREATMENTS IMPLEMENTED IN PERIOD UNDER REVIEW: JANUARY - DECEMBER YEAR				
POT disease	Endemicity status (endemic/non-endemic)	Disease distribution (generalized/focalized)	Mapping status (Complete/progress/not done)	Implementation status (Complete/in-progress/progress not done)
Lymphatic filariasis	Endemic	Focalized	Complete	In progress
Schistosomiasis	Endemic	Generalized	Complete	In progress
Soil-transmitted helminthiasis	Endemic	Focalized	In progress	In progress
Onchocerciasis	Endemic	Focalized	Complete	In progress
Trachoma	Endemic	Focalized	Complete	In progress
Loiasis	Endemic			

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2006 DRAFT
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Maps of infection/disease endemicity

Maps of preventive chemotherapy implementation required

Preventive chemotherapy implementation

Disease-specific epidemiological coverage

Monitoring decline of disease endemicity

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