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# The Added Value of Long-Term Technical Assistance to National Malaria Control Programs

## Phase I Assessment Report



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### **About the LMG Project**

Funded by USAID, the Leadership, Management and Governance (LMG) project (2011-2016) collaborates with health leaders, managers, and policymakers at all levels to show that investments in leadership, management, and governance lead to stronger health systems and improved health. The LMG project embraces the principles of country ownership, gender equity, and evidence-driven approaches. Emphasis is also placed on good governance in the health sector – the ultimate commitment to improving service delivery -- and fostering sustainability through accountability, engagement, transparency, and stewardship. Led by Management Sciences for Health (MSH), the LMG consortium includes Amref Health Africa; International Planned Parenthood Federation (IPPF); Johns Hopkins University Bloomberg School of Public Health (JHSPH); Medic Mobile; and Yale University Global Health Leadership Institute (GHLI).

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*Photo credit: Olivier Byicaza Nk, Case management workshop participants in Sierra Leone, 2017*

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# Table of Contents

Acronyms.....	5
Glossary .....	6
Executive Summary .....	7
Background.....	10
Assessment Purpose .....	13
Methodology .....	14
Conceptual framework.....	14
Design .....	14
Study sites .....	16
Data collection.....	17
Ethical considerations.....	17
Analysis.....	17
Quantitative Statistical Analysis .....	17
Qualitative Data Analysis .....	18
Study limitations and threats to validity .....	18
Results .....	21
Sample characteristics .....	21
Study Results .....	23
QUESTION 1: Have LTAs carried out activities and actions that can be expected to build NMCP capacity to carry out the national strategic plan (and therefore implement the Global Fund grant)? .....	23
QUESTION 2: What effect has LTA support had on individual NMCP staff capacity to carry out their job functions, coordinate internally, and address challenges?.....	27
QUESTION 3: What effect has LTA support had on the NMCP's capacity to coordinate, lead, and manage the implementation of the Global Fund grant, according to NMCP staff? .....	33
QUESTION 4: What effect has LTA support had on the capacity of the NMCP to coordinate and regulate performance of Global Fund grants, according to NMCP partners? .....	35
QUESTION 5: Has NMCP capacity to implement the national malaria control strategy improved during the LTA's tenure? .....	38
Discussion.....	42
External Context.....	43
Internal Context.....	44
Long-term technical advisor assessment	

Intervention Attributes.....	45
Future Research Priorities and Implications for Technical Assistance .....	46
Conclusion .....	47
Annex I: Survey Instrument.....	48
Annex II: Example LTA workplans .....	76
Bibliography.....	77

## Acronyms

<b>CCM</b>	Country Coordinating Mechanism
<b>GFATM</b>	Global Fund to Fight AIDS, Tuberculosis and Malaria
<b>FGI</b>	Focus group interview
<b>HR</b>	Human Resource(s)
<b>HRH 2030</b>	Human Resources for Health in 2030
<b>KII</b>	Key informant interview
<b>LDP+</b>	Leadership Development Program Plus
<b>LMG</b>	Leadership, Management, and Governance project
<b>LTA</b>	Long-term technical assistance advisor
<b>MCSP</b>	Maternal and Child Survival Program
<b>MOH</b>	Ministry of Health
<b>MSH</b>	Management Sciences for Health
<b>NMCP</b>	National Malaria Control Program
<b>OCA</b>	Organizational Capacity Assessment
<b>PMI</b>	President's Malaria Initiative
<b>PPFP</b>	Post-partum family planning
<b>PR</b>	Principal Recipient (Global Fund grant)
<b>SIAPS</b>	Systems for Improved Access to Pharmaceuticals and Services
<b>SR</b>	Sub recipient (Global Fund grant)
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>USG</b>	United States Government
<b>WHO</b>	World Health Organization

## Glossary

**Coefficients of correlation:** A statistical measure of the degree to which changes to the value of one variable predict change to the value of another. In positively correlated variables, the value increases or decreases in tandem. In negatively correlated variables, the value of one increases as the value of the other decreases. (Wert, Neidt, & Ahmann, 1954)

**Confidence interval:** “A range of plausible values for a population parameter with a level of confidence attached.” (Sullivan, 2012)

**Difference-in-differences:** A methodology that helps draw a causal inference. In this methodology, outcomes are observed for two groups for two time periods, pre- and post-intervention. One group is exposed to an intervention while the other is not. The difference between post and pre-intervention in the control group is subtracted from the difference in the intervention group. It removes biases in the post period comparisons between the intervention and control group that could result from permanent differences between the groups, as well as biases from comparisons over time in the intervention group that could be the result of a time trend. (Guido Imbens, 2007)

**F value:** Examines the overall significance of a regression model by testing the null hypothesis that all coefficients are equal to zero. The F value is the ratio of the mean regression sum of squares divided by the mean error sum of squares. Its value will range from zero to an arbitrarily large number. The value of Prob(F) is the probability that the null hypothesis for the full model is true (i.e., that all of the regression coefficients are zero). (Nonlinear Regression and Curve Fitting, 2017) (Regression Analysis: Stata Annotated Output, 2017)

**Ordinary least squares:** “A generalized linear modeling technique that may be used to model a single response variable which has been recorded on at least an interval scale. The technique may be applied to single or multiple explanatory variables and also categorical explanatory variables that have been appropriately coded.” (Hutcheson, 2011)

**P-Value:** “The exact significance of the data, the likelihood of observing the sample data if the null hypothesis is true, or the smallest level of significance where we still reject H0 (null hypothesis).” (Sullivan, 2012). A low p-value (< 0.05) indicates that you can reject the null hypothesis. In other words, a predictor that has a low p-value is likely to be a meaningful addition to your model because changes in the predictor's value are related to changes in the response variable. (Frost, 2013)

**Secular trend:** Changes over a long period of time, generally years or decades. (Glossary of Epidemiology, n.d.)

**Social desirability bias:** The tendency of some respondents to report an answer in a way they deem to be more socially acceptable than would be their "true" answer. They do this to project a favorable image of themselves and to avoid receiving negative evaluations. The outcome of the strategy is over reporting of socially desirable behaviors or attitudes and underreporting of socially undesirable behaviors or attitudes. Social desirability is classified as one of the respondent-related sources of error (bias). (Lavrakas, 2008)

**Standardized coefficient ( $\beta$ ):** Describes the change in Y that is associated with a unit change in X.  $\beta$  provides an indication of the average expected change. (Hutcheson, 2011)

## Executive Summary

In the global fight against malaria, National Malaria Control Programs (NMCPs) play a central role in leading national-level malaria control efforts. In order for NMCPs to fulfill this role, it is essential that individual NMCP staff members and NMCPs as organizational units possess the knowledge, skills, behaviors, and attitudes required to successfully lead, coordinate, and manage actors at all levels of the health system. In an effort to support NMCPs in becoming fully capable of both directing and implementing national malaria control strategies, and capable of effectively managing Global Fund malaria grants, the United States President's Malaria Initiative (PMI), with funding from the United States Government (USG) Global Fund 5% technical assistance set aside, has placed long-term technical assistance advisors (LTAs) with NMCPs in nine countries. These LTAs are placed for up to four years, and work with NMCP staff to identify and address capacity gaps. The LTA scope of work is broad, with LTAs having supported NMCPs to:

- Improve human, financial, and material resource management;
- Develop and direct national policies and norms for malaria control;
- Mobilize stakeholders and funding for national malaria control coordination; and
- Strengthen supply chain management for malaria commodities.

LTAs provide this support with ongoing assessment, feedback, direct technical assistance, training, advising, and coaching.

This report summarizes the findings of an assessment that aimed to evaluate the added value of LTA to NMCPs. The assessment examined the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it relates to improved management and implementation of Global Fund malaria grants. The LTAs included in this assessment are managed and implemented by Management Sciences for Health (MSH) through the USAID-funded Leadership, Management and Governance project (LMG). This first phase of the assessment research included LTAs and NMCPs in Cameroon, Côte d'Ivoire, Guinea, and Liberia.

In the four countries, data were collected after the LTA had been providing support for around three years. Quantitative data included Global Fund grant disbursement rates, burn rates, grant ratings, and performance indicators, as well as NMCP staff surveys. Focus group discussions and interviews provided data about the effect of LTAs on building NMCP capacity to manage and lead national malaria efforts, as well as the barriers and facilitators of NMCP performance.

Results showed that participants unanimously agreed LTA support has positively influenced NMCPs' ability to manage, coordinate, and lead national malaria efforts. NMCP staff members reported having greater confidence in their abilities to carry out their job functions, coordinate internally, coordinate national malaria partners, and manage Global Fund malaria grants. Staff members themselves attributed 24% of this increase in confidence to the sustained support provided by LTAs, whereas 10-15% is conventionally used as the desired measurable result in the public health behavior change context. Feedback and experiences provided during key informant interviews with NMCP directors and NMCP staff focus group discussions confirmed the survey results. NMCP staff members positively regard the



LTA support, and feel the assistance, advice, training, and coaching they provided has positively impacted staff motivation, technical competencies, coordination, leadership, and grant management.

NMCP malaria partners who were interviewed (USAID, Global Fund Grant Principal Recipients and Sub Recipients, SRs, WHO, UNICEF, Country Coordinating Mechanism) supported this in their observations. They noted that, over the past several years, NMCPs have more actively led and coordinated malaria control efforts, improved their responsiveness and the quality of communication with partners, and have generally been able to manage the malaria grant and activities well. Partners felt that the LTAs had a role to play in these improvements: they had been able to foster regular and systemic internal coordination at the NMCP; foster regular planning; motivate and support staff; propose and support implementation of solutions to bottlenecks and challenges; and introduce tools and training that the NMCPs will continue to use.

Despite these findings, the assessment did not find a statistically significant, positive relationship between LTA inputs and grant performance outcomes; nor did we find a relationship between the LTA inputs and changes in staff confidence. These analyses, however, tended to be under powered, which indicates that a larger sample size should be analyzed before coming to conclusions about the relationship. We did, however, see a statistically significant and modest positive relationship between self-reported improvements in staff confidence to fulfill their job functions, and several grant performance outcomes. These tests were adequately powered, and lead us to conclude that improving staff confidence has an effect on grant performance.

To better understand the potential links between NMCP staff and organizational capacity, and Global Fund grant management and performance, we examined data on the external and internal contexts in which NMCPs operate and the characteristics of the LTA intervention. We found that in the external context, government structure, the Global Fund grant management structure, procurement mechanisms, lack of financial resources within the health system, and outside events (such as the Ebola outbreaks in 2014/2015), have an effect on how efficiently and effectively NMCPs manage and lead malaria activities. Internally, NMCP staff and partners noted that work climate and morale at NMCPs has a positive effect on grant management and overall

## **EMERGING THEMES FROM FOCUS GROUPS AND INTERVIEWS**

LTA credited for a role in:

- Identification of staff capacity gaps
- Improved staff coordination and communication
- Improved understanding of staff's roles
- Improved internal planning and coordination (meetings, follow up)
- Improved work climate and team work, staff initiative, and problem solving with LTA-led LDP+ training
- Improved understanding of Global Fund rules, regulations, and requirements
- Improved planning through annual, quarterly, and monthly work plans
- Improved grant ratings
- Improved engagement with districts, health facilities, and other partners, resulting in improved data collection activity implementation, and grant performance

malaria control work, but also noted that human resource issues sometimes negatively impact NMCP capacity.

For the LTA intervention characteristics, we found that the experience and attitude of the LTA both allowed NMCP staff to trust the LTA's insight and judgment, and allowed them to learn from LTAs. Involving NMCP leadership in identifying areas of need prior to recruiting an LTA allowed NMCP leaders to feel that they had ownership of and investment in LTA support. Participants also were in strong agreement that the duration of LTA support was a key attribute of LTA success in building capacity. They felt that in order for LTA support to achieve lasting improvements, LTAs should work with NMCPs for a minimum of three years.

Limitations of the study included: the small sample size (31 NMCP staff surveys), lack of end-line organizational capacity assessment (OCA) data, limited quantitative measures, issues related to the outcome indicators used to measure grant management performance, and limited quantitative measures of the links between capacity-building technical assistance and improved organizational capacity. Further research with a larger sample, and more precise management and grant performance measures are needed to provide generalizable results and information on the expected effect of LTA support on NMCPs. Several of these assessment limitations will be addressed in Phase II of the research, which will gather data from five additional countries.

Despite the study limitations, our findings suggest that LTAs play a role in building individual staff and overall organizational capacity of NMCPs in the following ways: working daily with NMCPs over a sustained period; providing expertise and guidance on Global Fund grant management; introducing leadership and management tools and resources (namely the Leadership Development Program); supporting NMCP staff to effectively coordinate with malaria stakeholders; working with NMCP staff to build internal governance systems and processes; and supporting the application of leading, managing, and governing practices to malaria control efforts.

The question of how and to what extent long-term technical assistance adds value to other global malaria control investments is particularly complex and only partially addressed by this assessment. The nature of LTA support is difficult to quantify and to connect directly to Global Fund grant performance. However, qualitative data from this assessment suggest the sustained assistance, training, advice, and coaching provided by LTAs contribute to NMCP staff and NMCPs as organizations become more capable of leading and managing malaria control efforts, and also suggest that those improvements facilitate the effective and efficient management of Global Fund malaria funding.

## Background

The LTA model of technical assistance is designed to work with NMCP staff to develop skills and knowledge, and promote practices and behaviors that will lead to organizational improvements and increase NMCPs' ability to lead national malaria control efforts and manage Global Fund grants. The assessment examined the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it impacts the management and implementation of Global Fund malaria grants.

The assessment was supported by the President's Malaria Initiative (PMI), with funding from the United States Government (USG) Global Fund, and 5% technical assistance set aside, through the Leadership, Management, and Governance National Malaria Control Capacity Building project (LMG/NMCP).

Building the capacity of leaders and staff to coordinate, manage, and implement malaria control efforts is essential to building strong and capable NMCPs, which are a key player in the global fight against malaria. Efforts aimed at equipping NMCPs to fulfill core functions have often focused on short-term technical assistance, which can serve to fill specific technical gaps, but often cannot address underlying management and leadership needs. The participatory, sustained LTA approach, which emphasizes ongoing support and feedback through assistance, advising, training, and coaching, is particularly well suited for incrementally building staff knowledge, skills, attitudes, and behaviors.

### Long-term advisor model

Since October 2013, PMI has been providing long-term technical assistance (TA) to NMCPs using an LTA model. This model is characterized by an LTA experienced in Global Fund grant management, organizational capacity building, and health systems strengthening, seated with NMCPs in each country. The LTA model has been employed by PMI to ensure the effective management and implementation of Global Fund malaria grant investments in non-PMI focus countries, with the exception of Liberia.

The LTA model is designed to develop NMCP staff skills and knowledge, and promote practices and behaviors that will lead to organizational improvements and increase NMCPs' ability to lead national malaria control efforts and manage Global Fund grants. The assessment examined the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it impacts the management and implementation of Global Fund malaria grants.

NMCPs that receive the LTA are typically in those countries where Global Fund malaria grant performance is weak, NMCP organizational capacity to improve grant management is low, and where the Ministry of Health has expressed an interest in receiving LTA support to the USAID mission in country.

Prior to recruiting the LTA, the implementing partner organization works with the NMCP and USAID mission in each country to identify priority needs to tailor responsibilities and qualifications in the LTA job description. Upon arrival in country, LTAs conduct an organizational capacity assessment (OCA) of the NMCP, to identify areas of strength and weakness. The results of these assessments

inform the development of the LTA's annual work plan and performance monitoring plan. Once an OCA has been completed, LTAs develop annual work plans and performance monitoring plans based on findings of this exercise. Annual work plans also take into account annual NMCP priorities and needs, and tailor support accordingly. For example, an LTA present during the development of the Global Fund New Funding Model (NFM) concept note included specific activities to support NMCPs throughout this process.

Each work plan is tailored to the specific NMCP; however, several capacity-building activities are common across NMCPs, including the Leadership Development Program Plus (LDP+). Developed by Management Sciences for Health (MSH), the LDP+ equips people at all levels of an organization with the skills to lead, manage, and govern programs. LDP+ participants attend a series of intensive trainings and also work in teams for six to eight months to create a common vision for addressing real workplace challenges and to implement an action plan to achieve measurable results.

PMI-supported LTAs since 2013 have been managed under four mechanisms: the Leadership, Management and Governance project (LMG), the Systems for Improved Access to Pharmaceuticals and Services project (SIAPS), and now Health Resources for Health in 2030 (HRH 2030), and the Maternal and Child Survival project (MCSP). The country NMCPs that have received LTAs, start dates, and the managing mechanisms are displayed below in Table 1:

**TABLE 1: START, AND MECHANISM**

Country	Start	Mechanism
Guinea	September 2013	LMG
Liberia	January 2014	LMG
Côte d'Ivoire	January 2014	LMG
Cameroon	April 2014	LMG
Burundi	September 2014	LMG
	August 2016	
Sierra Leone	May 2015	LMG
	June 2016	
Niger, Supply Chain	August 2015	SIAPS, HRH2030
Côte d'Ivoire, Supply Chain	November 2015	LMG
Nepal	April 2016	MCSP
Nepal, Supply Chain	September 2016	MCSP
Chad	February 2017	MCSP

### BOX 1: THE LEADERSHIP DEVELOPMENT PROGRAM

An updated version of the original LDP, LDP+ includes several new features, such as the establishment of a governing body to facilitate endorsement from health decision-makers; alignment with national priorities; the inclusion of marginalized groups and persons with disabilities; and a focus on gender equity. LDP+ empowers teams, enhances critical thinking skills, results in measureable improvements, and transforms individuals' and teams' behavior and way of working. A 2016 study of LDP+s with postpartum family planning (PPFP) service providers in Cameroon found that the LDP+ had a strong effect on both individual practices and on PPFP service delivery outcomes (Monita Baba-Djara, 2016).

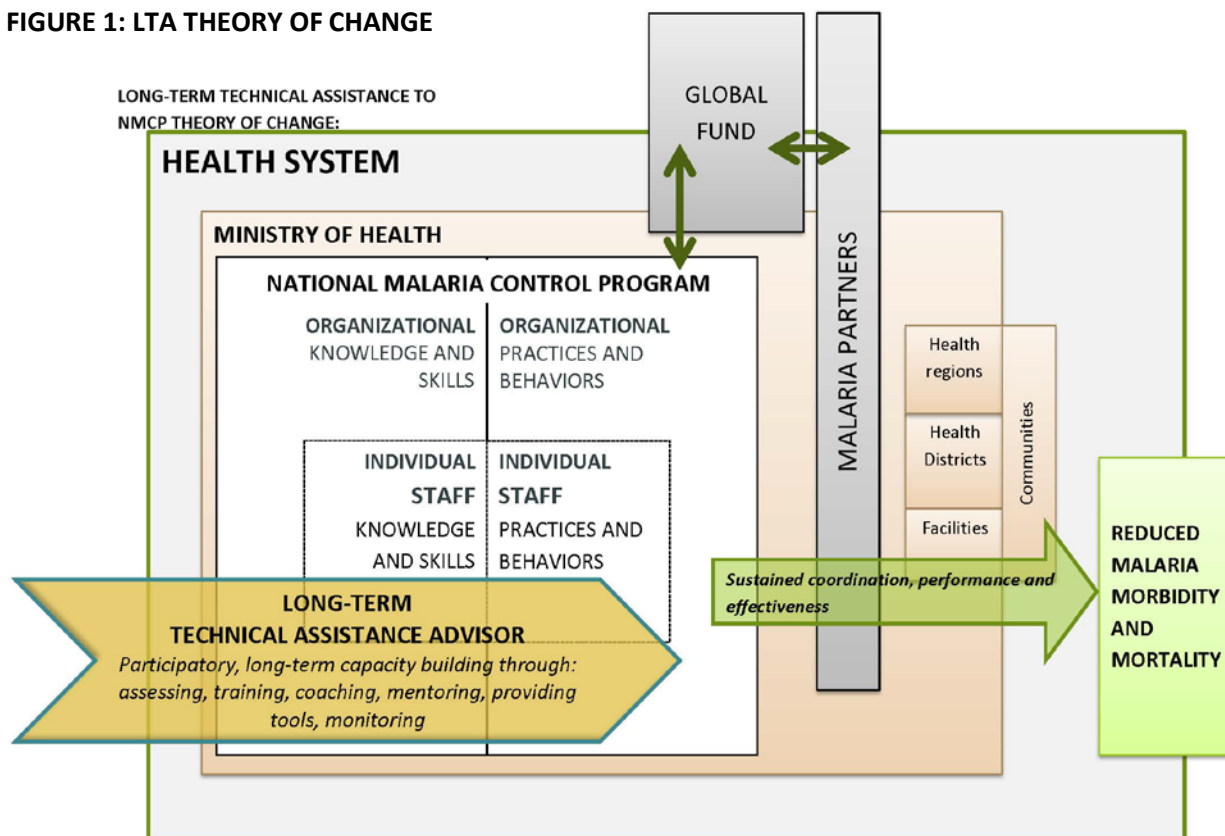
## LTA conceptual framework

While specific activities in each LTA's work plan differ based on the particular needs of the NMCP, LTAs apply a similar approach to achieve their project-specific objectives of building NMCP capacity. The focus on assisting and building capacity of NMCPs is rooted in the belief that **functioning NMCPs are essential to sustained, coordinated, and effective malaria control, and eventually, malaria elimination**. Tasked with managing, coordinating, and leading national malaria control efforts, "well-functioning NMCPs are key to the success and sustainability of the global effort against malaria" (Fred Rosenweig, 2008). NMCPs require the skills and organizational capacity to effectively manage resources and fulfill core functions, which include the following:

- Provide ongoing strategic direction
- Coordinate and oversee the malaria control activities of partners and implementing organizations at all levels, including districts
- Facilitate the development of malaria control policy
- Set standards and norms, and develop indicators to monitor the progress of program implementation
- Mobilize and coordinate external funding, and ensure effective fiscal management of funds (internal and external) allocated to the program
- Support capacity building and other activities at the subnational (regional and district) levels
- Promote outreach and advocacy for malaria control (ibid)

LTAs provide technical and ongoing coaching and mentoring to NMCP staff and leaders, with the goal of leaving the NMCP more capable of implementing the national malaria control strategy and managing Global Fund investments. The model applies an interactive approach to learning and knowledge, and emphasizes knowledge transfer and diffusion, experiential learning, coaching, and behavior modeling (D. Daniel Sokol, 2008). LTAs carry out participatory, long-term capacity building work with NMCPs through assessing, training, coaching, mentoring, providing tools, and monitoring application of new learning. The theory of change for this model of capacity building is displayed in Figure 1. It hypothesizes that malaria morbidity and mortality will decrease if NMCPs effectively lead and coordinate partners to carry out the national malaria control strategy (as funded by the Global Fund malaria grant). NMCPs will be able to do this if they routinely apply technical knowledge and skills using leadership, management, and governance practices and behaviors, at both the individual staff level and the organizational level. The LTA model includes sustained support at both of these levels, through participatory capacity building, which LTAs do by assessing, training, coaching, mentoring, providing tools, and monitoring progress over a longer period, usually 18 months to three years.

**FIGURE 1: LTA THEORY OF CHANGE**



## Assessment Purpose

The purpose of this assessment was to learn how current PMI-supported LTAs built individual staff and organizational capacity of NMCPs, and understand the link between their support and increased NMCP capacity to manage and implement Global Fund malaria grants, and the link between improved NMCP capacity and better managed Global Fund malaria grants.

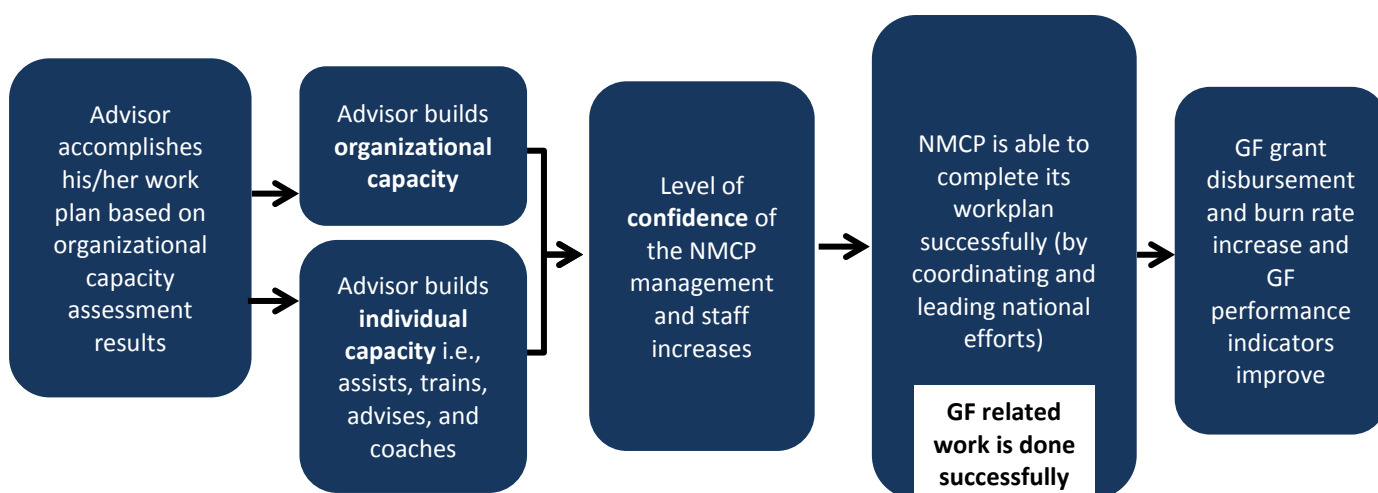
While embedded LTAs as a model for technical assistance has been around for some time, the anatomy and impacts of the approach have rarely been examined. The findings of this assessment serve to inform U.S. Government Global Fund technical assistance and test the hypothesis that long-term technical assistance aimed at building NMCP capacity results in sustained malaria control coordination and effectiveness. The findings may also be used to inform broader USG programming and policy knowledge on the use of long-term technical assistance to build capacity of other national disease programs, and other sectors.

# Methodology

## Conceptual framework

This assessment is designed around a subset of the larger theory of change, and examines the assumed causal pathways between the LTA and improved grant performance. According to this conceptual framework, the LTA embedded in the NMCP accomplishes his or her work plan that consists of building individual and organizational capacity in the NMCP. LTAs build individual capacity by training, assisting, advising, and coaching the NMCP manager & staff. As a result, the level of confidence of the NMCP management and staff to execute their responsibilities, coordinate, and lead increases. With capable and empowered staff, the NMCP is able to complete its work plans successfully by coordinating and leading national efforts (which is inclusive of Global Fund grant management and implementation). As a consequence, the Global Fund grant disbursement and burn rate increase and Global Fund performance indicators improve. We set out to measure improvements along this causal chain and also examine the contribution of adviser in the improvements. This assessment attempted to test the causal pathways of this conceptual framework, which is displayed in Figure 2 below:

FIGURE 2: ASSESSMENT CONCEPTUAL FRAMEWORK



A review of the literature on technical assistance, both long and short term, yielded no conceptual frameworks addressing the nature of the process by which TA reinforces or improves either individual or organizational management outcomes. In the absence of previously tested frameworks, we developed this assessment's framework based on organizational change theories, particularly life cycle models of organizational change. These models tend to emphasize the role of individuals throughout the organization as critical to change, and activities focus on "individual development, overcoming fear of change, training, and development" (Kezar, 2001).

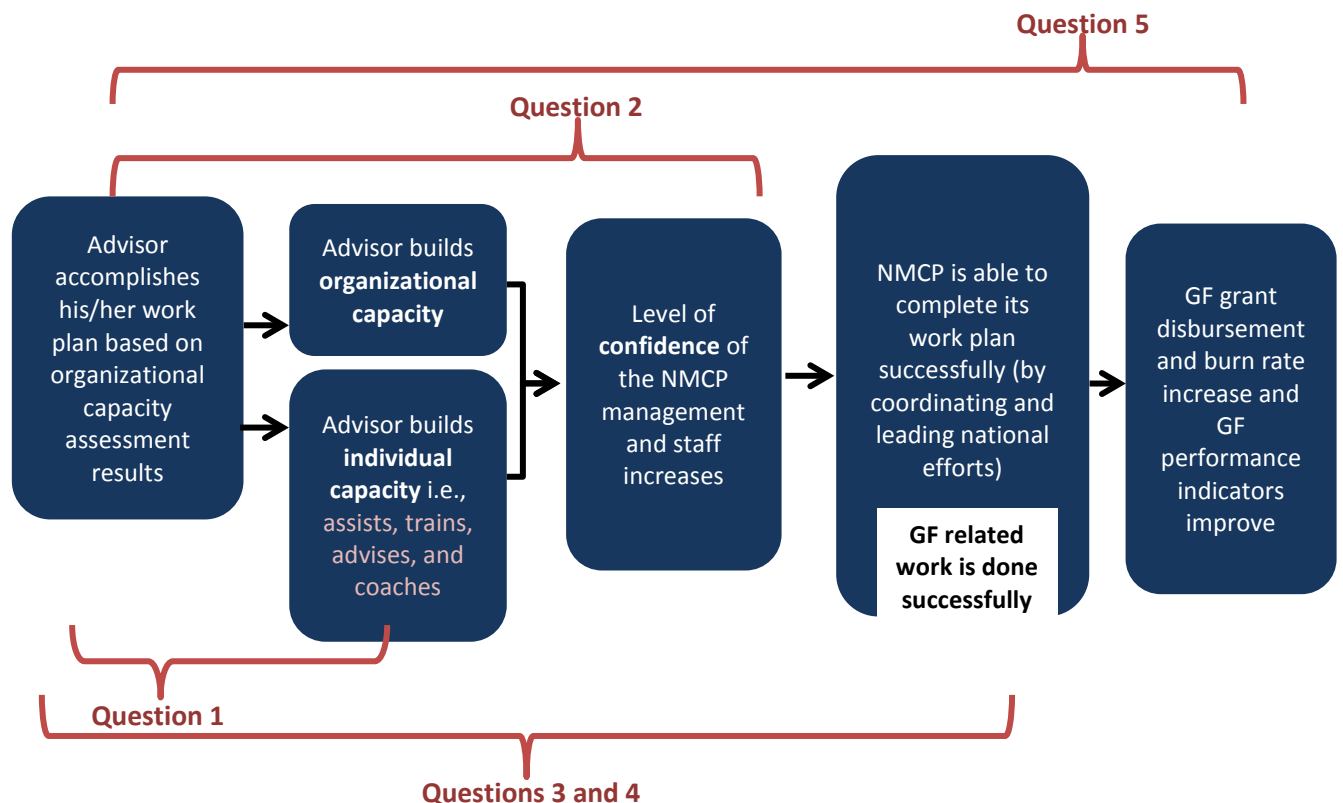
## Design

The following overarching question – which is broken down into five components – was examined in this assessment: **What value do LTAs add to NMCPs' sustained coordination and performance?**

1. Have LTAs carried out activities and actions that can be expected to build NMCP capacity to carry out the national strategic plan (and therefore implement the Global Fund grant)?
2. What effect has LTA support had on individual NMCP staff capacity to carry out their job functions, coordinate internally, and address challenges?
3. What effect has LTA support had on the NMCP's capacity to coordinate, lead, and manage the implementation of the Global Fund grant, according to NMCP staff?
4. What effect has LTA support had on the capacity of the NMCP to coordinate and regulate performance of Global Fund grants, according to NMCP partners?
5. Has NMCP capacity to implement the national malaria control strategy improved during the LTA's tenure?

To understand whether NMCPs' capacity to implement the national malaria control strategy during the LTAs' tenure, we needed to test several of the causal pathways in the assessment's conceptual framework. First, we measured the LTA's assistance, training, advising, and coaching report in Question 1. Then we examined the pathway between the LTA completing his work plan through assisting, advising, training, and coaching NMCP staff, and increases in NMCP staff confidence. This pathway was analyzed in Question 2. In Questions 3 and 4, we examined the experiences of NMCP staff and key malaria stakeholders with the overall LTA support process and their observed impacts of support on NMCP capacity. In question five, we examined the pathways between LTA inputs, improvements in staff confidence, NMCP work plan completion, and indicators for Global Fund grant performance. This breakdown by assessment question is displayed in Figure 3.

**FIGURE 3: ASSESSMENT CONCEPTUAL FRAMEWORK BY ASSESSMENT QUESTION**





The assessment was conducted using a proxy pretest-posttest design, combining both recollection proxy pretest design and archived proxy pretest design. We measured the “dose” of the LTA (X), in other words the kind of support provided by the LTA. We then measured NMCP staff perceptions of the role of the LTA in individual and organizational changes before (proxy pretest parenthesized [Y]) and after (Y) the LTA intervention. Finally, we measured the relationship between LTA dose, the LTA’s role in change, and archived grant management output data (O). This is displayed in Table 2 below:

**TABLE 2: ASSESSMENT DESIGN**

	Pre-LTA	Post LTA (2-3 years)	
	Pretest ((Y),O)	LTA (X)	Posttest (Y,O)
<b>Cameroon</b>	(Y <sub>1</sub> ), O <sub>1</sub>	X	Y <sub>2</sub> , O <sub>2</sub>
<b>Côte d’Ivoire</b>	(Y <sub>3</sub> ), O <sub>3</sub>	X	Y <sub>4</sub> , O <sub>4</sub>
<b>Guinea</b>	(Y <sub>5</sub> ), O <sub>5</sub>	X	Y <sub>6</sub> , O <sub>6</sub>
<b>Liberia</b>	(Y <sub>7</sub> ), O <sub>7</sub>	X	Y <sub>7</sub> , O <sub>8</sub>

## Study sites

We divided the assessment into two phases. Phase I assessed LTAs embedded for two consecutive years or longer with NMCPs in four countries. Phase Two will assess LTA embedded for fewer than two consecutive years in five countries. This report includes data and findings from Phase I, which included NMCPs in Cameroon, Côte d’Ivoire, Guinea, and Liberia. These sites were selected for inclusion in Phase I due to the duration of LTA in those countries, which have all had a continuous LTA for two years or longer. In Phase II, we will collect data from NMCPs and about grants in Burundi, Côte d’Ivoire (supply chain management focus), Nepal, Niger (supply chain management focus), and Sierra Leone. The results of Phase II will be discussed in an addendum to this Phase I report. The breakdown between the two phases is described in Table 3 below:

**TABLE 3: LTA ASSESSMENT PHASES I AND II**

	Country	Duration of LTA at time of data collection	Report timeline
<b>Phase I</b>	Cameroon	2.5 years	April 2017
	Côte d’Ivoire	2.5 years	
	Guinea	2.8 years	
	Liberia	2.5 years	
<b>Phase II</b>	Burundi	0.6 years	July 2017
	Côte d’Ivoire, Supply Chain	1.25 years	
	Nepal	0.9 years	
	Nepal, Supply Chain		
	Niger, Supply Chain	1.6 years	
	Sierra Leone	0.75 years	

## Data collection

Phase I of the assessment took place from August 2016 to January 2017. Assessment data were collected using both qualitative and quantitative methods. Qualitative methods included semi-structured key informant interviews (KII) and focus group discussions (FGD), and were used to gather data on the experiences of NMCP managers, staff, and other malaria stakeholders working with the LTA, their perceptions of changes in NMCP capacity, and the role they perceived the LTA to have played in changes.

Quantitative methods included a survey that asked NMCP managers and staff to indicate the kind of support the LTA provided the NMCP (assisting, advising, training, and coaching). The second half of the survey asked NMCP staff to indicate their level of confidence in carrying out routine NMCP tasks and functions before the LTA's arrival (this was the proxy pre-test) and their level of confidence now. Once this section was completed, respondents were asked to indicate what level of influence they believed the LTA had in any changes in confidence. (For a summary of the survey questions, please see Appendix I.)

For quantitative Global Fund malaria grant outcome data, we compiled secondary datasets from Aidspace's online database, the Aidspace Portal Workbench. Aidspace is an independent observer of the Global Fund, and the database retrieves grant portfolio data from web services provided by the Global Fund. We compiled data on each country's malaria grant rating, disbursement rate, burn rate, and performance indicator data, for all grants in each country from January 2003 to August 2016.

Using both qualitative and quantitative methods allowed for triangulation of results and provided in-depth information for understanding the complex processes and outcomes related to LTA support. Qualitative data was compared against quantitative findings in order to confirm agreement or disagreement between findings. While the quantitative data allowed us to measure any relationship between the LTA and expected outcomes, the qualitative data allowed us to better understand what people are saying about LTA support, and how and why the relationships work.

## Ethical considerations

Primary data collection tools (surveys, focus groups, and key informant interviews) required consent from respondents. Grant performance measure data was collected from Aidspace's online database, the Aidspace Portal Workbench. Additional data was gathered from the Global Fund website, which makes grant management letters available to the public.

## Analysis

### Quantitative Statistical Analysis

The statistician analyzed results from the quantitative surveys and the grant performance data. Descriptive statistical analysis was completed to understand mean percent increases in NMCP staff confidence, standard deviations, and confidence intervals. Basic statistical analyses were also completed to summarize findings on the type of support (assistance, training, advice, or coaching) that NMCP staff reported to have received from the LTA. Likewise, we completed descriptive statistical analysis on grant performance measures (disbursement rate, burn rate, grant performance indicators) to compare the mean, standard deviation, and confidence intervals for each country and for all countries. A differences-

in-differences analysis was performed to compare the focus country grant performance with grant performance in similar countries in the same regions (Central African Republic, Chad, Mali, and Togo). Criteria for inclusion for these comparison countries included population size, geographical proximity to focus countries, and Global Fund malaria grant recipient.

Coefficients of correlation were calculated to measure the strength and direction of a linear relationship between two variables. These were calculated for LTA inputs, overall gains in confidence, LTA induced gain in confidence, baseline organizational capacity scores, disbursement rates, burn rates, and grant performance indicators. Ordinary least squares (OLS) regression analyses were performed to examine the relationship between independent variables (LTA inputs, staff age, staff sex, length of service, and NMCP baseline OCA score, increase in confidence) and dependent variables (increase in confidence, work plan completion, disbursement rate, burn rate, grant performance indicators) one at a time. Lastly, OLS regression with difference-in-differences analyses were performed to examine the relationship between the intervention and grant performance outcomes, comparing intervention countries with similar countries in the region that did not receive the intervention (LTA).

## **Qualitative Data Analysis**

All KII and FGD transcripts (n=31; 21 interviews, 6 group interviews, and 4 focus group discussions) were transcribed in French and English. French transcriptions were translated into English, checked against the audio for quality control, and assigned to two researchers. A modified deductive coding structure was established based on Rosensweig's description of core NMCP functions and the assessment conceptual framework, then modified as needed during subsequent rounds of coding. Inductive coding was used to identify and capture specific interventions introduced by LTAs that were attributed with facilitating improvements at NMCPs. Each researcher coded independently and then reconciled coding assignments, resolving discrepancies in pairs. Once the code assignments were finalized, the typed interview transcripts were imported into Dedoose, a web-based qualitative data analysis software, for analysis of broad themes from the codebook, and stratified by country. Further analysis examined associations between LTA inputs, NMCP leading, managing, and coordinating practices, and outcomes in individual staff capacity.

## **Study limitations and threats to validity**

### **Methodological limitations**

Given the nature of the projects managing LTAs, the sites included in this assessment were not randomly chosen. Results from baseline organizational capacity assessment, as well as the grant outcomes, reveal that the starting point for each NMCP at the time of the LTAs arrival was dissimilar. We were also unable to collect NMCP staff confidence data in other countries that receive Global Fund malaria grants but have not received LTA support, which would have provided information on whether or not there are secular trend improvements in staff confidence. Therefore, the assessment results may not be generalizable. Given this limitation, we were able to compare only Global Fund malaria grant outcome data from the focus countries and four similar countries using difference-in-differences analyses.

Another limitation of the assessment was sample size. Surveys were administered to 32 people; however, seven of those did not complete all sections of the survey. This small sample size resulted in several under-powered quantitative analyses – meaning that the likelihood that we would correctly reject the null hypotheses was below 80%.

## Absence of OCA baseline

While the LTA in each country examined during Phase I completed an initial OCA soon after arrival, the LTA in Guinea used a different assessment methodology than was used in Cameroon, Côte d'Ivoire, and Guinea. This was because the tool used in the latter three countries, MSH's Organizational Capacity Assessment Tool (OCAT), was not finalized when the Guinea LTA began. This means the Guinea assessment results are not easily compared with assessment findings in the other three countries. In all four countries a final OCA is scheduled for May and June 2017. This unfortunately meant we could not include the endline OCA findings in our datasets. This limited our ability to objectively measure organizational capacity improvements of each NMCP.

## Grant Performance Measures

To measure changes in Global Fund grant performance we relied on the data routinely collected and reported on by Global Fund grant recipients. Currently these data – disbursement rate, burn rate, activity completion rate, performance indicators, and grant ratings – are not always used by the Global Fund itself to measure and monitor the overall performance and progress of grants, or of grant recipients. A description of the limitations of each of these measures is described below in Table 4:

**TABLE 4: GRANT PERFORMANCE MEASURES**

DESCRIPTION		LIMITATIONS
Grant disbursement rate	Sum of funding disbursed to the PR for the period divided by the total amount budgeted for disbursement for the period	Prior to the New Funding Model (NFM), disbursement was linked to grant performance, and therefore was a proxy for overall programmatic and management performance. This is no longer the case for NFM grants, where funds are disbursed once a year and are not tied to management performance.
Grant burn rate	Sum of funding spent for the reporting period divided by the total amount disbursed during the funding period	Procurement of malaria commodities (insecticide-treated bednets, malaria treatment, rapid diagnostic tests) account for the bulk of grant spending. While grant PRs oversee procurement, delays are often out of their immediate control as other entities are responsible for procuring commodities. Furthermore, under the NFM, disbursements are made only once a year. This means burn rates are reported annually, instead of quarterly, which makes incremental monitoring of grant spending more difficult.
Grant activity completion rate	The number of planned activities completed for the year divided by the total number of planned activities for the year	While grant PRs are accountable for activity implementation, their authority to compel SRs and other stakeholders to complete activities on time can be limited. In addition to this, grant activity

		completion data was not collected and retained prior to the arrival of the LTAs. Therefore, there are no pre-data.
Grant performance indicators	<p>Each grant is designated a set of grant performance indicators that measure changes in malaria activity outputs and outcomes. For example:</p> <ul style="list-style-type: none"> <li>- Output: # of ITNs distributed</li> <li>- Outcome: % of pregnant women sleeping under ITNs</li> </ul> <p>We measured the percentage of indicators reaching targets reported for each grant.</p>	The available grant performance indicator datasets (via Global Fund website and Aidspan) does not include updated performance indicator data for each Progress Update, so annual and bi-annually updates on these indicators could not be measured.
Overall grant rating	Metrics for the rating are a combination of programmatic performance using performance framework, and a PR grant management factor.	The grant management factor is at the discretion of the Global Fund country portfolio team. The grant rating – which looks at overall PR and SR management – can be relatively subjective.

The limitations of each grant performance measure meant that we could not accurately judge grant management and grant performance (or PR management or performance) using just one measure. To account for these limitations, we analyzed all of the measures together instead of relying on only one.

## Recall bias

In the absence of baseline data of NMCP staff confidence to carry out key job functions, we asked staff to reflect back on the period before the LTA's arrival and indicate their level of confidence at that time. This type of survey design, which depends on self-reporting and remembering a point in the past, introduces the potential for recall bias. Studies have shown that the human brain continuously rewrites memories, which clouds memories with more recent events or can edit them completely (Voss, 2014). Risk of recall bias is especially high when potential responses could be socially unacceptable, or the events or information under question was life threatening or traumatic (Hassan, 2005). To control for recall bias, we carefully worded survey questions so they could not easily be interpreted as leading, respondents were given ample time to complete questionnaires, and survey administrators were careful to reinforce that the survey responses were anonymous and would be used to measure the impact of the LTA model, not to measure the performance of specific LTAs. We also posit that NMCP staff *perceptions* of how LTA support has benefitted them is important, even if we cannot objectively measure changes in confidence (Robert Eisenberger, 1990).

## Pathways linking TA to grant outcomes

Finally, the understanding of the pathways of influence linking LTAs to grant performance improvements were largely documented through qualitative data, and compared against our own theoretical framework. This is in large part due to the lack of previously published studies or gray literature to inform measures. The methods and results of this assessment can inform future analysis as to potential indicators for measuring the influence of LTAs on sustained coordination and performance of national programs.

# Results

## Sample characteristics

Outcome data collected for each of the four countries, as described above in Table 4, included: grant disbursement rates, grant burn rates, grant performance indicator rates, activity completion rates, and grant ratings. The grants included in the dataset are described in Table 5 below:

**TABLE 5: GLOBAL FUND MALARIA GRANTS INCLUDED IN ANALYSIS**

Grant number	Country	Years	NMCP PR?	Grant status	Outcome data collected				
					Performance indicators	Disbursement rate	Burn rate	Grant rating	Activity completion rate
<b>CMR-304-G02-M</b>	Cameroon	2004-2009	Yes	Closed	✓	✓	✓	✓	
<b>CMR-506-G06-M</b>	Cameroon	2006-2011	Yes	Closed	✓	✓	✓	✓	
<b>CMR-910-G07-M</b>	Cameroon	2010-2015	Yes	Closed	✓	✓	✓	✓	
<b>CMR-M-MOH</b>	Cameroon	2014-2017	Yes	Active	✓	✓	✓	✓	✓
<b>CIV-607-G06-M</b>	Côte d'Ivoire	2007-2010	No	Closed	✓	✓	✓	✓	
<b>CIV-809-G08-M</b>	Côte d'Ivoire	2009-2015	No	Closed	✓	✓	✓	✓	
<b>CIV-809-G09-M</b>	Côte d'Ivoire	2009-2015	Yes	Closed	✓	✓	✓	✓	
<b>CIV-M-MOH</b>	Côte d'Ivoire	2015-2017	Yes	Active	✓	✓	✓	✓	✓
<b>GIN-202-G02-M-00</b>	Guinea	2003-2009	Yes	Closed	✓	✓	✓		
<b>GIN-607-G05-M</b>	Guinea	2007-2010	Yes	Closed	✓	✓	✓	✓	
<b>GIN-M-PNLP</b>	Guinea	2012-2013	Yes	Closed	✓	✓	✓	✓	
<b>GIN-M-CRS</b>	Guinea	2011-2017	No	Active		✓	✓	✓	✓
<b>LBR-304-G03-M</b>	Liberia	2004-2007	No	Closed	✓	✓	✓	✓	
<b>LBR-708-G05-M</b>	Liberia	2008-2011	No	Closed	✓	✓	✓	✓	
<b>LBR-M-PII</b>	Liberia	2011-2018	No	Active	✓	✓	✓	✓	
<b>LBR-M-MOH</b>	Liberia	2011-2018	Yes	Active	✓	✓	✓	✓	✓

Table 6 below presents descriptive statistics for the KIs and FGD participants. In general, KIs and FGDs included a high percentage of Francophone males and are somewhat skewed toward malaria partners/stakeholder interviews.

**TABLE 6: INTERVIEW AND FOCUS GROUP PARTICIPANTS CHARACTERISTICS**

	Cameroon	Côte d'Ivoire	Guinea	Liberia	Percent
<b>Gender</b>					
Male	5	13	13	9	64.5
Female	11	7	2	2	35.5
<b>Interview type</b>					
Staff focus group	1	1	1	1	13
NMCP staff interview (unavailable for FG)	4	1	0	0	16
Malaria partner/stakeholder Interview	4	6	3	3	52
NMCP director Interview	1	1	2	2	19
<b>Language</b>					
English	3	1	6	0	32.2
French	6	8	0	6	64.5
English and French	1	0	0	0	3.3

Table 7 presents the survey respondents. The large majority of respondents were French speaking and had more than 5 years of experience on the job.

**TABLE 7: SURVEY RESPONDENT CHARACTERISTICS**

	Cameroon	Côte d'Ivoire	Guinea	Liberia	TOTAL	PERCENT
<b>Gender</b>						
Male	2	3	8	4	<b>17</b>	<b>55</b>
Female	7	4	1	2	<b>14</b>	<b>45</b>
<b>Years at post</b>						
<5 years	4	2	4	0	<b>10</b>	<b>32</b>
>5 years	5	5	5	6	<b>21</b>	<b>68</b>
<b>Primary Language</b>						
English	0	0	0	6	<b>6</b>	<b>19</b>
French	9	7	9	0	<b>25</b>	<b>81</b>

Total Survey Respondents	9	7	9	6	31
Percent	29	23	29	19	

## Study Results

The final assessment results are presented by each research question below.

### Box 2: LTA SUPPORT DEFINITIONS

**TRAINED:** The Advisor taught us skills and approaches for carrying out an activity or task. *Example: The Advisor held a training session on how to write sections of the Global Fund concept note.*

**ASSISTED:** The Advisor was directly involved. He/she was responsible for completing some or all of the tasks related to the activity. *Example: The Advisor wrote sections of the Global Fund concept note.*

**ADVISED:** The Advisor directed, made recommendations, and reviewed our work in order to help us carry out an activity or task. *Example: The Advisor reviewed the draft Global Fund concept note and gave specific feedback and recommendations on how to improve it.*

**COACHED:** The Advisor helped us to reflect and identify next steps and/or solutions on our own in order to accomplish an action or task. *Example: The Advisor asked questions and listened to help you identify issues with the Global Fund concept note. He/she did not tell you what to do, but rather helped you to decide on your own.*

### QUESTION 1: Have LTAs carried out activities and actions that can be expected to build NMCP capacity to carry out the national strategic plan (and therefore implement the Global Fund grant)?

In order to target their support, each LTA completed an organizational capacity assessment (OCA) soon after their arrival. This served to identify areas of weakness and strength, and guide the selection of activities in each LTA's individual project work plan. To understand whether or not the recommended capacity building activities from each OCA had been followed, we looked at the rate at which NMCPs have completed the recommended baseline OCA activities. We found that on average each NMCP had completed or begun implementing **82%** of the recommended activities. This is broken down by country in Table 8 below:

**TABLE 8: PERCENTAGE OF INITIAL ORGANIZATIONAL CAPACITY ASSESSMENT RECOMMENDATIONS COMPLETED OR IN PROGRESS**

	In progress %	Completed %
Cameroon	19	40
Cote d'Ivoire	28	68
Guinea	0	88
Liberia	21	39

Activities included in individual LTA's annual work plans were based on OCA results and recommendations, scheduled grant-funded activities, and NMCP annual work plans aligned with National Strategic Plans. Examples of activities in LTA work plans include: revise and update NMCP organigram, revise and update all NMCP staff job descriptions, conduct the LDP+, provide technical assistance in the development of

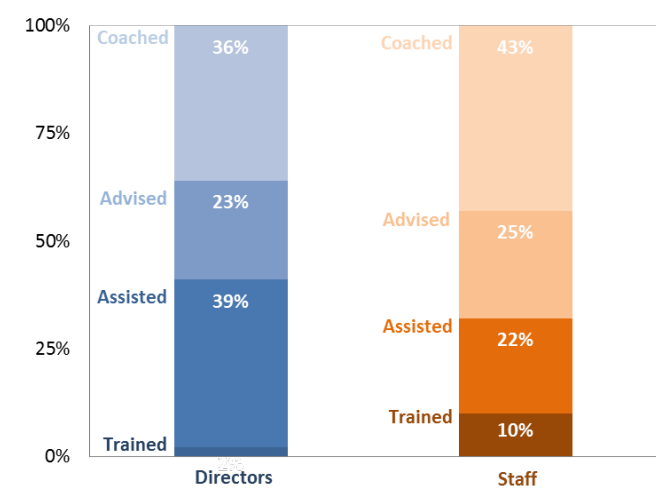


National Malaria Strategic Plans, draft staff code of conduct and procedures manuals, conduct endline-user verification survey, provide technical and planning support to mass bed net distribution campaigns, assist NMCP to update malaria prevention and treatment guidelines, assist with the drafting and submission of Global Fund grant concept notes, facilitate technical working group meetings, coach and train NMCP staff to integrate private health facilities into national malaria control efforts, and support NMCP to hold regular coordination meetings with SRs. Complete example work plans can be found in Annex II.

To assess the actions and activities carried out by the LTAs, NMCP staff were asked to complete a survey. The survey was completed by 31 NMCP staff (four NMCP directors, one NMCP deputy director, and 26 NMCP staff) in the four countries. Depending on the participant’s role, the survey provided a list of between 26 and 53 activities that LTAs would be expected to support, and prompted participants to indicate whether the LTA assisted, trained, advised, or coached them on the activity (See Box 2 for definitions of each action).

Both NMCP directors and staff reported that LTAs had provided assistance, training, advising, and coaching support. Of the support provided by LTAs, NMCP directors reported that they received mostly **assistance** (on 39% of activities) and **coaching** support (on 36% of activities). They reported slightly less **advising** (on 23% of activities) and minimal **training** (on 2% of activities). NMCP staff reported that LTAs provided mostly **coaching** support (on 43% of activities), and nearly equal **assistance** and **advising** support (22% and 25%, respectively). Like directors, they reported less **training** support (on 10% of activities). This is displayed in Figure 4 below. We expected NMCP directors and staff to report that LTAs provided all types of support, and we also expected these LTAs, who have been working with their respective NMCPs for more than two years to provide more coaching and advice than training and assistance. While NMCP directors reported more **assistance** than **advising**, their responses still allow us to confirm that LTAs provided the kind of support that we predicted to build NMCP capacity.

**FIGURE 4: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY, AS REPORTED BY NMCP PERSONNEL**



To better understand in what specific areas LTAs provided support, we divided activities listed in the survey into general themes and measured the percentage of NMCP staff who reported LTA support in those areas. We calculated the average percentages per LTA support type and support area by first looking at the average responses by support type, and then aggregating responses by category. The resulting percentages represent high-level aggregation of the total number of survey questions.

Of the five NMCP directors and deputy directors surveyed, most agreed that LTAs provided **coaching** support on activities related to internal coordination (73% of activities), strategies and innovation (65%), and partner coordination (56%). They reported that LTAs

provided direct **assistance** mainly on the national strategic plan (55%), governance (55%), and human resources activities (54%). LTA **advice** was mainly on monitoring and evaluations (35%) and the Global Fund concept note (34%) activities. Few directors reported to have received **training** from advisors: the highest was for development and implementation of the national strategic plan (10%).

**TABLE 9: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: DIRECTOR AND DEPUTY DIRECTOR ASSESSMENT OF LTA SUPPORT**

	Trained %	Assisted %	Advised %	Coached %
Internal coordination	3	40	13	<b>73</b>
Strategies and innovation	0	33	25	<b>65</b>
Partner coordination	0	48	28	<b>56</b>
National Strategic Plan	<b>10</b>	<b>55</b>	25	50
Governance	0	<b>55</b>	30	45
Human Resources	4	<b>54</b>	32	32
Monitoring and evaluations	0	40	<b>35</b>	25
Global Fund concept note	3	49	<b>34</b>	34

NMCP staff technical program officers (n= 18) reported that LTAs **coached** them extensively: more than half of the respondents reported that they received coaching support in technical areas (51% of activities), coordination and planning (56%), grant management (61%), and Global Fund concept note development (61%). For **advising** support, 40% of program officers also reported that LTAs advised NMCPs on coordination and planning and 44% reported advising support on Global Fund concept note development. Likewise, 40% of program officers reported that LTAs provided **assistance** with coordination and planning (40%), grant management (40%), and Global Fund concept note development (45%). Fewer program officers reported LTA **training** support: the highest was for coordination and planning training at only 19%.

**TABLE 10: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: TECHNICAL PROGRAM OFFICERS ASSESSMENT OF LTA SUPPORT**

	Trained %	Assisted %	Advised %	Coached %
Coordination and planning	19	40	40	56
Global Fund concept note development	13	45	44	61
Grant management	10	40	33	61
Technical support	15	22	36	51

Of the four M&E staff, most reported receiving **coaching** support for data collection (64%), coordination (60%), and supportive supervision (60%).

**TABLE 11: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: M&E STAFF ASSESSMENT OF LTA SUPPORT**

	Trained %	Assisted %	Advised %	Coached %
Data collection	4	0	12	64
Coordination	5	15	20	60
Supportive supervision	0	12	36	60

Of the two staff that self-identified as finance staff (n = 2), reported that LTAs provided **coaching**, mainly in the areas of budgeting (100%), coordination and planning (93%), and grant management (83%).

Finance staff reported to have received all four kinds of support for budgeting: 90% said LTAs **trained**, and 60% said LTAs **assisted** and **advised** in this area.

**TABLE 12: PERCENTAGE OF ACTIVITIES SUPPORTED BY TECHNICAL ASSISTANCE MODALITY: FINANCE STAFF ASSESSMENT OF LTA SUPPORT**

	Trained %	Assisted %	Advised %	Coached %
Budgeting	90	60	60	100
Coordination and planning	7	21	29	93
Grant management	83	67	67	83

In the qualitative interview data, we found that NMCP staff more frequently referenced instances of LTAs providing **assistance** and **training**, and less frequently referenced instances of **coaching**. Initially this appears to counter the quantitative survey responses. However, the nature of assisting and training lends itself more easily to providing specific examples than coaching, as assistance and training are discrete forms of support, and it is easier to point to a specific date or instance. Coaching, by nature, is more informal, incremental, and layered. One NMCP staff noted the following about the LTA's coaching:

*"And so the workshops that we had here at the office, [the LTA] was really the most present and he is always refocusing us. Meaning that when something is going on and the debate is happening and going in every direction, he will refocus us, and this allows whoever wasn't in agreement to understand where it is we want to go. That's how I feel we manage activities together now." (NMCP Staff, Country B).*

One NMCP director referenced coaching and advising in the following comment:

*"I had never negotiated. We had to go and negotiate (our Global Fund concept note) in Geneva, and I had never negotiated. I asked [the LTA], 'But how do we negotiate?' He taught us here, in this room here, how to behave, how to do things – he directed us on these things. He really oriented us on how to negotiate." (NMCP director, Country C)*

In general, we expected that the support provided by LTAs would overlap, with some instances requiring one form of support, and other instance requiring assisting, training, advising and coaching. We found this to be the experience of NMCP staff, and frequently descriptions of LTA support often included references to several types of support. One NMCP staff described their experience in this way:

*"[The LTA] has intervened in each of the stages of implementing the [Global Fund] concept note (assistance), and he supervised us during the training, he supervised us in our challenges (advising), day to day, the daily challenges at work. He helps us to make key decisions, and he's a good advisor, really. In making certain decisions that we have to make, he helps us to make good*

### Box 3: Question 1 EMERGING QUALITATIVE THEMES

- Sustained, on-the-job LTA enabled coaching to be effective.
- LTA assistance, advice, and coaching were instrumental during GF NFM concept note development.
- LTA support overlapped: coaching, advising, assisting, and training sometimes took place in tandem.

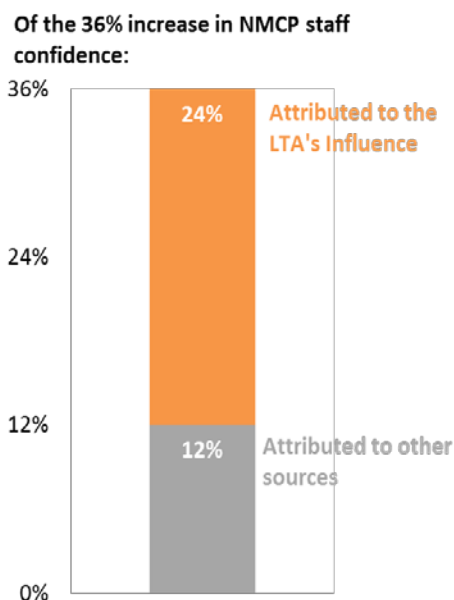
decisions (coaching). And he encourages us when we are overwhelmed: he asks us questions that allow us to move forward (coaching), to face certain obstacles, because he reminds us that there is no obstacle that is impossible to overcome. And in this very same way he applies the ideas that he taught us during the [Leadership Development Program], and also he is there to remind us of deadlines when we are overwhelmed by work, he helps us to meet more deadlines by reminding us of the fixed deadlines (assisting).” (NMCP staff, Country B).

## QUESTION 2: What effect has LTA support had on individual NMCP staff capacity to carry out their job functions, coordinate internally, and address challenges?

In the absence of objective pre and post measures of individual NMCP staff capacity, we measured NMCP staff confidence to fulfill their job functions, manage the Global Fund grant, and coordinate internally and externally. All NMCP staff who completed the survey reported that their confidence in their abilities to do their jobs had increased during the LTA’s tenure. We tested this by asking staff to reflect back to the period before the LTA arrived, and indicate their level of confidence at that time for a list of job functions, coordination activities, and responses to challenges. We then asked them to indicate their level of confidence now. This was done using a step ladder diagram (see Appendix I), and served as a proxy-pretest. The average increase in confidence for NMCP staff was **36%**.

We also asked staff to indicate the influence of the LTA to any reported increases in confidence, using a scale from one to three, where 1 = no influence, 2 = some influence, and 3 = significant influence. We found that about two-thirds of the gain in confidence (66% with 95% confidence interval lower bound at 57% and upper bound at 93%) was attributed to the influence of the LTA. This analysis indicates that of the 36% gain in confidence, **24%** is attributed to LTA influence, while the remaining 12% is coming from a source other than the LTA. This is displayed in Figure 5. The actions and skills for which NMCP staff reported the highest and lowest increases in confidence are described in Box 4.

**FIGURE 5: INCREASE IN NMCP STAFF CONFIDENCE**



### Box 4: NMCP STAFF CONFIDENCE

Of the tasks and actions listed, the highest average increase in confidence reported by NMCP staff was for the following skills and behaviors:

- Meet with your group to develop a team or organizational plan that defines activities, timeline, and responsibilities
- Analyze challenges
- Identify solutions for challenges

The lowest average increase in confidence reported by NMCP staff was for the following:

- Carry out all of your job responsibilities
- Link your team’s goals with the overall national malaria strategy
- Adjust plans and resources as circumstances change

### Changes in staff confidence

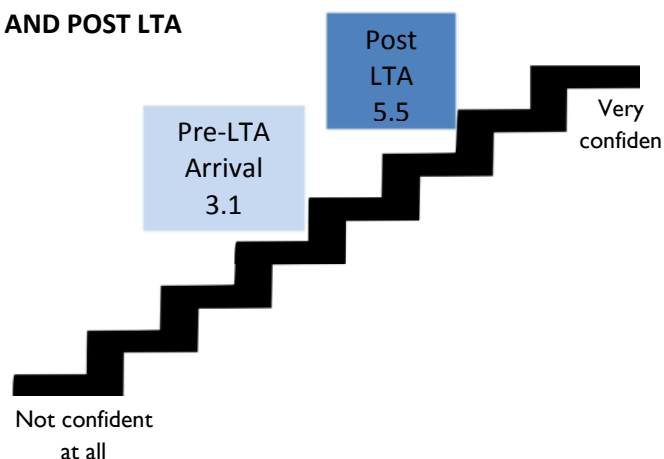
To understand what the average reported confidence level of NMCP staff before and after the LTA's arrival, we conducted a Wilcoxon matched pairs signed rank test. The results showed that the median confidence rating for all countries before the arrival of the LTA was **3.1**, on a scale of 0 to 7. The median confidence rating after the arrival of the LTA was **5.5** (see Figure 6). This showed that Liberia NMCP staff reported the lowest median confidence pre-LTA at 2.1, and Cameroon and Côte d'Ivoire staff both had median pre-LTA confidence of 3.5. The largest increase in median confidence is seen in Guinea (3.9), and the smallest increase in Cameroon (1.7), as shown in Table 12 below.

Overall, the median rating for the post-intervention period was statistically significantly higher than median rating for the pre-intervention period ( $z = -4.360$ ,  $p < 0.00$ ) indicating that these results are not random and suggesting that the LTA intervention is influencing increases in confidence. This was also true of all the countries individually analyzed, except Liberia, which had a very small sample size.

The calculation of the effect size of

Wilcoxon Signed-rank test is given by the formula,  $r = \frac{z}{\sqrt{N}}$ , where N is the total number of the observations. Effect size, r by convention for small, medium, and large effects, is 0.1, 0.3, and 0.5. Effect size of increase in the NMCP staff and manager confidence ratings is rather large, at **0.9**. These results are displayed in Table 13 below:

**FIGURE 6: MEDIAN NMCP STAFF CONFIDENCE PRE AND POST LTA**



**TABLE 13: WILCOXON MATCHED PAIRS ANALYSIS OF MEDIAN PRE- AND POST-LTA NMCP CONFIDENCE**

	Number of observations	Median confidence rating before the intervention	Median confidence rating after the intervention	Increase in median confidence rating	Z	p-value (Prob >  z )	Effect size, r
Cameroon	8	3.5	5.2	<b>1.7</b>	-2.524	0.0116	0.9
Côte d'Ivoire	5	3.5	5.7	2.3	-2.023	0.0431	0.9
Guinea	8	2.4	6.3	<b>3.9</b>	-2.521	0.0117	0.9
Liberia	4	2.1	5.0	2.9	-1.671	0.0947	0.8
All four countries	25	3.1	5.5	2.4	-4.360	0.0000	0.9

### *Relationships between LTA inputs and confidence*

These results show a strong, linear positive relationship between LTA induced confidence gain and overall gain in confidence (0.95). The relationships between LTA inputs and overall gain in confidence (0.19) and between LTA inputs and LTA induced gain in confidence (0.24) were not found to be statistically significant.

Coefficients of correlation were calculated to measure the strength and direction of a linear relationship between LTA inputs (assisting, training, advising, and coaching data collected in Part I of the survey), overall gain in confidence, and LTA induced confidence gain. Results are displayed in Table 14:

**TABLE 14: COEFFICIENTS OF CORRELATION FOR LTA INPUTS AND CONFIDENCE**

	LTA inputs	Overall gain in confidence	LTA induced confidence gain
LTA inputs	1.00		
Overall gain in confidence	0.19	1.00	
LTA induced confidence gain	0.24	0.95**	1.00

\*\*p<0.01

These results show a strong, linear positive relationship between LTA induced confidence gain and overall gain in confidence (0.95). The relationships between LTA inputs and overall gain in confidence (0.19) and between LTA inputs and LTA induced gain in confidence (0.24) were not found to be statistically significant.

### *Inferential statistics: regression analyses*

We further analyzed the relationship between LTA inputs reported in part one of the survey, and increases in NMCP staff and director confidence reported in part two of the survey, by conducting a series of OLS regression analyses. These analyses tested the significance of the regression model and tested hypotheses about the relationship between the dependent variable and several independent variables. In order to reject the null hypothesis (“LTA inputs have no relationship with gains in confidence”), the significance value, Prob(F), may not be nonzero.

We tested three models for fit between the relationship between predictor variables and the NMCP self-reported increases in confidence. We began with Model 1, which used a single predictor variable: the LTA inputs (training, assisting, advising, coaching). In Model 2, we added three covariates: staff age, staff sex, and length of service at the NMCP. Finally, we added the baseline OCAT score (as a measure for initial organizational capacity) in Model 3.

Prob(F) = 0.3344 and  $P > |t|$  value of 0.334 for LTA inputs in Model 1 and Prob(F) = 0.1952 and  $P > |t|$  value of 0.524 for LTA inputs in Model 2 imply that no significant relationship was found between LTA inputs and self-reported increase in confidence. All four p-values are greater than the 0.05 cutoff for statistical significance. Therefore, the LTA inputs do not explain the variation in the self-reported increase in confidence or predict the gain in confidence. Table 15 displays these results.

**TABLE 15: RELATIONSHIP BETWEEN TECHNICAL ASSISTANCE INPUTS AND INCREASE IN NMCP STAFF AND MANAGER CONFIDENCE**

Increase in NMCP staff and manager confidence	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Training, assistance, advisory, and coaching inputs	0.14	0.15	0.19	0.10	0.15	0.13	0.11	0.15	0.15
Age				0.00	0.54	0.00	-0.17	0.58	-0.08
Sex				-13.91	6.50	-0.47	-10.87	7.43	-0.37
Length of service				0.20	0.78	0.05	0.24	0.78	0.06
OCAT score							15.89	18.45	0.19
R <sup>2</sup>	0.0389			0.2617			0.2910		
F for change in R <sup>2</sup>	0.97			1.68			1.48		
Number of observations	26			24			24		
Power				0.51			0.51		

\* $p < .05$ . \*\* $p < .01$ .

These regression results show that the model is not significant, and we cannot state that the self-reported increase in confidence is associated with LTA inputs. This implies that either a relationship does not in fact exist and the independent variables are purely random with respect to the dependent variables, or it also could imply a design weakness in part one of the survey. In other words, it is possible that part one of the survey does not measure or capture LTA inputs in such a way that would allow their association with increases in confidence to be meaningfully measured.

That said, power in this analysis is 0.51, which indicates that the analysis is under-powered<sup>1</sup>. This means that given the sample size of 24, if we rerun our study many times with new random samples, we would only correctly reject the null hypothesis 51% of the time (i.e., we will find that  $p < 0.05$ ). This means that 49% of the time we run the experiment, we will not see a statistically significant effect, even if there really is an effect. To run the linear regression model we require a minimum of only two subjects per variable in the model to guarantee unbiased estimation of coefficients and adjusted R<sup>2</sup> values; but we need higher numbers for adequate statistical power (Austin, 2015). So while we have unbiased estimation in these analyses, the statistical power is inadequate, and a larger sample size is needed.

With the model underpowered, we reviewed the qualitative data to understand how NMCP staff and partners perceive the influence of LTA inputs on staff confidence and capacity. In interviews, in-country malaria partners observed that the LTA support had contributed to positive changes in NMCP leaders'

<sup>1</sup> Power refers to the probability that a test will find a statistically significant difference when such a difference actually exists. In other words, it is the probability that you will reject the null hypothesis when you should and thus avoid a Type II error. It is generally accepted that power should be 0.80 or greater.



communication and coordination with them. One representative from a Global Fund principal recipient (PR) noted the following:

*Q: Did you observe that the way the NMCP plays the role of malaria control leader has changed in the past year?*

*R: So what I can talk about is the very behavior of the NMCP leaders in relation to partners and in the way they speak, which is very important. Also you can demonstrate leadership on several levels: **there is communication with partners** and then behavior as well. I know that there is a lot of communication going on via email, the NMCP shares documents related to overall malaria control that even go beyond just the Global Fund work. [The LTA] is behind that. (CRS, Country A)*

In interviews and focus group discussions, several NMCP directors and staff noted that LTAs helped them to better understand and address governance and management gaps. An NMCP director described how the LTA assisted him in identifying gaps with the initial OCA and in helping NMCP staff to better understand their roles and responsibilities:

*“When I came [to the NMCP] I thought I had already transformed the program, but it was far from what I was hoping for. But when he did the assessment, I saw the shortcomings. I saw the shortcomings of what I had brought [to the NMCP] even though I thought I had made corrections, but after this initial review, I realized there was still a lot to do. And so I said to him ‘But how can we address all these questions?’ There were some questions, some situations that I could handle quickly, and I did. There were other questions that needed some training. In fact, after I saw [the OCA results] I saw that I was not wrong to ask for an LDP+, because he had found that not everyone was integrated... So there was that initial assessment, and it really, really, really helped us. And he saw through this assessment that though everyone had a job description, they were not concrete. They were linked to the state order that created the program, and the service manager knew about them, and I knew about them, but they weren’t really put into a document. **And so [the LTA] enabled us to put in place these job description documents and these allowed each person to understand what they do here. To see their responsibility, to see and also know their contribution to the system.**” (NMCP director, Country C)*

#### Box 5: Question 2 EMERGING QUALITATIVE THEMES

LTA credited for a role in:

- Identification of staff capacity gaps
- Improved staff coordination and communication
- Improved understanding of staff’s roles
- Improved internal planning and coordination (meetings, follow up)
- Improved work climate and team work, staff initiative, and problem solving with LTA-led LDP+ training

NMCP staff also stated that LTAs support, in tandem with organizational restructuring, has improved their capacity to plan and coordinate internally:

*“And a lot of things weren’t being done before with careful planning, where nobody but one person, the boss, utilized everything and each day told us ‘You do this, don’t do that.’ But I think that coming out of the LDP+ there was a certain decentralization, if I can say that, along with the new organigram that was developed, and then the head of the program changed also. All of this contributed to the fact that everyone understands what they should be doing. Each person, each week, is able to plan their activities.*



*That means that now each unit has weekly meetings. This means that at the beginning of each week, everyone already knows what is expected from then until the end of the week.” (NMCP staff, Country B)*

*“In regards to the specific role of [the LTA] that the NMCP received, this really put us in a place to follow an operational work plan. **So today, all units have their own action plan and, apart from that, we have monthly meetings that we organize.** These meetings are to evaluate our implementation of the operational plan, which is not just developed annually but also each six months, each quarter, and even monthly and weekly. Also, we have succeeded in putting together thematic working group meetings where the members of each unit are present. Partners participate in these meetings, which are held once a month. So these meetings have allowed us to closely monitor our activities. This is support that we have strongly appreciated, and it has allowed us to cover a lot of elements.” (NMCP staff, Country A)*

Across the board, NMCP staff, leaders, and partners discussed the role of a particular program introduced by the LTA in each country, in improving individual staff capacity: the Leadership Development Program Plus (LDP+). In all four countries, LTAs used the LDP+ to introduce and train NMCP staff on leading, managing, and governing practices. The LTAs in the four countries included in this phase of the assessment were trained on LDP+ facilitation, completed an LDP+ with NMCP staff, and have since modified the LDP+ in order to include key approaches and tools into NMCP work and planning processes. The LDP+ was mentioned specifically in all four NMCP staff focus group discussions, in all six NMCP director and deputy director interviews, and in nine key stakeholder interviews (56%). Staff credited the LDP+ for giving them tools to improve communication, coordination, planning, and to address challenges. As one NMCP staff described, their experience with the LDP+ also improved team cohesion:

*“We learned how to share with each other, to be more sociable here. Because before there wasn’t a lot of socializing, but we have kind of left that. We have a colleague who has been sick since last month, and we’ve tried to go see her several times, to go to her house to visit her, and that didn’t really happen before. So I think that the LDP with [the LTA] also helped us learn how to be social in a professional setting.” (NMCP staff, Country B).*

*“Attitudes among NMCP staff have changed as well. With the LDP+, we worked in teams, and people were able to express themselves for the first time. **The LDP+ process prompted people to identify problems and their own solutions and then propose them to the leadership.** Not every proposal was accepted, but [the LTA] has encouraged teams to go ahead and keep proposing their own solutions anyways, because some will be accepted and some will not, but it’s worth it to keep trying. **As a result, staff are showing more initiative – this program has psychologically changed staff, and their attitudes and habits have changed.** We are better at planning ahead instead of responding to immediate problems.” (NMCP director, Country B)*

These changes were noted by key malaria stakeholders in each country. They linked sustained LTA support and the LDP+, to improved capacity in planning, internal communication and coordination, and delegation of tasks, as expressed by a stakeholder representative in Country D:

*“The LDP+, which I think has set up for most of them an idea of where you need to go as a manager, as a program staff, and things that you need to do to improve the performance of the program. That has really helped them because previously it seemed to be like they were doing without knowing a way*

to go about it, but **with the LDP+ now they have an idea, they can really sit down and map all the activity (the challenges) and better communicate them, instead of just leaving it unsaid and nothing will be done.** So the LDP+ has also opened up communication because it has created a forum where staff are brought together, the senior managers with the program staff. At one point in time it was like an opening: people were saying things that they didn't have the opportunity to say before, because unlike the meetings they were going to before and being told what it was and what it should be, this forum really, really opened [communication] up and people were able to hear some of the challenges that the [less senior staff] were having and what the bosses were facing and where they could really meet each other.” (Program Management Unit, Country D)

### QUESTION 3: What effect has LTA support had on the NMCP's capacity to coordinate, lead, and manage the implementation of the Global Fund grant, according to NMCP staff?

#### Box 6: Question 3 EMERGING QUALITATIVE THEMES

LTA credited for a role in:

- Improved understanding of Global Fund rules, regulations, and requirements
- Improved planning through annual, quarterly, and monthly work plans
- Improved grant ratings
- Improved engagement with districts, health facilities, and other partners, resulting in improved data collection activity implementation, and grant performance

In the FGDs and KIs, NMCP staff generally agreed that the LTA support had increased the NMCP's capacity as an organization to coordinate, lead, and implement the Global Fund grants. References to Global Fund grant management changes were among the most frequent in the NMCP focus group discussions and NMCP director interviews.

Staff cited the LTA's role in improving the NMCP's overall understanding of Global Fund grant requirements, and improving communication with the Global Fund, as key to implementing activities. As one NMCP staff explained:

**“We understand [financial] justifications better,** how to justify them. In all cases, his support allows us to better understand what the Global Fund wants. And how we can manage the activities, how we can justify them, and often the two parties understand each other better. Because before, we did not understand the way the Fund saw because we

had our own way of seeing. They have their way of seeing and so, we never got closer to communicating. But now, **we understand each other and we are more comfortable** with having teleconferences.” (NMCP staff, Country C).

Changes to NMCP capacity to coordinate national malaria stakeholders was also widely cited in NMCP focus group discussions and NMCP directors. These changes were recognized as having increased the visibility and role of the NMCP in directing national malaria control efforts. NMCP directors credited the LTA support with having helped to improve coordination capacity, both at national levels and at the district level:

*“When we look at the managerial capacity of the NMCP leadership, today, you will see elements that we call institutional tools that make the malaria program a real program. First, look at how during the year we have a strategic plan. This strategic plan is divided into annual work plans, and the [LTA] supports the organization of the annual work plan. And with his support, we invite the partners to*

discuss the annual work plan with us, and when we developed the last annual plan **we even invited the regional directors and district director to help... This annual plan is then divided into quarterly plans. And, these quarterly work plans also are discussed in what we call quarterly malaria control coordination committee meetings, which we also call the RBM committee, which are at the national level.**" (NMCP deputy director, Country A)

In terms of managing the Global Fund grant, NMCP staff referenced the role the LTA has played in helping them to improve grant ratings and reinforce the governance role of the NMCP:

"And so now, I think things are going better. And, all this has allowed us to improve the performance of the program. So, in 2013 and 2012, we had a score of C, we had two scores of B1. This time it's linked; **this time we have B1**, which is related only to the question of finances, which were docked. On the website you will see B2, but nevertheless the programmatic score is B1. So for the programmatic side, this has really improved. We think that [the LTA and the LDP+] have lifted the level of each unit and so the training improved and the program is really playing its coordination role. And so... **we work with all the partners on the ground, the NGOs also who are on the ground refer to the malaria guidelines issued by the Ministry within the framework of the NMCP.**" (NMCP staff, Country C)

Participants linked improvements in NMCP capacity to coordinate externally and lead implementation of the Global Fund grant to improvements in internal coordination, through regular meetings, clarity in roles and responsibilities, systemic tracking of activities and action items, and greater emphasis on data collection.

"Each week, on Mondays, we have meetings. Before in 2014 we had meetings on topics, but sometimes the meeting reports were not easily available. So... [the LTA] improved that. Each time we have a meeting, we archive the reports in order to follow up and verify that the meeting was effective. This is an aspect that was reinforced. **And the points that we discuss at the leadership level, we prepare those points together to see what attempts we have made to address the program's concerns.** And because we discuss these concerns effectively during the meeting and share them, during the meetings recommendations come out and which allows us to follow up. We are moving forward in this way." (NMCP staff, Country C)

NMCP staff discussed how the LTA's management and leadership support contributed to increased malaria reporting and data collection:

"With his arrival, as my colleagues have said so well, with the LMG project we spent almost eight months on training leaders. So the NMCP had its challenge model that developed monitoring and evaluation objectives, partnerships associated even with the districts, the [district teams] and others, there were action plans that were elaborated and monitored with coaching. **So today, we have harvested the fruit of almost 22 facilities ...that have done the malaria control reports, and their contributions are really crucial for extending this to the interior of the country.**" (NMCP staff, Country A)

"Through his availability, really, his advice to NMCP leadership, we have been able to put in place tools on the ground that help us improve data quality." (NMCP staff, Country A)

There was also agreement among NMCP staff and directors that LTAs played an important role in helping them draft and negotiate Global Fund concept notes. In talking about drafting the NFM concept note, the NMCP director in one country noted the role that assistance provided by the LTA played:

*“We did not need outside technical support to develop the concept note. To develop the concept note, I said, ‘No, he’s my consultant, he’s my technical support.’ So when it was time, we wrote, we validated together, and we advanced. I set it up so that every evening we presented our work, and people were saying “Mr. Technical Advisor” “Mr. Technical Assistant” - because during that time he was like an assistant – ‘here is the vision that I have’ ‘Is this the right direction?’ ‘Here is where we are in drafting.’ **And we finished the concept note and the strategic plan was put in place. And the concept note was declared to be the best of 2014.**”* (NMCP director, Country C)

LTA support and contribution to coordination and leadership capacities of the NMCPs was perceived to have played a role in improving grant activity implementation and improvement of grant indicators, as expressed by focus group participants in Country B:

*“Regarding the daily implementation of activities, or during our coordination meetings, when we have recommendations, he has always been with us, and he has supported individual people, or he also supported the leadership with the processes for implementing the concept note. So, also in the joint community activities when we had to write documents, he was there. For the LLIN campaign, he also supported the NMCP during the whole process of implementing the campaign, from the development of the documents, training the trainers, and then the implementation of the activity itself in the field. So, all the major activities have known his support.”* (NMCP staff, Country B)

*“There were simple things that we could do - simple activities to complete that didn’t have a cost associated with them, but that were missing, that we could do what we could do to boost the indicators. So, for example, during the mosquito net distribution last year, to pregnant women during the seasonal malaria chemoprevention, we had good indicators from the distribution. It’s true that didn’t increase enough to achieve our targets, but we saw an improvement right after the [LDP+] because there was a recommendation that was given to us during the LDP+ that allowed us to improve the indicators. Simple activities like memos, following up regularly, that didn’t require money, but that only required the will). **With a little will... just memos to those involved in the work regularly, you can achieve an exceptional result. The same with the implementation of the Global Fund grant, we worked with [the LTA] in the evaluation of the distribution by community agents. He really helped us to integrate stakeholders.**”* (NMCP staff, Country B)

#### **QUESTION 4: What effect has LTA support had on the capacity of the NMCP to coordinate and regulate performance of Global Fund grants, according to NMCP partners?**

We use the term “NMCP partners” to describe national-level malaria control stakeholders. This included Global Fund malaria grant principal and sub recipients, WHO, UNICEF, other USG-funded programs involved in malaria control, the Global Fund Country Coordinating Mechanism, and USAID mission staff. These key stakeholders perceived that LTAs have had a positive effect on the capacity of NMCPs to manage and implement Global Fund grants, and generally agreed that LTAs support has contributed to capacity improvements.

NMCP partners observed that LTAs worked to strengthen NMCP staff confidence and capacity to fulfill its leading and coordinating responsibilities. They described LTAs guidance to the NMCPs and also attributed organizational improvements to this guidance. A Global Fund grant recipient summarized:

*“He writes, or he gives feedback, or he orients them to how they should organize themselves for this activity or that activity. So that confirms to me that he has a part in affirming the leadership of the NMCP. In regards to some areas where there may be bottlenecks, I know that he’s worked to bring together this partner or that partner, to bring everyone together to discuss. It’s something that I see at that level all the time: he always wants to affirm the NMCP as leader.” (CRS, Country A)*

*“I can say that if today the NMCP is where it is and where it was, I can say that – really [the LTA], if he has not played a maximum role of 100%, he played a truly extraordinary role, because I think when [the LTA] came here, there was the recession situation, which was a disaster since the Global Fund withdrew PR status and gave it to CRS. **Today the NMCP has another face and now a very clear vision for the national strategy**, and you see that the NMCP plans periods for review, planning periods, all that... I think that his leadership, his advice, his orientations were decisive.” (CRS, Country A)*

#### Box 7: Question 4 EMERGING QUALITATIVE THEMES

- LTA credited for a role in improved NMCP organizational behavior
- NMCP perceived to lead national malaria control efforts through improved planning, coordination, mobilization, and problem solving
- LTA is an appropriate form of technical assistance given the needs of NMCPs
- Given observed changes, LTA is a value-for-money proposition

NMCP partners not only linked the LTA’s support to changes in NMCP staff coordination and leadership capacity, but also to overall NMCP coordination and leadership capacity. There was agreement that NMCPs are better equipped to coordinate and communicate with the Global Fund country portfolio teams. Participants noted that Global Fund teams have been increasingly responsive, while NMCPs have become more confident in bringing their issues directly to the Global Fund team and more adept at working together to address bottlenecks.

A manager of the USAID-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project, a member of the CCM, and also a representative of the WHO expanded on their perception of these links:

*“[The NMCP] may have been coordinating according to the availability of some or others, but now it is much more well-defined and controlled, and today when the malaria program leaders sends a message to say ‘we have to meet about such and such a thing’ or ‘there is something that must happen, we must prepare to do this or prepare this,’ **today everyone is inclined to participate; to provide technical support; and some, to provide material and even financial support. So, that too is something that did not necessarily exist before, but is there today. So all this thanks to strengthened leadership.** Management also – although there is still room for improvement, I am sure that there are definite advances.” (SIAPS, Country A)*



“Communication has improved. Well, in the case of bottlenecks, for example, it might not be the fault of the PR itself, it can be caused by an external source - or even an external source or cause that the PR doesn’t have the influence over. **So, all efforts are made by the NMCP to jump start or propel the necessary actions needed by the NMCP’s partners. We know that the start-up... and paperwork take time, but despite this, the NMCP attempts to improve the implementation of the grant in the field. As I stated before, with the help of the [LTA], the NMCP staff is more professional...** their responses and demeanor are much more appropriate. NMCP staff also try harder and make more of an effort to resolve these problems when they have the capacity or ability to.” (CCM member, Country C)

“Even though some leadership changes have taken place there, but not really significant, just the program manager is changed. **But the rest of them are still the same group of people that have been there. And they are more confident now than before** — especially when it comes to partners. One example I can give you, in 2010 when I came here, they had already gone too far into making arrangements with an NGO for indoor spraying. And they entered into that arrangement being driven by that agency, instead of them being the driver. And so they did not have that bargaining power. They had it but they were not exercising it. So today they are more confident because [the LTA] comes with his experience with the way malaria programs should be managed and the position the team should take. And they—well, I don’t want to say power, because I want to put it positively - but let me say the potential they have to coordinate partners. They were overlooking their own abilities, you know. And so they have actually built confidence over the years.” (WHO, Country D)

Several NMCP partners, most notably USAID mission staff, evaluated the contributions of LTAs in terms of value for money, and drew comparisons to other forms of technical assistance. These stakeholders discussed how the investment of LTA support has added value to Global Fund investments:

“I know that [the LTA] has helped a lot in when you talk about Global Fund proposals. They have to be based on national strategies, because we no longer write proposals. I think it builds upon the national strategy, and I know at least that the NFM application went in and got a very high score. I think probably the best score in that year, and that’s why [our country] benefited from additional “top off” funding. And I am pretty confident that you can make a link between [the LTA] and a very high quality, well-articulated, clear proposal, which attracted attention from the technical review panel, and resulted in a high score and additional funding to the country. **So if you then look at how much you invest and you get an additional 15 or 30 million it’s a very interesting value for money concept. So for me, I don’t think I can comment too much about implementation. My comments would be more about organizational capacity building of the National Malaria Control program, and also helping in the formulation and negotiations of the new funding model funding. At least there I know for sure there was a huge impact coming from [the LTA]; I have no doubt about that.**” (USAID, Country C)

“New donors will come in and have money and ask [the Ministry of Health] ‘Please let’s do something.’ If we can shift their mindset to understand that this is mainly meant to help and everyone is part of this effort, I think we can achieve something. I think it can be done on the long or the short term. There are some specific things that we can do in the short-term, but the [LTA] is more like continuous accompaniment. So short-term, long-term [like needing a database built] or maybe a needs assessment. ‘Okay what do we need in terms of organizational support for capacity building, strengthening their

existing capacities?’ [They] need to be accompanied. *I’m quite sure that if we never had an advisor placed within the program we would have never have achieved this.*” (USAID, Country B)

The interviewed USAID mission staff considered LTA support to be a value-for-money investment in terms of adding value to USG investments in combatting malaria. This was reflected in KII, and was further reinforced by the USAID/Liberia mission’s decision to fund an additional year of LTA support through mission funding.

#### **QUESTION 5: Has NMCP capacity to implement the national malaria control strategy improved during the LTA’s tenure?**

To understand if LTAs inputs have a statistically significant relationship with changes in NMCP staff confidence, and if staff confidence has a relationship with Global Fund grant performance, we examined the pathways between LTA inputs, improvements in staff confidence, NMCP work plan completion, and indicators for Global Fund grant performance, as described in Figure 3 in the assessment design section. Our measures for grant performance included the grant disbursement rate, burn rate, and grant performance indicator achievement rate. A summary of descriptive statistics (mean, standard deviation, and 95% confidence interval) is shown in Table 16 below:

**TABLE 16: GRANT PERFORMANCE MEASURE DESCRIPTIVE STATISTICS**

	Mean	Standard Deviation	Confidence Interval
<b>Disbursement rate (%)</b>	89	161	49, 130
<b>Burn rate (%)</b>	41	94	16, 65
<b>Grant performance indicators (%)</b>	83	48	74, 92

#### *Associations between LTA inputs and staff confidence, and grant outcomes*

To test for linear associations, coefficients of correlation were calculated for the LTA inputs, overall gain in confidence, LTA induced gain in confidence, disbursement rate, burn rate, and grant performance indicator achievement rate. As discussed under Question 2, there is a strong and statistically significant correlation in overall gain in confidence and the LTA induced gain in confidence, and only a weak correlation between the LTA inputs and reported changes in confidence. The coefficients of correlation analyses of LTA inputs and confidence gains showed:

- No statistically significant relationship between the LTA inputs and grant disbursement rate, grant burn rate, and grant performance indicators
- A strong, negative relationship between overall gain in confidence and grant disbursement rate
- A strong, positive relationship between overall gain in confidence and grant burn rate
- A medium strong relationship between overall gain in confidence and grant performance indicators
- A strong, negative relationship between LTA induced gain in confidence and grant disbursement rate
- A strong, positive relationship between LTA induced gain in confidence and grant burn rate
- A medium strong relationship between LTA induced gain in confidence and grant performance indicators

These results are displayed in Table 17 below:

	LTA inputs	Overall gain in confidence	LTA induced confidence gain	Disburse-ment rate	Burn rate	Grant perform-ance indicators
LTA inputs	1.00					
Overall gain in confidence	0.19	1.00				
LTA induced confidence gain	0.24	0.95**	1.00			
Disbursement rate	-0.16	-0.60**	-0.57**	1.00		
Burn rate	-0.11	0.64**	0.66**	-0.45*	1.00	
Grant performance indicators	-0.22	0.42*	0.45*	-0.16	0.93**	1.00

\*p<0.05 and \*\*p<0.01

There is a strong and statistically significant correlation in overall gain in confidence, LTA-induced gain in confidence, and burn rate. Overall gain in confidence and LTA induced confidence gain also correlate well with grant performance.

We expected to see but did not see correlation of LTA inputs with the other variables further along the causal chain, like gain in confidence, disbursement rate, burn rate, and grant performance.

As expected, we find a statistically significant and strong correlation between burn rate and grant performance. However, disbursement rate does not correlate with grant performance. In addition, disbursement rate has a statistically significant negative correlation with staff gain in confidence.

The results of these analyses are interesting in that they reveal no correlation between the LTA inputs and grant performance measures. While this may suggest that no association exists, it is more likely due to the small sample size and/or problems with the LTA and/or problems with the LTA input data collect tool, as previously discussed in study limitations

The positive relationships between gain in confidence and LTA-induced gain in confidence, and grant burn rate and grant performance indicators, indicate that there is a statistically significant correlation between confidence improvements and these grant performance measures (the third and fourth arrows in our conceptual framework). However, the strong negative correlation between confidence and disbursement rate requires further exploration. This could also be due to the limitations of grant disbursement as a measure of grant performance. The negative relationship found between disbursement rate and burn rate and grant performance indicators may also suggest this limitation, as we would expect to see strong, positive relationships between these indicators.

#### *Associations between inputs and grant outcomes: regression analyses*

To test the associations between LTA inputs and NMCP staff confidence and grant performance outcomes, we ran a series of OLS regression analyses. The results of Model 1 analyses, testing just the relationship between LTA inputs and self-reported increase in confidence with grant performance is displayed in Table 18. The results of Model 2, which include the covariates of NMCP staff age, sex, and length of service, are displayed in Table 19.



**TABLE 18: OLS REGRESSION ANALYSES, MODEL 1**

	Independent variable	Dependent	Reject null hypothesis? (Model significant?)	Relationship? (Effect)	Adequately powered? (>0.80)
1	LTA inputs	NMCP work plan completion	No <i>Prob(F) = 0.3549</i>	No ( $\beta = -0.17$ )	Yes (0.93)
2		Disbursement rate	No <i>Prob(F) = 0.3708</i>	No ( $\beta = -0.16$ )	Yes (0.92)
3		Burn rate	No <i>Prob(F) = 0.5543</i>	No ( $\beta = -0.11$ )	No (0.74)
4		Grant performance indicators	No <i>Prob(F) = 0.2264</i>	No ( $\beta = -0.22$ )	No (0.68)
5	Self-reported increase in confidence	Disbursement rate	Yes <i>Prob(F) = 0.0011</i>	Yes, negative ( $\beta = -0.66^*$ )	Yes (0.84)
6		Burn rate	Yes <i>Prob(F) = 0.0004</i>	Yes, positive ( $\beta = 0.70^*$ )	No (0.64)
7		Grant performance indicators	Yes <i>Prob(F) = 0.0295</i>	Yes, very small positive ( $\beta = 0.42^*$ )	No (0.55)

$\beta$  is the standardized coefficient. When  $\beta = 0$  there is no relationship between the variables

\* $p < 0.05$  and \*\* $p < 0.01$

**TABLE 19: OLS REGRESSION ANALYSES, MODEL 2**

	Independent variable	Covariates	Dependent	Reject null hypothesis? (Model significant?)	Relationship? (Effect)
1	LTA inputs	NMCP staff age, sex, length of service	NMCP work plan completion	<b>Yes</b> <i>Prob(F) = 0.0097</i>	No ( $\beta = -0.17$ ) <i>Small positive female sex</i> ( $\beta = 0.61^*$ )
2			Disbursement rate	<b>Yes</b> <i>Prob(F) = 0.0126</i>	No ( $\beta = -0.16$ ) <i>Small positive with female sex</i> ( $\beta = 0.42^{**}$ )
3			Burn rate	No <i>Prob(F) = 0.0743</i>	No ( $\beta = -0.11$ )

4		Grant performance indicators	No <i>Prob(F) = 0.0732</i>	No ( $\beta = -0.22$ )
5	Self-reported increase in confidence	Disbursement rate	Yes <i>Prob(F) = 0.0009</i>	Yes, very small negative ( $\beta = -0.40^*$ ) <i>Small, positive relationship with female sex (<math>\beta = 0.39^{**}</math>)</i>
6		Burn rate	Yes <i>Prob(F) = 0.0015</i>	Yes, positive ( $\beta = 0.76^{**}$ )
7		Grant performance indicators	Yes <i>Prob(F) = 0.0456</i>	Yes, small positive ( $\beta = 0.51^*$ )

$\beta$  is the standardized coefficient. When  $\beta = 0$  there is no relationship between the variables

\* $p < 0.05$  and \*\* $p < 0.01$

**LTA inputs and grant performance:** For analyses 1-4 in both models, we were both unable to reject the null hypotheses and saw no statistically significant relationship between the LTA inputs and the grant performance outcome variables. From these results, we cannot confidently associate the support provided by the LTA with any positive changes in grant performance – meaning the results do not show a direct link between LTA inputs and outcomes further along the conceptual framework.

**Staff confidence and grant performance:** While we are unable to identify direct relationships between the initial LTA inputs and grant performance, analyses 5-7 in both models showed self-reported increases in confidence as having a modest effect on the grant performance measures. Namely, the results showed that increase in confidence is positively related to grant burn rate and grant performance indicators. These tests are slightly under powered; which render the findings even more noteworthy given that we arrive at this results with inadequate power. However, our results on effect size suggest that increased confidence among NMCP staff may have a small impact on achievement of grant performance indicators and grant burn rate. In other words, if staff feel more confident that they are capable of fulfilling their core job functions, we may see higher achievement in grant performance indicators, and staff may influence the whether or not grant money is spent in the period for which it was budgeted.

While we saw a positive relationship between confidence and burn rate and performance indicators, the same analyses showed a negative relationship between staff confidence and disbursement rate. Initially we predicted that this would be a positive relationship, with disbursement rates improving as staff become more confident that they have the knowledge, skills, and ability to fulfill their functions. However, given the coefficients of correlations we found for disbursement rate, we interpret these results as evidence of the limitations of using the grant disbursement rate as an indicator for grant performance.

**Difference-in-differences regression results:** We also conducted difference-in-differences regression analysis using three predictor variables: intervention (LTA), post, and intervention\*post. This analysis compared outcomes in disbursement rate, burn rate, grant performance indicators, grant rating, and programmatic rating between the four countries that had received LTA support, and four other

countries in the region that did not receive LTA support (Central African Republic, Chad, Mali, and Togo). This analysis showed no statistically significant relationship between the intervention and the grant outcomes measured.

However, it should be noted that power of the analyses for disbursement rate, burn rate, and grant performance indicators, was not adequate for finding a statistically significant difference when there is one. Therefore, we are unable to draw conclusions from the regression analysis results.

For grant rating and grant programmatic rating, there was adequate power. While the analysis showed no impact of the intervention on grant rating and programmatic rating, it did show a statistically significant secular rising trend of one letter grade improvements over 10 years of past and current grants. This tells us that on the whole, grant rating and programmatic ratings are improving, and we cannot attribute those improvements to the presence of LTA.

## Discussion

While the ongoing assistance, training, advising, and coaching provided by LTA are noted by NMCP staff and key NMCP partners as having influenced both individual and organizational skills and behaviors, leading to improved management of Global Fund malaria grants, we did not find a direct, statistically significant relationship between LTA support and grant outcomes. We see some correlation between increase in confidence and grant outcomes, but not between LTA inputs and changes in staff confidence.

Furthermore, our qualitative research and descriptive analyses suggest a relationship between staff confidence and improved NMCP organizational capacity to implement and manage grants successfully. Participants attribute the LTA inputs to their increase in confidence, but when we run statistical tests, we do not see this correlation. There are several possible reasons for this incongruence in findings:

1. **The sample size was not adequate for testing the relationships between LTA inputs and grant performance outcomes.** For this conclusion we would continue to trust that the survey tool adequately captures LTA inputs, but need a larger sample and testing of the reliability and validity of the survey instrument.
2. **Social desirability bias.** It is possible that the survey did not control for social desirability bias, and respondents answered questions about LTA inputs in a manner that they assumed would be more favorable for the LTA.
3. **The survey instrument used to gather data on LTA inputs did not adequately capture LTA inputs.** This would mean that either the design of the survey was problematic in terms of the reliability and validity of the instrument, or that the inputs we identified in our theory of change (assisting, training, advising, and coaching) are not in fact the elements that improve staff and organizational capacity. For the former, we would need to further examine other ways of surveying how LTAs have supported NMCPs. For the latter, we would need to examine other possible LTA inputs not included in the current theory.
4. **Other intervening variables were not measured.** It is possible that other intermediate variables should be included in the pathway from LTA inputs, to staff confidence, to Global Fund grant outcomes. Meaning, the link is not as direct as tested in this assessment, and that measurements of staff confidence are not enough to make a significant difference in grant performance outcomes. This indicates that it may be possible to find more significant links were

we able to measure actual changes in staff and NMCP behavior. In order to measure these changes, more comprehensive monitoring and evaluation of changes in staff behavior (through baseline assessments of staff) throughout the tenure of the LTA would be needed.

Phase II of the assessment will allow us to narrow down the possible conclusions. In light of the qualitative data, which supports the hypothesis that a relationship exists between the LTA's support, NMCP capacity, and grant performance, we conclude now that further data and study is required.

In the following sections, we discuss the ways in which the external context, internal context, and attributes of the LTA intervention may have either supported or inhibited the capacity of NMCPs to coordinate, lead, and manage malaria control efforts.

## External Context

In this assessment, external context refers to anything in the NMCP's external environment that contributes to or impedes the NMCP's ability to fulfill its function of coordinating national malaria control efforts and implementing the malaria grant. This specifically includes the governance structure (ministry of health, grant funding structure) in which the NMCP resides, resources (financial, material, technical), and events.

NMCPs in all four countries are situated within the national ministry of health. The specific MOH and other **government structures** for approval for fund disbursement, introduction of new guidelines and policies, and human resource management, influence the speed at which NMCPs can plan and implement malaria control activities. In several countries there are multiple levels of authorization required before grant funding is given to the NMCP, which can delay activity implementation. Delays in fund disbursements were attributed at times to the Global Fund and at other times to the ministry of health. Regardless of the source, participants agreed that disbursement delays are not only disruptive to activity implementation, but also to overall management of the grant. As NMCPs sit under ministries of health, their decision-making power and authority to move forward with activities is at times limited, and activities must be coordinated with other health priorities in the country.

NMCPs also function within the **Global Fund grant making and management structure**, which can also influence timelines and activity implementation. Actors within these structures include the Global Fund country portfolio team, the Country Coordinating Mechanism, PRs, SRs, the other two Global Fund disease programs (HIV/AIDS and tuberculosis), Fiscal Agents, and in some countries the Program Coordinating Unit. NMCPs must collaborate closely with these actors to effectively manage and implement grants; however, they have limited authority to address or resolve issues with other actors. For example, in Cameroon, the current grant includes community-based activities that must be managed and implement with the other two disease programs. These activities were delayed when the grant-making process for the two other programs took months longer than for the malaria grant, which can be assumed to have impacted the malaria grant burn rate.

In terms of Global Fund grant governance, NMCPs as both PRs and SRs are subject to grant conditions when requirements are not fulfilled. According to assessment participants, the Zero Cash policy in Guinea, while justified, has influenced activity implementation timelines. In other countries, participants

cited overly-strict procedural requirements that can result in ineligible costs, even if the activity itself was done correctly.

**Malaria commodity procurement mechanisms** are at the nexus of government and grant management structure challenges. Procurement of malaria prevention and treatment drugs and commodities make up the largest chunk of grant spending. Depending on the country, procurement is managed by national medical stores, semi-autonomous national procurement services, or sometimes by UN agencies. While the NMCP as PR leads coordination of the procurement process, it does not procure itself. Delays may occur at many different levels of the procurement process, and the NMCP's authority to resolve these delays can be quite limited, which in turn means that grant burn/absorption rates can be strong impacted.

**Insufficient financial resources** are also a barrier to the ability of NMCPs to implement their national malaria strategies. A country's ability to pay staff well and on time -- both NMCP staff and staff across the health system -- impacts motivation and the quality of work. This can have a particularly detrimental effect at the district and facility levels, where malaria prevention and treatment take place. Likewise, countries have not committed the financial resources necessary to address national health priorities, which means there is strong reliance on grant funding.

**External events** also influence the coordination and implementation of malaria activities. The LTAs in Guinea and Liberia were present throughout the **2015 Ebola virus epidemics**. During this period, NMCPs continued to implement malaria control activities, though activities were often delayed and/or revised: for example, bednet distributions in Liberia were changed from door-to-door to fixed site, and all suspected malaria cases were treated without testing in both Guinea and Liberia per WHO guidelines. In both countries, participants noted that the LTA had guided and supported NMCPs throughout the outbreak, particularly in the reprogramming of activities and coordination with partners. In terms of the outbreak's impact on grant performance, in Guinea, where the NMCP is not the PR but rather the SR, grant performance measures (disbursement rate, burn rate, and grant performance indicators) were not much different from Cameroon and Côte d'Ivoire. However, in Liberia, grant performance measures were nearly 48% lower than the other countries. While no statistical analyses were conducted on these differences, they merit further investigation to better understand the impact of the Ebola virus epidemic on grant management and implementation.

## Internal Context

The internal context refers to the internal environment that could affect an NMCP's ability to fulfill its function. We specifically looked at the internal NMCP culture and work climate, resources and support available, and NMCP human resources structure and staffing.

In all four countries, participants noted that in the past, the **work climate** at the NMCP, in terms of staff motivation and team spirit, was negatively impacting NMCP coordination and activity implementation. Malaria stakeholders not only noted a shift in NMCP staff internal coordination and teamwork post-LTA, but also increased teamwork at the NMCP. As noted in a previous section, NMCP staff confirmed these observations, noting that prior to the LDP+ their sense of mutual support and encouragement had been lacking. As noted by one NMCP staff, "The LDP has fundamentally changed our attitudes... towards work, relaxation, the professional environment." Staff and partners agree that

these changes in attitude and staff cohesion seem to have facilitated planning, coordination, and activity implementation.

We expected that **internal resources**, such as equipment, office space, materials, and/or technology, would be largely noted as either a barrier or facilitator for NMCP work; however, this was not the case. When it was noted, it was by NMCP partners, not by NMCP staff themselves. Specifically, partners in two countries said they felt that the lack of reliable internet connections, NMCP website, Ministry of Health email addresses, and program logo, limits the ability of NMCPs to effectively coordinate and communicate with national partners.

While material and other resources were not generally seen to be affecting the capacity of the NMCP to fulfill its function, interview and focus group participants emphasized **staffing and human resources issues** as barriers to full capacity. Many staff felt that they did not have the time or resources needed for technical training and development. Similarly, NMCP directors and partners observed that there is low incentive to invest in staff development when staff turnover is high, and government-hired staff can be reassigned to other programs and departments with little warning. Since NMCPs are situated within the government, human resources are managed by a centralized human resources unit in the ministry. This can mean that NMCP directors have little to no authority to fire or replace underperforming staff.

## Intervention Attributes

The intervention attributes refer to the specifics of the intervention itself that can affect how successfully or unsuccessfully it is able to achieve intended results. Here, intervention attributes refer to any attribute of the LTA's support that NMCP staff and NMCP partners used to conclude the appropriateness and usefulness of the support. This would include the knowledge and behavior of the LTA himself, the duration of time the LTA was present, and the specific approaches and tools the LTA used to strengthen NMCP staff capacity.

Prior to placing an LTA with each NMCP, the implementing partner worked closely with the USAID mission and NMCP **to identify recurring grant management challenges and NMCP needs**. This approach involved the NMCP leadership in the LTA's work from the beginning, and NMCP directors reported that they were appropriately consulted throughout the recruitment process. We found that this helped to secure a certain level of buy-in from the NMCP, which in turn facilitated the integration of the LTAs into the daily work of the NMCPs.

We found that **the knowledge and behavior of each individual LTA** was felt to be appropriate for each NMCP's needs. The experiences and profile of each LTA had been carefully considered against the needs of each NMCP during recruitment. Interview and focus group participants said that the LTAs' ability to demonstrate their knowledge of Global Fund grant processes and procedures had helped them to improve their own knowledge and management of grant funding. They also noted that LTAs had been successful in gaining the trust of NMCP directors and staff; made themselves available to assist, advise, and coach at all times; and had infused their support with optimism and a can-do attitude. The LTAs were noted to have been patient yet persistent, and could be depended upon to provide support whenever needed.

Initially the LMG/NMCP project had planned to place LTAs with NMCPs for a maximum of two years. At the time of this study they had been extended between six and 12 months. Participants expressed that two years should be the **minimum amount of time** for any LTA, and that optimally LTAs would

be placed with NMCPs for up to five years (although one respondent suggested 10), depending on the needs of the NMCP.

At the beginning of the LMG/NMCP project, PMI intended for LTAs to be placed with NMCPs in non-PMI-focus countries (countries without a PMI program). However, both Liberia -- which has a full PMI program -- and Guinea -- which has a partial PMI program -- received LTA support. The quantitative variables analyzed (LTA inputs, increase in confidence, and grant performance measures) were not substantially different between these two countries and the two non-PMI countries, Côte d'Ivoire and Cameroon. Additionally, participants in Liberia, including the USAID/PMI Advisor, noted that having the LTA placed at the NMCP offices afforded them greater access to NMCP staff and provided a better understanding of day-to-day NMCP activities. In Guinea, the LTA played a role in helping the NMCP to harmonize activities among the Global Fund-supported districts and the PMI-supported districts. Interview participants strongly advocated that the LTA approach **not be limited to non-PMI-focus countries** and felt that the LTA added value to PMI programming as well as Global Fund grant management.

Though the LDP+ was a common activity for all LTA included in this phase of the assessment, while designing the assessment we did not anticipate that participants would so prominently reference this training program. During the initial stages of coding the KIs and FGIs, we noticed this prominence and included several LDP+-related codes in the codebook. Our resulting analyses indicate that **the LDP+ was an important attribute of the LTA intervention**, specifically in regards to LTA training support. On this alone we advocate for inclusion of the LDP+ in any future LTA work plan, although this also merits further research.

## Future Research Priorities and Implications for Technical Assistance

The question of how LTAs contribute to NMCP organizational capacity is only partially addressed in this assessment. While it is generally difficult to quantify and connect the influence of improved individual staff confidence and organizational capacity changes, a comparison of **OCA baseline and endline scores** would provide a more complete picture of what changes in organizational behavior took place, and what can be expected at which level of the conceptual framework. The OCA endline will provide data on organizational capacity intermediate results – a dataset needed to test the causal pathway between LTA inputs, increase in individual staff confidence, and organizational capacity. We plan to include these datasets in Phase II of the assessment.

Qualitative results, as well as descriptive statistics, suggest that LTA inputs play some role in increased staff confidence and also facilitate improved Global Fund grant management. However, a **larger sample size** is needed to run an adequately powered test. We are currently analyzing Phase II LTA data from the five additional countries: Burundi LTA, Côte d'Ivoire supply chain management LTA, Nepal, Niger supply chain management LTA, and Sierra Leone. This will both allow us to rerun the analysis using a larger sample size, and also compare results between countries that have had continuous LTA support for three years or more with those that have received LTA support for less time. These datasets comprise Phase II of the assessment.



Finally, the limitations of **grant performance measures** undermine the reliability of results. There are several issues with current measures, which have been acknowledged by other programs working with Global Fund PRs, such as the Grant Management Solutions project, as well as by the Global Fund itself. Since disbursements are no longer tied to grant management performance, disbursement rates no longer serve as an indicator for performance. Grant performance indicators are only measured every year or every two years, which means that changes in these indicators may not be captured during the LTA's tenure. Grant burn (absorption) rate is perhaps the best proxy measure for grant management and performance, though the majority of grant funds are used for procurements and NMCPs may have limited control over procurement processes. Programmatic and grant ratings are given at the discretion of the Global Fund Country Portfolio team, and cover the entirety of the Global Fund grant, not only PR or SR performance.

Currently, PR dashboards are being introduced to Global Fund programs. These dashboards allow PRs to collect and review up-to-date data on indicators that are closely tied to PR grant management performance, such as stock-outs of malaria commodities, SR performance, and activity completion rates. We recommend that future research includes the dashboard data, and that indicators tracked by dashboards to be used as measures for grant management outcomes.

## Conclusion

It is clear from our assessment that NMCPs benefit from the support provided by LTAs. From the perspective of people who have worked directly with LTAs, LTAs add value to existing NMCP staff skills and knowledge by building staff confidence to adopt behaviors and attitudes that improve management of Global Fund grant resources. LTA inputs (assistance, training, advice, and coaching) were reported to have been effective due to:

- Early involvement of NMCP leadership in identifying needs
- The skill set and experience of the LTA
- The LTA's ability to gain the trust of NMCP staff and provide support that was seen to be directly related to the immediate needs of the NMCP
- The LTA's use of effective tools for building staff capacity, such as the LDP+
- The LTA's emphasis on promoting the NMCP as the leader of national malaria control efforts
- The LTA's attitude, approachability, and availability
- The duration of time the LTA has been working with each NMCP

While the qualitative data and descriptive statistics were in agreement, and we found statistically significant relationships between improvements in staff confidence and grant performance, our study did not find statistically significant relationships between LTA inputs and grant performance outcomes. More data and more study are needed to clearly and quantitatively measure the causal links between LTA inputs, staff capacity gains, organizational capacity gains, and grant performance.

## **Annex I: Survey Instrument**

## Survey: Program Officers

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This programmatic assessment will examine the role of long-term technical assistance advisors (LTAs) in building individual and organizational capacity of National Malaria Control Programs (NMCPs). LTAs work with NMCP staff to develop skills and knowledge, and promote practices and behaviors that will lead to organizational improvements and increase NMCPs' ability to lead national malaria control efforts and manage Global Fund grants. Therefore, this assessment is designed to examine the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it impacts the management and implementation of Global Fund malaria grants. It will also contribute to broader scientific and programming knowledge in the use of long-term technical assistance advisors for organizational capacity building. This assessment is being supported by the President's Malaria Initiative (PMI), with funding from the United States Government (USG) Global Fund 5% technical assistance set aside, through the Leadership, Management, and Governance National Malaria Control Capacity Building project (LMG/NMCP).

The following survey will gather information on your opinions of the actions carried out by the LTAs that have been working with the NMCP in your country, their effect on your individual skills and behaviors, and their effect on the organizational capacity of the NMCP. Questions in Section 1 ask you to indicate if and how the LTA supported specific actions. In Section 2, questions ask you to rate your confidence in your abilities to carry out certain actions, first **before** the LTA arrived, and then **after**. Finally, you will be asked to evaluate the degree to which you think the LTA influenced any changes in your abilities. You should answer questions based on your **actual current behavior** rather than what you feel you should be doing or want to do. Please remember that this is in no way an assessment of your individual performance. We are seeking your feedback as it is vital in helping us to understand how effective the LTA model is. Your participation is voluntary and you have the option to stop taking the survey at any time. Your responses will be kept confidential and will not be associated with you now or in the future.

Please confirm that prior to completing this survey you have read and agreed to the disclosure statement about this research and have signed the consent form of your own free will. Did you read the disclosure statement and have you given your consent to participate in this interview?

- ☐ I was given the disclosure statement and gave consent to participate in the survey
- ☐ I did not agree to participate in the survey

Demographic	Response
Gender (M/F)	
Age	
Number of years in service at the NMCP	
Area of expertise (i.e. Finance, M&E, Vector Control, etc.)	

## SECTION I

**Review the list of actions below. On which of the following did the Advisor train, assist, advise, or coach you? Please check all that apply.**

Definitions:

**Trained:** The Advisor taught us skills and approaches for carrying out an activity or task. *Example: The Advisor held a training session on how to write sections of the Global Fund concept note.*

**Assisted:** The Advisor was directly involved. He/she was responsible for completing some or all of the tasks related to the activity. *Example: The Advisor wrote sections of the Global Fund concept note.*

**Advised:** The Advisor directed, made recommendations, and reviewed our work in order to help us carry out an activity or task. *Example: The Advisor reviewed the draft Global Fund concept note and gave us specific feedback and recommendations on how to improve it.*

**Coached:** The Advisor helped us to reflect and identify next steps and/or solutions on our own in order to accomplish an action or task. *Example: The Advisor asked us questions and listened in order to help us identify issues with the Global Fund concept note. He/she did not tell us what to do, but rather helped us to decide on our own.*

**n/a:** Not applicable.

		Trained	Assisted	Advised	Coached	n/a
<b>Technical</b>						
1.	Development of national malaria control guidelines					
2.	Revision of national malaria control guidelines					
3.	Supportive supervision visits to districts and/or facilities					
4.	Supportive supervision trainings					

		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>
5.	Implementation of mass LLIN distribution campaigns					
6.	Implementation of seasonal malaria chemoprevention					
7.	Implementation of iCCM					
8.	Technical trainings for district malaria focal points/district malaria staff					
<b>Coordination and planning</b>						
9.	Regular coordination meetings with all NMCP staff					
10.	Regular internal coordination meetings with NMCP technical teams					
11.	Regular coordination meetings with technical working groups					
12.	Development of coordination meeting calendar					
13.	Dissemination of calendars to NMCP staff					
14.	Planning meetings for mass LLIN distribution campaign with partners					

		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>
15.	Coordination with private facilities					
<b>Grant management</b>						
16.	Regular coordination meetings with SRs and PRs					
17.	Timely compilation of grant programmatic updates					
18.	Timely submission of programmatic updates					
19.	Resolutions of special conditions and/or conditions precedent					
<b>Global Fund Concept Note</b>						
20.	Coordination of concept note planning meetings					
21.	Drafting of concept note					
22.	Grant negotiation					
23.	Development of concept note budget					

		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>
24.	Revision of concept note					
25.	Development of concept note supporting documents (operational plan, etc.)					
26.	Communication with the Global Fund during concept note development					



## SECTION 2

**STEP 1:** First, read column A. In column B, place a **(B)** on the step signifying how confident you felt about your ability to (statement in box) **BEFORE** the arrival of the advisor in **January 2014**. Place an **(N)** on the step indicating how confident you feel about your ability to (statement in box), **NOW**. Leave Column C blank until you have completed this step. Low on the step indicates that you are Not Confident At All, middle on the step indicates that you are Fairly Confident, and high on the step indicates that you are Very Confident.

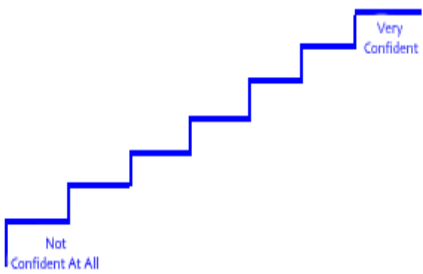
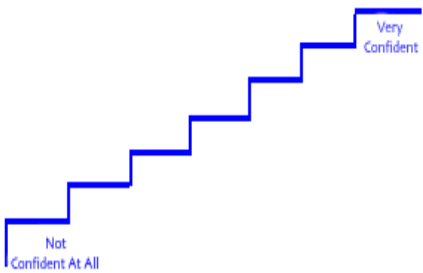
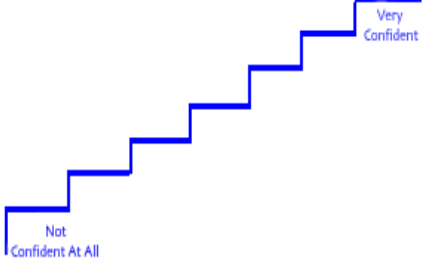
**STEP 2:** After you have completed step 1, review this list again and indicate in column C, write how much influence you think the Advisor's support had on the change (if any) on a scale from 1 to 3:

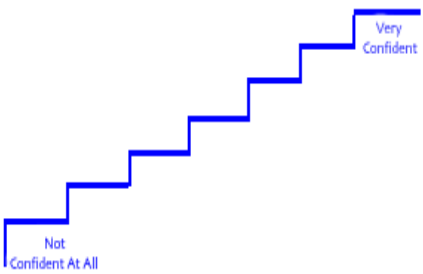
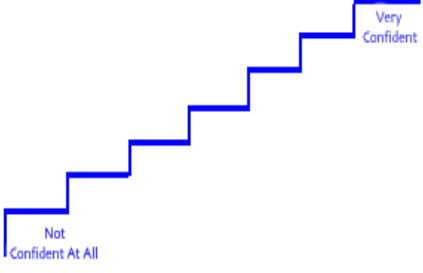
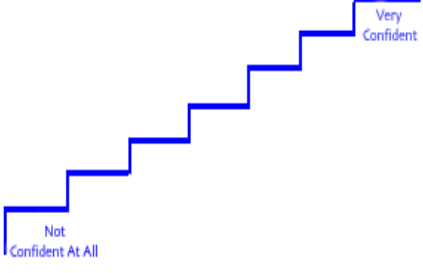
1 = No influence      2 = Some influence      3 = Significant influence

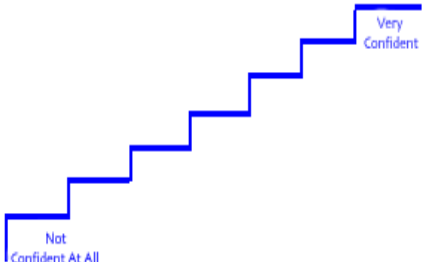
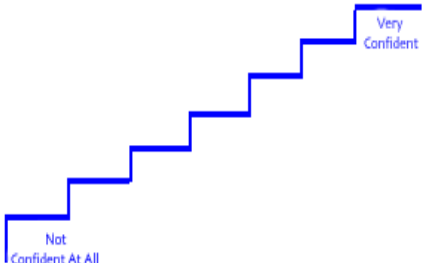
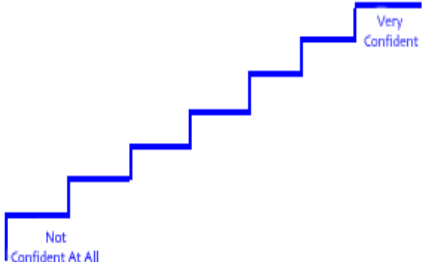
	A	B	C
E X	<b>EXAMPLE 1:</b> Follow the code of conduct in my daily work		
		1. Read the action 2. Indicate how confident you were in carrying out the action before the Advisor arrived. 3. Indicate how confident you are in carrying out the action NOW.	
E X	<b>EXAMPLE 2:</b> Plan and facilitate meetings		
		4. Rate how much influence you think the Advisor had on any change in confidence.	

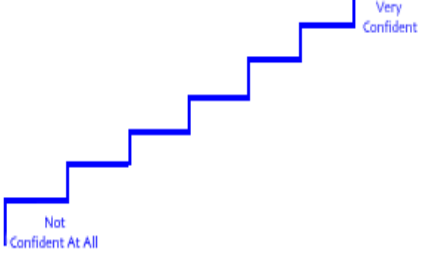
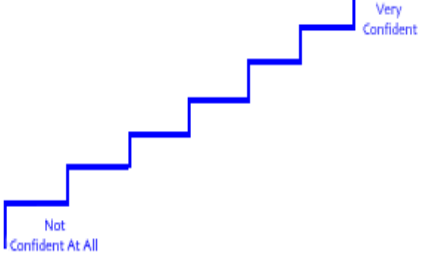
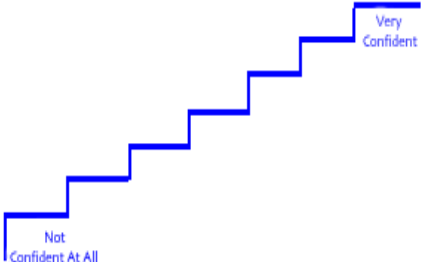
In Example 1, you were not very confident in your ability to follow the code of conduct before the Advisor arrived, and now you are moderately confident. You think the Advisor had some influence on this change.

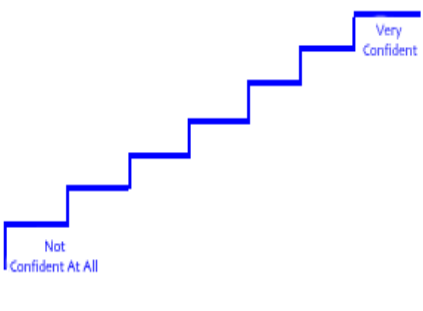
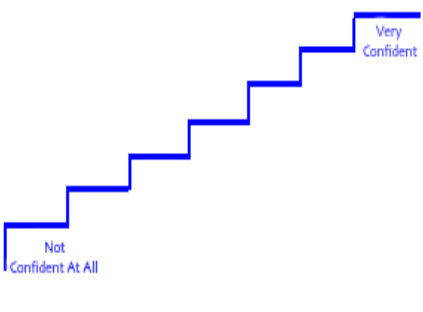
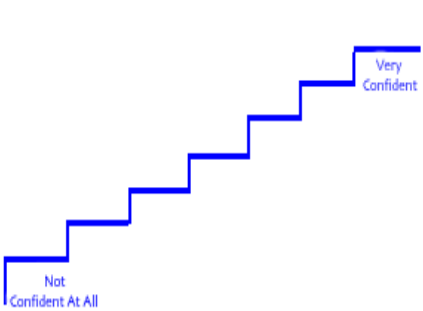
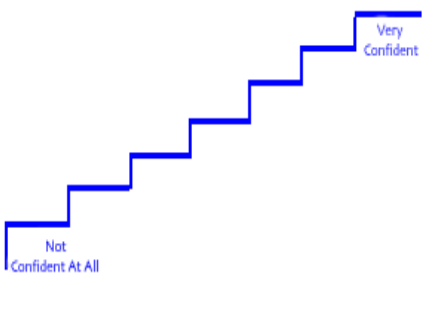
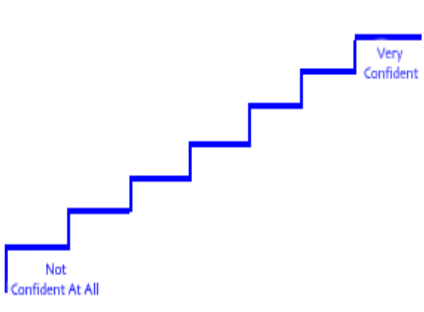
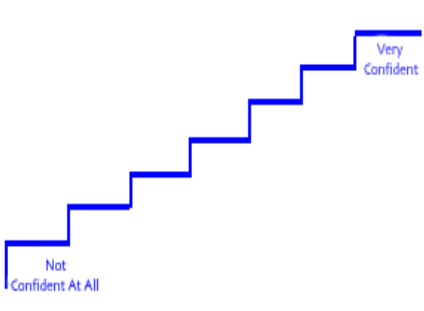
In Example 2, you were moderately confident in your ability to plan and facilitate meetings before the Advisor arrived and are still moderately confident. You don't think the Advisor had any influence on your ability to plan and facilitate meetings.

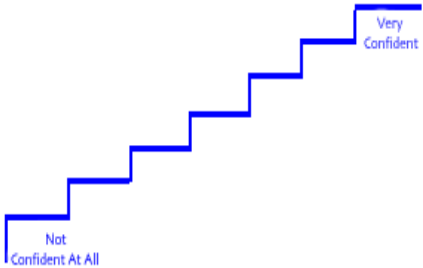
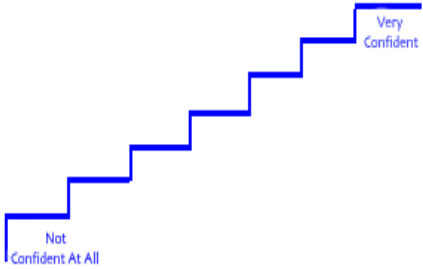
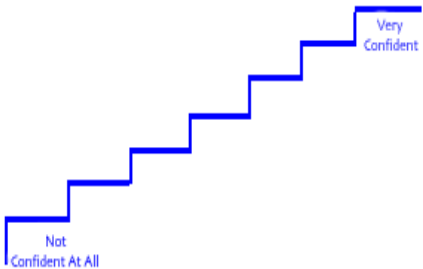
	A	B	C
1	Carry out all of your job responsibilities		1 2 3
2	Articulate the NMCP's mission		1 2 3
3	Articulate the NMCP's strategy		1 2 3

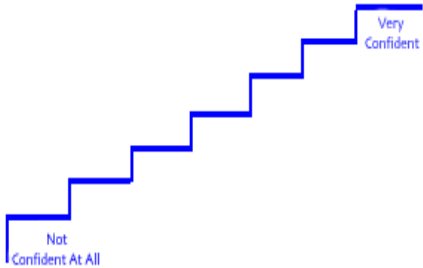
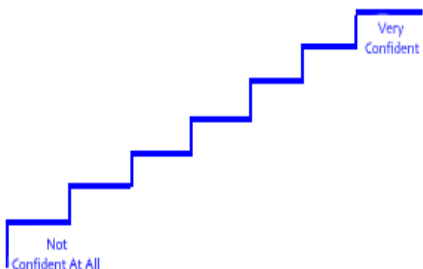
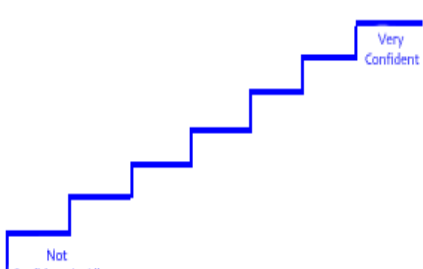
	A	B	C
4	Describe the NMCP's structure and lines of accountability		1 2 3
5	Establish, practice, and enforce codes of conduct		1 2 3
6	Give feedback to coworkers		1 2 3

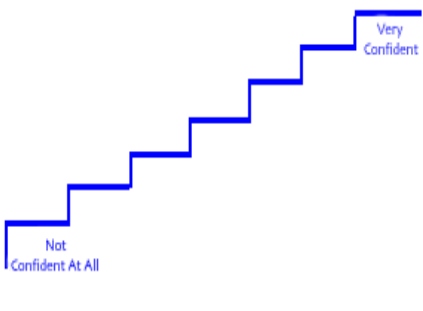
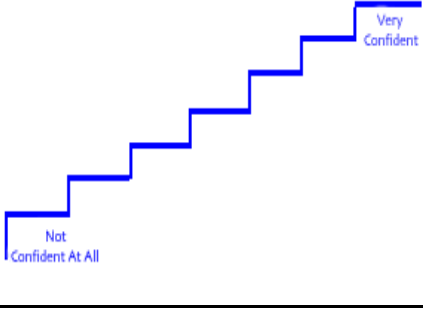
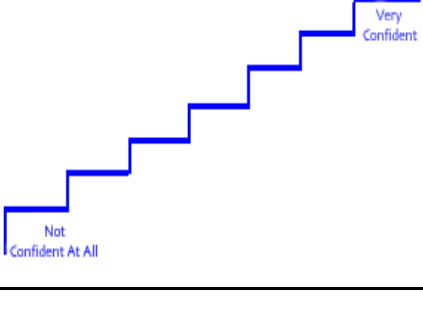
7	Receive feedback from coworkers		1 2 3
8	Identify your own values, strengths, and weaknesses		1 2 3
9	Analyze challenges		1 2 3

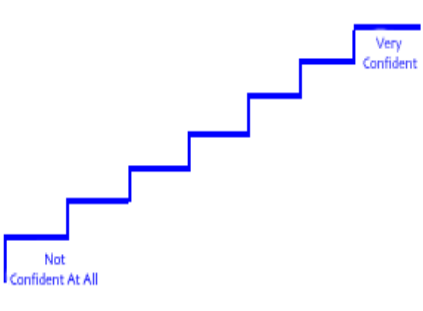
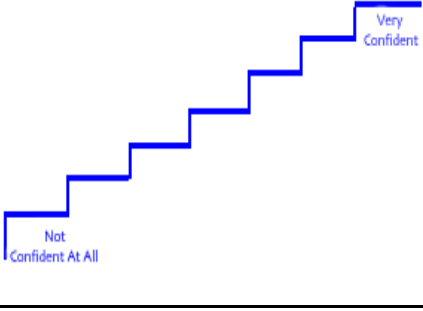
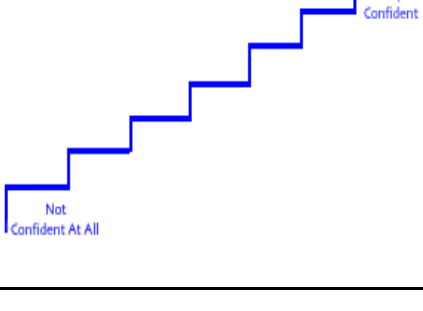
10	Discuss and analyze challenges with your coworkers		1 2 3
11	Bring stakeholders together to discuss or address a shared challenge		1 2 3
12	Meet with your group to develop a team or organizational plan that defines activities, timeline, and responsibilities		1 2 3

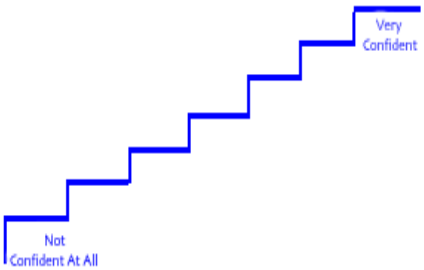
13	Identify solutions for challenges		1 2 3
14	Advocate for adequate resources (money, people, and materials) for carrying out plans		1 2 3
15	Link your team's goals with the overall national malaria strategy		1 2 3
16	Communicate team or organizational plans to stakeholders		1 2 3
17	Integrate multiple systems (financial, programmatic, M&E) to coordinate work		1 2 3
18	Empower more marginalized voices (junior staff, women, new hires, etc.) by giving them a voice in decision-making		1 2 3

19	Balance competing demands on your time		1 2 3
20	Determine priority actions for achieving your desired results		1 2 3
21	Resolve conflicts at work		1 2 3

22	Strengthen work processes to implement the National Strategic Plan		1 2 3
23	Ensure that your activities effectively support the National Strategic Plan		1 2 3
24	Identify Global Fund grant management needs and priorities		1 2 3

25	Describe a common vision for your desired results		1 2 3
26	Review monitoring data for trends		1 2 3
27	Use monthly data to make decisions		1 2 3

28	Adjust plans and resources as circumstances change		1 2 3
29	Train NMCP and district staff on the use of monthly monitoring reports		1 2 3
30	Invite participation in planning and implementation from all parties affected by your technical unit		1 2 3

31	Use aggregate data to make decisions		1 2 3
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Other comments or feedback:



## Survey: Program Manager

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This programmatic assessment will examine the role of long-term technical assistance advisors (LTAs) in building individual and organizational capacity of National Malaria Control Programs (NMCPs). LTAs work with NMCP staff to develop skills and knowledge, and promote practices and behaviors that will lead to organizational improvements and increase NMCPs' ability to lead national malaria control efforts and manage Global Fund grants. Therefore, this assessment is designed to examine the effectiveness of the LTA model of capacity building for improved NMCP coordination and performance, particularly as it impacts the management and implementation of Global Fund malaria grants. It will also contribute to broader scientific and programming knowledge in the use of long-term technical assistance advisors for organizational capacity building. This assessment is being supported by the President's Malaria Initiative (PMI), with funding from the United States Government (USG) Global Fund 5% technical assistance set aside, through the Leadership, Management, and Governance National Malaria Control Capacity Building project (LMG/NMCP).

The following survey will gather information on your opinions of the actions carried out by the LTAs that have been working with the NMCP in your country, their effect on your individual skills and behaviors, and their effect on the organizational capacity of the NMCP. Questions in Section 1A ask you to indicate your level of agreement with a list of actions. Questions in Section 1B ask you to indicate if and how the LTA supported specific actions. We are seeking your feedback as it is vital in helping us to understand how effective the LTA model is. Your participation is voluntary and you have the option to stop taking the survey at any time. Your responses will be kept confidential and will not be associated with you now or in the future.

Please confirm that prior to completing this survey you have read and agreed to the disclosure statement about this research and have signed the consent form of your own free will. Did you read the disclosure statement and have you given your consent to participate in this interview?

- ☐ I was given the disclosure statement and gave consent to participate in the survey
- ☐ I did not agree to participate in the survey

Demographic	Response
Gender (M/F)	
Age	
Number of years in service at the NMCP	
Area of expertise (i.e. Finance, M&E, Vector Control, etc.)	

## SECTION I

**A. For each statement below, please indicate if you strongly agree, somewhat agree, somewhat disagree, strongly disagree, or have no opinion. Please check only one.**

		Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	No Opinion
1.	The goals and objectives of the Advisor's support were clearly articulated to me					
2.	The activities the Advisor carried out were appropriate for the NMCP's needs					
3.	I had influence in developing the Advisor's terms of reference					
4.	The Advisor carried out an initial organizational or needs assessment					
5.	The Advisor engages/engaged me when designing activities					
6.	The Advisor engages/engaged me while implementing activities					
7.	The Advisor communicates/communicated with me regularly					
8.	The Advisor provides/provided advice that was useful to me					
9.	The Advisor provides/provided coaching that was useful to me					

10.	The Advisor understands/understood the NMCP's context					
11.	The Advisor's knowledge and skills are/were appropriate for the job					
12.	The Advisor helps/helped me to adapt to changes at the NMCP (restructuring, new activities, new guidelines, etc.)					
13.	The Advisor helps/helped me to motivate my staff					
14.	The Advisor helps/helped me to resolve conflicts					
15.	The Advisor helps/helped me delegate tasks					

**B. Review the list of actions below. On which of the following did the Advisor train, assist, advise, or coach you? Please check all that apply.**

Definitions:

**Trained:** The Advisor taught us skills and approaches for carrying out an activity or task. *Example: The Advisor held a training session on how to write sections of the Global Fund concept note.*

**Assisted:** The Advisor was directly involved. He/she was responsible for completing some or all of the tasks related to the activity. *Example: The Advisor wrote sections of the Global Fund concept note.*

**Advised:** The Advisor directed, made recommendations, and reviewed our work in order to help us carry out an activity or task. *Example: The Advisor reviewed the draft Global Fund concept note and gave specific feedback and recommendations on how to improve it.*

**Coached:** The Advisor helped us to reflect and identify next steps and/or solutions on our own in order to accomplish an action or task. *Example: The Advisor asked you questions and listened in order to help you identify issues with the Global Fund concept note. He/she did not tell you what to do, but rather helped you to decide on your own.*

**n/a:** Not applicable.

		Trained	Assisted	Advised	Coached	n/a
<b>National Strategic Plan</b>						
27.	Revision or drafting of the National Strategic Plan					
28.	Development of strategies for implementing the National Strategic Plan					
29.	Development of work plans for implementing the National Strategic Plan					
30.	Monitoring the implementation of the National Strategic Plan					
<b>Human Resources</b>						
31.	Development of job descriptions for NMCP staff					
32.	Reviews of job descriptions for NMCP staff					
33.	Review of the NMCP organogram					
34.	Updates to the NMCP organogram					
35.	Restructuring of NMCP human resources					
36.	Evaluations of staff skills					
		Trained	Assisted	Advised	Coached	n/a

37.	Development of staff professional/skills development plans					
38.	Professional coaching of NMCP staff					
39.	Recruitment of new staff					
40.	Onboarding of new staff					
<b>Global Fund reporting</b>						
41.	Drafting of the Programmatic Update					
42.	Review of the Programmatic Update					
43.	Responses to Global Fund questions					
44.	Resolutions of conditions precedent					
45.	Justification of grant expenditures					
46.	Communication with the Country Portfolio Manager					
47.	Communication with PR/SRs					
48.	Communication with the local funding agent					
		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>

49.	Training of NMCP staff on reporting					
<b>Global Fund concept note</b>						
50.	Coordination of concept note planning meetings					
51.	Drafting of concept note					
52.	Grant negotiation					
53.	Development of concept note budget					
54.	Revision of concept note					
55.	Development of concept note supporting documents (operational plan, etc.)					
56.	Communication with the Global Fund during concept note development					
<b>Monitoring and evaluations</b>						
57.	Collection of monthly malaria data					
58.	Analysis of monthly malaria data					
		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>
59.	Timely submission of monthly malaria data by district					

60.	Training for NMCP staff on M&E					
<b>Partner coordination</b>						
61.	Scheduling of meetings with NMCP partners					
62.	Drafting agendas for partner meetings					
63.	Following up on action items from partner meetings					
64.	Institution of regular thematic working group meetings					
65.	Coordination of partner activities					
<b>Internal coordination</b>						
66.	Establishment of regular staff coordination meetings					
67.	Note keeping during regular staff meetings					
68.	Dissemination of meeting notes to staff					
69.	Drafting of agendas for staff meetings					
		<b>Trained</b>	<b>Assisted</b>	<b>Advised</b>	<b>Coached</b>	<b>n/a</b>
70.	Establishment of regular technical team meetings					



71.	Timekeeping during meetings					
<b>Governance</b>						
72.	Production of procedures manuals					
73.	Drafting of standard operating procedures (SOPs)for NMCP operations					
74.	Revision of malaria control guidelines (prevention and/or treatment)					
75.	Dissemination of guidelines					
<b>Strategies and innovation</b>						
76.	Development of innovative strategies					
77.	Implementation of innovative strategies					
78.	Operational planning of grant activities (LLIN campaigns, efficacy studies, supportive supervision, etc.)					
79.	Implementation of grant activities					

## SECTION 2

**STEP 1:** First, read column A. In column B, place a **(B)** on the step signifying how confident you felt about your ability to (statement in box) **BEFORE** the arrival of the advisor in **January 2014**. Place an **(N)** on the step indicating how confident you feel about your ability to (statement in box), **NOW**. Leave Column C blank until you have completed this step. Low on the step indicates that you are Not Confident At All, middle on the step indicates that you are Fairly Confident, and high on the step indicates that you are Very Confident.

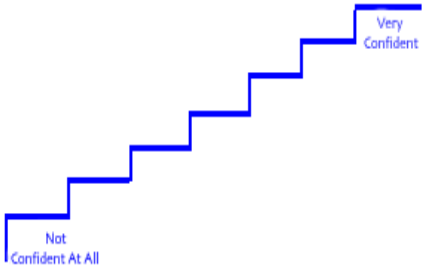
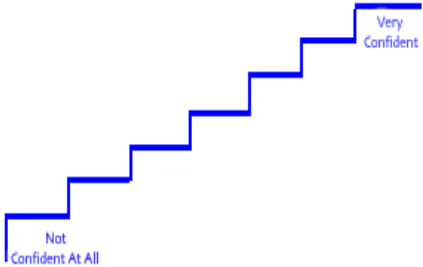
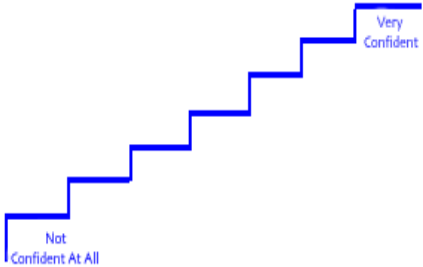
**STEP 2:** After you have completed step 1, review this list again and indicate in column C, write how much influence you think the Advisor's support had on the change (if any) on a scale from 1 to 3:

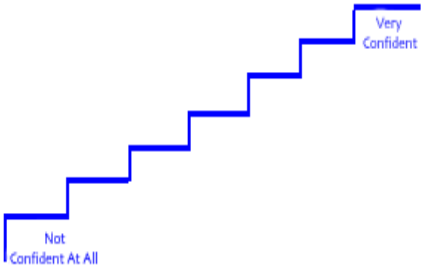
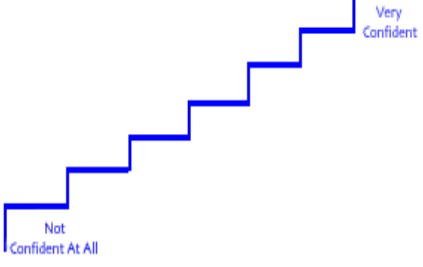
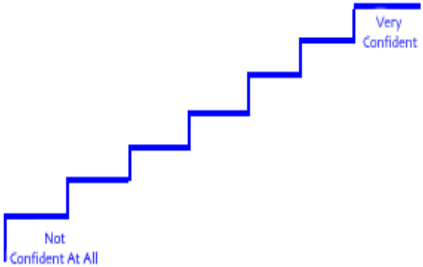
1 = No influence      2 = Some influence      3 = Significant influence

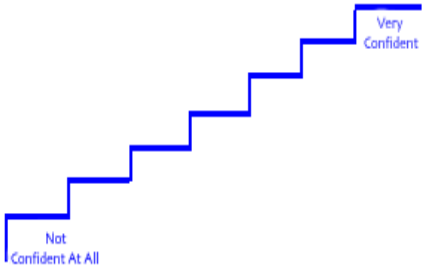
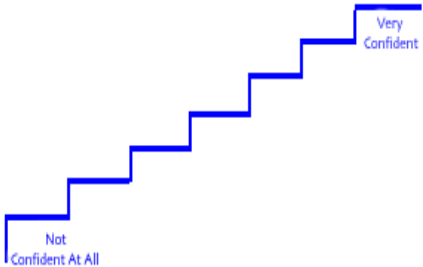
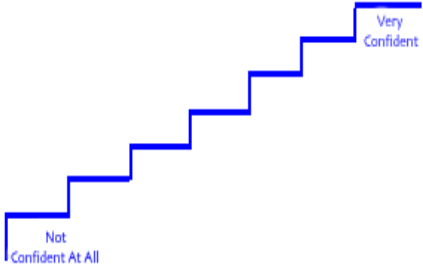
	A	B	C
E X	<b>EXAMPLE 1:</b> Follow the code of conduct in my daily work		1 2 3
		1. Read the action	
		2. Indicate how confident you were in carrying out the action before the Advisor arrived.	
		3. Indicate how confident you are in carrying out the action NOW.	
		4. Rate how much influence you think the Advisor had on any change in confidence.	
E X	<b>EXAMPLE 2:</b> Plan and facilitate meetings		1 2 3

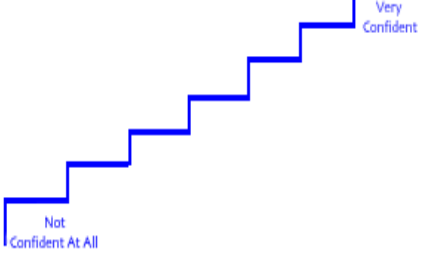
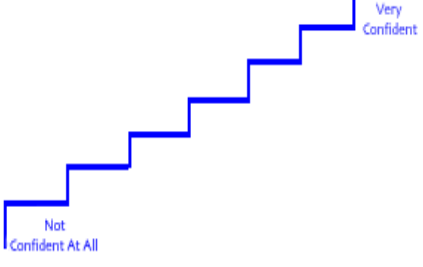
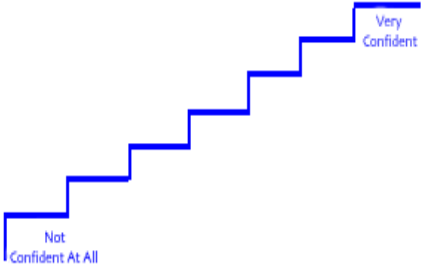
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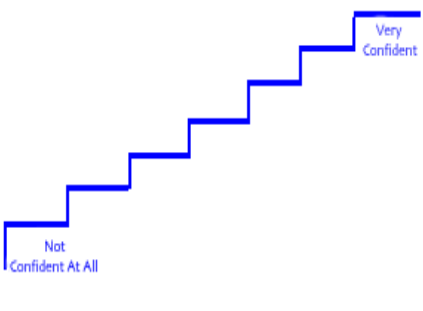
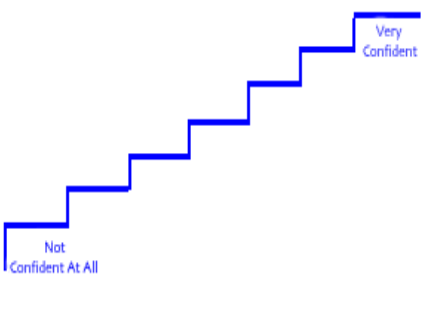
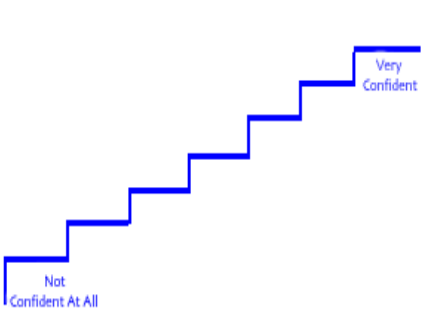
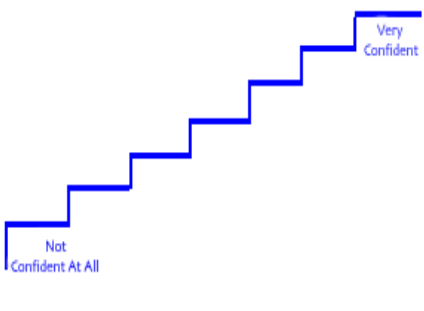
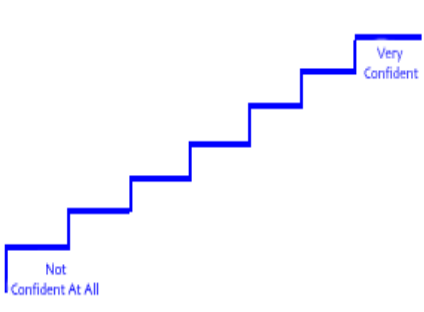
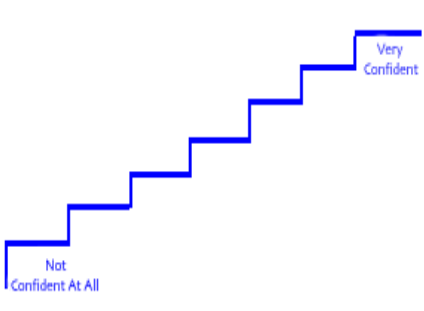
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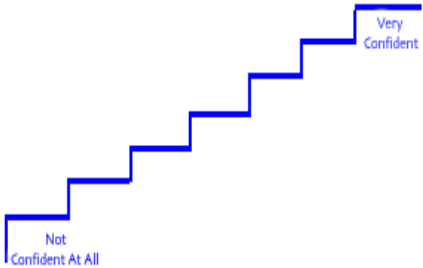
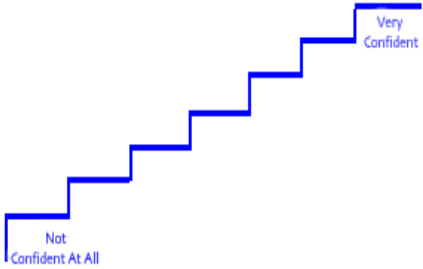
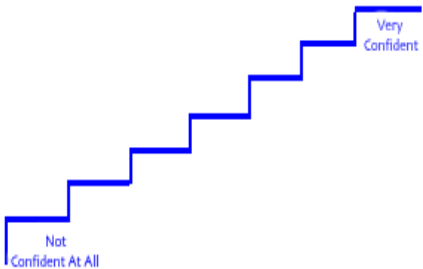
	A	B	C
1	Carry out all of your job responsibilities		1 2 3
2	Articulate the NMCP's mission		1 2 3
3	Articulate the NMCP's strategy		1 2 3

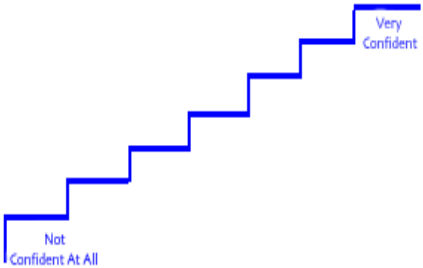
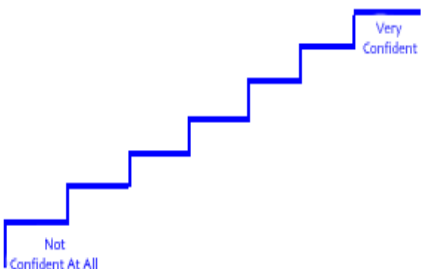
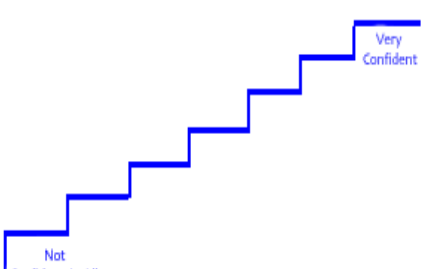
	A	B	C
4	Describe the NMCP's structure and lines of accountability		1 2 3
5	Establish, practice, and enforce codes of conduct		1 2 3
6	Give feedback to coworkers		1 2 3

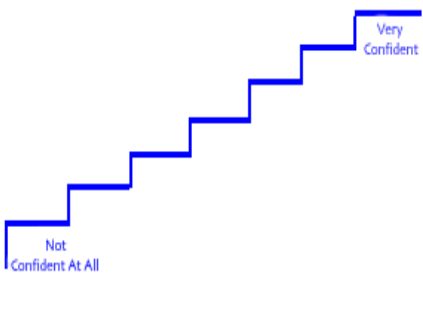
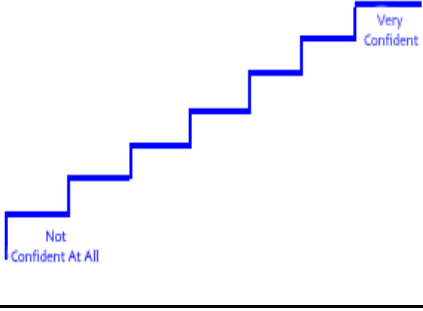
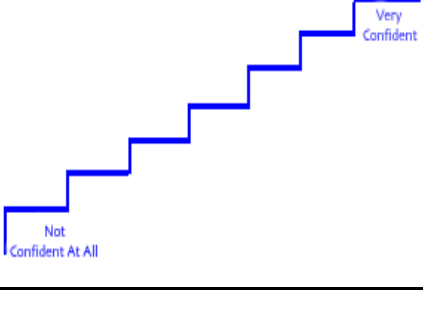
7	Receive feedback from coworkers		1 2 3
8	Identify your own values, strengths, and weaknesses		1 2 3
9	Analyze challenges		1 2 3

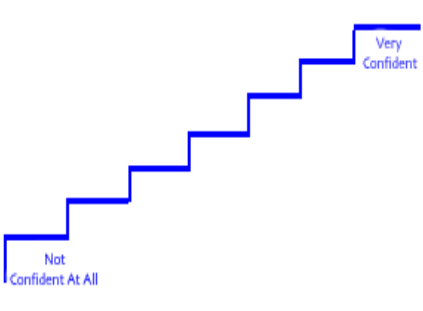
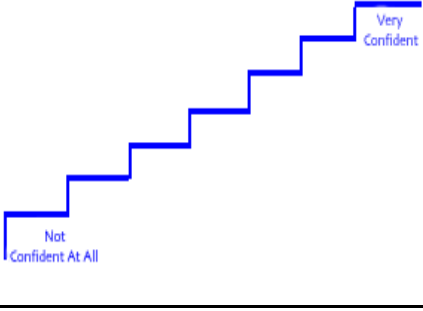
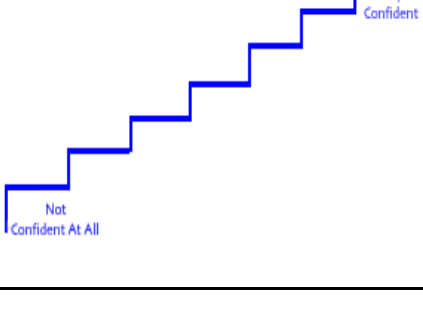
10	Discuss and analyze challenges with your coworkers		1 2 3
11	Bring stakeholders together to discuss or address a shared challenge		1 2 3
12	Meet with your group to develop a team or organizational plan that defines activities, timeline, and responsibilities		1 2 3

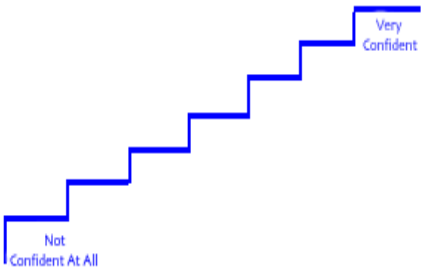
13	Identify solutions for challenges		1 2 3
14	Advocate for adequate resources (money, people, and materials) for carrying out plans		1 2 3
15	Link your team's goals with the overall national malaria strategy		1 2 3
16	Communicate team or organizational plans to stakeholders		1 2 3
17	Integrate multiple systems (financial, programmatic, M&E) to coordinate work		1 2 3
18	Empower more marginalized voices (junior staff, women, new hires, etc.) by giving them a voice in decision-making		1 2 3

19	Balance competing demands on your time		1 2 3
20	Determine priority actions for achieving your desired results		1 2 3
21	Resolve conflicts at work		1 2 3

22	Strengthen work processes to implement the National Strategic Plan		1 2 3
23	Ensure that your activities effectively support the National Strategic Plan		1 2 3
24	Identify Global Fund grant management needs and priorities		1 2 3

25	Describe a common vision for your desired results		1 2 3
26	Review monitoring data for trends		1 2 3
27	Use monthly data to make decisions		1 2 3

28	Adjust plans and resources as circumstances change		1 2 3
29	Train NMCP and district staff on the use of monthly monitoring reports		1 2 3
30	Invite participation in planning and implementation from all parties affected by your technical unit		1 2 3

31	Use aggregate data to make decisions		1 2 3
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Other comments or feedback:



## **Annex II: Example LTA workplans**

LMG/NMCP-Cameroon Workplan October 2016 - August 2017							Senior Manager: Daniel Djakba Senior Technical Advisor, Cameroon: Maurice A. N'Djoré							
#	Objectives, Results and Activities	Indicators	11 Months											
			2016			2017								
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Objective 1 : National Malaria Control Program human, financial, and material resources are effectively managed														
Output 1.1 Organizational capacity assessment (OCAT) of National Malaria Control Program conducted with key internal management strengths and weaknesses identified		% of recommendations that have been implemented by NMCP according to the OCAT exercise; French and English organizational capacity assessment report validated after the second round of OCAT is conducted												
1.1.1	Continue to provide coaching support to the NMCP as needed in order to implement initial OCAT recommendations		X	X	X	X	X	X	X	X	X			
1.1.2	Conduct a second OCAT exercise at the NMCP to measure changes in organizational capacity						X	X						
Output 1.2 Organizational staff capacity and structure reviewed and streamlined		# meetings held to share recommendations of organizational audit of the Central Technical Group (GTC) of the NMCP												
1.2.1	Provide support to the NMCP to follow up on the recommendations from the Global Fund organizational audit		X	X	X	X	X	X	X	X	X			
Output 1.3: National Malaria Control Program management units implement standardized internal operational management tools		# of monthly staff coordination meetings; # of regular coordination meetings with sub-recipients (SRs) and partners held by NCMP on the New Funding Mechanism; # of meetings organized by NMCP on financial and administrative issues; Planning document for staff vacation/holidays developed for NMCP staff; Document on Rules and Code of Conduct developed for NMCP staff												
1.3.1	Provide support to the NMCP management team to continue to facilitate monthly coordination meetings with staff at the central level		X	X	X	X	X	X	X	X	X			
1.3.2	Assist the NMCP management team to continue to hold regular malaria control coordination meetings with sub-recipients (SRs) and other partners of GF grants						X		X					
1.3.3	Provide support to NMCP staff (management controller, internal auditor and/or head of Finance and Administrative Unit) to hold internal annual meetings with regards to improving financial/administrative procedures		X	X	X	X	X	X	X	X	X			
1.3.4	Assist the NMCP to develop an official staff vacation and annual leave calendar which will assist in effectively planning for activities and staff participation throughout the course of the year				X	X	X							
1.3.5	Assist the NMCP to develop an organizational charter			X	X	X	X	X	X					



LMG/NMCP-Cameroon Workplan October 2016 - August 2017			Senior Manager: Daniel Djakba Senior Technical Advisor, Cameroon: Maurice A. N'Djoré											
#	Objectives, Results and Activities	Indicators	11 Months											
			2016			2017								
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Objective 2 : National Malaria Control Program develops and directs policy and norms for the implementation of the national malaria control strategy														
Output 2.1 National Malaria Control Program key guidelines and documents developed and updated		Africa Strategy 2016-2030 on Malaria document developed ; 2016 Global Mass Distribution Campaign report available												
2.1.1	Provide support to the NMCP to disseminate the new 2014-2018 communications plan aligned with the National Malaria Control Strategic Plan 2014-2018 (PSN 2014-2018) to NMCP staff and GF sub-recipients		X	X	X	X	X	X	X	X				
2.1.2	Assist the NMCP Senior Management Team to orient staff in regions on the updated 2014-2018 M&E plan in line with the PSN 2014-2018		X	X	X	X	X	X	X	X				
2.1.3	Assist the NMCP leadership in disseminating the new WHO Africa Strategy within the WHO Global Technical Strategy for Malaria 2016-2030, to the staff after it is validated by the Ministry of Health					X	X	X	X					
2.1.4	Provide support to the NMCP to develop a report on the 2016 Global Mass LLIN Distribution Campaign to be shared with partners			X	X	X	X							
Output 2.2: National Malaria Control Program develops detailed workplan for implementation and monitoring of the multi-year national malaria control strategy		Annual NMCP workplan developed and aligned with National Malaria Control Strategy according to the NFM grant												
2.2.1	Provide technical support to the NMCP to develop annual workplans in alignment with the PSN and based on the Global Fund grant activities (NFM)				X	X	X	X						
Output 2.3: Malaria control norms and technical tools are updated and available for implementation		% of malaria cases treated according to national guidelines in health facilities; # of field visits carried out annually with the NMCP; % of public health facilities without stockout in semiannual reports to GF; # of annual briefing meeting organized by NMCP staff on best practices; # number of action plan documents that address the challenges of archiving at the NMCP												
2.3.1	Provide technical support to the NMCP to continue to develop and update malaria control norms and technical tools in coordination with key SRs and project partners (including WHO and UNICEF)		X	X	X	X	X	X	X	X	X			
2.3.2	Provide technical support to NMCP staff to monitor data related to trainings of health service providers (numbers of attendees, disaggregated by sex) in the public sector using updated tools and policies				X	X	X	X	X					
2.3.5	Organize and participate in semiannual supervisory field visits in collaboration with NMCP staff					X			X					
2.3.7	Provide technical support to the NMCP staff to organize an annual training on financial/administrative procedures				X	X	X							
2.3.8	Provide technical support to the NMCP in developing a plan of action to formalize and improve its internal system for archiving data and documents at the central level		X	X	X	X	X	X	X	X				

LMG/NMCP-Cameroon Workplan October 2016 - August 2017							Senior Manager: Daniel Djakba Senior Technical Advisor, Cameroon: Maurice A. N'Djoré							
#	Objectives, Results and Activities	Indicators	11 Months											
			2016			2017								
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Objective 3 : National Malaria Control Program mobilizes stakeholders to participate in national malaria control coordination efforts														
Output 3.1: National Malaria Control Program regularly provides technical input for Sub Recipients (SRs) and stakeholders of Global Fund Malaria grants		# of meetings held by RBM/WHO/GF attended by NMCP representatives; # of periodic coordination meetings held by NMCP with SRs and partners												
3.1.1	Participate in regular or ad hoc meetings with Global Fund Portfolio team and national stakeholders and partners and provide support to the NMCP to follow up on any specific actions based on meetings		X	X	X	X	X	X	X	X				
3.1.2	Attend annual regional Roll Back Malaria trainings and workshops to review, update, and plan country activities according to the country roadmap						X	X	X					
3.1.3	Support the NMCP leadership to strengthen the coordination with GF malaria grant SRs, partners, and stakeholders by coaching staff on organizational tools and methods for streamlining and strengthening communication and more effectively mapping malaria activities		X	X	X	X	X	X	X	X				
Output 3.2: National Malaria Control Program regularly provides stakeholders with technical input with regards to Global Fund malaria grants		# of meetings held by national /international partners (RBM/WHO/UNICEF /GF) attended by NMCP representatives												
3.2.1	Provide technical support and ongoing coaching to streamline the review process for documents and ensure regular communication between the NMCP and SRs, partners, and stakeholders regarding malaria activities for the GF		X	X	X	X	X	X	X	X				
3.2.2	Provide technical support to the NMCP to hold ad hoc monitoring/coordination meetings with partners and stakeholders for the implementation of malaria activities					X			X					
3.2.3	Provide technical support to the NMCP to complete the annual update of the mapping tool on public and private sector partners of the NMCP			X		X								
Project Management and Reporting														
PM.1	Develop a program workplan and country-specific intervention design within the overall LMG/NMCP framework and mandate approved by PMI/Washington		X	X	X	X								
PM.2	Participate in regular in-person or online trainings and exchanges among LMG/NMCP Senior Technical Advisors and other LMG technical staff to deepen capacity building approaches and knowledge, share best practices, and support NMCP staff				X	X		X	X	X	X			
PM.3	Update and sign MoU with the Cameroon NMCP		X	X										
PM.4	Attend annual coordination meetings for all LMG/NMCP Senior Technical Advisors to ensure the sharing of best practices, technical successes, and challenges, and promote knowledge exchange and regional networking			X										
PM.5	Document and share project successes; produce quarterly success stories; and monitor adherence of all project communications products to the project's approved Branding and Marking Plans (BMP)		X	X	X	X	X	X	X	X				
PM.6	Produce quarterly reports and other ad hoc reports for PMI/Washington				X	X		X			X			
PM. 7	Participate in quarterly meetings with the USAID/Cameroon team to discuss project status and implementation				X			X			X			

LMG/NMCP-Cameroon Workplan October 2016 - August 2017						Senior Manager: Daniel Djakba Senior Technical Advisor, Cameroon: Maurice A. N'Djoré									
#	Objectives, Results and Activities	Indicators	11 Months												
			2016			2017									
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		
PM.8	Complete the LMG/NMCP Final Project Report											X	X		
PM.9	Organize and participate in the end-of-project meeting with all Advisors and NMCP representatives										X				
PM.10	Carry out LMG/NMCP closeout in country							X	X	X	X	X	X		
PM.10a	Prepare the disposition plan for program materials and equipment							X	X						
PM.10b	Dispose of materials and equipment in accordance with the approved disposition plan									X	X	X	X		
PM.10c	Complete all necessary operational, technical, and financial activities related to project closeout (termination of office lease, payment of final invoices, etc.)									X	X	X	X		
PM.10d	Conduct an inventory of program records and technical documents and ship all necessary documents to the home office									X	X	X	X		
PM.10e	Develop a project sustainability plan that outlines the key technical activities that can be transferred to the NMCP							X	X	X	X	X	X		

[illegible]

1.3.3	Support the NMCP management team to organize, facilitate, and document semiannual malaria control coordination task force meetings											X			
1.3.3a	Provide technical support to present results achieved by NMCP-supported health regions to other technical partners, MSLS directions, and sub-recipients at malaria control coordination task force meetings											X			
1.3.4	Conduct two semiannual evaluations with NMCP staff to assess internal communication within the NMCP, according to the NMCP's internal communication plan			X								X			
Output 1.4: NMCP staff technical capacity to plan, implement, and monitor interventions strengthened		# of quarterly or semiannual progress reports submitted to the Global Fund on time % of conditions precedent satisfied # of NMCP Dashboards completed on time and presented at CCM meetings # of annual Program Reports completed and submitted on time (March) % of private structures and university hospitals whose data related to malaria activities is integrated into NMCP reports													
1.4.1	Provide technical support to NMCP M&E and finance staff to prepare and submit semiannual progress reports to the Global Fund (45 days after the end of the reporting period)					X								X	
1.4.2	Support the NMCP management team to satisfy conditions precedent in compliance with New Funding Model (NFM) agreement deadlines, by reviewing terms of conditions precedent and developing actions plans to satisfy them	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.3	Provide technical support to the NMCP management team to complete semiannual dashboards to track the progress and implementation of the GF grants and present these dashboards in CCM meetings					X								X	
1.4.4	Provide technical support to the NMCP management team to produce an annual report, including grant management updates					X	X								
1.4.5	Assist the NMCP to integrate and to analyze private sector data, university hospital data, and data from other clinics (including military hospitals, National Public Health Institute), in order to better measure NMCP results and the progress on the national strategic plan	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 1.5: Leadership Development Plus Program (LDP+) focused on applying leadership, management and governance practices and executing the leadership dimensions of challenges is implemented regionally for National Malaria Control Programs		# of NMCP staff that attend LDP+ workshop n°4 # NMCP staff that complete all four workshops of the LDP+ delivered by LMG/NMCP % of teams participating in the LDP+ that have achieved their desired measurable result within six months of completing the training # quarterly coaching sessions held with LDP+ teams to select new desired measurable results, monitor implementation of action plans, and present results to program partners % of teams participating in the LDP+ that have reported an improved work climate six months following the training													
1.5.1	Implement a Leadership Development Plus Program (LDP+) for senior leadership and managers of the National Malaria Control Program in Côte d'Ivoire, in line with LDPs for the other PMI-selected National Malaria Control Programs, aimed at improving their leadership, management and governance skills for the effective management of their respective programs through a team-based performance improvement process														
1.5.1a	Conduct LDP+ workshop 4 with the NMCP teams to present results	X	X												
1.5.1b	Upon the completion of the first LDP+ cycle, organize quarterly coaching sessions with each of the three current LDP+ improvement teams to select new desired measurable results, monitor implementation of action plans, and present results to program partners			X		X				X				X	
1.5.1c	Provide regular, ongoing coaching to new LDP+ improvement teams to implement their challenge models and action plans	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Objective 2: National Malaria Control Program develops and directs policy and norms for the implementation of the national malaria control strategy															
Output 2.1: NMCP's grants management procedures strengthened		# of training meetings held on financial and accounting procedures													



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#	Objectives, Results and Activities	Indicators	12 months											
			2014			2015								
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Objective 1: National Malaria Control Program human, financial, and material resources effectively managed														
	Output 1.1: Organizational capacity assessment of National Malaria Control Program conducted with key internal management strengths and weaknesses identified (Note: the organizational capacity assessment drives the overall planning process and objective-specific activities and thus the assessment and related activities are the first Output under each Objective)	NMCP implements 80% of assessment recommendations; % change in organizational weaknesses disaggregated by capacity area												
1.1.1	Support the NMCP and Ministry of Health and Public Hygiene (MSHP) to implement organizational capacity assessment recommendations (detailed in the following activities under Objective 1)		X	X	X	X	X	X	X	X	X	X	X	X
1.1.2	Review the implementation of organizational capacity assessment recommendations with the NMCP and partners to assess progress towards improved organizational capacity goals			X	X									
1.1.3	Conduct endline participatory organizational capacity assessment of the NMCP, collaborating with staff, stakeholders, and partners to measure changes in organizational strengths and weaknesses in the areas of: governance, financial planning and management, grants and sub-grant management, human resources and change management, project management													X
	Output 1.2: Organizational staff capacity and structure reviewed	Revised organigram proposal submitted to MSHP; HR Reference Manual validated; # of coaching sessions organized by NMCP staff; % of NMCP staff trained on the HR Reference Manual; # reports from weekly coordination meetings submitted; Emergency community engagement protocol for NMCP staff completed and disseminated												
1.2.1	Provide technical support to the NMCP to adopt the Human Resources Reference Manual to improve the quality of human resources within the NMCP		X	X	X	X								
1.2.1. a	Assist the NMCP in submission of the final HR Reference document to the Ministry of Health for review and validation		X											
1.2.1. b	Provide technical support to the NMCP leadership to advocate for technical assistance support from partners to address priority needs and recruit qualified personnel for the various NMCP coordination units			X	X	X								
1.2.2	Support the development and implementation of personnel professional development plans that contribute to the organizational capacity of the NMCP				X	X								
1.2.2. a	Share the HR Reference manual with all NMCP staff and partners following validation by the Ministry of Health				X	X								
1.2.2. b	Develop an NMCP internal coaching program to strengthen the capacity of NMCP staff to effectively contribute to organizational goals				X	X								

[illegible]



[illegible]



[illegible]



LMG/NMCP Liberia Workplan October 2016 - August 2017							Senior Manager: Daniel Djakba Senior Technical Advisor, Liberia: Kwabena Larbi									
#	Objectives, Results and Activities	Indicators	11 months													
			2016			2017										
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			
Objective 1: National Malaria Control Program human, financial, and material resources effectively managed																
	Output 1.1: Results and recommendations of organizational capacity assessment (OCAT) of National Malaria Control Program implemented	% of OCAT review recommendations implemented by NMCP and Ministry of Health; OCAT implementation progress assessed with NMCP and partners														
1.1.1	Conduct a follow-up OCAT exercise to review the progress of implementation of the recommendations of the first OCAT exercise with the NMCP and its partners and to assess progress towards improved organizational capacity goals		X	X												
1.1.2	Organize a meeting with key NMCP partners to review the results of the follow-up assessment of the OCAT of the NMCP, including a presentation of strengths, weaknesses, opportunities, threats, and recommendations			X												
1.1.3	Support the NMCP and the Ministry of Health and Social Work (MOHSW) to implement reviewed OCAT recommendations, including a revised organogram and human resource, organizational, governance, and financial management plans			X	X	X	X	X	X	X	X					
	Output 1.2: Revised organizational structure and staff performance development plans established and functional	# of NMCP staff with performance and development plans; # of NMCP staff receiving staff appraisal and feedback from their managers														
1.2.1	Monitor the adoption of the NMCP's revised organigram (proposed by the MOHSW) and ensure that all NMCP staff have validated job descriptions in line with the restructuring of staff		X	X	X	X	X	X	X	X	X					
	Output 1.3: National Malaria Control Program management units conduct regular scheduled meetings, share minutes and complete action points.	% NMCP unit teams' scheduled bi-weekly meetings held in the preceding quarter; # validated bi-weekly meeting minutes disseminated to all staff and key partners; % of meeting action points completed in the preceding quarter														
1.3.1	Provide ongoing coaching support to NMCP unit leaders to plan and facilitate scheduled meetings with unit staff		X	X	X	X	X	X	X	X	X					
1.3.1a	Ensure that progress on priority activities is monitored on a bi-weekly basis using previously developed activity trackers		X	X	X	X	X	X	X	X	X					
	Output 1.4: Leadership Development Program (LDP+) focused on applying leadership, management, and governance practices and executing the leadership dimensions of challenges is implemented regionally for National Malaria Control Program	# of LDP+ teams that have identified a new challenge and developed an action plan; # of LDP+ teams that have achieved their desired measurable result; # of LDP+ teams that have reported an improved work climate														
1.4.1	Provide ongoing support to the NMCP to identify new challenges and to work in teams to resolve these challenges using LDP+ tools and principles		X	X	X	X	X	X	X	X	X					
1.4.2	Provide ongoing coaching to each LDP+ team to reinforce learnings and skills from the LDP+ and provide technical support and coaching to achieve each team's identified desired result		X	X	X		X		X		X					

Objective 2: National Malaria Control Program develops and directs policy and norms for the implementation of the national malaria control strategy													
	Output 2.1: National Malaria Control Program develops multi-year National Malaria Control Strategy and detailed workplans for implementation and monitoring	# counties briefed about the National Malaria Control Strategy targets and implementation arrangements required by Global Funds and PMI; NMCP annual workplan validated											
2.1.1	Provide technical support to the NMCP management unit team to develop the NMCP's annual workplan (for 2016-2017 ) in line with the National Malaria Control Strategy		X	X									
2.1.2	Provide technical and financial support to the NMCP and Program Coordinating Unit (PCU) to brief and update county health teams about NMCP strategies and targets, workplans, funding arrangements, and donor requirements for the implementation of effective malaria control activities and to improve accountability			X		X		X		X			
	Output 2.2: Health workers updated in current malaria control guidelines	# of county health teams trained on revised malaria in pregnancy guidelines; # of county health teams trained on revised malaria case management guidelines											
2.2.1	Support NMCP to organize and facilitate a training of trainers for county health teams on revised malaria in pregnancy guidelines			X									
2.2.2	Support NMCP to organize and facilitate a training of trainers for county health teams on revised malaria case management guidelines			X									
	Output 2.3: NMCP M&E unit has capacity to conduct assessments, surveys, analyze data and disseminate findings	Malaria indicator survey to assess key indicators such as coverage and use of LLINs, prevalence of malaria parasitemia, and uptake of intermittent prophylactic treatment of malaria in pregnancy conducted; # of malaria indicators and LLIN post-distribution reports completed and disseminated; % M&E capacity improvement plan targets met; # of monthly HMIS data analysis meetings held by M&E team; # study sites that have successfully implemented Therapeutic Efficacy Study of current recommended anti-malaria medicines used in Liberia; # of health facilities in Montserrado county that received supportive supervision from NMCP Liberia; Liberia malaria indicator survey completed; # of dissemination forums held to highlight survey findings											
2.3.1	Provide technical and financial support to the NMCP to assess the current M&E capacity and to develop a budgeted M&E improvement plan				X	X							
2.3.2	Provide technical support to the NMCP M&E team to conduct a monthly analysis of malaria data to identify trends and inform targeted responses in collaboration with selected counties		X	X	X	X	X	X	X	X	X		
2.3.3	Provide technical support to NMCP and partners to conduct a malaria indicator survey		X	X	X								

[illegible]

[illegible]

PM. 12	Complete the LMG/NMCP Final Project Report									X	X	X
PM. 13	Carry out LMG/NMCP closeout in country							X	X	X	X	X
PM.13a	<i>Prepare the disposition plan for program materials and equipment</i>							X	X			
PM.13b	<i>Dispose of materials and equipment in accordance with the approved disposition plan</i>									X	X	X
PM.13c	<i>Complete all necessary operational, technical, and financial activities related to project closeout (termination of office lease, payment of final invoices, etc.)</i>									X	X	X
PM.13d	<i>Conduct an inventory of program records and technical documents and ship all necessary documents to the home office</i>									X	X	X
PM.13e	<i>Develop a project sustainability plan that outlines the key technical activities that can be transferred to the NMCP</i>							X	X	X	X	X

[illegible]

## Bibliography

- Austin, S. (2015). The number of subjects per variable required in linear regression analysis. *Journal of Clinical Epidemiology*, 627-36.
- D. Daniel Sokol, K. W. (2008). An Empirical Evaluation of Long Term Advisors and Short Term Interventions in Technical Assistance and Capacity Building. *U. of Missouri School of Law Legal Studies Research Paper No. 2008-03*.
- Fred Rosenweig, J. W. (2008). *Guidelines for Assessing NMCP Capacity*. Bethesda: Abt Associates.
- Frost, J. (2013, July 1). *How to Interpret Regression Analysis Results: P-values and Coefficients*. Retrieved from The Minitab Blog: <http://blog.minitab.com/blog/adventures-in-statistics-2/how-to-interpret-regression-analysis-results-p-values-and-coefficients>
- Glossary of Epidemiology*. (n.d.).
- Guido Imbens, J. W. (2007). *Whats New in Econometrics?* . Michigan S. U.
- Hutcheson, G. (2011). *The SAGE Dictionary of Quantitative Management Research*. London: Sage Publication Ltd.
- Lavrakas, P. (2008). *Encyclopedia of Survey Research Methods*. Thousand Oaks, CA: Sage Publications, Inc.
- Monita Baba-Djara, M. C. (2016). *The Added Value of Combining a Leadership Development Program with Clinical Training on Postpartum Family Planning Service Delivery*. Arlington, VA: Management Sciences for Health, Inc.
- Nonlinear Regression and Curve Fitting*. (2017, April 6). Retrieved from <http://www.nlreg.com/>
- Regression Analysis: Stata Annotated Output*. (2017, April 6). Retrieved from UCLA Institute for Digital Research and Education: <http://stats.idre.ucla.edu/stata/output/regression-analysis-2/>
- Robert Eisenberger, P. F.-L. (1990). Perceived Organizational Support and Employee Diligence, Commitment, and Innovation. *Journal of Applied Psychology*, 51-59.
- Sullivan, L. (2012). *Essentials of Biostatistics in Public Health*. Sudbury, MA: Jones and Bartlett Learning, LLC.
- Wert, J. E., Neidt, C. O., & Ahmann, S. J. (1954). *Coefficient of correlation*. East Norwalk, CT: Appleton-Century Crofts.

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