

ProMPT GHANA

PROMOTING MALARIA PREVENTION & TREATMENT

FINAL REPORT



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April 2009–March 2013

ProMPT Ghana *Promoting Malaria Prevention and Treatment*, was made possible by the United States Agency for International Development (USAID) under Cooperative Agreement number 641-A-00-09-00010-00. The project team included prime recipient University Research Co., LLC (URC) and sub-recipients the Population Council and Malaria Consortium.

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Acronyms

ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Care
CBA	Community-based Agent
CD	Continuous/Routine Distribution [of LLINs]
CHIM	Centre for Health Information and Management
CHV	Community Health Volunteer
CWC	Child Welfare Clinic
DHMT	District Health Management Team
DHIMS	District Health Information Management System
DHS	Demographic and Health Survey
GES	Ghana Education Services
GHS	Ghana Health Services
HH	Household
HIO	Health Information Officer
HMM	Home-based Management of Malaria
ICD	Institutional Care Division [of Ghana Health Service]
IPTp	Intermittent Preventive Treatment of Pregnant Women
ITN	Insecticide-treated Net
LLIN	Long-lasting Insecticidal Net
M&E	Monitoring and Evaluation
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in Pregnancy
NGO	Non-governmental Organization
NMCP	National Malaria Control Programme
PMI	President's Malaria Initiative
PPME	Policy, Planning, Monitoring, and Evaluation Division (Ghana Health Services)
ProMPT	Promoting Malaria Prevention and Treatment
RHMT	Regional Health Management Team
SHEP	School Health Education Programme
SP	Sulfadoxine-Pyrimethamine
UNICEF	United Nations Children's Fund
URC	University Research Co., LLC
USAID	United State Agency for International Development
WHO	World Health Organization

A community volunteer carries a bale of long-lasting insecticidal nets.

Introduction

Promoting Malaria Prevention and Treatment (ProMPT) Ghana was a four-year (March 2009–March 2013) United States Agency for International Development (USAID)-funded program under the President's Malaria Initiative (PMI). It was implemented by University Research Co., LLC (URC) and its partners, the Malaria Consortium and the Population Council. ProMPT aimed to strengthen the capacity, effectiveness, and reach of Ghana's National Malaria Control Programme (NMCP) and support the engagement of all key actors in malaria prevention and control, including health workers, nongovernmental organizations (NGOs), schools, communities and the private sector.

Initially scheduled to end on March 9, 2012, the ProMPT agreement was extended to March 31, 2013. In its first 12-months, ProMPT had a nationwide mandate. However, with the launch of PMI-supported malaria activities through two other USAID-funded family health programs in ProMPT's second year, ProMPT activities shifted to focus on seven of Ghana's ten regions: Ashanti, Brong Ahafo, Eastern, Northern, Upper East, Upper West and Volta. Nevertheless, the project continued to provide technical support to some activities in all ten regions.

ProMPT worked to reduce malaria morbidity and mortality by implementing proven interventions in prevention and treatment. These interventions were clustered in four components:

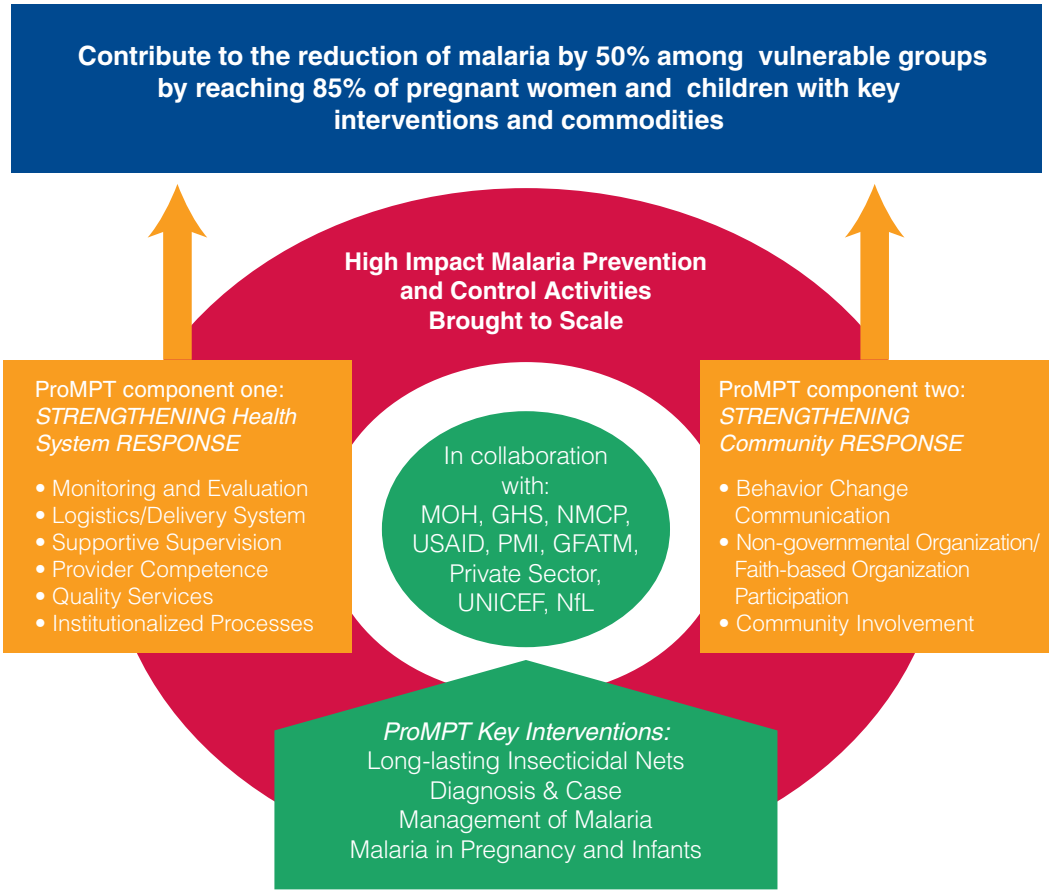
1. Prevention of malaria through use of long-lasting insecticidal nets (LLINs);
2. Management of malaria in pregnancy (MIP), including intermittent prevention treatment for pregnant women (IPTp) and diagnosis of malaria and treatment with artemisinin-based combination therapy (ACT), including community-based home management of malaria (HMM) delivered by community-based agents (CBAs);
3. Strengthening capacity to implement community-based malaria prevention and control activities through social mobilization, which combines behavior change communication (BCC) and community mobilization; and
4. Capacity building of Ghana Health Service (GHS) and NMCP and health systems strengthening for monitoring and evaluation (M&E).

Coordination and collaboration with international and national partners were part of all of these components.

The project used the conceptual framework in Figure 1 to guide the implementation of activities.

This report summarizes ProMPT's achievements and results, discusses the strategies used, and presents lessons learned and implications for future activities.

Figure 1. ProMPT's Conceptual Framework



Major Achievements

Mosquito Net Distribution

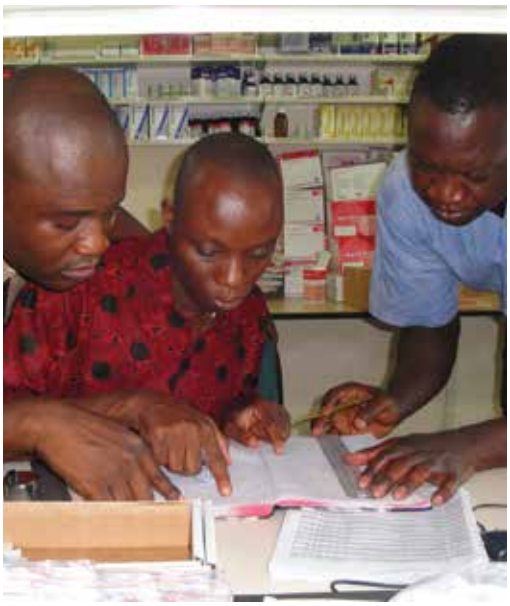
- Supported NMCP to distribute a total of over 12.5 million insecticide-treated nets (ITNs), engaging all major stakeholders and volunteers
- Directly supported the distribution of 6,349,361 ITNs in four regions, with US Government funds and provided technical support for five additional regions
- Tested continuous distribution of ITNs through school-based distribution in partnership with the Ghana Education Service, which enabled over 181,000 students and teachers to receive nets
- Developed effective national strategies (and documented results) for distribution and hang-up campaigns as well as for continuous distribution of nets

Malaria Case Management and Malaria in Pregnancy

- Led an initiative to train and provide training materials for more than 10,000 facility-based health workers in integrated malaria case management and MIP
- Collaborated with GHS to train and provide training materials for over 2,500 community health officers and community-based agents in community case management of malaria

Supportive Supervision

- Worked with master trainers from GHS to train 642 supervisory staff from seven regions and from GHS's Institutional Care Division (ICD) in supportive supervision and provided grants to enable regions to effectively monitor, evaluate and continuously teach health workers to correctly manage malaria and MIP
- In collaboration with the ICD of GHS, supported regions to conduct supervisory visits to over 21,000 health workers from more than 2,000 health facilities



ProMPT and GHS staff coach a health facility worker on calculation of malaria data.

Health Systems Strengthening

- Strengthened NMCP capacity to monitor and evaluate the national malaria program (through a seconded M&E advisor), equipping NMCP to use statistical software and conduct evaluations of national malaria projects
- Supported the training of 45,970 health personnel in malaria treatment or prevention in 7 regions
- Collaborated with the Policy, Planning, Monitoring, and Evaluation (PPME) Unit of the GHS and the NMCP to strengthen the capacity of regional and district health information officers (HIOs) in malaria data management and to coach facility-level staff in 4 regions to improve the use of reporting tools and the calculation of key indicators reported to the District Health Information Management System (DHIMS)
- Trained over 1,300 facility-based health workers to use new consulting room registers to improve data quality and distributed 15,500 revised registers in 7 regions
- Facilitated malaria data review meetings for the exchange of best practices in malaria data management, resulting in increases in the quality and timeliness of district reporting

Behavior Change Communication and Community-based Malaria Prevention and Control

- Co-sponsored, with GHS and the USAID|Behavior Change Support (USAID|BCS) project, a nationwide multi-media campaign promoting malaria prevention, through which more than 11,000 radio spots aired in 5 local languages
- With NMCP and other partners, finalized a national malaria BCC strategy and developed and distributed a package of print materials, including 20,000 sets of counseling cards, posters on benefits of sulfadoxine pyrimethamine (SP) and posters on the use of ACTs
- Reached 2,134,147 people, through 33 NGO grantees, with malaria prevention messages and activities
- Engaged 326 civil society organized groups (e.g., trade unions, faith-based organizations) in community-based malaria activities
- Oriented more than 4,500 opinion leaders, including traditional chiefs and queen mothers, clergy members, trade union leaders and media journalists, in mobilization against malaria

Coordination & Collaboration

From its outset, ProMPT systematically encouraged all malaria partners (and others) to collaborate, and the project made concerted efforts to do so for each project component. NMCP served as the primary counterpart organization within the Government of Ghana, closely followed by many other GHS units, the Regional Health Directorates, and the Districts.

The LLIN hang-up campaigns were massive undertakings, involving multiple partners, each contributing various resources and expertise. In all campaigns NMCP and the GHS (and its regional, district, and sub-district units) were the lead partners. USAID|PMI and its partners, including USAID|DELIVER, USAID|Focus Region Health Project, and USAID|BCS, also played key roles in many campaigns. International partners such as the Department for International Development, United Kingdom; the World Health Organization (WHO); the United Nations Children's Fund (UNICEF); Malaria No More (UK); the Global Fund to Fight AIDS, Tuberculosis and Malaria; and NetsforLife® were additional partners. For each regional campaign, numerous other local and international partners contributed.

Planning and implementation of continuous distribution (CD) also involved coordination with several partners. USAID|NetWorks facilitated the write-up of the continuous/routine distribution guidelines and the NetCALC computer modeling tool. The Regional Health Management Team (RHMT) and the District Health Management Teams (DHMTs) in Eastern Region were pivotal in the planning and execution of the health facility-based CD channels: antenatal care (ANC) and child welfare clinic (CWC). The regional management of GES, the various district education circuits, School Health Education Program (SHEP) Coordinators, and primary schools in the region also played critical roles in piloting the school-based LLIN distribution.

For social mobilization and BCC, support to the National Malaria Communication Committee helped generate the harmonization of materials and messages and develop the National Malaria Behavior Change Communication Strategy. Partners in this effort included several GHS units, NMCP, UNICEF, WHO, Roll Back Malaria, USAID|BCS, Ghana Social Marketing Foundation, VOICES for a Malaria-free Future, World Vision Ghana, and a dozen Ghanaian NGOs. ProMPT and USAID|BCS created a joint implementation plan for the national malaria campaign under the "Good Life" umbrella. In another collaborative effort, ProMPT led the development and pre-testing of a pictorial fact sheet for LLIN campaign volunteers, involving seven partner organizations, including USAID|BCS and UNICEF; Malaria No More (UK) financed the printing. In every region, ProMPT worked with and supported a broad range of civil society organizations, including NGOs, organized groups, and faith-based organizations (FBOs).

ProMPT also collaborated with PMI/Centers for Disease Control and Prevention, WHO, NMCP, PPME/Centre for Health Information and Management (CHIM), regional and district HIOs and regional malaria focal persons to enhance the strengthening of routine systems throughout the project. The project also worked closely with health facility staff throughout the country during coaching visits and during trainings.

Implementation Approaches & Results

MALARIA PREVENTION THROUGH LLIN DISTRIBUTION

In Ghana, use of ITNs, which have an insecticide incorporated into the netting fibers during manufacturing, is one of the main approaches to preventing malaria. By reducing contact between malaria-carrying mosquitoes and humans, the combination of high ownership and use of such nets reduces all-cause mortality in children under five by about 20% and malarial infections in children under five and pregnant women by up to 50%. The national strategic plan for malaria 2008–2015 sets several targets for ITN coverage by 2015, including having one ITN available per two persons by 2015; 100% of households (HHs) will own at least one ITN, and 85% of children under five years and pregnant women will sleep under an ITN. The PMI targets align with national targets for net ownership and use. ProMPT supported the NMCP to achieve these goals. Table 1 summarizes the projects interventions and outputs relative to net distribution.

Door-to-door Hang-up Campaigns

The 2008 Ghana Demographic and Health Survey (GDHS) reported that only 32.6% of HHs owned at least one ITN. In addition, the 2008 HH Survey on ITNs, conducted by the USAID-funded NetMark project, found that almost 45% of ITNs owned were not hung and ready to use. The NMCP had adopted the use of LLINs as one of its primary malaria control interventions. Since 1998, untreated and treated nets had been available on a limited scale through distribution from fixed points, both in the public sector (for free or at subsidized prices) and in the private sector (for purchase).

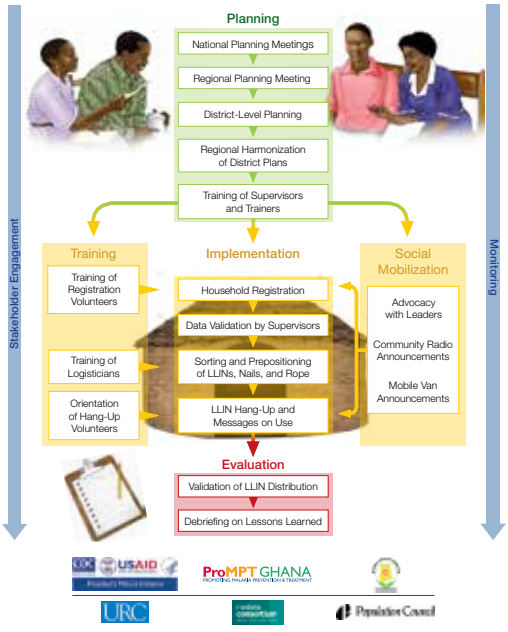
In 2009, NMCP and ProMPT, in collaboration with the NetsforLife program, decided to try a new strategy, never used before on a large scale in Africa: a door-to-door delivery and hang-up campaign that used community volunteers. Just three years later, more than 12.5 million LLINs had been distributed in Ghana using this strategy.

The model developed with NMCP and supported by ProMPT is presented in Figure 2.

Table 1. Summary of Key Interventions and Outputs: Malaria Prevention through LLIN Distribution

Intervention	Output
Directly **supporting door-to-door LLIN hang-up campaigns**	6,349,361 LLINs hung in Northern, Eastern, Volta, and Ashanti Regions
Providing **technical assistance for door-to-door hang-up campaigns**	4,531,944 LLINs hung in Western, Central, Upper West, Upper East, and Brong Ahafo Regions
Applying the **campaign model** developed by NMCP and ProMPT in other campaigns	2,023,705 LLINs hung in Greater Accra Region
Pilot-testing CD of LLINs through primary schools	181,600 LLINs distributed to primary 2 and primary 6 pupils in 2,321 public and private schools in Eastern Region
Training in LLIN distribution, hang-up and/or promotion	33,430 people trained in 4 regions

Figure 2. Door-to-Door LLIN Delivery and Hang-Up Campaign Model



Each campaign involved careful orchestration of multiple activities involving all levels of the health system, several other government sectors, donor and implementing agencies, civil society organizations, and volunteers. At the central level, a national campaign committee oversaw planning; this committee and its subcommittees were replicated at the regional and district levels in coordination with the RHMT and DHMTs. A complex set of trainings ensured that supervisors, logisticians and volunteers had the knowledge and skills required to carry out their responsibilities. Communities were tasked with recruiting and motivating volunteers for HH registration before LLIN distribution and the subsequent door-to-door hanging of nets. After a campaign, a validation exercise ascertained the number of LLINs distributed and hung. Campaign review meetings with stakeholders at the various levels discussed lessons learned and proposed solutions to identified problems.

Social mobilization activities served as the channel for both advocacy and information to communities to gain their commitment to support the campaigns and to practice the behaviors needed to sustain protection from mosquito bites. ProMPT's social mobilization team worked closely with RHMTs and DHMTs, Malaria Focal Persons and other key stakeholders to enable them as malaria prevention advocates, who in turn worked with other officials, to gain the endorsement of community opinion leaders and stakeholders. As a result, community leaders provided space to store the nets and other logistics, mobilized community members to support volunteers through various means, and in some instances paid for more "gong gong" beatings to increase awareness of the distribution and hang-up. Other channels, such as mobile information vans and radio spots, announced the need to register a HH in advance to receive the correct number of nets and later reminded people to be at home on the day of the hang-up.

An outcome evaluation of door-to-door distribution and hang-up pilot campaign in the Northern Region found substantial increases in LLIN ownership, retention and use.

This evidence substantiated that door-to-door distribution of LLINs with hang-up support by local volunteers was an effective means of increasing LLIN use in the Northern Region. It also gave partners confidence in the approach and led to their commitment to replicate the strategy. Other evidence showed that people remembered the messages they heard about malaria. Of the HHs that received BCC messages, 81.0% had at least one member who slept under an ITN the previous night, whereas only 72.8% of HHs that did not receive messages had at least one member who slept under an ITN the previous night. The difference was statistically significant ($p=0.034$).

A community volunteer, with one of the pregnant women that he urged to go for malaria preventing antenatal care services.

Table 2. Selected Indicators of Net Coverage and Use Before and After the May 2010 Campaign, Northern Region

Indicator	Before campaign (n=928)*	After campaign (n=809)	% increase
HHs with at least one ITN	53.5%	82.1%	53.5%
HHs with more than one ITN	26.2%	55.1%	110.3%
Children under 5 who slept under an ITN the previous night	31.8%	52.0%	63.5%

* Data are from the Ghana Demographic and Health Survey 2008.

With this success, NMCP and partners embarked on carrying out the first LLIN campaign for universal coverage (defined as one ITN available per two people) by 2013. The campaign, held in the Eastern Region, resulted in the distribution of 1,142,110 nets. The Volta Region campaign followed, with 1,069,741 distributed. The lessons learned from these campaigns helped to further refine the model for subsequent door-to-door distribution and hang-up campaigns and helped to ensure the equitable distribution of LLINs.

Allocating LLINs for Equity

Universal coverage—one net for every two people—is a goal, and the number is used for planning and evaluation purposes. To ensure that all people are covered by LLINs at night, the campaigns allocate nets according to the number of sleeping places in a HH. The allocation takes into account LLINs found in a HH, but not yet hung. After volunteers hang the LLINs (both the new ones and those found in the home during registration), every sleeping place is covered by a net. This increases the likelihood that those who have less power, particularly children and women, are not denied access to this life-saving intervention.

Distribution in urban versus more rural environments: The next campaign, in the Ashanti Region, presented challenges that were not present in previous campaigns, challenges that derived from having a large, diverse metropolitan area, the regional capital of Kumasi. To address these challenges, implementation focused first on the 26 districts classified as rural; Kumasi Metro area was the final focal area. A strategy specific to each type of urban and peri-urban sub-population was developed and used for HH registration and distribution. ProMPT allocated additional time and resources to enable NMCP, the RHMT and the Kumasi Metro management team to complete the registration, distribution and hang-up. For example, a special collaboration among ProMPT, the Peace Corps and Ghanaian NGOs devised new approaches to reach Kayayei, a population of low-wage, seasonal migrant workers, who often live on the streets or in improvised dwellings. The experiences suggested that practices for reaching this vulnerable group, such as using trusted members of the group to register LLIN recipients and extend distribution hours into the evening, could be useful for other hard-to-reach populations. A total of 1,887,737 LLINs were distributed in Ashanti Region.

ProMPT and Peace Corps Collaborate to Bring LLINs to Vulnerable Populations

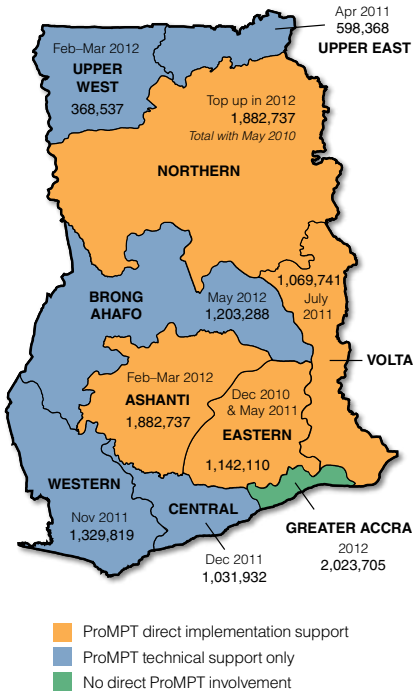
Kumasi, the capital of the Ashanti Region, is a large city of 1.5 million residents; it has several urban subpopulations that required specially tailored approaches to ensure that they receive LLINs. The Kayayei are a distinct population of low-wage workers who make their living by carrying goods on their heads, or by means of trolleys, or by selling small items in the markets. The Kayayei typically sleep in large groups within make-shift temporary shacks, underneath storefront verandas, or even outside without overhead cover. Similarly, many migrant workers frequent Kumasi for intermittent work opportunities. Like the Kayayei, these migrant workers also sleep in groups in improvised shelters.

Although Kayayei and street dwellers are especially at risk of suffering from severe malaria, registration of and hanging LLINs for them was not routine, particularly as these groups do not reside in HHs. Peace Corps volunteers, ProMPT and local NGOs combined efforts to ensure that these often overlooked and forgotten groups were reached. Almost 27,000 members of this vulnerable population were registered, and 4,300 LLINs were distributed to sleeping groups through NGO facilities.

As many as 20 to 30 Kayayei may sleep in wooden market stalls, after the market closes for the day. This sleeping place has an LLIN. *Photo: David Kalpachian, Peace Corps*

Institutionalization: Campaigns in Brong Ahafo, Central, Upper East, Upper West, and Western Regions, benefited from ProMPT's technical support in the regional campaign planning meetings, training of community health volunteers (CHVs) to register HHs (HHs), and data validation and compilation. By the July 2012 "top-up" campaign in the Northern Region (to distribute additional nets to people not reached by the targeted campaign in 2010), NMCP and its regional counterparts had developed the requisite skills and capacity to lead the implementation of such campaigns, while ProMPT played a background role with technical support. Highlights of this campaign include strong partnerships with community leaders and district

Figure 3. Number of LLINs Distributed and Dates of Regional Campaigns



assemblies and a process of deciding volunteer motivation prior to the campaign. It was led by the Regional Coordinating Council, which provides intersectoral coordination to government activities. The map shows ProMPT's support toward achieving universal LLIN coverage in Ghana.

Continuous Distribution

The NMCP, with ProMPT support, developed a comprehensive CD system to sustain progress achieved through the distribution/hang-up campaigns. CD ensures that everyone needing an LLIN after a campaign ends (newborns, migrants and people missed by the campaign and HHs with nets that need replacing) will have access to LLINs. Two ProMPT-supported activities played key roles in developing the strategy: 1) a study tour to Kenya for GHS technical officers to learn about different approaches to CD and 2) use of the NetCALC tool, developed by ProMPT partner, The Malaria Consortium, to simulate the viability of the mix of channels and the quantity of nets needed to sustain the net coverage. In addition, ProMPT provided technical support to NMCP to review the CD guidelines and build consensus around the roles and responsibilities of piloting CD in Eastern and Volta Regions.

Key Channels of the CD Pilot

CD maintains the focus on protecting the population groups most vulnerable to malaria by using distribution channels where pregnant women and young children are routinely found:

- ANC,
- Routine expanded program on immunization,
- Child Health Promotion Week, and
- School-based distribution (Eastern Region).

School distribution pilot in Eastern Region: In August–September 2012, ProMPT, in collaboration with the Regional and District Education Officers of the Ghana Education Service (GES) trained 213 District School Health Education Program (SHEP) Coordinators and Circuit Supervisors as trainers to conduct and manage the circuit-level orientations and primary school-based LLIN distribution. These trainers trained 4,642 head teachers and school SHEP Coordinators from all 2,321 public and private primary schools in Eastern Region. During the campaign, schools distributed approximately 181,600 LLINs to primary 2 and primary 6 (P2 and P6) pupils in Eastern Region.

The key steps in the school-based distribution pilot are described in Table 3.

The collaborative efforts of LLIN campaigns resulted in substantial increases in LLIN ownership and use as demonstrated in Figures 4, 5 and 6. The largest differences are in Volta, Eastern, and Northern Regions, where campaigns were completed prior to the data collection for the Multiple Indicator Cluster Survey (MICS) in 2011.

While the 2011 MICS data show that the ambitious national targets (100% of HH owning nets and 85% of children and pregnant women sleeping under nets) have yet to be met, substantial progress has been made. Because the job is unfinished, NMCP and GHS, with support from development partners, will need to continue efforts to strengthen and institutionalize support to increase and maintain LLIN ownership and use.

Table 3. Steps for Distributing LLINs at Primary Schools

National Planning and Consensus Meetings	GHS (through the NMCP) actively engaged donors, development partners, health and education authorities, and the private sector in building consensus on the school-based LLIN distribution strategy and in developing an implementation process.
Regional Orientation and Planning Meetings	Regional orientation and planning meetings brought together regional and district education officers and SHEP Coordinators to be oriented on the CD implementation process and timeline.
Training of Trainers Workshops for District SHEP Coordinators and GES Circuit Supervisors	Training of Trainers Workshops for District SHEP Coordinators and GES Circuit Supervisors equipped them to educate other teachers on the key facts related to malaria prevention and LLIN care and use, and school distribution. Micro-plans included information on the number of schools and enrollment figures for grades P2 and P6 (the beneficiaries of LLINs to be distributed).
Training of Primary School Head Teachers and SHEP Coordinators	At the circuit level, each circuit supervisor, supported by the district SHEP and the private school coordinator, organized a training session for all head teachers and school-based SHEP coordinators. The session addressed key malaria prevention messages and explained the process for distribution.
Orientation of Primary School Teachers	Trainers oriented primary school teachers on the rationale for the selection of the target classes and on key malaria prevention facts.
Distribution of LLINs to Pupils in Grades P2 and P6	On the day(s) of distribution, each class teacher educated the pupils on the use and care of LLINs using laminated posters, developed and printed by ProMPT, as a teaching aid. Every class member received an LLIN.
Social Mobilization through School Drama and Radio	Eight schools, two urban and two rural, in each of two districts in Eastern Region piloted school dramas to engage students in using LLINs. The entire primary school population watched skits developed and performed by students to sensitize that population on the availability of and the need to consistently sleep under an LLIN to prevent malaria. Community radio stations also informed beneficiaries and their families about CD, and GHS staff and the SHEP Coordinators participated in weekly radio panel discussions to interact with listeners through phone call-ins.
Reporting	Records of the distribution at each school were sent to the circuit supervisors, who compiled the data from all the schools and submitted the information to the district SHEP. The district SHEP compiled all district data and submitted that information to the regional SHEP Coordinator. Circuit supervisors used data from schools to determine that all P2 and P6 children had received their LLINs. Any identified shortages were quickly reported, and additional nets sent to ensure total coverage. The Regional Deputy Director of Public Health shared the data with the NMCP, which used it to evaluate the campaign and inform future planning for CD.

Figure 4. Trends in Ownership of ITNs: Percent of HHs with at Least One ITN by Region, Ghana 2011

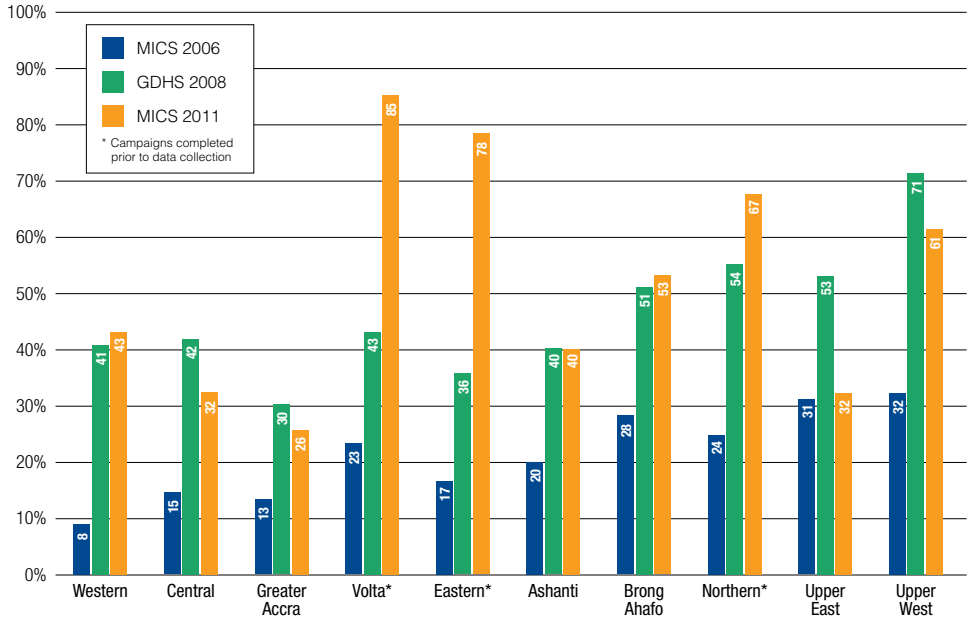


Figure 5. Proportion of Children under Five Who Slept under an ITN the Previous Night, by Region, 2006–2011

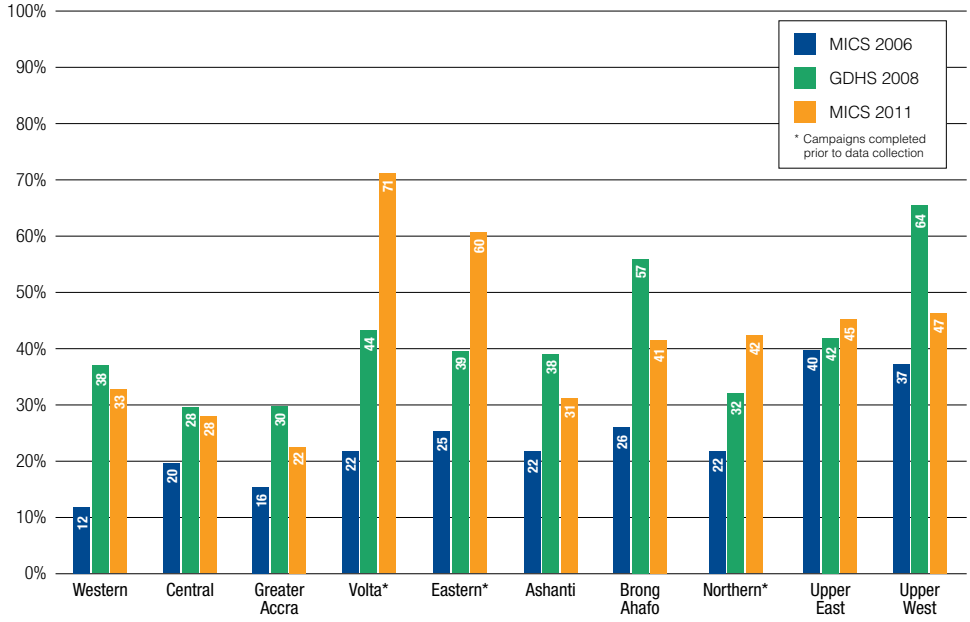
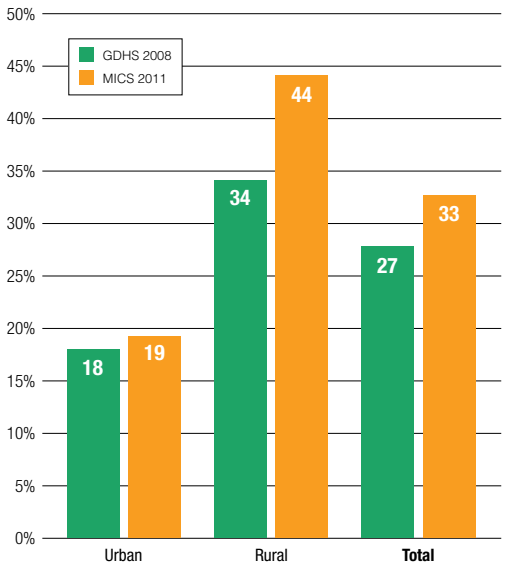


Figure 6. Proportion of Pregnant Women Who Slept under an ITN the Previous Night, by Type of Locale



MALARIA IN PREGNANCY AND CASE MANAGEMENT, INCLUDING HMM

The MIP interventions focused on 1) increasing uptake of intermittent preventive treatment of malaria during pregnancy (IPTp) at ANC, particularly the second and third doses of SP; 2) ensuring prompt and effective treatment of malaria cases that occur during pregnancy; and 3) promoting the regular use of LLINs among pregnant women. Case management content focused on 1) confirming a diagnosis of malaria through a rapid diagnostic test (RDT) or microscopy, 2) treating malaria through correct dosing of ACT, and 3) monitoring malaria cases to ensure improvement or referral for worsening cases.

For home-based management of malaria (HMM), ProMPT supported NMCP to develop strategies for effective implementation of HMM and to train trainers, community health officers/nurses and CBAs in community-based management of malaria. The interventions and outputs of activities supporting MIP and case management are in Table 4.

Integrated Malaria in Pregnancy and Case Management

ProMPT adopted an integrated approach to MIP and case management, which was based on NMCP's national malaria strategic plan for 2008–2015. In addition, ProMPT implemented NMCP's recently revised MIP and malaria case management guidelines. The project worked with NMCP to train regional trainers who in turn trained district trainers, enabling large-scale and cadre-specific training countrywide. This resulted in a total of 10,045 health professionals receiving training in case management of malaria with ACTs, IPTp, and lab and microscopy.

Malaria in Pregnancy and Case Management Strategy

To help Ghana reach its goal of a 75% reduction in malaria morbidity and mortality by 2015, ProMPT supported GHS to carry out a wide-ranging set of interventions aimed at improving supply, demand and management of MIP and malaria case management services. ProMPT's strategy, developed with NMCP, was to ensure that potential users, their families and community leaders understood malaria treatment and prevention and that health providers knew how to accurately diagnose and treat malaria, how to administer SP to pregnant women and how to integrate these skills and services into the health delivery system.

After completion of health worker training in MIP and case management, ProMPT and GHS shifted their attention to capacity building for the supervision of malaria services. To start this process, ProMPT trained 35 skilled regional and district supervisors from the seven regions to build GHS's capacity in supportive supervision and create a pool of supportive supervision trainers. They worked alongside ProMPT's expert trainers to train 625 regional and district supervisors in supportive supervision to enable them to provide hands-on guidance in MIP and case management to recently trained health workers at their respective facilities. ProMPT also trained 17 ICD (national level) staff to provide

Table 4. Summary of Key Interventions and Outputs: MIP and Case Management

Intervention	Output
Training of facility-based health workers in MIP and case management	• 10,045 health workers trained nationwide
Reprinting and distribution of **national guidelines and training manuals** on MIP and case management	• Reproduced 11,800 copies of three sets of manuals in partnership with Improving Malaria Diagnostics (IMaD) and Jhpiego
Developing and distributing two **job aids** on IPTp and RDTs	• 29,000 copies of IPTp job aid and 20,000 copies of RDT job aid distributed in 7 regions
Introduction of **supportive supervision** system through regional grants and technical support to supervisory teams	• 642 supervisory staff trained from the national, regional and district levels • 21,586 health workers from 2,003 facilities received at least 1 supervisory visit
Mobilize communities to increase demand for MIP, case management and HMM	• 11,000 radio spots aired in 7 regions • Community volunteers from 33 NGOs reached more than 2,134,147 people with information about early recognition of malaria symptoms and the need for treatment as well as the importance of IPTp • 4,500 opinion leaders trained in MIP and case management advocacy for community mobilization
Support **introduction of HMM**	• 2,526 community health officers and CBAs trained in HMM • Produced and distributed educational materials, including 10,000 copies of new counseling card on home-based care, 10,000 copies of wall chart for CBAs and 30,000 copies of poster encouraging community members to seek CBA services • Regional and national review meetings held on HMM strategy implementation and lessons learned

The nurse educates a pregnant woman about benefits of malaria prevention.

coaching to the supervisors and to monitor the implementation of supportive supervision by the regions and districts.

The training culminated in the launch of grants to the regions to enable regional and district supervisors to carry out supportive supervision visits with health workers. These visits enabled supervisors to coach staff not only to improve the clinical quality of MIP and case management, but also to address broader, facility-level issues related to the quality of care. As supportive supervision fosters multidisciplinary team work, the visits allowed supervisors and facility staff to identify gaps and propose changes in areas such as internal processes on drug/supply requisitions, hygiene issues (such as having client wash rooms available) and referral systems. Furthermore, the visits helped strengthen the dialogue between districts and health facilities to identify and address issues faced by the facilities.

ProMPT worked with the regions to successfully complete two rounds of supportive supervision. Across both rounds, 21,586 health workers from 2,003 health facilities received at least one supervisory visit: 99.4% of health facilities with a worker trained in MIP/case management received at least one visit. Figure 7 sets out the steps undertaken to introduce supportive supervision for MIP/case management.

Supportive supervision regional review meetings conducted midway through the process (organized by ProMPT and facilitated by regional health teams) also gave supervision teams an opportunity to share experiences and receive additional guidance on how to improve planning for and the implementation of supportive supervision.

Specific Malaria in Pregnancy/ Intermittent Preventive Treatment in Pregnancy

Joint coaching visits to health facilities conducted with regional and district health officers highlighted inconsistencies and a lack of understanding of the calculation of IPTp coverage, particularly related to the denominator. To address this, a job aid reminding providers and records staff how to calculate the IPTp coverage rate was

> **“ The supervision has helped us, especially on IPTp monitoring and how to chart monthly. ”**
>
> Facility Head, CHPS Compound in Upper East Region, February 2013

IPTp job aid from health facility in Eastern Region

Figure 7. ProMPT/GHS Supportive Supervision Process

ProMPT and GHS trained 642 supervisory staff from seven regions in supportive techniques.

Supportive Supervision in Districts

- ProMPT provided grants to seven Regional Health Directorates to implement supportive supervision in two rounds. Round one was conducted in five regions, and round two was conducted in six regions.
- Trained supervisors from the district health teams supervised health facilities to identify and resolve barriers to good quality malaria services.
- Where feasible, supervisors worked with facilities to develop action plans to address key issues related to malaria case management and MIP.

Technical Assistance for Supportive Supervision

- Teams composed of ProMPT, ICD, and Regional Health Directorate staff provided coaching to support and monitor supportive supervision at the district level.
- The teams visited 97 districts in round one and 62 districts in round two.
- In round two, ICD took the lead in conducting monitoring and coaching visits and focused on districts most in need of support.

Review Meetings

- Midway through round one, ProMPT supported the regions to hold supportive supervision review meetings on lessons learned to date and to make midcourse corrections to the process.
- Meetings focused on helping supervision teams plan for supportive supervision and provide constructive feedback to health facilities.

Assessment

- To obtain facility feedback on their experience, facility heads completed post-supervisory questionnaires.
- In round one, 81% of respondents indicated a very high level of satisfaction with the first supportive supervision visit.

Across both rounds of grants, approximately 21,000 health workers from 2,000 facilities received a supervisory visit.

Mnemonic Devices for Steps in Supportive Supervision

Many supervisors found it challenging to internalize all of the recommended steps in planning for and carrying out supportive supervision. At the review meetings, ProMPT shared mnemonic devices with the attendees to help them remember the essential elements of supportive supervision.

Before the supervision visit – **TICL**:

- Form a supervision **team** with the requisite skills and experience.
- **Inform** the facility of your visit and the duration and expectations of the visit in advance so they can prepare.
- **Confirm** your visit with the facility a few days before arrival.
- Make sure **logistics** are in place, such a means of transport and any materials or commodities needed by the facility.

During the supervision – **COLA**:

- Upon arrival, perform the appropriate **courtesies** by greeting the facility head and explaining the objectives of the visit to supervisees.
- Quietly **observe** how the work is being carried out.
- **Listen** to the questions and concerns of the health facility.
- **Ask** questions about progress made, challenges the facility is facing, and/or anything that is unclear.

Before departing the facility – **FAN:**

- Provide constructive **feedback**; discuss the positive things observed and potential areas for improvement.
- Develop **action** plans or review progress on existing action plans.
- Define **next** steps and responsibilities for implementation of action items; discuss the time of the next visit and/or follow-up phone call.

developed in collaboration with NMCP, ICD and district staff. The job aid was distributed to facilities offering IPTp in all seven regions. It enabled health workers to track the number of women receiving IPTp1, IPTp2 and IPTp3 each month; determine the number of women eligible for each dose (the denominator); and plot the results monthly on a bar or line graph. The job aid enabled plotting to be done by hand and posted on the facility wall. In addition to tracking progress, helped serve as a reminder of the importance of IPTp to staff and patients.

Since most job aids were disseminated before or during supportive supervision, supervisors could help improve the uniformity of data collection by ensuring that all facilities in their jurisdiction used the correct numerators and denominators. In addition, supervisors helped facilities address situations that caused gaps in IPTp coverage by helping staff determine whether a pregnant woman was due for an IPTp dose during an ANC visit and remember to provide SP when indicated.

Ghana experienced a significant increase in the nationwide coverage of IPTp2 during the three-year period 2008–2011 (Figure 8). The "total" level of coverage places Ghana among the highest in sub-Saharan Africa (Figure 9). The impressive growth from 46% to 65% brought Ghana closer to its target of 85% coverage of IPTp2. ProMPT's work, carried out in collaboration with GHS and civil society, likely played a substantial role in these increases.

Figure 8. Percentage of Women Receiving at Least Two Doses of IPTp, by Type of Locale, 2008 and 2011

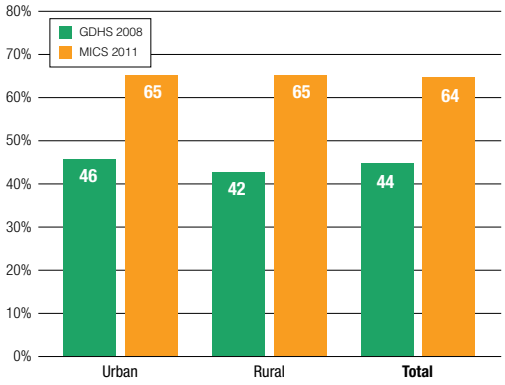
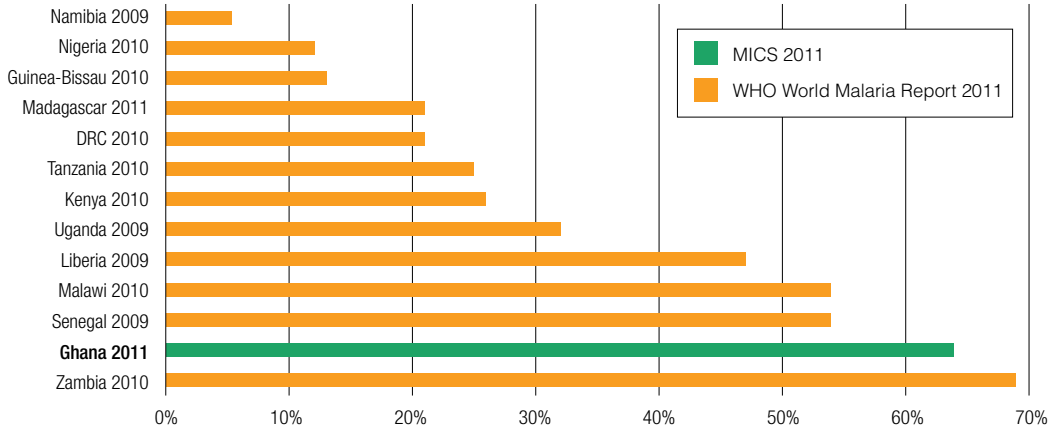


Figure 9. Percentage of Women Receiving IPTp2, Sub-Saharan Africa



Home-based Management of Malaria

Throughout the project, ProMPT worked with NMCP to implement strategies to improve prompt treatment of uncomplicated malaria at the community level. ProMPT assisted with the development of implementation plans and helped lead a committee that oversaw the implementation of the malaria component of home-based care (or HMM) (In Ghana home-based care is essentially integrated community case management and covers childhood pneumonia, diarrhea, malnutrition and malaria.). To resolve bottlenecks in NMCP's implementation of HMM, ProMPT actively participated in a nationwide review of HMM implementation in 2012. The review indicated that inadequate drug supplies, limited supervision and some misunderstandings of the HMM strategy as the main problems facing HMM implementation. Appropriate deployment and supervision of volunteers was a major constraint. ProMPT advocated for the resolution of these issues, and NMCP agreed to reduce by 70% the number of communities targeted for HMM until its fundamental elements could be better developed and implemented.

ProMPT also assisted NMCP with technical and financial support for the training of trainers at the national, regional and district levels. The project supported refresher training and supervision on HMM for 308 community health officers in 23 districts in the Ashanti, Eastern, Volta and Brong Ahafo regions. It also printed and disseminated numerous educational materials through government and NGO partners.

ProMPT redirected its efforts to support only "year-one" HMM districts (the first group of districts slated for HMM), rather than expand its support to the second group originally scheduled to begin in the second year of HMM implementation. The redirected efforts 1) included refresher trainings, consensus meetings and continuous coaching with regional and district malaria focal persons and 2) ensured that ProMPT-supported HMM activities in the 23 districts across four regions continued despite the challenges. In addition, ProMPT's support to NGOs in HMM districts ensured that communities knew of the HMM services and that DHMTs learned about HMM challenges during regular NGO/DHMT meetings.

COMMUNITY-BASED MALARIA PREVENTION AND CONTROL

ProMPT's community-based malaria prevention and control efforts worked to 1) increase demand for malaria interventions and 2) establish use of these interventions that would be sustained as a social norm, boosting community support and links to services. Social mobilization engaged many segments of society in embracing the goal of improving prevention and treatment of malaria, simultaneously strengthening the quality of health services and stimulating the public's participation in both using and improving those services. Adapted from the definition used by UNICEF, social mobilization engaged a range of players in related and complementary efforts. It accounted for people's needs; adopted the principle of community involvement; and empowered individuals, families, groups, and institutions for sustained action.

Activities used a mix of approaches—partnerships, capacity building, training, face-to-face interactions, mass media, special events, and traditional methods of communication—that lead to the sustained adoption of preventive and treatment behaviors: nightly sleeping under LLINs; rapid recognition of and action in cases of fever or other malaria symptoms; adherence to ACT; and early attendance at ANC and adherence to IPTp. ProMPT also leveraged the diversity of people, cultures, and social networks in Ghana through organized civil society groups and government structures, taking advantage of the opportunities they presented to influence the attitudes and behaviors of different social segments. Table 5 summarizes the interventions and outputs of ProMPT's efforts relative to community-based prevention and control.

Table 5. Summary of Key Interventions and Outputs: Community-based Malaria Prevention and Control

Development/dissemination of ***National Malaria Behavior Change Communication Strategy***	• Strategy launched by the Minister of Health on World Malaria Day 2010 • 2,500 copies of strategy distributed to partners and stakeholders
Production and distribution of a package of malaria **materials for health workers and community volunteers**	• 20,000 sets of 7 counseling cards/job aids on LLINs, MIP and HMM • 50,000 leaflets on LLINs • 20,000 posters on benefits of SP • 20,000 posters on ACT
Radio campaigns	• Four sets of radio spots on LLIN, MIP, and ACT produced in six languages • 4,274 radio spots aired nationwide on 23 radio stations • 4,027 radio spots rebroadcast on 14 stations • 1,796 spots, announcements, jingles, panel discussions and live presenter mentions aired on 21 community radio stations on MIP and LLIN use
Support **joint "Good Life" malaria campaign** with USAID|BCS	• Jointly developed strategy, media messages and materials; technical input and review by ProMPT • National campaign launched; music icon Nana Boro unveiled as LLIN Ambassador • Materials produced and distributed: – 50,000 posters on LLINs – 20,000 large stickers – 50,000 bumper stickers – 100,000 leaflets on LLIN hanging and care – 2,284 radio spots aired on 14 radio stations
Capacity development for NGOs and FBOs in community mobilization for malaria prevention and treatment	• 33 NGOs and 1 FBO received training, support and monitoring • 3,213 CHVs trained • Supported partnerships between NGOs and district health teams • 2,134,147 people reached by CHVs • Oriented in advocacy for malaria prevention and control more than 4,500 opinion leaders

National Level Multi-Media BCC

The launch in 2010 of the *National Malaria BCC Strategy*, supported by ProMPT, set the stage for subsequent large-scale malaria communication and social mobilization efforts. An integrated package of materials (leaflets, posters and counseling cards) was printed and distributed to health workers, NGOs and community volunteers. ProMPT trained print and broadcast journalists on malaria reporting, resulting in numerous articles in national daily papers. Radio spots were broadcast in six languages on different national and regional stations.

The strategy guided the intensive malaria campaign under the "Good Life. Live It Well" theme. ProMPT collaborated closely with USAID|BCS in planning the campaign, producing its messages and materials, and ensuring the messages were accurate. The new campaign was launched in June 2011, with the newly named LLIN Ambassador, music icon Nana Boro singing, "It feels good under the treated net." Reinforcing the song's message was the distribution of large numbers of posters, stickers (see photo) and leaflets on LLIN use, hanging and care; and radio spots aired on 14 radio stations.

ProMPT contributed to three of the four BCC messages covered in the 2011 MICS, jointly developing messages/formats for the three national spots with USAID|BCS. When the BCS project joined the PMI team, ProMPT and BCS combined resources to complete the pieces, and BCS paid for production and airing. The 2011 MICS surveyed women and men aged 15–49, asking respondents to recall messages seen or heard on television and radio. MICS data demonstrate positive recall of malaria messages. Recall was highest for TV messages, with generally expected geographic, urban/rural and educational differentials. In Greater Accra and among the richest quintiles, recall for TV was as high as 70%; predictably, in rural areas in ProMPT regions, recall for many meessages was usually below 10%. Recall for person-to-person (e.g., relative, neighbor, community health worker or volunteer) communication was not covered in the survey. Nevertheless, any recall is a first step toward change in attitude/action, and the MICS findings bode well for PMI's messages, especially in urban areas.

A driver puts a sticker advocating net use on his truck.

"It Feels Good Under the Treated Net."

Adapting the lyrics of his 2010 hit song "Aha yede" ("It feels good in here"), Ghana's new anti-malaria Ambassador, Nana Boro, asked people to open their minds to sleeping under a mosquito net.

Engaging Civil Society

ProMPT emphasized the participation of many segments of society in "driving malaria away" through its support to civil society organizations: NGOs, FBOs, professional organizations, women's groups, etc. These activities complemented the mass media campaigns and used a mix of approaches—grants, partnerships, capacity building and training—and channels—face-to-face interactions, special events and traditional methods of communication, such as drama. Together, the approaches aimed at creating a social norm of "we need to live free from malaria."

Civil society groups played important roles in supporting DHMTs: they were often able to reach populations that the health system could not reach due to the lack of resources. These well-established, dynamic structures have the credibility, trust, experience and "convening capacity" to mobilize their networks around malaria prevention. ProMPT particularly emphasized working with structures that advocated for meeting women's needs/interests to ensure that a women-centered approach to malaria prevention and treatment was prominent in social mobilization.

ProMPT supported 326 organized groups in seven regions. Most groups were the district or municipal branch of a larger national confederation, such as the Ghana Teachers Association. Key aspects of ProMPT's work with the organized groups were: identifying appropriate events and timing for groups to include malaria messages into ongoing programming and planning for such mobilization together; providing orientation and BCC materials on malaria; and fostering collaboration between the groups and the DHMT. On limited occasions, ProMPT provided financial support for bigger activities, such as a "durbar" (public celebration) in larger towns. Each group provided most of the inputs for its activities or leveraged them from other sources.

Members of the Christian Mothers' Union dance at the Techiman Civic Union durbar to mobilize the community against malaria.

Mobilizing Networks to Spread Information

The networks in organized groups facilitated the dissemination of malaria information down to sub-groups and individual members and their affiliates, friends and family members. For example, after their training, the leaders of Techiman Civic Union in Brong Ahafo Region oriented leaders and members of its various sub-groups (e.g., the onion sellers, tomato sellers and butchers in the association of market women) in regularly scheduled meetings. In Volta Region, the 130 members of the Association of Queen Mothers in the Manya Krobo traditional area pledged their support to fight malaria by urging each Queen to educate her community and encourage pregnant women to make ANC visits for IPTp.

For example, one group obtained a commitment from the district Chief Executive to provide water for durbar participants. Two radio stations covered the durbar live, allowing people not present to receive the information on malaria.

Faith-based organizations: Religion in Ghana is diverse and deeply rooted; the thousands of churches, mosques and other FBOs presented an influential channel for disseminating malaria information. ProMPT supported training in advocacy for malaria prevention for 49 high-level FBO leaders from the Christian Council of Ghana, the Ghana Muslim Mission and other faith-based umbrella groups. These leaders produced a communiqué, published in major daily papers, committing to support malaria prevention and control. In 2010 and 2011, 392 FBO and congregational leaders received training in outreach, which they were to replicate with an additional 30 leaders in local congregations. Many of the ProMPT-supported civil society groups, discussed above, were also faith-based and active in the "district activations" and LLIN campaigns.

Drama and cultural troupes: Drama is a medium long used in Ghana as a recreation and teaching mechanism, with varying traditions among its ethnic groups. ProMPT piloted a community drama program in six districts in two regions. Professional cultural groups and community drama troupes performed in 78 communities, reaching more than 85,000 men, women and children. The GHS, the Center for National Culture, local NGOs, and the actors reviewed and revised the scripts for

District Activations Engage Government and Civil Society

District activations were strategic alliances among DHMTs, other decentralized government departments, civil society organizations and community leaders for district-specific, bottom-up grassroots campaign approaches. ProMPT supported activations in 71 districts in five regions. Under the leadership of DHMTs, representatives of government, NGOs, FBOs, community-based organizations and other organized groups planned and carried out community-based and small-media activities tailored to the socio-cultural context in the district. ProMPT provided small grants for monitoring, but other resources came from district and community stakeholders. Common approaches used in district activations included durbars; orientation of religious leaders for outreach in churches, mosques and fetish shrines; community-based radio (small FM stations that broadcast in local languages); and outreach through school children. For example, in Saboba District of Northern Region the activation efforts included three durbars, community education through mother-to-mother support groups and traditional birth attendants, radio discussions, and talks in churches and mosques.

An actress playing a pregnant woman learns from her sister about the dangers of malaria in pregnancy.

An audience member interacts with actors.

Eastern Region LLIN campaign volunteers on the path to the next community.

appropriateness and effectiveness. Chiefs and elders sanctioned the events and reinforced the messages in opening and closing remarks. Audience participation boosted learning levels: at moments of suspense in the drama (when an outcome was unknown), a facilitator walked into the performance and assumed the role of an actor. She or he asked the audience questions and asked for suggestions and solutions. ProMPT conducted exit interviews with the audience and used the findings to revise the drama scripts for subsequent performances, emphasizing messages that were not well recalled and incorporating elements that addressed audience concerns. After the pilot program, ProMPT provided guidance on the use of community drama as a social mobilization tool to project-supported NGOs, enabling them to continue drama performances in their communities after ProMPT support ended. The photos show scenes from these drama presentations.

Capacity Building of NGOs

ProMPT supported 33 Ghanaian NGOs in eight regions to include malaria in their health activities or, for those that were already including malaria, to upgrade their capacities. Simultaneously, ProMPT assisted these NGOs with strengthening their M&E and financial management systems.

Reinforcing the implementation of the HMM strategy was a central rationale for NGO support. Only NGOs operating in one of the districts where NMCP was rolling out HMM were eligible for ProMPT grants.

All the NGOs and their volunteers trained in participatory outreach delivered integrated (LLIN, MIP and case management) community-based malaria outreach and interventions (e.g., door-to-door outreach and group activities), but ProMPT particularly focused on supporting HMM and the CBAs (in a few cases, NGO volunteers were also CBAs). The NGOs, DHMTs and community leaders worked together to put on durbars and other participatory activities to introduce CBAs and their services to communities. Those reached were urged to refer children to a CBA for prompt malaria assessment and treatment. Community dialogue encouraged communities to identify ways that they could support, sustain and guide CBAs' work. To reinforce community awareness of HMM and CBAs, the NGOs distributed posters on home-based care, including HMM.

NGOs Faciliate Simplified Cost-benefit Analysis of Using LLINs

Cost-benefit analysis of LLIN use was a very popular and, according to the NGOs, convincing participatory learning activity used in many communities. The activity guided participants in performing an analysis that facilitated collective recognition that routine use of LLINs results in savings in terms of money, time, well-being and even human life. An NGO facilitator would ask community members to name the various products for preventing mosquito bites (e.g., LLINs, repellents and coils), draw the product on a chart and show its effectiveness in preventing bites. Participants then discussed the advantages and disadvantages of each product (how long it lasts, its price, ease of obtaining, etc.). Finally, the facilitator helped participants calculate how many product packages would be needed to protect someone from bites for two years. He/she then led a discussion on the cost-benefit of the different products. Participants were also asked to compare the cost of an LLIN to the cost of treating three episodes of malaria in two children in a year or the cost of sending a pregnant woman with malaria to the hospital for treatment. The exercise made clear that LLIN use was the best choice in terms of financial and other costs.

CAPACITY BUILDING OF GHS AND HEALTH SYSTEMS STRENGTHENING

ProMPT consistently worked hand-in-hand with GHS, which took the lead in planning and decision making, while ProMPT strove to ensure that both Ghana's and PMI's priorities PMI were met. The project's engagement with regional and district-level health authorities was also crucial; having RHMTs and DHMTs actively contribute to the design and monitoring of program activities contributed to their ownership of interventions at multiple levels. As noted above, ProMPT actively sought to bring in the voice and participation of a wide range of civil society actors—from the faith-based community to traditional leaders—in its programming, further increasing the likelihood that efforts to "drive malaria away" would be maintained. This approach contributed to evidence-based programming not only for malaria, but also for the broader health system. Table 6 presents a summary of the relevant interventions and outputs.

Addressing some of the basic needs of GHS units (such as NMCP and PPME/CHIM) was a key element of ProMPT's approach and helped build a firm foundation for ongoing improvements in data quality and use. In the project's early stages, these investments included supplying equipment and network infrastructure to the NMCP to increase its ability to record, analyze and report data. ProMPT also assisted the NMCP to develop and disseminate a new M&E plan, which helped to create a framework to meet Global Fund reporting requirements without using a parallel system.

The project's approach evolved over time, and the focus shifted to streamlining systems for collecting and reporting malaria data as well as for facilitating communication throughout the health system to address malaria-related data challenges. Placing a seconded senior M&E advisor from ProMPT in NMCP assisted this process, as he could provide ongoing leadership and technical direction to strengthen M&E. For example, he played a major role in the execution of the national MICS, which included biomarkers of malaria (such as anemia and parasitemia). As a result, NMCP has a greater range of data for assessing performance and improving program planning.

Enhancing the capacities and prominence of district and regional HIOs was another fundamental aspect of ProMPT's approach. HIOs already had a mandate to work with data, but were sometimes underutilized and occasionally their critical role in improving malaria programming was not fully appreciated. ProMPT provided training on malaria data to newly appointed HIOs and put into place procedures to provide ongoing support to them. The procedures consisted of regular field visits to regions and districts, when ProMPT M&E advisors provided coaching and guidance to HIOs and malaria focal persons as they visited health facilities to mentor health workers on data quality issues. ProMPT also provided financial support to regions and districts for these facility visits. This hands-on technical assistance reinforced skills and boosted the confidence of HIOs to perform their jobs. Coaching by HIOs of health facility workers

Review Meeting in Ashanti Region Leads to Improved Reporting

At the time of their review meeting, only 18% of health facilities had reported their complete malaria data for the period January–June 2012 (as of July 2012). This prompted the Regional Health Directorate to call and describe the low reporting rate to the district health directors for their prompt action. A review of the reporting rate as of September 30, 2012, found that it had risen from 18% to 54%.

Table 6. Summary of Key Interventions and Outputs: Capacity Building of GHS and Health Systems Strengthening

Intervention	Output
Conduct **evaluations** to assess the effectiveness of LLIN campaigns	• Performed an outcome evaluation of LLIN hang-up campaigns in Northern Region and a process evaluation in Eastern Region to provide evidence to improve subsequent campaigns
Built **capacity in data management and M&E** for NMCP and CHIM	• Supported the review and finalization of the National Malaria M&E Plan • Placed senior-level M&E Advisor in NMCP • Procured Stata software for data management and analysis for NMCP and CHIM and trained 10 staff to use it • Trained 103 newly appointed HIOs in data management to produce malaria bulletins
Improved **IT infrastructure** for data management	• Purchased 40 computers for newly created districts to strengthen routine data management at the district level and 6 laptop computers for NMCP national and zonal staff • Supported the installation of a network infrastructure to facilitate data access and sharing at NMCP
Revision and printing of **routine data collection forms**	• Helped the NMCP introduce more user-friendly and accurate malaria reporting forms • Supported the revision and distribution of 15,500 consulting room patient registers to 7 regions
Improved **malaria data reporting** and data quality	• Trained 1,353 facility-based health workers in the use of the revised consulting room registers to improve data quality in all seven regions • Worked with regional HIOs and malaria focal persons in five regions to coach health facilities on malaria data management • Supported PPME/CHIM, NMCP and HIOs to conduct a malaria data quality assessment at 131 health facilities in four regions • Supported malaria data review meetings in each region for exchange of best practices
Strengthen **data collection** and reporting of community-based malaria interventions	• Improved the capacity of 33 NGOs to capture and report data on community-based malaria interventions.

helped them see the value of good quality data. Furthermore, the project also provided guidance to the regions to address malaria data issues as part of district-led supportive supervision visits, which were aimed at providing support to health workers in case management and malaria in pregnancy.

ProMPT's focus on shared learning also contributed to **elevating the importance of malaria data quality and strengthening HIO capacities**. Regional malaria data review meetings, held in seven regions, served as a forum for regional leadership and districts to share performance feedback relative to the timeliness of reporting and quality of malaria data. The meetings recognized the accomplishments of well-performing districts and put peer pressure on underperforming districts. They also heightened senior-level health managers' awareness of concerns about data and informed the development of action plans on data quality improvements.

Three major cross-regional review meetings, in which HIOs from neighboring regions (e.g. Ashanti/Brong Ahafo, Eastern/Volta, and Upper East/Upper West/Northern) interacted and shared experiences, also stimulated efforts to improve malaria M&E. Regional malaria bulletins were another ProMPT-supported intervention to foster the understanding of both data and ways to use it throughout the GHS. Furthermore, the coaching visits and review meetings helped address the challenge of staff turnover, by familiarizing newly appointed, not yet trained HIOs and facility staff with malaria data quality issues and procedures.

Focusing attention on malaria data collection at the facility level was a recurrent theme in technical assistance, and ProMPT supported the introduction of more user-friendly and accurate data capture and reporting forms and tools to strengthen M&E. The NMCP compiled its four malaria reporting forms into one booklet with carbon copies so that facilities could keep copies of their malaria reports and better track their progress.

Key Issues Uncovered during Malaria Data Verification Visits to Health Facilities

Facility level:

- Lack of approved data-capturing tools, i.e., consulting room, out-patient department and lab registers. Most visited facilities had exhausted their supply of the approved registers and had improvised, using ruled notebooks and exercise books.
- Inadequate training and/or data entry know-how for personnel in charge of data capture and collation.
- Lack of adequate communication between data entry nurses and clinicians.
- Records officers closing books at different times each month, instead of the stipulated last day of each month.

Sub-district, district and regional levels:

- Inadequate supervision of records staff at the facility level.
- Need for more structured periodic data verification and validation by HIOs and district directors.
- Limited feedback on data issues provided to the facilities.

Based on the findings of a joint assessment of the accuracy of malaria data reported to the national DHIMS, ProMPT, PPME/CHIM, and NMCP revised the existing consulting room patient registers to better capture routine data, including data on the number of suspected cases of malaria that had been tested, one of the main driving forces behind the register's revision.

Before introducing the registers, ProMPT worked with HIOs in four regions to conduct a preliminary review of malaria data reported

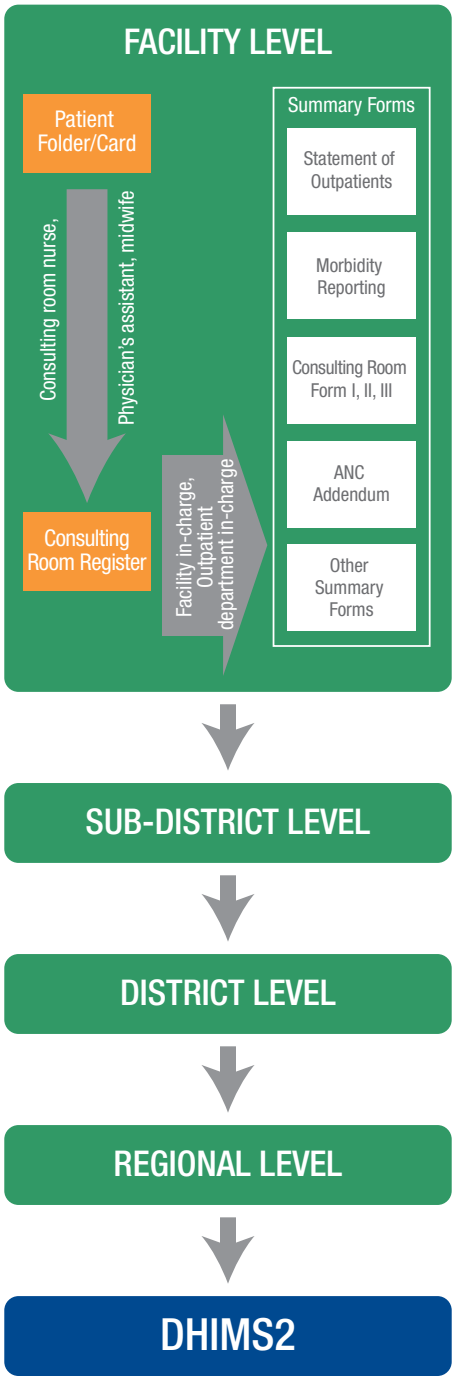
to the DHIMS2. This review found a wide variation between data reported by the facilities to DHIMS and those verified by the review team.

Having occurred before the introduction of the new consulting room registers, the review helped justify the need for improved registers that addressed the shortfalls of the old register. It also ensured that ProMPT and the Regional Health Directorates could develop feedback and technical support to consulting room nurses and records staff to improve the accuracy of malaria and routine data capture. Furthermore, it enabled the incorporation of key issues identified during the assessment into the orientation on new consulting room registers. This orientation, led by ProMPT and HIOs, enabled the training of 1,373 health workers (consulting room staff, outpatient department staff and HIOs) in seven regions on the use of the new consulting room registers. The interactive training enabled participants to actively learn how to use the new register and to understand the definitions of the various fields as prescribed by GHS.

As a follow-on to the introduction of the new consulting room registers, ProMPT supported PPME/CHIM, NMCP and the regional HIOs to conduct **a malaria data verification and coaching exercise** at 132 health facilities in 62 districts in Eastern, Northern, Volta and Upper East Regions. The team looked at the accuracy of the malaria data reported to DHIMS for November 2012, reviewing total malaria cases, total malaria cases tested, total malaria cases tested positive and IPTp coverage calculations. The team also assessed the availability of required malaria data-capturing tools. The teams, comprised of staff from PPME/CHIM, ProMPT, NMCP and the regions, also used the visits as an opportunity to coach records staff on data management and to clarify the recording and calculation of malaria indicators.

The aforementioned data quality exercise highlighted the need for additional interventions to improve the quality of malaria

Figure 10. Pathway for Data Capture from Facility Level to DHIMS2



Community members perform a skit on the benefits of LLIN use at the Techiman durbar organized by ProMPT and the Civic Union of Techiman.

data being reported to DHIMS, particularly related to the use of the revised consulting room registers so they could serve as a reliable source of data on number of cases tested and number tested positive. Since the exercise was carried out by a wide variety GHS staff from the national and regional level, GHS (under the leadership of PPME/CHIM) is well positioned to continue addressing malaria data quality issues.

Supportive Supervision Framework

ProMPT's experience collaborating with GHS on supportive supervision highlighted the need for a clearer strategy within GHS to support onsite continuous learning for health workers. ProMPT supported the ICD, to develop a supervision framework and a road map to achieve the goal of stronger supportive supervision in clinical care and data quality improvement in Ghana.

Six Key Strategies of the Draft Supportive Supervision Framework

1. Build on what exists.
2. Use a bottom-up approach.
3. Focus on planning for implementation.
4. Foster engagement and accountability at all levels.
5. Empower health workers.
6. Develop capacity at all levels in management, teamwork and problem-solving.

A supervisor observes a nurse interact with a patient in Ghana's Volta Region during a supportive supervision visit.

Challenges & Opportunities

Over the course of four years, ProMPT achieved significant breakthroughs and results. Challenges arose, solutions were developed and implemented, lessons were learned and new opportunities identified. Highlights are presented in Table 7.

Table 7. Summary of the Challenges and Resolutions

Challenge	Resolution
Although the findings from the 2011 MICS were promising, improvements were still needed to ensure that all HHs had a sufficient number of nets to allow one for every two people. Challenges in the timely procurement of nets hampered roll-out of continuous distribution programs.	• Aggregate regional LLIN coverage data by district to obtain a more accurate portrayal of coverage and identify places needing additional assistance. • Data should be provided to the GHS and Regional Health Directorates. • Emphasize improvement in supply chain management for nets, closely linked to coverage data. • MICS data suggest that campaigns could reach many HHs with LLINs. Additional efforts are needed to achieve one net per two people coverage and increase nightly use of LLINs by pregnant women and children.
Delayed availability of ITNs for piloting of continuous distribution at ANC and child welfare clinics in Volta and Eastern Regions.	ProMPT stayed in constant communication with the USAID|DELIVER Project and regions to address delays in ITN delivery to health facilities and liaised with district supervisors to ensure they were addressing ITN availability issues during supportive supervision.
Improvement collaboratives unable to be implemented due to regular stockouts of RDTs and inability of managers to adhere to schedules for the improvement/learning sessions.	ProMPT shifted focus of quality improvement activities to strengthening management of malaria data at the regional level. This included data review meetings, data quality coaching visits, and supportive supervision, implemented in all seven regions.

Challenge	Resolution
Insufficient and irregular supply of commodities for HMM implementation in targeted communities.	• Engaged NMCP in dialogue to initiate quarterly provision of HMM commodities to CBAs. • Utilized refresher trainings to highlight the need for accurate and timely reporting to inform sufficient CBA drug allocation. • Provided technical and financial support to a Community Health Officers Conference in Eastern Region to address HMM implementation issues and develop action plans.
Absence of representative, population-based data to measure social mobilization outcomes.	• Contracted additional questions for market research omnibus surveys (also used by other USAID|PMI-supported projects). Unfortunately, the sample the surveys used was unrepresentative of ProMPT target population. (It was weighted toward urban [60%] and the highly educated [48%: have completed secondary education or more]). • Met with MEASURE Evaluation during development of MICS 2011 instruments to advocate for questions on activities directly related to ProMPT's social marketing efforts (e.g., person-to-person communication through volunteers and the effects of traditional modes of communication (such as durbars and dramas), but the final instrument did not include questions.
Data verification exercises after the introduction of the revised consulting room registers did not show improvements in quality of malaria data reporting to DHIMS2 (in four regions).	The data verification teams involved a cross section of staff from GHS (e.g. PPME/CHIM, NMCP, and regional HIOs). Thus, a large number of stakeholders are well informed of the specific issues related to the registers as well as the larger health systems issues that need to be addressed at various levels.

Lessons Learned & Recommendations

The **phased approach** to LLIN campaign implementation facilitated national and regional ownership of campaigns and institutionalization of capacities.	The series of successive regional campaigns allowed ProMPT, NMCP and other partners to engage with regional and district officials, planning campaign activities and adapting them to the specific context. By phasing campaigns over two years, both NMCP and its zonal counterparts had an opportunity to develop the capacity to lead subsequent campaigns. Moreover, the phased approach permitted refinement of strategies as lessons learned were incorporated into the next campaign. Many of these same lessons can be applied to CD approaches.
Implementation of door-to-door hang-up campaigns in **large urban areas requires more time** than campaigns in largely rural areas.	Success in hang-up campaigns is based largely on the HH registration data, and completing HH registration in urban areas takes more than the five days allocated for campaigns in other areas, as many HH members are not at home when the registration volunteers arrive, requiring repeated visits and/or volunteers available for "after-hours" registration. Similarly, more time is needed to validate the data captured by the HH registration exercise.
Continuous distribution strategies beyond the health sector can be important complements to distribution through the health system.	Applying realistic assumptions and estimates for population and health system performance based on Ghanaian data in NetCALC allowed NMCP officials to appreciate that CD through routine health services would be insufficient to sustain LLIN coverage in the long term. Thus the strategy proposed adding an annual school-based distribution to primary school classes as well as to child health promotion week. The Eastern Region school-based CD experience suggested that this pilot was successful due largely to the strong supervisory role of the circuit supervisors, who know the terrain and major stakeholders of their circuits and are well-connected to the schools. The relatively high primary school enrollment rates and general respect for teachers also helped. This innovative approach expanded the reach of the health sector in a manner that can be sustained over generations, assuming the nets are available. Other sectors, such as agriculture extension programs, may also be available for this non-health approach to prevention.
Sustainability of supportive supervision depends on GHS commitment to plan and budget for it.	Supportive supervision is generally accepted by the Health Directorates and workers as one of the most effective means of improving performance and clinical outcomes. There is an overwhelming desire by all health workers for this activity to continue. For this effort to be sustainable, funds for its related activities must be included in the plans and budgets at all levels.

Coaching techniques and training are critically important for developing and maintaining skills.	Given the large numbers of staff that needed to be trained and oriented, ProMPT's support to an on-the-job coaching approach (as well as supportive supervision) delivered as a reinforcement of the training, aided the dissemination of improved processes for malaria case management and routine data capture and reporting.
Strengthening the capacity of data management staff already in place can produce good results.	Ghana's HIOs were specially trained to handle data issues throughout the health system but lacked the resources and authority to lead effective data management. ProMPT worked with GHS to identify, train, and provide resources for HIOs, making their role in the health system more visible and empowering them to better execute their core mandate.
Building an appreciation for the role of data among health workers will help improve the quality and use of data.	ProMPT and GHS adopted a multi-pronged approach to sensitize health workers on the value of data. Interactive interventions—such as periodic data review meetings, coaching visits, and consulting room register trainings—involved a broad spectrum of health workers. These types of approaches enabled workers to better understand the importance of 1) having quality data for programming and service delivery and 2) sharing this information with other health workers.
Consulting room registers and lab registers should be reviewed together.	General findings from recent malaria data quality verification demonstrated that the lab registers should be reviewed together with other programs to develop a user-friendly register that can capture and report reliably on important malaria data, specifically the number of people tested for malaria and the number/percentage that tested positive. This combined with information from the consulting room registers enables better monitoring of malaria treatment according to clinical standards (e.g., test, treat and track: TTT).
Highlighting issues and encouraging **national level dialogue on key malaria program challenges** should be an essential component of future PMI programs.	ProMPT facilitated a process to help GHS share M&E issues, challenges and findings with GHS managers from the national to the facility level through review meetings and malaria bulletins. The increase in awareness led to discussions and actions among health system leadership on appropriate steps needed to improve routine M&E systems. These same principles can be applied to broader malaria-related issues.

Annex 1 – Performance Monitoring Plan

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
IMPACT														
1	All-cause under-five mortality Rate	DHS Survey 2011–MICS	E: 81 N: 137 UE: 78 V: 50	n/a		n/a		E: 69 N: 116 UE: 66 V: 42	E: 61 N: 124 UE: 98 V: 89	n/a	n/a	n/a	n/a	n/a
2	Proportion of Children 6–59 months with malaria infection	2011–MICS	n/a	n/a		n/a		E: 30 N: 30 UE: 35 V: 30	E: 22 N: 48 UE: 44 V: 17	n/a	n/a	n/a	n/a	n/a
MALARIA PREVENTION														
3	Proportion of HHs with at least one ITN	Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS	E: 36% N: 53.5% V: 42.8%	E: 36% N: 53.5% V: 42.8%		E: n/a N: n/a V: n/a		E: 90% N: 90% V: 90%	E: 78.2% N: 67.2% V: 85.4%	n/a	n/a	n/a	n/a	
4	Proportion of children under five years old who slept under an ITN the previous night	Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS	E: 39.2% N: 31.8% V: 43.7%	E: 39.2% N: 31.8% V: 43.7%		E: n/a N: n/a V: n/a	E: n/a N: n/a V: n/a	E: 85% N: 85% V: 85 %	E: 60.2% N: 41.8% V: 70.7% *(NR Post Campaign Outcome Evaluation = 52%)*	n/a	n/a	n/a	n/a	
5	Proportion of pregnant women who slept under an ITN the previous night.	2011–MICS	E: n/a% N: 7% V: 51.5%	E: n/a% N: 7% V: 51.5%		E: n/a N: n/a V: n/a	E: n/a N: n/a V: n/a	E: 85% N: 85% V: 85%	E: 62.3% N: 37.9% V: 57.8% *(NR Post Campaign Outcome Evaluation = 34.9%)*	n/a	n/a	n/a	n/a	
6	Number of ITNs distributed nationally with USG funds	PROMPT Activity Reports	0	0		1,065,000	657,316	1,665,000	2,211,851	1,900,000	3,480,194	n/a	n/a	6,349,361
6a	Number of insecticide treated nets (ITNs) purchased with USG funds that were distributed through Campaigns	PROMPT Activity Reports	n/a	n/a		n/a		n/a	n/a	500,000	1,557,536	n/a	n/a	1,557,536

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
6b	Number of insecticide treated nets (ITNs) purchased with USG funds that were distributed through health facilities	PROMPT Activity Reports	n/a	n/a		n/a		n/a	n/a	250, 521	0	n/a	n/a	0
6c	Number of insecticide treated nets (ITNs) purchased by other partners that were distributed with USG funds	PROMPT Activity Reports	n/a	n/a		n/a		n/a	n/a	2,000,000	1,922,658	n/a	n/a	1,922,658
7	Number of persons trained in ITN distribution, hang-up, and/ or promotion	PROMPT Activity Reports	0	n/a		n/a		5,000	10,538	19,700	22,892	n/a	n/a	33,430
7a	Number of persons trained in ITN distribution, hang-up, and/ or promotion (Male)	PROMPT Activity Reports	n/a	n/a		n/a		n/a		14,578	14,083	n/a	n/a	14,083
7b	Number of persons trained in ITN distribution, hang-up, and/ or promotion (Female)	PROMPT Activity Reports	n/a	n/a		n/a		n/a		5,122	8,809	n/a	n/a	8,809
8	Proportion of women who received intermittent preventive treatment (At least 2) during antenatal care (ANC) visits during their last pregnancy	MIS/MICS 2011	E: 41% N: 28% V: n/a	E: 41% N: 28% V: n/a	E: 41% N: 28% V: n/a	E: 45% N: 31% V:n/a		E: 85% N: 85% V:85% UE:85% UW: 85% A:85% BA:85%	E: 71.4% N: 67.0% V: 39.3% UE: 69.4% UW: 65.3% A: 75% BA:61.9%	n/a	n/a	n/a	n/a	n/a
8a	Proportion of women who received intermittent preventive treatment(At least 2) during antenatal care (ANC) visits during their last pregnancy (Urban)	MIS/MICS 2011	46.3%	n/a		n/a		n/a	65.3%	n/a	n/a	n/a	n/a	
8b	Proportion of women who received intermittent preventive treatment(At least 2) during antenatal care (ANC) visits during their last pregnancy (Rural)	MIS/MICS 2011	42.1%	n/a		n/a		n/a	64.2%	n/a	n/a	n/a	n/a	
9	Number of ANC health workers trained in IPTp	ProMPT Activity Reports	0	216	237	2,000	2,797	6,500	6,584	0	427	n/a	n/a	10,045

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
9a	Number of ANC health workers trained in IPTp (Male)	ProMPT Activity Reports	n/a	n/a		n/a		n/a		0	186	n/a	n/a	186
9b	Number of ANC health workers trained in IPTp (Female)	ProMPT Activity Reports	n/a	n/a		n/a		n/a		0	241	n/a	n/a	241
CASE MANAGEMENT														
10	Proportion of children under 5 years with fever in the last two weeks who received the treatment with ACTs within 24hours of onset of fever.	DHS survey 2011–MICS	E: 4 out of 40 or 10% N: 7 out of 97 or 7%	E: 4 out of 40 or 10% N: 7 out of 97 or 7%		E: 20% N: 14%		E: 40% N: 38%	Inconclusive according to MICS 4 Data. It was presumed that respondents mistook Artesunate Amodiaquine to be Amodiaquine	n/a	n/a	n/a	n/a	n/a
11	Number of Health workers trained in case management with ACTs With USG funds-(Total)	ProMPT Activity Reports	0	216	237	2.000	2.797	6.500	6.584	0	427	n/a	n/a	10,045
12	Number of health workers trained in malaria laboratory diagnostics (RDTs or microscopy) with USG funds	ProMPT Activity Reports	0	216	237	2.000	2.797	6.500	6.584	0	427	n/a	n/a	10,045
13	Number of people trained in community case management of malaria	ProMPT Activity Reports	0	0		800	48	1,500	441	2,000	2,037	n/a	n/a	2,526
13a	Number of people trained in community case management of malaria (Male)	ProMPT Activity Reports	0	0		n/a		n/a		1,720	1,563	n/a	n/a	1,563
13b	Number of people trained in community case management of malaria (Female)	ProMPT Activity Reports	0	0		n/a		n/a		280	474	n/a	n/a	474
14	Number of people trained in supportive supervision	ProMPT Activity Reports	0	0		n/a		n/a		480	642	n/a	n/a	642
14a	Number of people trained in supportive supervision (Male)	ProMPT Activity Reports	0	0		n/a		n/a		TBD	332	n/a	n/a	332

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
14b	Number of people trained in supportive supervision (Female)	ProMPT Activity Reports	0	0		n/a		n/a		TBD	305	n/a	n/a	305
15	Proportion of planned malaria-related supervisions conducted	ProMPT Activity Reports	0	n/a		80%	200%	70%	250%	70%	89%	70%	87%	175.5%
16	Proportion of health facilities with staff trained in CM, MIP, and/or malaria diagnostics receiving supportive supervision	ProMPT Activity Reports	0	n/a		n/a		30%	62% (UE: 72% N: 55%)	70%	49%	70%	99.4%	99.4%
STRENGTHENING HEALTH SYSTEM RESPONSE														
17	# of NMCP/CHIM personnel trained in data quality, management, and data analysis with at least 75% score during post test.	ProMPT Activity Reports	0	0		50	20	50	50	10	20	n/a	n/a	90
17a	# of NMCP/CHIM personnel trained in data quality, management, and data analysis with at least 75% score during post test. (Male)	ProMPT Activity Reports	n/a	n/a		n/a		n/a		9	18	n/a	n/a	18
17b	# of NMCP/CHIM personnel trained in data quality, management, and data analysis with at least 75% score during post test. (Female)	ProMPT Activity Reports	n/a	n/a		n/a		n/a		1	2	n/a	n/a	2
18	# of Health Information Officers trained at the regional, and district levels on DHIMS with at least 75% score during post test.	ProMPT Activity Reports	0	0	0	50	44	0		0	0	n/a	n/a	44
SOCIAL MOBILIZATION														
19	# of NGO and FBO sub grantees implementing malaria activities	NGO Activity Reports				15	13	47	33	20	20	15	15	33
20	# of people from NGOs and FBOs sub grantees trained in malaria prevention and control	NGO Activity Reports				800	1,150	400	1,187	480	876	n/a	n/a	3,213

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
20a	# of people from NGOs and FBOs sub grantees trained in malaria prevention and control (Male)	NGO Activity Reports	n/a	n/a		n/a		n/a		360	593	n/a	n/a	593
20b	# of people from NGOs and FBOs sub grantees trained in malaria prevention and control (Female)	NGO Activity Reports	n/a	n/a		n/a		n/a		140	283	n/a	n/a	283
21	# of people reached by NGO and FBO sub grantees malaria activities	NGO Activity Reports				765,000	741,486	300,000	749,634	500,000	632,479		10,548	2,134,147
21a	# of people reached by NGO and FBO sub grantees malaria activities (Male)	NGO Activity Reports	n/a	n/a		n/a		n/a		300,000	287,535		6,340	293,875
21b	# of people reached by NGO and FBO sub grantees malaria activities (Female)	NGO Activity Reports	n/a	n/a		n/a		n/a		200,000	344,944		4,208	349,152
22	# of organized groups engaged in malaria SM activities	Activity Reports	n/a	n/a		n/a		680	326	35	326		62	326
23	% of HH respondents who heard or saw a malaria message by specific message	2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS 2012–Synovate Omnibus Survey	A: ITN-93% IPTp-83% ACT-64% E: ITN-92% IPTp-79% ACT-71% N: ITN-89% IPTp-83% ACT-62%	A: ITN-n/a IPTp-n/a ACT-n/a E: ITN-n/a IPTp-n/a ACT-n/a N: ITN-n/a IPTp-n/a ACT-n/a		A: ITN-n/a IPTp-n/a ACT-n/a E: ITN-n/a IPTp-n/a ACT-n/a N: ITN-n/a IPTp-n/a ACT-n/a		A: ITN-93% IPTp-83% ACT-70% E: ITN-97% IPTp-93% ACT-92% N: ITN-94% IPTp-93% ACT-72%	N: ITN-30.9%	A: ITN-n/a IPTp-n/a ACT-n/a E: ITN-n/a IPTp-n/a ACT-n/a N: ITN-n/a IPTp-n/a ACT-n/a	Sampling of Synovate Omnibus Survey not representative of ProMPT's target population. Will be updated in the final report	n/a	n/a	n/a

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
24	% of HH respondents who heard or saw a malaria message by source	2009–DHS 2008 2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS 2012–Synovate Omnibus Survey	A: TV–59% R–86% NP–18% P–51% B–12% HW–44% CV–16% E: TV–50% R–75% NP–18% P–37% B–9% HW–46% CV–24% N: TV–37% R–71% NP–13% P–23% B–11% HW–56% CV–41% V: TV–24% R–82% NP–11% P–35% B–8% HW–53% CV–25%	A: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a E: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a N: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a V: TV–24% R–82% NP–11% P–35% B–8% HW–53% CV–25%		A: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a E: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a N: TV–n/a R–n/a NP–n/a P–n/a B–n/a HW–n/a CV–n/a V: TV–24% R–82% NP–11% P–35% B–8% HW–53% CV–25%		A: TV–59% R–86% NP–18% P–51% B–12% HW–44% CV–16% E: TV–61% R–91% NP–22% P–45% B–12% HW–56% CV–30% N: TV–45% R–85% NP–16% P–28% B–14% HW–67% CV–50% V: TV–60% R–90% NP–20% P–45% B–15% HW–65% CV–60%	N: TV– (Urban: 10.3% Rural: 0.9%) R–34.4% HW– 28.6% CV–54.1 % MV–9.3% F–8.2%	A: TV–80% R–90% NP–22% P–55% B–18% HW–70% CV–70% E: TV–61% R–91% NP–22% P–45% B–12% HW–56% CV–30% N: TV–45% R–85% NP–16% P–28% B–14% HW–67% CV–50% V: TV–60% R–90% NP–20% P–45% B–15% HW–65% CV–60%	Sampling of Synovate Omnibus Survey not representative of ProMPTs target population. Will be updated in the final report	n/a	n/a	n/a

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
25	Proportion of caretakers who can recognize signs and symptoms of malaria in children under 5	2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS 2012–Synovate Omnibus Survey	n/a	0		N: 50% E: 50%		N: 85% E: 85%	N: Men–95.0% Women–96.3% E: Men–99.3% Women–98.7% A: Men–95.1% Women–93.5% V: Men–99.8% Women–98.1%	A: 85% N: 85% E: 85% V: 85%	Sampling of synovate survey not representative of ProMPTs target population	n/a	n/a	n/a
26	Proportion of target group who can explain/ demonstrate how to hang an ITN properly	2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS	n/a	0		N: 50% E: 50% V: 50%		N: 85% E: 85% V: 85%	Indicator not captured by MICS	n/a	Sampling of synovate survey not representative of ProMPTs target population	n/a	n/a	n/a
27	Ratio of actual utilization of ITN to knowledge of ITN utilization	2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS 2012–Synovate Omnibus Survey	n/a	0		N: 60% E: 67% V: 60%		N: 85% E: 85% V: 85%	Will be updated in the final Project Report	A: 85% N: 85% E: 85% V: 85%	Sampling of synovate survey not representative of ProMPTs target population	n/a	n/a	n/a

#	Indicator	Project Data Source	Baseline	Targets Year 1	Results	Targets Year 2	Results	Targets Year 3	Results	Targets Year 4	Results	Targets Year 4.5	Results	End of Project Results
28	Ratio of children under five with fever in the last two weeks who were treated with ACTs	2010–Post Campaign Evaluation Survey Northern and Eastern Regions 2011–MICS	n/a	0		N: 50% E: 50% V: 50%		N: 85% E: 85% V: 85%	Inconclusive according to MICS 4 Data. It was presumed that respondents mistook Artesunate Amodiaquine to be Amodiaquine amonotherapy	n/a	n/a	n/a	n/a	n/a
29	Number of Opinion Leaders trained in social mobilization for malaria prevention	ProMPT Activity Reports	n/a	n/a		n/a		1,000	326	1,200	1,228	n/a	n/a	1,554
TRAINING														
30	Number of people (medical personnel, health workers, community workers, etc.) trained with USG funds in malaria treatment or prevention	ProMPT Activity Reports	n/a	n/a		n/a		15,430	19,076	22,000	26,894	n/a	n/a	45,970
30a	Number of people (medical personnel, health workers, community workers, etc.) trained with USG funds in malaria treatment or prevention (Male)	ProMPT Activity Reports	n/a	n/a		n/a		n/a		16,500	16,775	n/a	n/a	16,775
30b	Number of people (medical personnel, health workers, community workers, etc.) trained with USG funds in malaria treatment or prevention (Female)	PROMPT Activity Reports	n/a	n/a		n/a		n/a		5,500	10,114	n/a	n/a	10,114

* The MICS survey took place in 2011, Year 3 of ProMPT. Therefore, all survey indicators have results in Year 3 and subsequent columns for survey indicators are marked n/a (not applicable). Also the Years 1, 2 & 3 targets for indicators introduced in Year 4 are marked as n/a.

Indicators #15 and #16: End of Project Results reflect aggregated results from Rounds 1 & 2 of supportive supervision, which took place from July 2012–February 2013. This time period reflects when the majority of visits occurred. A total of 21,586 health workers from 2,003 health facilities received at least one supervisory visit. The project originally aimed to support 12,300 supervisory visits.

Indicator #29: Includes Traditional, Faith Based and Local Government officials

A=Ashanti, BA=Brong Ahafo, E=Eastern, N=Northern, UE=Upper East, UW=Upper West, V=Volta
NW=Newspaper, R=Radio, P=Poster, B=Brochure, HW=Healthworker, CV=Community Volunteer

Annex 2 – Success Stories

Football Leads to Malaria Prevention and Treatment in Ghana's Brong Ahafo Region

In Ghana's Brong Ahafo Region, malaria is one of the leading causes of illness and death. The National Malaria Control Programme (NMCP) reports that people in Brong Ahafo have as many as seven malaria episodes per year, and pregnant women and children under five are the groups most affected by this deadly disease. Providence Club, a non-governmental organization (NGO) working in the region, received a grant from the Promoting Malaria Prevention and Treatment (ProMPT) project, funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC), to educate the public on malaria prevention and treatment. The NGO chose an unusual but effective medium: football (known in the US as soccer), the most popular sport in Ghana.

Pregnant women line up for malaria-preventing antenatal care services after being educated on malaria prevention by community volunteers and through events like the Providence Club football tournament. *Photo: Obed Ebo Asamoah, URC.*

Football for Malaria Education

Through ProMPT funds, Providence Club organized a football tournament involving 32 teams from junior high schools in 28 communities throughout the Jaman South District in the Brong Ahafo Region. As Godson Amekuedi, one of the organizers explained it, "Ghana is a football-loving nation, so we decided to use football to attract a crowd and deliver messages on malaria." Each game started and ended with short and simple messages on malaria prevention and treatment delivered in the local language of the community. Participants and spectators were educated on the importance of sleeping under insecticide-treated bed nets (ITNs) every night, of treating malaria through the use of recommended medicines, and of taking three doses of a malaria-prevention medication called SP during pregnancy. Providence Club also distributed leaflets, supplied by ProMPT, on the proper ways to hang ITNs over sleeping places. The ITNs prevent the

> *"I have been moving from house to house educating community members in churches, homes, etc., and encouraging pregnant mothers to attend [antenatal care] clinics. Now people are accepting the message to the extent that some even visit me [to ask about malaria]."*
>
> – Bae Joseph, Community Volunteer –

malaria-carrying mosquitoes from biting at night, the time when they are most active, and the insecticide kills the mosquitoes on contact.

Organizing the event required input from a number of different groups. Providence Club involved the District Education Office and school officials, including coaches, in leading tournament organization. The event was publicized through interviews with local radio stations and through mobile van announcements coordinated through the Ghana Health Service. The Providence Club also contacted chiefs and other traditional opinion leaders about the tournament to seek their endorsements and ensure their help in encouraging community participation.

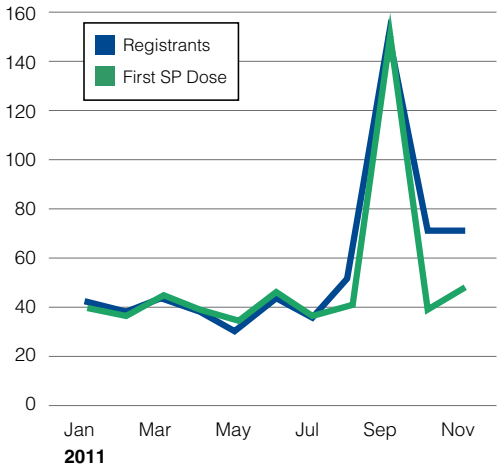
Community Volunteers Also Contribute to Malaria Education

Malaria messages at the tournament reinforced ongoing malaria education outreach being conducted by community volunteers. With ProMPT support, Providence Club trained more than 50 people to go door-to-door and personalize the same messages delivered during the football games. One of the volunteers, Bae Joseph, explained the work that he is doing: "I have been moving from house to house educating community members in churches, homes, etc., and encouraging pregnant mothers to attend [antenatal care] clinics. Now people are accepting the message to the extent that some even visit me [to ask about malaria]."

Results for Malaria Prevention and Treatment

The tournament, combined with the volunteers' efforts , was successful in motivating the public to take action on malaria prevention. More than 350 people purchased ITNs during and after the games. Local clinics also reported an increase in attendance of pregnant women requesting treatment with SP. One health center, for example, showed a dramatic spike in the number of pregnant women registering at the clinic and taking their first dose of SP, as shown in Figure 1.

Figure 1. Registration and First SP Dose for Pregnant Women at the Adamsu Health Center (January – November 2011)



The experience of Providence Club shows that educating the public in non-traditional settings, like football tournaments, combined with committed volunteers delivering continuous messages can lead to substantial increases in community awareness and can motivate individuals to take active steps toward improving their health and well-being. NGOs like Providence Club help Ghana achieve its national malaria control goals because the NGOs operate within communities that government programs may not reach effectively.

Quarterly Malaria Review Meeting Triggers Data Reporting Improvements: Friendly Competition Yields Better Information

Without regular, good quality health information, a health system cannot adequately do its job: deliver information and services needed to combat priority health issues. Accurate, routine data contributes to good decision making and more precise programming. Malaria is a major burden of disease and cause of death in Ghana. Every man, woman, and child in Ghana is at risk for suffering from malaria and its harmful short- and long-term effects.

Cross-District Meetings for Malaria Data Review

Recognizing that health information was a low priority in some districts, the Promoting Malaria Prevention and Treatment (ProMPT) project assisted the Ghana Health Service to organize quarterly review meetings that provided a forum for Health Information Officers to receive feedback on their malaria data performance and exchange ideas and experiences on data collection and quality. ProMPT is funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI).

Mr. Chrisantus Tambaa, newly-assigned Health Information Officer for the Asunafo South District, in the Brong Ahafo Region, Ghana, did not know how poorly his district was reporting data until he joined other Health Information Officers in the first meeting. There he learned the weaknesses of his district's reporting system and realized that many other districts were performing much better.

Districts Take the Initiative to Improve

When Mr. Tambaa returned to his district, he shared the disappointing feedback with the District Health Directorate. Then, he and his

A determined Chris Tambaa is hard at work improving malaria reporting systems in the Asunafo South District. *Photo: Obed Ebo Asamoah, URC*

> *"I listened attentively to the experiences and all the suggestions made by districts that were categorized as performing well in the region. As the newly appointed Health Information Officer, I was so surprised by the poor situation in my district. I decided to take action to enhance its performance."*
>
> *– Mr. Chris Tambaa, Health Information Officer, Asunafo South –*

team developed a five-point action plan to remedy the situation. The action plan can be seen in the box on the right.

The team's dedication to carrying out the action steps yielded results. Over the next nine months, Asunafo South's consistency and timeliness in reporting to the Ghana Health Service reporting (known as the reporting rate) increased from 45% to 78%, a 73.3% increase.

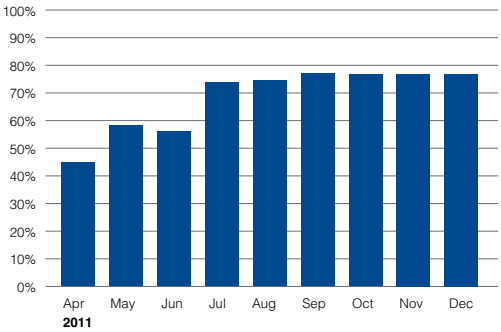
The Asunafo South District team is committed to continued improvements and has included in its action plan a new step: ensuring the availability of all reporting forms at the facilities.

USAID|PMI's investment in malaria data review meetings resulted in the discovery and acknowledgement of a problem and a team-generated proposal for changes that was put in place rapidly. The arrival of timely and complete data from Asunafo South District health facilities makes it easier for district authorities to understand the local malaria situation and take appropriate action. Good quality data from the district also contribute to a clearer regional and national malaria picture, which will translate into more effective efforts toward malaria prevention and control in Ghana.

Action Plan

1	Communicate feedback to heads of facilities and data collection staff
2	Provide data management training for all staff in step 1
3	Conduct data verification on the 8th and 9th day of the month
4	Systemize delivery of reports from data collection staff
5	Centrally post and mark the monthly data report monitoring chart

Figure 1. Percentage of Expected Reports Submitted by Asunafo South District (April – December 2011)



Community Volunteers at the Heart of Successful Mosquito Net Distribution in Ghana

Patricia Sarpong did not want a malaria-preventing bed net in her home. The married mother of two, living in the Ejisu-Juaben District in Ghana's Ashanti Region, had hung bed nets in her home before. The nets she used previously were not treated with insecticide, and she felt that they did not protect her family from malaria-transmitting mosquitoes, which bite at night when people are sleeping. Teddy Boachie and Angela Tetteh, volunteers from her own community going door-to-door to deliver and hang long-lasting insecticidal nets (LLINs), convinced her to allow insecticide-treated nets in her home. When asked about her new net, Ms. Sarpong said, "I am very happy about it. I will sleep under the net every night."

Community volunteer Teddy Boachie stands with homeowner Patricia Sarpong after hanging a mosquito net in her home. *Photo: Kate Howell, URC.*

Nationwide LLIN Campaign in Ghana

Mr. Boachie and Ms. Tetteh volunteered as part of a region-wide LLIN hang-up campaign, organized through a partnership led by Ghana's National Malaria Control Program (NMCP) and the Promoting Malaria Prevention and Treatment (ProMPT) project, funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and implemented by University Research Co., LLC (URC).

NMCP, together with ProMPT and other partners, has relied heavily on community volunteers like Mr. Boachie and Ms. Tetteh to reach its goal of universal coverage of LLINs, defined as one net for every two persons in a HH. Distributing and hanging bed nets are a key NMCP strategy to combat malaria, which is responsible for almost a third of child deaths in the country. Using a model developed with support from ProMPT, the NMCP works with government officials and civil society at all levels to plan for LLIN mass campaigns. During the campaign, LLINs are delivered and hung in pre-registered HHs. One vital component of this model is the identification, training, and equipping of community volunteers to register HHs; deliver and hang the nets in the homes of their neighbors, friends, and other fellow community members; and provide education on the benefits of LLINs and how to care for them.

Volunteers' Messages Promote Net Use

Community volunteers are essential to these LLIN campaigns for several reasons. Volunteers are needed first because the number of people required to hang nets in all homes in the country is enormous: in Ashanti Region where Ms. Sarpong lives, an estimated 40,000 volunteers were trained to hang nets. In addition, the volunteers interact one-on-one with HH residents to register them and deliver messages on the importance of sleeping under bets and the proper ways to use and care for the nets. This personal interaction allows volunteers to provide tailored advice to their community members and encourages more discussion about preventing malaria, making it more likely that the nets will be properly used. Finally, since the volunteers come from the communities in which they work, they are much more likely to be well-received when asking to enter residents' homes and bedrooms, where the nets need to be hung.

For Ms. Sarpong, the volunteers' clear messages that her new net was treated with insecticide and will kill insects on contact were enough to convince her to allow them into her home to hang an LLIN over her bed. An evaluation of the LLIN campaign in Ghana's Northern Region showed that residents' main source of information regarding malaria prevention and treatment was campaign volunteers. Of the HHs that received messages, 81.0% had at least one member who slept under a net the previous night, whereas only 72.8% of HHs that did not receive messages had at least one member who slept under a net the previous night. The difference was statistically significant (p=0.034).

Communities Recruit Local Volunteers

In order to recruit volunteers for the campaigns, district-level NMCP planners coordinate with communities to identify volunteers for the LLIN campaigns. The process for selecting volunteers varies by community: volunteers can include those already working as health volunteers, citizens nominated by community leaders, or members of civil society organizations including student clubs and churches. Individual communities are also responsible for determining ways to motivate their volunteers; many supply volunteers with meals, soft drinks, small stipends, and other kinds of incentives to show their appreciation. In Ejisu-Juaben, each HH was requested to make an optional contribution of 50 pesewas (about 30 cents) to the volunteers. Both the volunteers for HH registration and the volunteers for hang-up receive a half-day training in their various tasks shortly before they begin their work. The people who train volunteers are Ghana Health Services staff, who have participated in higher-level training-of-trainers sessions delivered by NMCP and ProMPT staff. Volunteers are equipped with the tools that they needed to complete their work, including nets, ropes, hammers, and a laminated job aid, which reminds them of key information to give to community members.

The volunteers in Ejisu-Juaben, including Mr. Boachie and Ms. Tetteh, hung about 100 nets per day, working in often-sweltering conditions

A community volunteer carries bed nets to HHs in Ejisu-Juaben, Ashanti Region, Ghana. *Photo: Nancy Newton, URC.*

to ensure that HHs in their community had the LLINs that they need to prevent malaria. When asked why she was doing this work, another community volunteer, Bella Agyapong, explained, "Malaria is a major problem in my community. When my friend asked me to help with this campaign, I agreed because I want to help the people here prevent malaria."

NMCP, ProMPT, and other partners are deploying community volunteers for malaria prevention in other ways. ProMPT has provided support to 33 non-governmental organizations (NGOs), which have trained volunteers in hard-to-reach communities to mobilize their fellow residents to take action against malaria. The NMCP is also launching a program to train volunteers to provide malaria diagnosis and treatment in communities. In addition, congregational leaders from churches and mosques throughout the country bring malaria prevention information to their members.

Strengthening NGO Capacity to Monitor Volunteer Performance in Ghana

Accurate data management from non-governmental organizations (NGOs) is essential both for reporting to donors and meeting donor targets and for effective program targeting and implementation. However, NGOs frequently face challenges in data reporting, often because their work is being conducted by volunteers untrained in data management. NGOs in Ghana have been increasing their capacity for accurate data reporting with some assistance from the Ghana Promoting Malaria Prevention and Treatment (ProMPT) project, funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC). Since 2009, ProMPT has been supporting local NGO capacity through financial and technical assistance to provide malaria prevention and treatment services and to educate the public on malaria issues.

To improve their capacity to capture and report data, ProMPT assisted selected NGOs in two ways. First, ProMPT provided technical assistance to the NGOs on monitoring and evaluation (M&E) provided by ProMPT M&E team and field facilitator staff. This technical assistance included four M&E workshops, on-site support through day-long M&E-focused visits, phone and e-mail support during reporting, and feedback on reports. Second, the project supplied all of the NGOs with Volunteer Activity Reporting Sheets (VARS), standardized reporting tools developed by the ProMPT M&E team to track the activities of volunteers through volunteer self-reporting and standardized monitoring by NGO staff. ProMPT supported the NGOs to adapt the VARS for their specific programs, using input from multidisciplinary teams affiliated with the NGOs, including volunteers, program managers, and top level staff. Input from all stakeholders enabled managers to ensure that the adapted VARS addresses the challenges encountered by volunteers in reporting.

Sarah Asare, Program Officer for Health Foundation of Ghana (HFG), trains the organization's volunteers on the new Volunteer Activity Reporting Sheets provided by the ProMPT project.

One NGO that received assistance from ProMPT on M&E was the Health Foundation of Ghana (HFG). HFG was faced with the challenge of documenting its activities and results and especially with reporting the activities of volunteers. As a project manager explained, before ProMPT's support, "Volunteers and women's group leaders were reaching community members with community education that was not being documented. Furthermore, it was becoming increasingly difficult to track the activities of non-performing volunteers."

Through ProMPT's technical assistance including on-site support and development of the VARS, HFG is now able to accurately report data on the community education being conducted by volunteers and women's group leaders. The number of people and communities that the NGO has reached through community education is also being accurately reported. In addition, volunteers report that the VARS enables them to monitor their own progress and make improvements to their performance. Sarah Asare, Program

Officer with HFG, reports, “The VARS has helped program managers at HFG to gather effective implementation data, monitor progress, and enhance reporting on activities. In addition, it has also served as a check on volunteer activity, enabling the team to identify issues affecting volunteer performance and provide appropriate remedies as required. The VARS serves as means of continuously testing volunteers’ understanding of the various indicators being reported. The advent of the VARS has enhanced volunteer performance and increased volunteer satisfaction, as high-performing volunteers are easily identified and recognized. This has translated to improved outputs in volunteer activities and consequently positively impacts their respective communities.”

HFG is now expanding its use of the VARS to its other programs. According to Samuel Tovor, Project Manager at HFG, “When the [VARS] first came to the office, I thought the information on it was too much for the volunteers, but after ProMPT’s [assistance] and the success it has achieved, the M&E team and project managers at HFG decided to adopt it in all other projects in which data is needed. The adapted VARS is currently being used for a maternal and child health project.” HFG has also shared the VARS with other organizations and has made its staff available to assist them in adapting the VARS to their needs. Through this and other program activities, ProMPT is ensuring that its interventions will build local capacity for development and ensure sustainability after the life of the project.

ProMPT’s M&E Advisor provides technical support to the Strength of Women Foundation, an NGO located in Ghana’s Volta Region.

Elders and Chiefs Monitor Volunteer Activity in Ghana's Remote Communities

Community volunteers are an essential component of the malaria prevention and treatment effort in Ghana because they expand the reach of the National Malaria Control Program (NMCP). From 2009 to 2012, the United States Agency for International Development (USAID)-funded Promoting Malaria Prevention and Treatment (ProMPT) project, managed by University Research Co., LLC (URC), supported Ghanaian non-governmental organizations (NGOs), which mobilized community volunteers to educate the public on preventing and treating malaria. Through door-to-door visits, group discussions, and community meetings, the volunteers delivered messaging on the use of malaria-preventing bed nets, prevention of malaria during pregnancy, and prompt treatment of fever (a symptom of malaria) in young children. Continuous monitoring of volunteer activities was critical to their success. However, this monitoring can be challenging for NGOs where communities are long distances apart and transportation infrastructure is minimal.

One NGO's Solution

One ProMPT-supported NGO, the Agency for Health and Food Security (AHEFS), found a solution for this problem. AHEFS is supporting malaria prevention and treatment education through community volunteers in 200 communities of the Amansie Central District of Ghana's Ashanti Region. These communities are spread out over a wide area, and the roads between them are frequently impassable by cars. In order to ensure effective volunteer monitoring, AHEFS engaged traditional village leaders to monitor volunteers in 56 targeted difficult-to-reach communities.

AHEFS staff approached the chiefs and elders during community meetings to introduce the volunteers' malaria education efforts and solicit the leaders' support in ensuring that

A community chief demonstrates the house marking system for volunteer monitoring

messages reach every HH, particularly those with pregnant women and young children. Together, AHEFS staff and the leaders decided that volunteers should use chalk to mark the letter "M" along with the number of people met on each house visited. Leaders were then able to follow up on the volunteers' visits, monitoring their work and identifying the extent of their outreach.

Results for Improved Malaria Interventions

As a result of this new policy, traditional leaders, who are responsible for the health and well-being of their communities, can ensure that malaria messaging appropriately targets mothers and caregivers as well as the general population. Leaders and volunteers can both see clearly which areas were reached and not reached and address gaps. According to one community chief, Nana Boafo, "Health is a matter of concern for all. Since the volunteers have been chosen by the community to serve

the preventative health needs of the people, we as leaders must support and encourage them. We must show interest in the work that they do and help them mitigate the challenges they encounter."

An assessment of this monitoring model conducted by AHEFS showed that communities whose traditional leaders supported community volunteer monitoring saw improved levels of coverage for malaria messaging. Community volunteer Abraham Appiah explained, "I didn't know the chief was also going house-to-house to find out if I had been there to deliver messages to the families in the HHs. When I realized this, I made sure that all the houses were covered, and the chief's visit would reveal not only that I had educated them but also that they are putting the education to use."

Because of this monitoring effort, AHEFS and ProMPT are able to assess the reach of the community volunteer program to educate the public on malaria. In total, AHEFS was able to reach 60,060 people through a variety of activities in the Amansie Central District. AHEFS predicts that the partnership with community leaders will increase the likelihood that malaria outreach and education will continue long after ProMPT support has ended.

About ProMPT's NGO Program

AHEFS is one of 33 NGOs that ProMPT engaged between 2009 and 2012 to implement community-based activities in support of malaria prevention and control interventions. ProMPT provided the NGOs with grants and technical support to initiate awareness and support good practices of ITN use and prevention of malaria during pregnancy; to mobilize communities for improved engagement of community leaders, stakeholders, and volunteers; and to expand the reach of evidence-based malaria interventions to populations including rural and marginalized communities with limited access to health information and services that promote healthy behaviors and practices. Over the course of the project, ProMPT has overseen the training of more than 3,200 NGO volunteers, and ProMPT-supported NGO activities have reached over 2.1 million people.

Annex 3 – Technical Briefs & Reports

Technical Briefs

Using Drama to Raise Malaria Awareness in Ghanaian Communities and Schools

ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Technical Brief
Using Drama to Raise Malaria Awareness in Ghanaian Communities and Schools

Background

In Ghana, malaria is the primary cause of morbidity, accounting for 38%—over 3 million—outpatient visits to public health facilities each year. The disease causes 30% of deaths in children under the age of five and is responsible for nearly 10% of deaths of pregnant women.[1] The USAID/Ghana-funded and US President's Malaria Initiative-funded Promoting Malaria Prevention and Treatment (ProMPT) project has been working with the National Malaria Control Program (NMCP) of the Ghana Health Service (GHS) to strengthen malaria prevention and treatment services in the country. ProMPT is funded under the US President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC).

Social mobilization (SM) is an important component of ProMPT. As defined by the United Nations Children's Fund (UNICEF), SM is a broad-scale process that seeks to facilitate changes in awareness of and demand for interventions through a range of players engaged in interrelated and complementary efforts. SM takes into account the needs of people, embraces the principle of community involvement, and seeks to empower individuals, families, groups, and institutions for sustained action.[2] ProMPT's SM model for malaria prevention and control combines mass media behavior change communication with small media and grassroots community mobilization.

As part of its SM interventions, ProMPT employed drama, a medium long used as a recreation and teaching mechanism, with varying traditions among Ghana's ethnic groups. The dramas, performed in both

Actors discuss the benefits of using LLINs during a drama performance in Ghana's Northern Region.

communities and in primary schools, informed and engaged audience members on malaria prevention and control: use of long-lasting insecticidal nets (LLINs); intermittent preventive treatment of malaria in pregnant women (IPTp); and prompt care-seeking and use of appropriate malaria treatment.

Community Drama

ProMPT piloted a community drama program in Ghana's Northern Region in 2010, to accompany an LLIN door-to-door hang-up campaign. Before, during, and after the campaign, drama troupes performed in 78 communities and reached more than 85,000 men, women, and children.

1 Ghana Health Service. Strategic Plan for Malaria Control in Ghana, 2009-2015. http://www.ghanahealthservice.org/includes/upload/publications/STRATEGIC%20PLAN.pdf.
2 UNICEF. Communication for Development: Social Mobilization. http://www.unicef.org/cbsc/index_43307.html, updated Dec. 2012.

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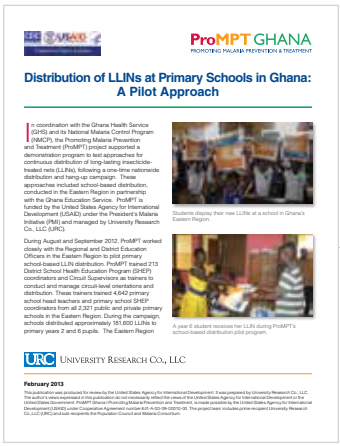
This technical brief was prepared by University Research Co., LLC (URC) for the United States Agency for International Development (USAID). The work described was carried out under the USAID Promoting Malaria Prevention and Treatment (ProMPT) project in Ghana, funded by USAID under agreement number 641-A-00-09-00110-00. ProMPT is managed by URC in collaboration with Malaria Consortium and the Population Council. The views expressed in this publication do not necessarily reflect the views of the USAID or the United States Government. For more information, please contact Nancy Newton at nnewton@urc-chs.com or Mario Lauwerijs at mlauwerijs@urc-chs.com.

Distribution of LLINs at Primary Schools in Ghana: A Pilot Approach



ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Distribution of LLINs at Primary Schools in Ghana: A Pilot Approach

In coordination with the Ghana Health Service (GHS) and its National Malaria Control Program (NMCP), the Promoting Malaria Prevention and Treatment (ProMPT) project supported a demonstration program to test approaches for continuous distribution of long-lasting insecticide-treated nets (LLINs), following a one-time nationwide distribution and hang-up campaign. These approaches included school-based distribution, conducted in the Eastern Region in partnership with the Ghana Education Service. ProMPT is funded by the United States Agency for International Development (USAID) under the President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC).

During August and September 2012, ProMPT worked closely with the Regional and District Education Officers in the Eastern Region to pilot primary school-based LLIN distribution. ProMPT trained 213 District School Health Education Program (SHEP) coordinators and Circuit Supervisors as trainers to conduct and manage circuit-level orientations and distribution. These trainers trained 4,642 primary school head teachers and primary school SHEP coordinators from all 2,321 public and private primary schools in the Eastern Region. During the campaign, schools distributed approximately 181,600 LLINs to primary years 2 and 6 pupils. The Eastern Region

Students display their new LLINs at a school in Ghana's Eastern Region.

A year 6 student receives her LLIN during ProMPT's school-based distribution pilot program.

URC University Research Co., LLC

February 2013

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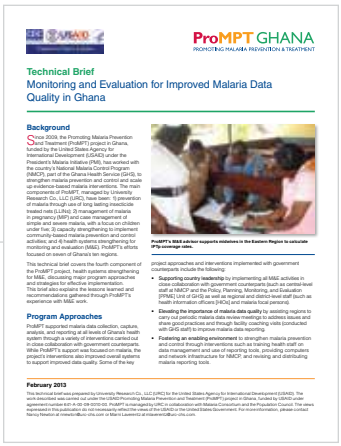
Monitoring and Evaluation for Improved Malaria Data Quality in Ghana



ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Technical Brief
Monitoring and Evaluation for Improved Malaria Data Quality in Ghana

Background

Since 2009, the Promoting Malaria Prevention and Treatment (ProMPT) project in Ghana, funded by the United States Agency for International Development (USAID) under the President's Malaria Initiative (PMI), has worked with the National Malaria Control Program (NMCP), part of the Ghana Health Service (GHS), to strengthen malaria prevention and control and scale up evidence-based malaria interventions. The main components of ProMPT, managed by University Research Co., LLC (URC), have been: 1) prevention of malaria through use of long lasting insecticide nets (LLINs); 2) use of intermittent preventive treatment in pregnancy (IPTp) and case management of simple and severe malaria, with a focus on children under five; 3) capacity strengthening to implement community-based malaria prevention and control activities; and 4) health systems strengthening for monitoring and evaluation (M&E). ProMPT's efforts focused on seven of Ghana's ten regions.

ProMPT's M&E advisor supports midwives in the Eastern Region to calculate IPTp coverage rates.

This technical brief covers the fourth component of the ProMPT project, health systems strengthening for M&E, discussing major program approaches and strategies for effective implementation. This brief also explains the lessons learned and recommendations gathered through ProMPT's experience with M&E work.

Program Approaches

ProMPT supported malaria data collection, capture, analysis, and reporting at all levels of Ghana's health system through a variety of interventions carried out in close collaboration with government counterparts. The NMCP and the Policy, Planning, Monitoring, and Evaluation (PPME) Unit of GHS were the project's primary counterparts. The project's interventions also improved overall systems to support improved data quality. Some of the key project approaches and interventions implemented with government counterparts include the following:

- **Supporting country leadership** by implementing all M&E activities in close collaboration with government counterparts (such as central-level staff at NMCP and the Policy, Planning, Monitoring, and Evaluation [PPME] Unit of GHS) as well as regional and district-level staff (such as health information officers [HIOs] and malaria focal persons).
- **Elevating the importance of malaria data quality** by assisting regions to carry out periodic malaria data review meetings to address issues and by conducting supportive supervision and data coaching visits (conducted with GHS staff) to improve malaria data reporting.
- **Fostering an enabling environment** to strengthen malaria prevention and control through interventions such as training health staff on malaria data collection and reporting tools, providing computers and network infrastructure for NMCP, and revising and distributing malaria reporting tools.

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ProMPT and the Peace Corps Partner to Reach Marginalized Groups during Mosquito Net Distribution Campaigns in Ghana

ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Technical Brief
ProMPT and the Peace Corps Partner to Reach Marginalized Groups during Mosquito Net Distribution Campaigns in Ghana

Background

In Ghana malaria is the leading cause of death in children under five years of age, accounting for more than 10 deaths among pregnant women. Insecticide-treated nets (ITNs), which stop malaria-carrying mosquitoes from biting and kill them on contact, are a proven way to prevent malaria. Although some nets have been available for free and for purchase since 1998, only 33.6% of households owned an ITN in 2008, according to the Ghana Demographic and Health Survey (DHS) from that year.

The National Malaria Control Program (NMCP) of the Ghana Health Service (GHS) was not satisfied with these results and turned to the Promoting Malaria Prevention and Treatment (ProMPT) project for assistance. ProMPT is funded by the United States Agency for International Development (USAID) under the United States President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC). The NMCP, ProMPT, and their Peace Corps and other international partners, implemented a new national strategy for malaria prevention: door-to-door long-lasting insecticidal net (LLIN) delivery and hang-up campaigns, carried out in each of Ghana's ten regions between mid-2010 and late 2012.

The innovative strategy, never before tried on a large scale in Africa, proved effective. In Ghana's Northern Region, for example, a survey found that the campaign there increased the percentage of households owning a net from 26.7% to 87.1% and increased the percentage of children under five who slept under a net the previous night from 11.2% to 52.0%. By the end of 2012, nearly 10.8 million nets had been distributed nationwide using this new strategy.

During the standard LLIN distribution and hang-up campaigns, volunteers first visited all homes to register household members; determine the numbers of sleeping

A kayoyo woman in her sleeping place. Ghana's national strategy for door-to-door LLIN distribution and hang-up had to be adjusted to reach marginalized populations like the kayayo.

places, of nets still in packages, and of installed nets; and record information in a household registration inventory. Supervisors validated the data. Then, the total numbers of required nets and supplies to hang the nets (nails and ropes) were calculated and the supplies transferred to temporary holding sites donated by communities. Finally, distribution and hang-up of the nets occurred over a period of two to three days. Teams of 10 to 15 people distributed supplies and hung up nets in about 60 households per day. These hang-up campaigns were accompanied by social mobilization efforts, through which volunteers, community leaders and organizers, radio programs, mobile van announcements, and other outlets delivered campaign messages. Before hang-up, messages

1 Tanekgi A-Asiedu, TH and Asamoah, OK. Outcome Evaluation of a Long Lasting Insecticidal Net Distribution Campaign Using Door-to-Door Delivery and Hang-up in the Northern Region, Ghana. ProMPT Ghana. 2011.

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ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Technical Brief

A Door-to-Door Delivery and Hang-Up Campaign Brings Dramatic Increase in Long-Lasting Insecticidal Net Ownership and Use in the Northern Region of Ghana

Introduction

The National Malaria Control Program (NMCP) of the Ghana Health Service (GHS) has adopted the use of long-lasting insecticidal nets (LLINs) as one of its primary malaria control interventions. Since 1998, untreated and treated nets have been available on a limited scale through distribution from fixed points, both in the public sector (for free and at subsidized prices) and in the private sector (for purchase). However, the 2008 Ghana Demographic and Health Survey (DHS) indicated that only 32.6% of households owned at least one insecticide-treated net (ITN). In addition, the 2008 Household Survey on ITNs, conducted by the USAID-funded NetMark project, found that almost 45% of ITNs owned were not hung and ready to use.

Dissatisfied with the results of these fixed-point distribution programs, NMCP began to explore new strategy options with technical support from the Ghana Promoting Malaria Prevention and Treatment (ProMPT) project, funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and implemented by University Research, Co., LLC (URC). In 2009 NMCP and ProMPT, in collaboration with the NetworkLife program, decided to try a new strategy: a door-to-door delivery and hang-up campaign using community volunteers.

The campaign targeted pregnant women and children under five in Ghana's Northern Region. The Northern Region was selected because of the heavy malaria burden found there. In 2008, 41% of outpatient visits were malaria cases for all ages; 51.4% of outpatient visits in the Northern Region were attributed to malaria. The region was also selected because it had one of the lowest ITN coverage rates in the country prior to the door-to-door campaign. The 2008 DHS found that only 26.7% of households in the region had at least one ITN.

A woman shows how the bed net should be tucked under the mattress.

while only 11.2% of children under five and 7.0% of pregnant women had slept under an ITN the night before they were surveyed. The strategy of targeting pregnant women and children under five was in keeping with PMI policy.

Six months after the completion of the door-to-door hang-up campaign, ProMPT, the GHS/NMCP, and DERMED Consult conducted a survey to evaluate the success of the campaign. The survey was specifically designed to be comparable to the 2008 DHS. The primary objectives of the survey were to measure campaign coverage and LLIN ownership and to determine LLIN retention and use rates by pregnant women and children under five. The detailed results of that survey are found in this brief. Detailed results are available in the technical report "Outcome Evaluation of a Long-Lasting Insecticidal Net Distribution Campaign Using Door-to-Door Delivery and Hang Up in the Northern Region, Ghana" published by URC for USAID.

January 2012

This technical brief was prepared by University Research Co., LLC (URC) for the United States Agency for International Development (USAID). The work described was carried out under the USAID Promoting Malaria Prevention and Treatment (ProMPT) project in Ghana, funded by USAID under agreement number 641-A-00-09-00010-00. The program is managed by URC in collaboration with Malaria Consortium and the Population Council. The views expressed in this publication do not necessarily reflect the views of the USAID or the United States Government. For more information, please contact Nancy Newton at nnewton@urc-chs.com or Kate Howell at khowell@urc-chs.com.

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Supportive Supervision for Improving Malaria Case Management and Malaria in Pregnancy Services in Ghana

ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

Technical Brief

Supportive Supervision for Improving Malaria Case Management and Malaria in Pregnancy Services in Ghana

Background

The Ghana Promoting Malaria Prevention and Treatment (ProMPT) project, funded by the United States Agency for International Development (USAID) through the President's Malaria Initiative (PMI) and managed by University Research Co., LLC (URC), supported the country's National Malaria Control Program (NMCP) in implementing a package of activities for the prevention and management of malaria in pregnancy (MIP) and case management of malaria. One of the earliest interventions was training more than 10,000 health workers in malaria case management and MIP between 2009 and 2011.

While training is important to build technical competencies, it does not fully prepare health workers to decide and apply everything that they learned during training. Trained health workers may return to their places of work to find that they lack the supplies, drugs, or other support needed to implement what they learned. In addition, frequent staff rotation means that trained health workers may leave their posts and be replaced by new staff who have not received adequate in-service training. To help address these issues, ProMPT supported the Ghana Health Service (GHS) to train 640 supervisory staff in supportive supervision techniques in all seven regions where the project worked. Subsequently, ProMPT provided grants to the Regional Health Directorates to implement supportive supervision of health workers. The grants were used to support visits by district health managers to health facilities with technical support from regional health teams. ProMPT partnered with the Institutional Care Division (ICD), the division within the GHS responsible for health care quality assurance, to monitor the implementation of supportive supervision and to provide technical support to health managers in applying supportive supervision techniques. This brief outlines the process used by ProMPT and GHS to implement supportive supervision in Ghana and presents some of the findings and recommendations from the experience. A more in-depth document will be produced after data analysis from the second round of supportive supervision is complete.

A joint supportive supervision team made up of ProMPT, ICD, and regional and district health staff provides feedback to health workers in the Ashanti Region of Ghana.

The Role of Supportive Supervision

Supportive supervision is based on the principles of cooperative goal-setting, problem-solving, and staff empowerment. Rather than relying on punishment to change staff behavior, it typically works as an intermediary who can facilitate the implementation of institutional goals, local-level problem solving, and quality improvement (QI). He or she serves as a mentor or coach (see call-out box), working with his or her supervisees as a partner to identify gaps in performance, help staff establish measurable performance targets, and identify and implement strategies to meet those targets. When performance falls short of targets, the supervisor helps the team to identify barriers, and develop and test strategies to overcome them. Part of supportive supervision involves the supervisor helping supervisees develop the analytical skills to implement this approach

1 Sabin, M. and Beadle, H. Facilitative Supervision: A Vital Link in Quality Reproductive Health Service Delivery. AVSC Working Paper No. 10. AVSC International. New York, NY. 1996. http://www.k4health.org/sites/default/files/AVSC%20working%20paper%20no.%2010.pdf

February 2013

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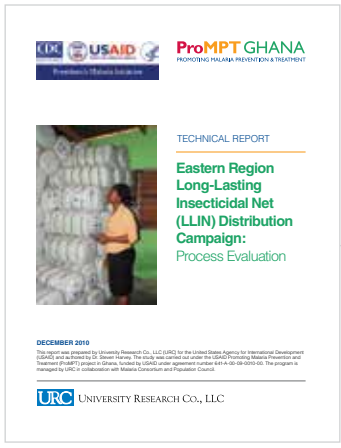
Technical Reports



ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

TECHNICAL REPORT

Eastern Region Long-Lasting Insecticidal Net (LLIN) Distribution Campaign: Process Evaluation

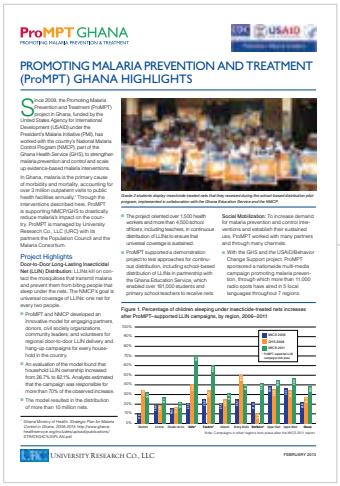
DECEMBER 2010

This report was prepared by University Research Co., LLC (URC) for the United States Agency for International Development (USAID) and authored by Dr. Steven Harvey. The study was carried out under the USAID Promoting Malaria Prevention and Treatment (ProMPT) project in Ghana, funded by USAID under agreement number 641-A-00-09-00010-00. The program is managed by URC in collaboration with Malaria Consortium and Population Council.

URC University Research Co., LLC

Eastern Region Long-Lasting Insecticidal Net (LLIN) Distribution Campaign: Process Evaluation

Highlights



ProMPT GHANA
PROMOTING MALARIA PREVENTION & TREATMENT

USAID

PROMOTING MALARIA PREVENTION AND TREATMENT (ProMPT) GHANA HIGHLIGHTS

Since 2008, the Promoting Malaria Prevention and Treatment (ProMPT) project in Ghana, funded by the United States Agency for International Development (USAID) under the President's Malaria Initiative (PMI), has worked with the country's National Malaria Control Program (NMCP) and the Ghana Health Service (GHS) to strengthen malaria prevention and control and scale up evidence-based malaria interventions.

In Ghana, malaria is the primary cause of morbidity and mortality, accounting for over 3 million outpatient visits to public health facilities annually.[1] Through the interventions described here, ProMPT is supporting NMCP/GHS to drastically reduce malaria mortality in Ghana. The country ProMPT is managed by University Research Co., LLC (URC) with its partners the Population Council and the Malaria Consortium.

Project Highlights

Door-to-Door Long-Lasting Insecticidal Net (LLIN) Distribution: LLINs kill on contact the mosquitoes that transmit malaria and prevent them from biting people that sleep under the nets. The NMCP's goal is universal coverage of LLINs: one net for every two people.

- ProMPT and NMCP developed an innovative model for engaging partners, donors, civil society organizations, community leaders, and volunteers for regional dioms-door LLIN delivery and hang-up campaigns for every household in the country.
- An evaluation of the model found that household LLIN ownership increased from 36.7% to 82.1%. Analysts estimated that the campaign was responsible for more than 70% of the observed increase.
- The model resulted in the distribution of more than 10 million nets.

[1] Ghana Ministry of Health, *Strategic Plan for Malaria Control in Ghana 2008-2015*, http://www.ghanahealthservice.org/includes/uploads/publications/STRATEGIC%20PLAN.pdf

Grade 2 students display insecticide treated nets that they received during the school based distribution pilot program, implemented in collaboration with the Ghana Education Service and the NMCP.

- The project oriented over 1,500 health workers and more than 4,000 school officers, including teachers, in continuous distribution of LLINs to ensure that universal coverage is sustained.
- ProMPT supported a demonstration project to test approaches for continuous distribution, including school-based distribution of LLINs in partnership with the Ghana Education Service, which enabled over 181,000 students and primary school teachers to receive nets.

Social Mobilization: To increase demand for malaria prevention and control interventions and establish their sustained use, ProMPT worked with many partners and through many channels.

- With the GHS and the USAID/Behavior Change Support project, ProMPT sponsored a nationwide multi-media campaign promoting malaria prevention, through which more than 11,000 radio spots have aired in 5 local languages throughout 7 regions.

Figure 1. Percentage of children sleeping under insecticide-treated nets increases after ProMPT-supported LLIN campaigns, by region, 2006–2011

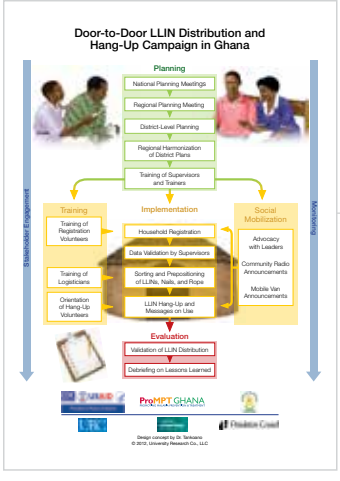
Note: Campaigns in other regions took place after the MICS 2011 survey.

UNIVERSITY RESEARCH CO., LLC

FEBRUARY 2013

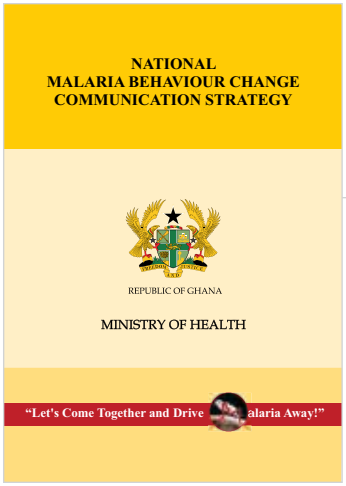
ProMPT Ghana Highlights

Other



Door-to-door LLIN Distribution and Hang-up Campaign Model

Annex 4 – Job Aids & BCC Materials



National Malaria Behaviour Change Communication Strategy

Integrated Package of Materials

Counseling Cards

Reverse side of each card includes discussion questions, key points, and reminders.

1 – How LLIN Can Protect You From Malaria

2 – How Pregnant Women Can Avoid Malaria

3 – The MOH Recommended Anti-Malaria Medicines

4 – Why Seek Care When Your Child Has Fever/Malaria?

5AA – I Give My Child the Prescribed Dose of Artesunate-Amodiaquine (AA)

5AL – I Give My Child the Prescribed Dose of Artemether-Lumefantrine (AL)

5DP – I Give My Child the Prescribed Dose of Dihydroartemisinin Piperaquine (DP)

6 – Act Fast When Your Child has Fever/Cough/Diarrhea

7AA – How Much Artesunate-Amodiaquine (AA) is Right For You and Your Child?

7AL – How Much Artemether-Lumefantrine (AL) is Right For You and Your Child?

7DP – How Much Dihydrartemesinin Piperaquine (DP) is Right For You and Your Child?

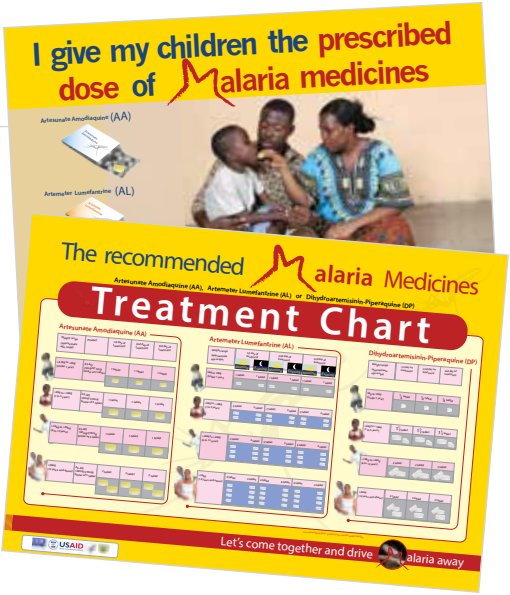
Posters

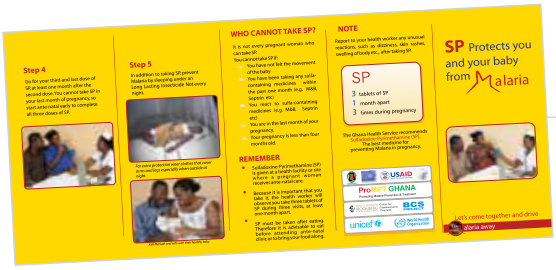
The Recommended Malaria Medicines Treatment Chart

Treat Malaria with the Recommended Medicines

I Give My Child the Recommended Malaria Medicines

How Pregnant Women Can Avoid Malaria





Leaflets

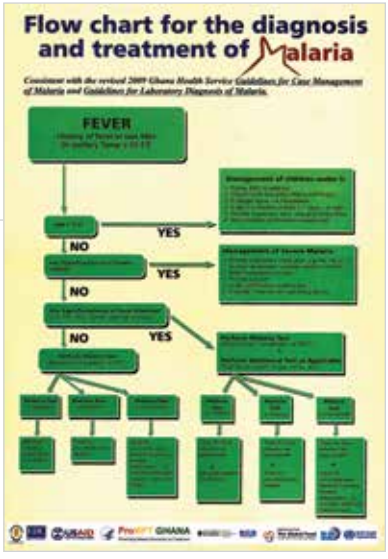
SP Protects You and Your Baby from Malaria

Protect your Family from Malaria

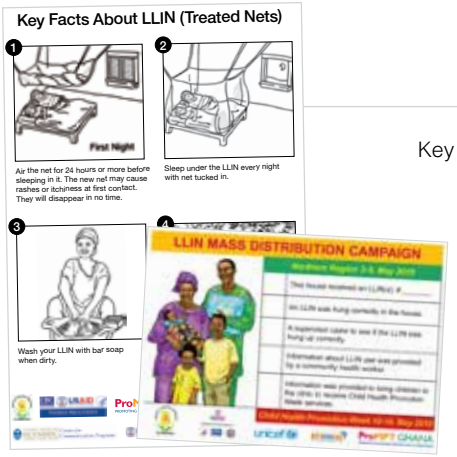
Job Aids

Flow Chart for The Diagnosis and Treatment of Malaria

Malaria in Pregnancy IPT Flow Chart



LLIN Campaign Materials



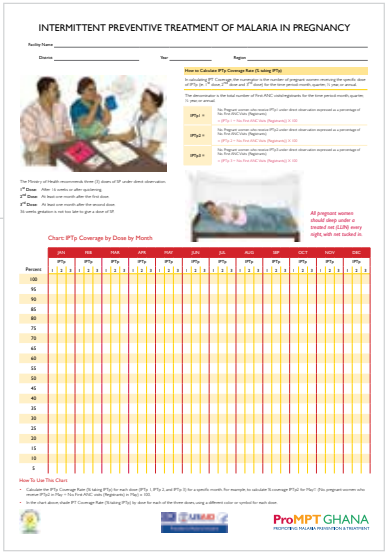
Key Facts about LLINs (Treated Nets) Job Aid for Volunteers

Eastern Region Campaign Monitoring Wall Sticker

Northern Region Campaign Monitoring Wall Sticker

JOB AIDS FOR HEALTH PROVIDERS

Intermittent Preventive Treatment of Malaria in Pregnancy



Other

Media Pack for Journalist Training

"GOOD LIFE. LIVE IT WELL" MALARIA CAMPAIGN MATERIALS

in collaboration with USAID|BCS Project

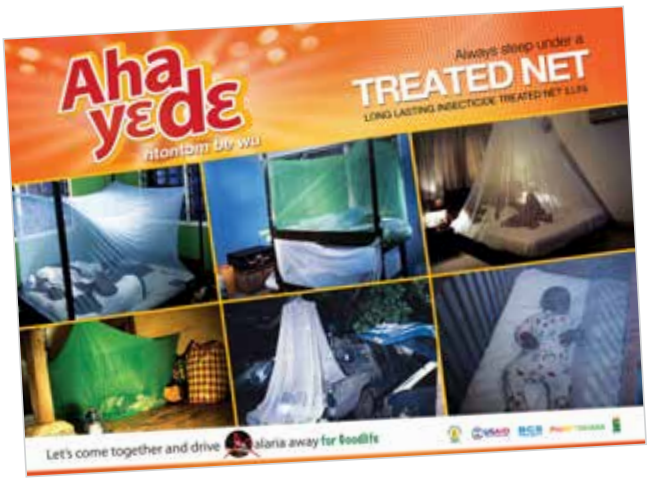
AhaYeDe Proper Ways to Hang and Care for Your Treated Net leaflet

AhaYeDe Always Sleep Under a Treated Net poster

AhaYeDe Always Sleep Under a Treated Net commercial car sticker

AhaYeDe Always Sleep Under a Treated Net small sticker

AhaYeDe Always Sleep Under a Treated Net leaflet

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