Year 2 Annual Report

VECTORWORKS PROJECT

October 1, 2015 – September 30, 2016

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VECTORWORKS
Scaling Up Vector Control for Malaria Prevention

VECTORWORKS PROJECT

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JOHNS HOPKINS Center for Communication Programs

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VectorWorks Core Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

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Contents

Abbreviations

AMP	Alliance for Malaria Prevention
ANC	antenatal care
AOR	agreement officer representative
ASTMH	American Society of Tropical Medicine and Hygiene
BCC	behavior change communication
CCoP	Communication Community of Practice
CCP	Johns Hopkins Center for Communication Programs
CD	continuous distribution
CDC	U.S. Centers for Disease Control and Prevention
DFID	U.K. Department for International Development
DHS	Demographic and Health Survey
DWL	durable wall liner
EIWG	Emerging Issues Working Group
EMMR	environmental monitoring and mitigation
EPI	Expanded Programme on Immunization
GIS	geographic information system
GMP	Global Malaria Programme
HC3	Health Communication Capacity Collaborative
HWG	Harmonization Working Group
IFRC	International Federation of Red Cross and Red Crescent Societies
IRB	institutional review board
IRS	indoor residual spraying
ITN	insecticide-treated net
LLIN	long-lasting insecticidal net
M&E	monitoring and evaluation
MERG	Monitoring and Evaluation Reference Group
MIP	malaria in pregnancy
MIS	Malaria Indicator Survey
MORE	monitoring, operational research, and evaluation
MPAC	Malaria Policy Advisory Committee
NGO	nongovernmental organization
NMCP	national malaria control program
OR	operational research
PBO	piperonyl butoxide
PMI	U.S. President's Malaria Initiative
PSI	Population Services International
RBM	Roll Back Malaria
SBCC	social and behavior change communication
SNP	School Net Program
TBD	to be determined
TDR	Special Programme for Research and Training in Tropical Diseases
UNEP	United Nations Environment Programme
USAID	U.S. Agency for International Development
VCTEG	Vector Control Technical Expert Group
VCWG	Vector Control Working Group of the Roll Back Malaria Partnership
WHO	World Health Organization

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs), and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation (M&E), and implementation support.

Project Objectives

Objective 1: Policy—Develop and promote policies at both the international and national levels to encourage sustained, high levels of coverage and use of ITNs and/or alternative vector management interventions.

Objective 2: M&E—Design, conduct, and analyze results from monitoring, evaluation, and operational research activities to improve current best practices of ITN distribution and use and/or alternative vector management interventions.

Objective 3: Implementation—Promote and support country-level implementation of malaria prevention activities to ensure sustained, high-level coverage and use of ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

Summary of Activities

VectorWorks is settling into a role of consolidating PMI's technical support function for ITN distribution. We have a large number of missions who have bought into a variety of activities, from large-scale ITN distribution through continuous channels, technical assistance for mass campaigns, to TA for developing and assessing various continuous distribution channels. We are working quickly to finalize guides and toolkits for implementation of continuous distribution, and identifying cost-saving adjustments to activities for improved efficiency. Costing data for various channels is now starting to come in and will be compiled and published in the coming year. Likewise, VectorWorks' durability monitoring activities have expanded considerably in the second year, and we continue to explore the interface between net use and the contextual factors which influence it.

1. **Policy**: Our vision of the project's role in the policy arena has changed since we began. It is now clear that our major contribution is going to be consolidating the evidence base and implementation practices for effective continuous distribution. This will require engagement with the World Health Organization Global Malaria Programme (WHO/GMP) and The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) to ensure that the technical guidance and authorization to use GFATM funds for continuous distribution is approved and adopted in country strategies. This will be our primary policy focus. In addition, we intend to continue to work on methods to increase the efficiency of ITN distribution, which includes both improving current implementation practices and exploring ways to allocate or target PMI-funded ITNs more

efficiently to households and communities in need of them. This second policy objective of increasing efficiency is a more upstream activity, and will require collaboration with a variety of researchers and modelers to build the case, design necessary pilots or field tests of key components, and to demonstrate the value of the approach.

2. **M&E**: Our primary M&E efforts are in durability monitoring and in cost analysis of a variety of continuous distribution channels. VectorWorks now has five active durability monitoring activities, in Mozambique, Nigeria, Myanmar, DRC, and Zanzibar, and has gathered and launched a complete set of preparatory, data collection, and baseline reporting tools. Researchers and PMI staff worldwide have accessed the durabilitymonitoring.org website, and the project is reaching out to key implementers working on these activities under separate funding, to build communities and collaboration. Tulane University's cost analyses for school, community, health facility, and mass campaign distribution channels are steadily ramping up, and data collection has taken place in Tanzania, Zanzibar, Ghana, and Mali in Year 2. This year we also completed discrete choice experiments in Tanzania to gauge willingness to pay for ITNs, and received approval for a concept note on residual transmission in Zanzibar from the PMI OR committee. Steady progress has been made on secondary analyses, including the updated PMI LLIN Access and Use Report, which now covers all countries with ITN data, a VCTEG report on ITN preferences, and on our outstanding manuscripts.
3. **Implementation**: We are focusing on filling the implementation gaps for continuous distribution (CD), by taking the evidence developed through field experience and documenting it through practice-oriented documents and tools. These tools are intended to guide programs and implementing partners who wish to use CD to sustain universal coverage. Significant efforts have been put into developing cdtoolkit.org, which houses a comprehensive set of tools and step-by-step guides for CD. The beta for this site is expected to launch in November 2016.
4. Challenges:
    a. **Confusion, delays, and political tensions** in developing global policy around next generation nets and insecticide resistance: WHO is not currently staffed to manage the development of normative guidance that is urgently needed to chart the way forward for product development and approval of next generation nets. While the I2I process is moving forward, progress is slow, and pathways for regulatory processes are not yet clearly defined. There are conflicting sentiments on how to pragmatically deal with insecticide resistance, including its measurement. The present discussions may be above the project's purview, but they have significant implications for the state of ITN distribution in the coming years. We will continue to engage and follow these discussions so that we can have an informed approach to our activities and support PMI.
    b. **Slow completion of written deliverables**: the project continues to struggle with completing manuscripts and other longer written deliverables on time. We are putting in place a set of priority items for completion and have reassessed our staffing matrix in order to free up the time required to address these deliverables, which demand extended focused attention. In Year 3, we are planning monthly two-day writing retreats to carve out time for this focused attention for all staff members who need it. It is crucial to consolidate the evidence on continuous distribution in the coming year to support global funding cycles.
    c. **Limited research agenda**: While PMI approved the concept note for the Zanzibar residual transmission study, our other research activities are limited to the costing exercises, durability monitoring, and net misuse. We feel these are good priorities, but are actively seeking opportunities to conduct additional research particularly in CD piloting or CD

channel evaluation. Guinea and Senegal activities in the coming two years are good opportunities, and Tanzania also provides strong field operations that could be evaluated.

d. **Delayed communication from some PMI field teams**: This continues to be a challenge for the project where work plans took many months to obtain approval and where it has been difficult to obtain clarity on the expected activities in a timely manner. We are actively working to improve communication in conjunction with the AOR.
e. **Small buy-ins**: VectorWorks managed 13 country buy-ins in Year 2, of which only three are over $300,000 per year. This represents a significant burden for financial management in comparison to the amount of activities the project is able to achieve. Thus, the project hired an additional budget analyst and scaled up administrative support in Baltimore. Likewise, three additional program staff have been hired to help manage program activities in Year 2: a full-time program officer for Tanzania, a 50% program officer to assist with Ghana, and a full-time program officer to cover several of the smaller countries.
f. While CCP's complementary private-sector ITN distribution project funded by Department for International Development (DFID) in Ghana has now been approved, prospects to compare activities in Ghana to those in Tanzania are somewhat tempered. Interest in early Year 2 indicated an openness from manufacturers to consider making additional investments in retail sales of ITNs, but the momentum is slowing. We need to be strategic about the activities that the project can spend time and effort on in the coming years vs. their likely impact.

5. Opportunities:
    a. We are increasing our **collaboration with the Global Fund and WHO/GMP**, with an eye on supporting evidence-based continuous distribution strategies in upcoming concept notes for 2017, from both the Global Fund side and from the country support side, and in developing papers for VCTEG review on ITN preferences, repurposing, and other issues. Likewise, our engagement with the Harmonization Working Group (**HWG)** and its transition to a Roll Back Malaria (RBM) partner committee continues.
    b. **Increasing interest in trying out CD**: Guinea and Mozambique are discussing CD activities at a small-scale for the coming years, and other implementing partners are conducting CD in Madagascar, Zambia, Zimbabwe, and elsewhere. Ghana is implementing nearly-nationwide school distribution. Not measuring the results of these distributions would be a **missed opportunity** to further build the evidence base for both pilots and at-scale CD.
    c. An increasing emphasis by PMI and other donors on **improving accountability and transparency in the use of donor funds** provides opportunities for increased collaboration focused on **improved efficiency** of ITN distribution, both in campaign and continuous modes.
    d. The **durabilitymonitoring.org website** now has over 80 subscribers, and we are actively tracking all PMI-funded durability monitoring activities and preparing to build this community of practice through outreach and collaborative virtual platforms, particularly as data are collected and reports begin to come in. There are significant opportunities for cross-country data mining, including into behavioral determinants of net survival.
    e. **Residual transmission**: The **WHO/TDR grant** to investigate outdoor malaria transmission in Tanzania and Burkina Faso is being leveraged to explore additional sites in Zanzibar in Tanzania, under our OR study in Year 3. Understanding residual transmission is a key step in being able to design both appropriate vector control and SBCC strategies for malaria control and elimination. VectorWorks brings a unique vantage point on malaria behaviors

related to residual transmission, and can play a facilitating role in global conversations on the best methods to use to measure the link between human behaviors, entomological monitoring, and transmission.

6. Status of country operations:
    a. VectorWorks is now **fully staffed** in all countries. Seven new PMI countries bought in to the project during Year 2, for a total of thirteen countries in Year 2.
    b. We have **strong relationships** with the PMI teams in our countries of operation. Two countries have reprogrammed additional funds to the project for new activities, and in Tanzania, the project was able to help by taking over two evaluation activities due to delayed funding obligations within the Measure AA grant, and keep these on track. These are the Zanzibar Continuous Distribution Process Evaluation and the Tanzania Care and Repair study, the latter led by IHI.
    c. We have been able to provide **technical assistance for mass campaigns** using the AMP model in Mozambique, Senegal, Malawi, and Uganda, and have a mechanism in place to be able to quickly deploy consultants in the future as requests arise.

Core Progress Report

Objective 1: Develop and Promote Policies at International and National Levels (PC)

PC.1 Roll Back Malaria Support

PC.1.A Vector Control Working Group Secretariat Support

Brief activity description: Secretarial support includes partial level of effort toward administrative staff for meeting organization, printing of meeting materials, and working group products.

Status (including next steps, challenges, and opportunities, if any): The Swiss Agency for Development and Cooperation has taken a stronger role in this activity than we had anticipated, and our role has been limited to offering knowledge management technical support. We will continue to explore through discussions with Konstantina Boutsika opportunities to fill any gaps in Vector Control Working Group (VCWG) Secretariat capacities, particularly as the new RBM Board and new partner committees take shape, and any changes to VCWG leadership emerge.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PC.1.A.1, identical to the activity below.				
2. VCWG meeting organized and conducted; proceedings posted.	Implementing partners and malaria technical community, RBM partners	Quarter 2	VWCG email list and greater RBM email list	Completed

PC.1.B RBM Board Participation

Brief activity description: Matt Lynch participated as co-chair for the Partner Committee Work Stream on the Transition Oversight Committee in the first half of Year Two, and the group held an in-person meeting in Geneva in October 2015. Lynch's role in the RBM Board meetings as an alternate board member for the Northern NGO delegation and on the Transition Oversight Committee has ended, and VectorWorks has ceased participating in RBM Board meetings. The RBM Board formally adopted the restructuring process in its December 2015 meeting, and established a new Board in late September 2016.

Status (including next steps, challenges, and opportunities, if any): We see significant opportunities to contribute to a stronger and more effective global partnership through engagement with the partner committees and the technical working groups. We will closely monitor the process of establishing the partner committees, and will continue our engagement with the relevant working groups, which will be reported going forward under their respective activity codes.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PC.1.B.1 and 2, RBM Board meeting trip reports.				
3. Transition Oversight Committee meeting trip report	Transition Oversight Committee members	Quarter 1	RBM Transition Oversight Committee co-chairs	Complete
4. November 2015 Board meeting trip report	PMI	Quarter 1	Trip report and debriefing with AOR	Complete
5. May 2016 Board meeting trip report	PMI	Quarter 3	Trip report and debriefing with AOR	Canceled in Modification 1, Year 2 (June 3, 2016)

PC.1.C VCWG Annual Meeting Support

Brief activity description: The annual meeting of the RBM VCWG was held in Geneva on February 3–5, 2016. VectorWorks assisted with funding the meeting and providing travel for the Secretariat. VectorWorks funded participation by Matt Lynch, Hannah Koenker, Ato Selby, April Monroe, and Rebecca Shore from the core budget, along with partners Albert Kilian (Tropical Health), Josh Yukich (Tulane), Fredros Okumu (IHI), and Charlotte Eddis (PSI), and country programs funded travel for additional participants from the Mozambique National Malaria Control Program (NMCP), Ghana VectorWorks and NMCP, Tanzania VectorWorks and NMCP, and Liberia NMCP.

Status (including next steps, challenges, and opportunities, if any): VectorWorks actively participated, presented lessons learned from our research and pilot activities, and exchanged insights with implementers. Hannah Koenker co-chaired the LLIN Priorities Work Stream, and launched the durability monitoring website and tools at the meeting. The LLIN Priorities work plan was submitted and includes seven activities that VectorWorks is wholly or partially responsible for moving forward. April Monroe met directly with VCWG participants involved in residual malaria transmission research and development of

new tools for vector control. Albert Kilian's presentation on comparing the cost of CD with the cost of mass campaigns provided valuable points for further follow-up with GMP in discussions on how to target ITN distribution for more efficient control. It is clear this will need to be a long process. The private-sector CD design activity gained significant input from interviews and small-group meetings with five ITN manufacturers, as well as several side meetings. VectorWorks knowledge management officer, Rebecca Shore, met with Konstantina Boutsika prior to the meeting, observed the meeting sessions, and discussed recommendations for knowledge management improvements with Konstantina following the meeting.

Post-meeting engagement has been to liaise with the chairs of VCWG about work plan progress and to move forward on LLIN Priorities work plan activities, which are reported in their respective sections in this report. As the RBM Board restructures and new Partner Support Committees are put into place, we expect the VCWG to remain a strongly attended working group that enables many partners to meet and discuss the key issues that need to be addressed and put before WHO through its VCTEG, Malaria Policy Advisory Committee (MPAC), and other mechanisms. The LLIN Priorities Work Stream has not held any conference calls, in part because the work plan was not approved by the co-chairs of VCWG until June (despite submission in March), and there was no way to post it to the RBM website until recently due to the RBM Secretariat's transition. The work stream co-chairs have been in regular contact with each other and with those working on the work plan activities, however. Nonetheless, there is a key need to maintain the group's engagement and to provide opportunities for its members to discuss and to get work plan updates between meetings; we see this as a valuable opportunity in the coming year.

Deliverable	**Audience**	**Timing**	**Dissemination Plan**	**Status**
Completed in Year 1: PC.1.C.1 and 2, presentations and trip report; PC.1.C.3 priority issues for work streams; PC.1.C.4 VCWG meeting report.				
3. Joint trip report highlighting output from specific objectives	PMI	Quarter 2	Internal staff debriefing and debriefing with AOR	Completed
4. Four VectorWorks presentations at VCWG	VCWG partners, PMI, country implementers, Global Fund	Quarter 2	VCWG email list, RBM website	Two presentations were accepted and made, and submitted with the trip report.
5. LLIN Priorities and Outdoor/Residual Malaria Transmission Work Stream priority issues for 2016	CD Work Stream partners, country implementers, PMI, Global Fund	Quarter 2	VCWG email list, RBM website	Completed

PC.1.D Participation in the Alliance for Malaria Prevention

Brief activity description: VectorWorks continues to participate in weekly AMP calls, the Emerging Issues Working Group (EIWG), the AMP Core Group, and the Monitoring, Operational Research, and Evaluation (MORE) Working Group on issues related to continuous distribution, campaign planning and quantification, gender considerations in ITN distribution, emerging issues such as ITN misuse and repurposing communication, and campaign communication.

Status (including next steps, challenges, and opportunities, if any): The AMP meeting in February 2016 focused on complex humanitarian emergencies. VectorWorks submitted five potential presentation topics (school distribution methods, costs of CD, gender issues, net preferences, and an improved access indicator calculation); however, given the focused topic, none were appropriate for the focused agenda. Nonetheless, VectorWorks raised several of these issues during the lunch working group meetings and in side conversations, and put the net preferences work on the agenda for the next meeting of the Vector Control Technical Expert Group (VCTEG)—originally scheduled for June 2016, but rescheduled for first quarter of 2017. VectorWorks also participated in the MORE Working Group and April Monroe agreed to co-chair the new Establishing Minimum Data Requirements Work Stream; this work stream took some time to get going, but is now engaging Yves Cyaka through the International Federation of Red Cross and Red Crescent Societies (IFRC) to develop guidelines for minimum data requirements for mass campaigns. VectorWorks supported travel for NMCP managers from Mozambique and Liberia. Side meetings to coordinate AMP technical assistance through IFRC and VectorWorks were held to streamline supervision of the technical assistance providers and clarify lines of communication and responsibility for reviewing mission reports. Specific information on technical assistance missions is found in section IM.10 of this report. Vector Works also contributed to drafting and revising a series of communication briefs, resulting in a third revision of the AMP Toolkit; as of September 30, 2016, these were still in final review after comments from the Pakistan NMCP manager. Dr. Koenker participated in the August meeting of the AMP Core Group, where plans for the next AMP meeting were discussed, along with coordination between VCWG and AMP.

VectorWorks will continue to support AMP through its working groups and weekly calls and close collaboration with country programs where the project provides funding for campaign technical assistance.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PC.1.D.1 presentations; PC.1.D.2 trip report.				
3. Revisions to AMP Toolkit (updates and supplements)	AMP partners, PMI, country implementers, Global Fund	TBD	We will share print and electronic versions with our country programs and encourage our teams to share the updates at technical working group meetings	In process
4. Four Presentations in Year 2	AMP partners, PMI, country implementers, Global Fund	Quarter 2	AMP meeting, via AMP email list and website post-meeting	Not selected due to meeting theme on complex humanitarian emergencies

5. Trip report in Year 2	AOR	Quarter 2	AOR	Complete

PC.2 Input into Global Policy

PC.2.A Collaborative Work on Policy Issues with the Global Malaria Programme

Brief activity description: VectorWorks goal was to maintain close contact with WHO GMP vector control team on the Global Technical Strategy and specifically, implications from the vector control graduation paper submitted to MPAC in September 2015.

Status (including next steps, challenges, and opportunities, if any): VectorWorks has maintained close contact with WHO GMP, but as described in more detail in PC.2.A.2, the findings of the MPAC did not open the door towards prioritizing vector control resources in a resource constrained environment. For ease of tracking, this activity is considered to be complete, and specific next steps related to Global Policy (PC.2) are described as new activities in the Year 3 workplan.

PC.2.A.2 Building the Evidence Base for Geographic Targeting of Vector Control Interventions

Brief activity description: The original goal of this activity was to support SwissTPH to liaise with WHO GMP on specific issues related to the MPAC paper on conditions under which it would be appropriate to withdraw vector control from certain areas. The paper identified four key factors that would potentially permit withdrawal of vector control, but at the time the workplan activity was drafted, we anticipated there might be additional data, agreed-on indicators, and comparable variables that could be developed and discussed to inform decisions about appropriate settings or circumstances in which to reduce vector control activities.

Status (including next steps, challenges, and opportunities, if any): At the September 2015 MPAC meeting, members of the Vector Control Technical Expert Group (VCTEG) and the WHO-GMP Secretariat presented their conclusions to the MPAC from a comprehensive literature review and mathematical simulation model on when to scale back vector control. Following discussion, the MPAC recommendations underscored the critical need for all countries with ongoing malaria transmission, and in particular those approaching elimination, to build and maintain strong capacity in disease and entomological monitoring in order to provide useful setting-specific information on which to base decisions, including the ability to respond to possible resurgences. The MPAC emphasized that having capacity for entomological surveillance and strong health systems are a pre-condition for even evaluating the potential of scaling back vector control.[1] The recommendations are to pursue and maintain universal coverage with effective malaria vector control of all people in areas with ongoing local malaria transmission.

The question for the project is now perhaps: what is the best way to maintain effective universal coverage of vector control? This question is addressed through our ongoing work on continuous distribution, and our activities focusing on effective operational strategies for campaign and continuous distribution. There is room for considering additional vector control tools in combination with ITNs, where the tools are most appropriate, but research is still developing; these "most appropriate" areas are not yet clearly identified,

[1] WHO Malaria Policy Advisory Committee and Secretariat. Malaria Policy Advisory Committee to the WHO: conclusions and recommendations of eighth biannual meeting (September 2015). *Malaria Journal*. 15:117;2016. https://www.ncbi.nlm.nih.gov/pubmed/26911803

and may not be targeted solely based on geography. With the MPAC decision, this policy issue is currently resolved and the project's activity complete. Our efforts on effective universal coverage are captured in other sections of our Year Three work plan, in particular PC.2.B, PC.3, PC.6., and PC.7.

PC.2.B Articulating the Process of Moving from Campaign to Continuous Distribution

Brief activity description: VectorWorks had planned to publish an article (drafted in late Year One), highlighting the key points made and supporting data from the presentation on the pilot studies, and providing recommendations for how countries should consider the distribution options available to them, including campaigns and continuous distribution options. Albert Kilian made a clear presentation summarizing key points for this discussion at the VCWG. However, many evidence gaps remain, and it is clear that this process will require more time than originally thought.

Status (including next steps, challenges, and opportunities, if any): VectorWorks is marshalling the evidence to support continuous distribution in terms of effective coverage and equity, and is working with RBM and WHO to design policy guidelines to assist countries in planning if (and how) they should transition to greater use of continuous distribution at a subnational level. We will continue to promote discussion on the issue; however, the evidence base needed to support the transition is not yet fully in place. This lack of a fully developed case for the transition means that it is now too early to initiate the steps listed in our (overly ambitious) Year Two work plan for this activity.

In Year Two, we coordinated closely with the Global Fund, conducting a training with fund portfolio managers, public health M&E officers, and procurement and supply management officers in April and late September about continuous distribution, the existing evidence base, and operational considerations that need to be recognized. We worked with the Global Fund on specific language to include in the guidance note for the next funding cycle, and drafted an outline for the manuscript on transitioning to CD, which we must complete in Year 3. The HWG was not very active during the second half of Year Two, and we did not liaise with them during subregional meetings as initially planned, but will do so as they plan workshops under their new configuration as a Country/Regional Support Partner Committee to support the next funding cycle for countries whose Global Fund grants are ending in December 2017. In April we also met with WHO-GMP before Abraham Mnzava's departure, where GMP stated that a solid memo making the case for full-scale continuous distribution could be reviewed by GMP and then submitted to the VCTEG. As data from Tanzania in particular comes in, the initial results from the School Net Program Round 1 (SNP1) and Round 2 (SNP2) are extremely promising, but must be updated in late 2016 when the Tanzania Demographic and Health Survey (DHS) data are released and survey results from post SNP3 are available.

At this time, there are very few countries that are prepared for a large-scale transition away from mass campaigns and toward continuous distribution. Tanzania and Ghana present the best political and donor environments to do so, but there are remaining challenges to fully adopting these strategies, including pending survey data. The project does not advise other countries to consider full-scale transitions to CD in the next Global Fund funding cycle, but for those countries who have an interest in testing alternative approaches, we are providing support.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Publishable, quality manuscript on transitioning to CD submitted	NMCP and national decision makers, HWG members and consultants, GMP, Global Fund portfolio managers and	Delayed to Quarter 2 Year 3	Share publication with VCWG email list as well as to specific contacts within Global Fund, HWG, GMP, and PMI	Postponed

	technical review panel members			
2. Coordination meetings held on transitioning to CD	GMP, VCTEG, NMCP, and national decision makers, HWG members and consultants, Global Fund portfolio managers, and technical review panel members	Quarters 3, 4	Share with VCTEG the draft technical guidance developed with GMP	Meetings held in Quarter 2 with GMP and GF
3. Presentations to subregional network meetings and HWG meetings and/or technical assistance on how to transition to CD	NMCP leaders, HWG consultants	Quarters 1, 3	Consultants and NMCP participants in workshops will take key points back to use in their concept notes; alternatively, may include specific input to concept notes	Postponed

PC.3 Promoting Key Indicators

PC.3.A Improving Use of the ITN Population Access Indicator at the Country Level

Brief activity description: Albert Kilian developed a revised method of calculating the ITN population access indicator to avoid ratios above 1.0, making the indicator even more useful for program managers to understand, and to use to steer their ITN programs. The new calculation adds a step to ensure that individuals who used a net the previous night are marked in the data set as having access. Thereafter, remaining individuals in the household are assigned access in the usual manner, depending on the number of remaining nets (more accurately, "net spaces") in the household. This has an advantage of avoiding access-and-use ratio greater than 1.00.

Status (including next steps, challenges, and opportunities, if any): VectorWorks organized a meeting of the Monitoring and Evaluation Reference Group (MERG) Indicator and Data Sources Task Force on July 15, 2016, at CCP, where Kilian presented an option for revising the access indicator's calculation, and Olivier Briet presented a second option/approach to calculating population access, based on the net file instead of the household member file, although he stressed that his option was being presented for feedback and not as a proposed approach for the MERG to consider adopting. Notes and presentations are available on Google Drive.[2] The discussion focused on the implications of changing the indicator's calculation (for either Option 1 or Option 2), which would require issuing updates for all previous surveys (e.g., Malaria Indicator Surveys [MIS] and DHS) and explaining the new calculation to M&E officers and NMCP staff (which has already necessitated some significant efforts). A third option was also discussed—to simply cap the access-to-use ratio at 1.00, and a fourth option—to do nothing, and leave the current access indicator calculation as is. VectorWorks produced a list of pros and cons for each approach and the group consensus is currently leaning toward not changing anything, due to the large amount of work required to update prior documents and train people on the new approach. The implications of not changing the indicator are minimal; follow-up with co-chairs of the Indicator and Data Sources Task Force was done in Quarter 4 to

[2] Meeting notes: Monitoring and Evaluation Reference Group (MERG) Indicator and Data Sources Task Force. July 15, 2016. Available from: https://drive.google.com/drive/folders/0B1OT_g2g-ylqY0U0ZExqOVhxQ00

prepare agenda items for the January 2017 MERG meeting in Geneva, where the issue will be discussed, and a decision will be taken.

Deliverables	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PC.3.A.1 training materials for MIS; PC.3.A.2 updated HWG guidance.				
3. Presentation of rationale and method for improved access indicator to AMP and RBM/WHO and MERG	AMP/MERG/VCTEG	Delayed to Quarter 2 Year 3	meetings	In process
4. Tools for M&E program staff on the RBM and/or VectorWorks websites	PMI, NMCPs, malaria community	Delayed to Quarter 3 Year 3	RBM and VectorWorks websites	Not started
5. Publishable quality paper on the new calculation and its application	PMI, NMCPs, malaria community	Delayed to Quarter 4 Year 3	*Malaria Journal*	Outline stage

PC.3.B Source of Nets Analysis Plan

Brief activity description: VectorWorks finished developing an analysis plan for the new "source of net" question, which helps to determine where nets came from. The plan includes a breakdown of sources by region, residence type, socioeconomic status, and whether the net is an ITN, if available. Additionally, household-level analysis of ownership of ITNs from certain sources can be conducted—for example, the proportion of households with currently or recently pregnant women who own an ITN obtained from antenatal care (ANC), and the proportion of households with a net from school-based distribution that had at least one child attending school the current year. In Year Three, VectorWorks will use this plan to analyze data from DHS or MIS that have included the "source of net" question. This information can be used to answer question about a country's ITN distribution strategy and help inform future planning. This analysis will be updated as new data including source of nets is available.

Status (including next steps, challenges, and opportunities, if any): With the completion of the analysis plan in Year Two, VectorWorks began analyzing DHS and MIS data that contains the "source of net" question. We will prepare a report that includes all data sets from 2014 to present, and will update it as new data is released. This deliverable will help countries understand different aspects of net distribution and the population demographics of targeted groups, such as pregnant women or households with school-aged children.

Deliverables	Audience	Timing	Dissemination Plan	Status
1. Narrative analysis plan with do-files for data on source of nets	PMI officers, NMCPs, researchers	Quarter 2	PMI, VCWG, CD Work Stream, AMP	Completed
2. Report on PMI countries using the analysis plan	PMI officers, NMCPs,	Delayed to	PMI, VCWG, CD Work Stream, AMP	In progress

	researchers	Quarter 1 Year 3		

PC.4 ITN Misuse for Fishing and Designing Mitigation Interventions

Brief activity description: VectorWorks is working to provide a clear process to assess, quantify, and recommend mitigation measures for ITN misuse for fishing. The overall process consists of a series of questions, actions, and tools that planners can use to clarify the issues in a specific geographic setting. The audiences for this activity include USAID Global Health and Environment Bureaus; PMI resident advisors; implementing partners with expertise in sustainable fisheries, environment, and livelihood programs; and other interested parties such as the United Nations Environment Programme (UNEP) and journalists.

The first step was to conduct a literature review on the existing state of knowledge on mitigation interventions, and hiring consultants to write technical reports to guide the analysis of potential harm. VectorWorks is designing the second phase, including rapid assessment tools to quantify the magnitude of the problem and household survey instruments to inform potential mitigation designs. VectorWorks is on track to pilot rapid assessment tools to assess the magnitude of ITN misuse for fishing in Malawi in project Year 3, Quarter Two.

Status (including next steps, challenges, and opportunities, if any): VectorWorks conducted a scoping visit to Malawi at the end of Year Two, and met with a number of stakeholders involved with misuse of ITNs for fishing in Malawi. The team also visited the field to see misuse in action, and to discuss the Department of Fisheries' annual frame survey, which will provide data on the proportion of fishing gear that is composed in some part by mosquito netting. Tools for the pilot have been completed and are currently undergoing final review by PMI and other pertinent partners, before being submitted for ethics review at the Malawi College of Medicine and Johns Hopkins University by November 1, 2016. Assuming no delays from these review boards, the pilot will take place in Malawi during February and March 2017. This activity is an exciting opportunity to bring together several sectors to define and resolve the problem; however, it could also be a major challenge. Changes in leadership in Malawi, PMI, bilateral projects, and the government could also potentially hamper progress.

Deliverable	Audience	Timing	Dissemination	Status
1. Literature review summarizing current evidence addressing ITN misuse for fishing	AOR	Quarter 3	AOR	Complete
2. GIS population estimates report	USAID AOR	Quarter 1, Year 3	Not for dissemination	Complete
3. Potential harm from pesticide technical report	PMI, VCWG, environmental implementing partners, UNEP	Quarter 3	AOR	Complete

4. Potential harm in using small-mesh nets for fishing technical report	PMI, VCWG, environmental implementing partners, UNEP	Quarter 3	AOR	Complete
5. Set of survey instruments	PMI	Delayed to Quarter 1 Year 3	AOR	Submitted
6. Summary process manual	PMI	Delayed to Quarter 4 Year 3	AOR	In process
7. Pilot test survey instruments in two sites (TBD) report	PMI	Delayed to Quarters 2,3 Year 3	AOR	In process
8. Final Decision Tree	PMI resident advisors	Year 3	PMI	Not yet started
9. Complete Net Misuse Toolkit	PMI	Year 3	PMI	Not yet started

PC.5 Malaria in Pregnancy

PC.5.3 Malaria in Pregnancy Advocacy Strategy

Brief activity description: Based on a need identified for a malaria in pregnancy (MIP) advocacy strategy by the MIP Working Group, VectorWorks has worked with partners to create an advocacy strategy to address the identified issues, working with the MIP Working Group leadership to facilitate advocacy actions by specific partners. Developed by the RBM MIP Technical Working Group, the aim of this *MIP Advocacy Guide for National Stakeholders* is to provide malaria and reproductive, maternal, child, and adolescent health stakeholders in malaria-endemic countries with the tools to advocate for scaling up MIP interventions.

Status (including next steps, challenges, and opportunities, if any): The *MIP Advocacy Guide for National Stakeholders* was completed and circulated to the MIP Working Group, AMP, VCWG, the VectorWorks newsletter, Twitter, and the VectorWorks Facebook page. The guide will be translated into French in Year Three.

PC.5.4 Malaria in Pregnancy Working Group Meeting

Brief activity description: Matt Lynch and Kathryn Bertram attended the MIP Working Group meeting in Nairobi, Kenya, on July 11–13, 2016, to present on the activities in the PC.5 group and liaise with MIP experts to further determine areas of interest for the project to focus.

Status (including next steps, challenges, and opportunities, if any): At the meeting, a presentation of the MIP guide was well received. Conversations about the guide revealed some interesting topics for future consideration, including advocacy in the context of elimination, advocacy around screening at ANC services, documenting the use of the advocacy guide, reaching adolescents with ITNs, ITN use from pre-conception through post-conception, and exploring reasons for non-use, especially among teenagers. The MIPTWG is interested in having CCP support them in capturing country-level input on usage of the guide. As such, CCP will continue to contribute LOE to participate in the MIPTWG. This support may include planning for collecting country-level feedback, developing tools to collect field-based information about the guide, making revisions to the guide based on feedback, and regular contributions to scheduled and as-needed calls and other virtual correspondences.

PC.5.5 Follow-Up Activity from Advocacy Strategy

Canceled in Modification 3, Year Two (August 15, 2016)

PC.5.6 Tracking ANC Attendance in Tanzania Before and After ITN Distribution

Brief activity description: VectorWorks will work closely with NMCP in Tanzania to monitor distribution of ITNs at ANC services, using data from two electronic databases (the Electronic Logistic Management System and the Health Management Information System). We will track the number of ITNs that are delivered to ANC clinics, as well as the number of pregnant women who attend ANC services and the number who receive an ITN. One aim of this monitoring is to determine whether pregnant women make an extra trip specifically to receive an ITN through ANC distribution. This will be evaluated in two ways: (1) Comparing ANC attendance before and after health facility ITN within Mtwara region, where only ANC distribution is occurring, to see if there is an increase in attendance. (2) Comparing attendance in Mtwara region to ANC attendance in Mwanza region, which has recently conducted a universal coverage campaign and is not yet distributing ITNs at ANC. The hypothesis is that an increase in attendance in Mtwara vs Mwanza would provide evidence for ITN demand as an incentive to attend ANC services.

Status (including next steps, challenges, and opportunities, if any): This activity is continuing into Year Three. We recently noticed that ANC attendance rates in Tanzania, and in the regions identified, are very high, which means that an extremely large sample size is required to determine if pregnant women are making a decision to attend or not attend based on ITN availability. It is far more reasonable to assume that the decision is not a yes/no on attending but might be related to timing of the first attendance. We are therefore assessing the feasibility of analyzing the gestational age at the first attendance by whether ITNs were available.

Deliverable	Audience	Timing	Dissemination Plan	Status
Canceled in Year 1: PC.5.1 US MIP trip report. Completed in Year 1: PC.5.2 trip report and presentation.				
3. MIP Advocacy Strategy	MIP Working Group members, PMI MIP Working Group, and PMI resident advisors, NGO delegation to the RBM Board, reproductive and maternal health partners	Quarter 1	MIP Working Group and PMI email lists, Malaria Advocacy Working Group email list	Completed

4. MIP Working Group trip report and presentation	PMI technical team	Quarter 3	Submission and debriefing with AOR	Completed
5. In support of the MIP advocacy strategy, identify case study examples of actions that have successfully engaged reproductive health partners in MIP	MIP Working Group, PMI resident advisors	Quarter 3	MIP Working Group, PMI networks	Canceled
6. Tracking ANC attendance in Tanzania before and after ITN distribution, report describing results of study	MIP Working Group, AMP, PMI	Delayed to Quarter 2 Year 3	AMP and MIP email lists	In process

PC.6 Identifying Alternative Distribution Strategies in Urban Areas

Brief activity description: In collaboration with the AMP EIWG, VectorWorks lead a process to determine what type of information would be required to inform selection of alternative distribution strategies in urban areas. Then we worked to gather the necessary data (epidemiological characteristics of urban areas, expected coverage from alternative distribution strategies) and drafted a report describing alternative distribution strategies, their contribution to coverage, and potential logistical and/or cost savings.

Status: VectorWorks conducted interviews with AMP consultants and NMCP officers in ten countries with an ITN distribution plan. Information from these countries has been collected and analyzed for common themes and unique approaches to ITN distribution in urban areas. We prepared the outline of a working paper, organized by mass distribution phase and filled in with findings from the interviews. A first draft of the working paper will be prepared in Quarter One, Year Three. Urban distribution information will continue to be collected throughout the quarter as mass campaigns progress and new information emerges. The working paper will then be circulated for review and editing, with the aim to complete it by early 2017. Some of the challenges were around the difficulty connecting with lower administrative-level officials. These are the people responsible for implementing many distribution activities and are important to the body of perspectives on urban distribution. National-level officials have been very helpful, but sometimes cannot cite specific issues or instances related to urban distribution. This activity is giving VectorWorks the opportunity, based on participation from officials and consultants in so many settings, to make recommendations based on common challenges and strategies that have proven effective in several countries. In 2017 and beyond, several countries will be able to use this information to improve their urban distribution strategies.

Deliverable	Audience	Timing	Dissemination Plan	Status
Working paper on alternative	PMI, GMP,	Delayed	PMI, AMP,	Majority of interviews

distribution strategies in urban areas	AMP, VCWG	to Quarter 1, Year 3	VCWG	conducted and outline drafted.

PC.7 Maps for PBO Net Pilot Areas

Brief activity description: Following the 2016 VCWG meeting, the LLIN Priorities Work Stream created a work plan activity that would produce maps of potentially suitable locations for piloting piperonyl butoxide (PBO) nets, based on the WHO criteria of areas with >20% parasite prevalence among children ages 2 to 10 years old, where mosquito mortality was <80% against pyrethroids, and where Actellic or other organophosphates have not been sprayed recently. This activity was added in Modification 1, Year Two.

Status (including next steps, challenges, and opportunities, if any): VectorWorks compiled data from the Malaria Atlas Project, PMI entomological monitoring, IR Mapper, and Africa Indoor Residual Spraying project spray records to construct the maps. Drafts were reviewed with PMI and shared through the VCWG email list. At that time we learned that the Global Fund had engaged Josh Yukich at Tulane University to produce web-based dynamic maps to provide the same information, but that Tulane had not compiled all of the entomological data. The project has discussed with Tulane and the Global Fund and will collaborate moving forward by sharing the PMI data and providing feedback on the web application. Both products are considered to fulfill the same LLIN Priorities Work Stream deliverable and the PDF report produced under VectorWorks will be subsumed into the web application.

Objective 2: Design, Conduct, and Analyze Results from Monitoring, Evaluation, and Operational Research Activities to Improve Current Best Practices (ME)

ME.1 ITN Durability Monitoring

Brief activity description: VectorWorks has produced for PMI a complete package of durability monitoring tools and resources available at www.durabilitymonitoring.org. Tools are available in English, French, and Portuguese, and reports and data sets will be added as they are finalized. VectorWorks also provides technical assistance in planning durability monitoring activities and provides technical assistance to other implementing partners in the form of distance email support on specific questions.

Status (including next steps, challenges, and opportunities, if any): The full package of data collection tools was posted in October 2015. In November 2015, VectorWorks gave a webinar for PMI staff worldwide on the www.durabilitymonitoring.org website and tools. Minor updates were made to specific tools, and in February 2016 the site was publicly launched at the VCWG annual meeting. In April, French translations of the data collection and training/fieldwork tools were posted to the website, and in August, data analysis and reporting do-files and templates were added, along with tablet data collection forms and resources. As of September 30, 2016, 82 individuals had signed up for access to the site, and the tools page has had 538 page views this year. There has been good collaboration between the U.S. Centers for Disease Control and Prevention, VectorWorks, and other durability monitoring implementing partners thus far, and we have provided an alternative approach to selecting ITNs for bioassay testing in the most recent update of the protocol as a result of interagency discussions and country feedback. The next steps are to post available reports and data sets on the website along with implementing a user registration system for data requests, similar to that of DHS or MIS, and providing the necessary tools and forms to facilitate data use in line with USAID's Open Data Policy, while remaining cognizant of local research and NMCP data security policies. A meeting of investigators will be held at the American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting in Atlanta in November 2016 to build working relationships between principal investigators, resident advisors, and PMI staff, and to solve common implementation challenges.

In Modification 1, at the request of PMI, VectorWorks hired a data-cleaning consultant to assist with PMI's eight-country durability monitoring analysis. Alex Thackeray has been working since April to clean and harmonize data sets to enable cross-country analysis on determinants of net proportionate hole index (pHI) and insecticidal activity, across eight countries, eight brands, and a mix of repeated cross-sectional and prospective study designs. This process has taken a significant amount of time primarily due to poor data records, including challenges with data file-naming (making it difficult to determine which were the final data sets for several countries), missing data set components (e.g., Rwanda household data), different approaches to bioefficacy testing (conducting bioassays only after failing chemical testing in some studies; vice versa in others), and duplicate records. Investigating these problems required input from the principal investigators, and several were either no longer available or did not have time to go back through their own records. VectorWorks established a weekly call between Thackeray, CDC, and USAID's Durability Monitoring Focal Point in July, which has helped to keep the process moving forward. At the same time, PMI requested that Olivier Briet be brought on board to conduct some analyses of the data, which he began prior to finalization of the working data sets. Thackeray's contract has been extended until December 2016 to continue working on analysis, with support from John Gimnig and Ryan Wiegand at CDC, which will feed into a planned presentation at VCWG in February 2017.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Guidelines on how to conduct ITN durability monitoring, including data collection templates	Principal investigators and resident advisors involved in durability monitoring in PMI countries, and countries undergoing mass campaigns that are likely to require durability monitoring in 2015 and going forward	Quarter 1	ITN technical working group call to the field; recorded webinar for PMI and resident advisors; Durability Work Stream email list	Complete; periodic updates
2. Standardized tools for data analysis and reporting		Quarter 2		Completed for baseline
3. Data repository		Delayed		In progress
3d-e. PMI pooled durability study data cleaning and analysis	PMI	Quarter 2-4	AOR; Durability Monitoring focal point	Added in Modification 1, Year 2 (June 3 2016) In process
4. Resistance to Damage Score Validation. Deliverable TBD	TBD	Quarters 3, 4	TBD	Canceled in Modification 1, Year 2 (June 3, 2016)

ME.2 Alternative Vector Control Tools

ME.2.B Quarterly Updates on Alternative Vector Control Tools

Brief activity description: Since July 2015 VectorWorks has disseminated a quarterly newsletter that summarizes findings from relevant studies and highlights possible interpretations and implications, including gender considerations for new tools when applicable. The newsletter is developed based on a systematic search in key databases for literature from the last three months on alternative tools and paradigms identified in Landscape of New Vector Control Products. They are presented in a user-friendly newsletter format that enables readers to quickly scan for key new developments as well as study in detail the referenced literature. Each quarterly update is circulated through the general VCWG mailing list as well as PMI country or regional advisors and central staff. The updates are also posted to the VectorWorks website.

Status (including next steps, challenges, and opportunities, if any): The quarterly newsletter is ongoing; every three months new articles are reviewed, summarized, formatted, and disseminated. Quarter One (January to March) was released in May 2016, Quarter Two (April to June) was released in August 2016, Quarter Three (July to September) will be released in November 2016, and Quarter Four (October to December) will be released in February 2017.

Deliverable	Audience	Timing	Dissemination Plan	Status

Completed in Year 1: ME.2.B.1, 2 newsletters.				
2. Quarterly electronic newsletter summarizing recent literature on alternative vector control tools	International Vector Control Consortium, VCWG, PMI technical and resident advisors, implementing partners	Nov, Feb, May, Aug	VCWG mailing list, RBM website; potentially PMI field and core email lists; link on PMI.gov; vector-works.org	Completed

ME.3 Issues in Costing ITN Distribution

ME.3.A Continuous Distribution Costing Analysis

Brief activity description: Building on the work started in Ghana under NetWorks, VectorWorks will conduct cost analyses of school-based, health-facility-based, and community-based distribution programs—either as a stand-alone strategy (e.g., school-based distribution in Tanzania and health-facility-based distribution in Mali) or in combination with other strategies (e.g., in Ghana and Zanzibar).

Status (including next steps, challenges, and opportunities, if any): In Year Two, VectorWorks completed the Tanzania SNP3 costing report (distribution in schools) and the Zanzibar costing report (distribution in communities and health facilities). Data collection and analysis began for Ghana (distribution in schools and health facilities) and Mali (distribution in health facilities and mass campaigns) in the second half of the year. Draft reports for Ghana and Mali are currently under internal review and will be submitted for PMI review in the Quarter One, Year Three.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Madagascar costing and output data report	VectorWorks project team, PMI AOR	Postponed until Madagascar scales up CD	Internal reports for preparation of a summary report/article	Canceled in Modification 3, Year 2 (August 15, 2016)
2. Tanzania SNP3 costing and output report	VectorWorks project team, PMI AOR	Quarter 3	Internal reports for preparation of a summary report/article	Submitted
3. Ghana health facility costing update	VectorWorks project team, PMI AOR	Quarter 4	Internal reports for preparation of a summary report/article	Report in process
4. Mali health facility costing and output data report	VectorWorks project team, PMI AOR	Quarter 4	Internal reports for preparation of a summary report/article	Report in process
5. Zanzibar CD costing	VectorWorks project team, PMI AOR	Quarter 4	Internal reports for preparation of a summary report/article	Submitted

ME.3.B Experimental Auctions

Brief activity description: VectorWorks conducted discrete choice experiments in Tanzania in urban and rural sites in two regions (Southern Zone and Lake Zone) to obtain data to establish price elasticity curves for ITNs, and determine how price and net attributes affect purchase decisions. Fieldwork occurred in late May and June 2016. The specific technique employed was a discrete choice experiment, where participants

chose between two different net types (or neither net), repeated over seven alternative scenarios. Participants received 10,000 TSH (approximately US$4.50) before starting the discrete choice experiment, with net prices ranging between 2,000 and 8,000 TSH. At the end of the procedure, one randomly selected scenario became "binding," in which participants actually purchased their chosen net (if any).

Status (including next steps, challenges, and opportunities, if any): Analysis took place in July and August 2016 and the report was finalized in late September and early October. The key findings were that only 8% of participants opted not to buy for any scenario, and 40% opted to buy for all seven scenarios, indicating a strong desire to purchase nets among the study population. Rural populations in both sites were more likely to buy nets, driven primarily by their lower access to ITNs within the household. Mean willingness-to-pay estimates for an untreated, conical, small net ranged from 2,400 TSH (less poor households) to 3,800 TSH (poorer households). The demand estimates also confirmed that participants were willing to pay for various net attributes, including a rectangular net (vs. conical shaped), a large 6 feet x 6 feet net (vs. a smaller 3.5–4 feet x 6 feet), and for a long-lasting, polyethylene net pretreated with insecticide (vs. an untreated polyester net). The mean willingness to pay for these individual attributes ranged from 1,200 to 3,000 TSH.

These results will be integrated into the Tanzania private-sector market analysis and will also be used in the overall manufacturer landscape analysis (IM.9.1), to provide manufacturers with information necessary to make investment decisions in retail sales of ITNs. The methodology used here is also being applied in Ghana with funding from DFID and is proving useful in other willingness-to-pay studies. Despite the common assumption that there are no markets for ITNs, these results indicate that, with some assistance to reduce liquidity constraints, there is a strong demand for ITNs at both rural and urban levels.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Trip Report	AOR/resident advisors, NMCP Tanzania	Quarter 2	PMI, VCWG, AMP	Completed
2. Study report	PMI resident advisors, NMCP Tanzania, VCWG	Quarter 4	PMI, VCWG, AMP	Submitted on October 18, 2016

ME.4 External Review of a Durable Wall Lining Study in Tanzania

Brief activity description: Matt Lynch participated in one field visit to the Muheza test site on March 17–23, 2016. The visits included meetings with the project technical teams, as well as one meeting in Dar es Salaam with the National Institute of Malaria Research leadership. The study review panel played an important role in assisting the Translating Research Into Action (TRAction) Project to refine the study design, identify and validate challenges in field operations, and review plans.

Status (including next steps, challenges, and opportunities, if any): Initial results from this trial which came out in May showed that the wall liners did not work as expected, hence the study was terminated as of October 2016.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.4.1 trip report.				

2. Trip report	USAID/PMI; TRAction project management	Quarter 2	Trip report to VectorWorks AOR	Complete

ME.5 Continuous Distribution Evidence Base

ME.5.A NetCALC 3.0

Brief activity description: VectorWorks has made and issued updates to improve NetCALC's functionality.

Status (including next steps, challenges, and opportunities, if any): NetCALC 3.0 was posted in October 2015, adding half-year durability options, additional flexibility in selecting school classes (each class in each year can be selected or deselected), and additional flexibility in the community channel options. In May 2016 we submitted and posted a tool to help users produce pie charts of the proportions of households and populations reached by school and other channels, consisting of a Microsoft Excel form and a Stata do-file, to enable program planners to assess how broad the reach of a combined strategy might be. Minor background updates were made in June and July following user-testing in Tanzania, including an adjustment to the way that population access is calculated from household ownership. Version 3.2 was released in August, along with an updated French translation. The detailed user guides were also updated in both languages. The updated NetCALC 3.0 files were disseminated through the AMP and VCWG email listservs in October 2015. NetCALC 3.2 was announced in the VectorWorks email newsletter in October 2016 and posted to the website. No presentations were made on this at the 2016 VCWG or AMP meetings, due to time contraints at VCWG and meeting theme at AMP, or at subregional network meetings, which were not held in Year 2. However, Ato Selby promoted NetCALC at the HWG meetings in Year 2.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. NetCALC 3.0 beta version finalization	NMCPs, HWG and HWG consultants, VCWG, PMI	Quarter 1	VCWG and AMP presentations in 2016 annual meetings; VCWG and AMP email lists, HWG and AMP trainings, subregional network meetings	Completed, pending final accompanying components

ME.5.B Dissemination of NetWorks Continuous Distribution Findings: Papers on Continuous Distribution Pilots in Madagascar, Ghana, and Nigeria

Brief activity description: VectorWorks is drafting manuscripts on the Madagascar, Ghana, and South Sudan continuous distribution pilots. The manuscripts describe the interventions and results from the pilots.

Status (including next steps, challenges, and opportunities, if any): Most of the Madagascar and Ghana manuscripts have been drafted and should be ready for PMI review in the first half of Year Three. The South Sudan manuscript has been drafted and is in internal review. These manuscripts have been significantly delayed, as other urgent activities and deliverables have taken priority during the closeout of NetWorks and startup and expansion of VectorWorks. We have enlisted additional writers and hired additional staff to better tackle these longer written deliverables, and are instituting monthly writing retreats in Year 3 to complete these.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.5.B.3 Nasarawa CD Report.				
1. Publishable, quality manuscript on community CD pilot in Madagascar	NMCPs, HWG and HWG consultants, VCWG, PMI	Delayed to Quarter 2 Year 3	Peer-reviewed journal article, VCWG	In process
2. Publishable, quality manuscript on school-based distribution in Eastern region of Ghana	NMCPs, HWG and HWG consultants, VCWG, PMI	Delayed to Quarter 2 Year 3	Peer-reviewed journal article, VCWG	In process
4. Publishable, quality manuscript on community CD pilot in South Sudan	NMCPs, HWG and HWG consultants, VCWG, PMI	Delayed to Quarter 2 Year 3	Peer-reviewed journal article, VCWG	In process

ME.6 Publication Fees for NetWorks Articles

Brief activity description: Several articles planned under NetWorks funding are still being completed.

Status (including next steps, challenges, and opportunities, if any): In February 2016 the paper comparing different approaches to implementing mass ITN campaigns was published, with the main finding that the quality of the household registration is the true key to overall success of the campaign. Likewise, universal coverage allocation strategies (one ITN per two people, or a sleeping space allocation) performed better than issuing a fixed number of ITNs per household. Sleeping space approaches were marginally more successful than those that counted household members, but were also highly correlated with the country of implementation. The paper describing the piloting of school distribution in Cross River State, Nigeria, was not accepted for publication at *Malaria Journal*, and we were not able to resubmit it for peer review to the *Global Health: Science and Practice* journal before the end of Year Two; this is an urgent task for Quarter One of Year Three. Likewise, the Hole Index Paper continues to linger as other higher-priority activities are taking up time.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.6.2 Hang up; ME.6.3 Ghana Outdoor Sleeping; ME.6.4 Nigeria Durability; ME.6.5 Uganda Care Repair.				
1. Campaign strategies comparison paper	Malaria technical community, PMI	Quarter 1	Peer-reviewed journal article, VCWG	Published on February 3, 2016
6. Nigeria Cross River schools	Malaria technical community, PMI	Delayed to	Peer-reviewed journal article, VCWG	Not accepted by *Malaria Journal*; in revision for

		Quarter 2 Year 3		resubmission
7. Hole Index Methods	Malaria technical community, PMI	Delayed to Quarter 2 Year 3	Peer-reviewed journal article, VCWG	In draft

ME.7 Subnational Analysis of Access-to-Use Ratio

Brief activity description: VectorWorks will use DHS and MIS data sets to more closely examine rates of ITN use and ITN access based on subnational time frames for environmental variables such as rain and temperature. This analysis will be done for all PMI countries within the last five years (where data are available) and potentially for additional countries, if useful, to assess patterns in net culture by region and by rainfall timing. The draft paper is targeted for submission to an appropriate journal during Quarter One. We will continue to update the ITN Use and Access for PMI Countries report with new data as it becomes available, with the addition of maps created using ArcGIS 10.2, for the PMI countries included in the report using the most recent data for which geographic information system (GIS) data sets can be obtained from the DHS Program.

The ITN Use and Access for PMI Countries report is an ongoing document that is updated with the release of DHS or MIS data from PMI countries. The most recent update was completed and disseminated on October 1, 2016, to add the Mali 2015 MIS results. An annex containing maps for this report has been added. The publishable paper analyzing ITN use and access by rainy season is in progress and will be submitted for peer review by Quarter One.

Status (including next steps, challenges, and opportunities, if any):

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.7.1 Year 1's ITN Use and Access for PMI Countries report.				
2. Publishable paper analyzing access-to-use ratio by rainy season 2010–2015	Malaria technical community	Delayed to Quarter 3 Year 3	VCWG, *Malaria Journal*	Delayed
3. Updated PMI report on access indicator showing stratification by region, season, and risk group	PMI resident advisors	Ongoing updates will be made as new data sets are released; Quarter 2 prior to Malaria Operational Plan season	AOR to circulate to wider PMI team and resident advisors. In-country presentations during technical assistance visits	Completed
4. Annex to ITN Use and Access for PMI Countries report	PMI	Quarter 3	Inclusion in the next update of the ITN Use and Access for PMI Countries	Completed

containing country maps			report	

ME.8 Operational Research

ME.8.A Expert Committee Meeting

Brief activity description: The Expert Committee met twice to discuss research priorities and plans for developing operational research (OR) concept notes that would obtain PMI approval.

Status (including next steps, challenges, and opportunities, if any): The Expert Committee met by phone in early Quarter One and in person on February 8, 2016, and reviewed two concept notes on outdoor malaria transmission and on the SNP4 evaluation. Also discussed were support to Ghana on investigating patterns of net use, the updated calculation of the population access indicator and strategies for gaining acceptance for the new calculation, and the importance of completing the papers on continuous distribution pilots. In addition to the regular members (Matt Lynch, Hannah Koenker, Albert Kilian, Christian Lengeler, Josh Yukich, and Megan Fotheringham), we invited Fredros Okumo from Ifakara Health Institute to participate and assist with outdoor malaria transmission discussions. At the Year Three work plan meeting in July 2016, the group met again to talk through Year Three research priorities, reflected in the Year Three work plan. These focus on implementing the Zanzibar outdoor biting and behaviors study and consolidating the evidence from NetWorks and VectorWorks continuous distribution activities.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.8.A.1 research agenda				
2. Updated research agenda in line with PMI priorities	PMI	Quarter 1	Project work plan	Complete

ME.8.B Concept Notes and IRB Preparation for Identified Study Topics

Brief activity description: The concept note for outdoor malaria transmission in Tanzania's Lake Zone and in Zanzibar was completed, vetted by PMI Tanzania, and approved by the Zanzibar Malaria Elimination Programme and NMCP Tanzania. It was then reviewed by the PMI OR Committee, and the Lake Zone site was dropped. OR Committee approval was obtained on September 12, 2016. We canceled concept notes on durable wall liner (DWL) operational issues, as the corresponding research study is not proceeding.

Status (including next steps, challenges, and opportunities, if any): In close collaboration with PMI Tanzania and Ifakara Health Institute, VectorWorks drafted a concept note to add two sites to an approved TDR study on outdoor malaria transmission currently being carried out in Tanzania and Burkina Faso. The two additional sites are Lake Zone and Zanzibar, where considerable malaria control efforts have taken place. This concept note was reviewed at the Expert Committee meeting on February 8, 2016, discussed by PMI teams in Tanzania, and presented and approved by the respective managers of the Zanzibar Malaria Elimination Programme and NMCP Tanzania in late March. During discussions with the PMI OR Committee, the Lake Zone site was dropped. A lengthy review process by PMI led to postponement of the first round of fieldwork to mid-November 2016. IRB applications are currently in review at the Zanzibar Medical Research

and Ethics Committee and at Johns Hopkins University's IRB; study preparations are under way, including meetings with the Zanzibar Malaria Elimination Programme and Ifakara Health Institute, data collector interviews, and site selection.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: ME.8.B.1 rapid ITN coverage (rejected); ME.8.B.2 parasitemia and net integrity (tabled); ME.8.B.5 semi-field testing (rejected).				
3. Concept note for study documenting the risk of outdoor transmission and IRB submission if approved	PMI OR committee	Quarter 2	PMI OR committee	Approved by PMI OR Committee on September 12, 2016
4. Concept note for study to evaluate operational issues related to durable wall liners; IRB submission if approved	PMI OR committee	Quarter 1	PMI OR committee	Canceled—concept note cancellation on July 14, 2016

ME.9 Net Preference Literature Review

Brief activity description: In June 2016 VectorWorks submitted a report to the VCTEG on findings from a literature review and data analysis of the effect of preferences for nets on net use. These findings are expected to inform procurement decisions for various donors, in combination with activity ME.10.

Status (including next steps, challenges, and opportunities, if any): Findings were presented at PMI and on an AMP call in Quarter One, Year Two. The report was updated slightly based on feedback about procurement language from the Global Fund in August 2016, and resubmitted to WHO for sharing with the VCTEG. We anticipate a VCTEG meeting in Quarter One, Year Three. In Year Three, we plan to submit this report as a manuscript for peer review.

Deliverable	Audience	Timing	Dissemination Plan	Status
Net preferences literature review	VectorWorks project team, PMI AOR	Quarter 1	Internal report; may feed into preparation of a summary report/article with ME.10 deliverables	In process

ME.10 Break-Even Analysis for Procurement of Conical Nets

Brief activity description: Josh Yukich developed the mathematics to calculate whether procuring more expensive nets that may be used at higher rates is worthwhile. This has been translated into a simple Microsoft Excel tool that can be used by program planners, and is integrated into the Net Preference Literature Review in ME.9.

Status (including next steps, challenges, and opportunities, if any): Josh Yukich developed a PowerPoint summary of the math involved in calculating whether procuring more expensive nets (at a loss in overall ITN coverage, assuming the budget is fixed) is worth the gains in net users. VectorWorks then translated these formulas into an Excel tool, whereby programs can enter costs of the different nets, and

the known or expected differences in net use, to calculate (1) whether it is worth switching (yes/no) and (2) the number of net users lost or gained by switching. The overall takeaway is that conical nets, although used more in some countries than rectangular nets, are not used sufficiently more to justify the cost of procuring them. Overall coverage would still drop significantly, assuming a fixed budget, if conical nets are procured at current prices. This finding has been integrated into the Global Fund's guidance note for the upcoming funding cycle. When size of the net is considered, the number of users per net increases, providing more protection, and this tool demonstrates that purchasing larger nets may provide value for money if more individuals can sleep under them.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Cost tradeoff report	VectorWorks project team, PMI AOR	Quarter 3	Internal report; may feed into preparation of a summary report/article with ME.9	Complete; combined with ME.9 report
2. Microsoft Excel tool	VectorWorks project team, PMI AOR	Quarter 3	PMI, VCWG, Global Fund, NMCPs	Complete

ME.11 Characterizing Risk of Outdoor Malaria Transmission

Brief activity description: In Year Two, VectorWorks carried out a literature review on human behavioral drivers of residual malaria transmission. The review summarizes activities that can present risk for malaria transmission, as well as the methodologies that have been used to measure and characterize these activities. Search terms were identified and refined through consultation with an informationalist at the Johns Hopkins Bloomberg School of Public Health. Searches were carried out through PubMed and Google Scholar. Additional articles were identified through hand searches of all references in articles identified through the initial search.

Status (including next steps, challenges, and opportunities, if any): In Year Three, VectorWorks will write up the results of the literature review for publication. This work will also complement residual malaria transmission research in Zanzibar to be carried out through VectorWorks Tanzania in Year Three.

Deliverable	Audience	Timing	Dissemination Plan	Status
Publishable review of literature on outdoor malaria transmission, characterizing outdoor activities that may present risks for malaria transmission	PMI, VCWG	Delayed to Quarter 2, Year 3	Peer-reviewed publication	In process

ME.12 Revisions to the Malaria Social and Behavior Change Communication Indicator Guide

Brief activity description: The guide is being updated based on feedback from members of the RBM SBCC Working Group. Key updates include: the addition of data sources other than large national surveys, addressing the contribution of health provider behaviors, updating knowledge indicators to reflect diagnostics, and guidance on how to select and prioritize indicators. The guide also contains mini-case studies/examples of how various countries and programs have used and adapted the content in the guide.

Status (including next steps, challenges, and opportunities, if any): A consultant, Janita Bhana, was hired to consolidate feedback and lead the drafts. The first set of key questions and issues was presented at a meeting in August 2016, held in Baltimore, and another set of updates, questions, and issues were presented at the M&E Task Force breakout session in Dakar in September 2016. The consultant submitted a second draft, which is under review and revision with the M&E task force leads. Because the number of survey questions can be quite long and duplicative, a PhD student was hired to analyze the data from the HC3 project malaria surveys to identify the survey questions that are most strongly linked to the behavioral determinants being measured. The analysis and revisions are scheduled to be completed by November 2016.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Revised Malaria SBCC indicator guide	PMI, CCoP, AMP	Delayed to Quarter 2, Year 3	CCoP, Springboard, AMP, RBM	In process

ME.13 Indoor Residual Spraying and ITNs Technical Assistance

Brief activity description: Our initial assessment of whether ITN use is different in indoor residual spraying (IRS) areas found that there are not programmatically significant differences in PMI countries, as described in the ITN Access and Use Report. A more detailed analysis was conducted with data from Uganda where we compared similar clusters; ITN use was not significantly different in similar IRS and non-IRS areas.

Status (including next steps, challenges, and opportunities, if any): As new data sets are released, we will include IRS stratification in the ITN Use and Access for PMI Countries report. In Year Three we plan to look at subanalyses, comparing ITN use in IRS areas to ITN use in similar non-IRS areas in a given country, as the current ITN Use and Access for PMI Countries report provides a nationwide estimate.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. ITN use in the context of IRS report	PMI	Quarter 3	PMI	Complete

Objective 3: Promote and Support Country-Level Implementation of Malaria Prevention Activities (IM)

IM.1 Revise the ANC-EPI Guide ("Keep Up Guide")

Canceled in Modification 1, Year Two (June 3, 2016)

IM.2 Community Distribution Guide

Brief activity description: The community distribution guide consolidates lessons learned from experiences in Madagascar, Zanzibar, Nigeria, and South Sudan. The document aims to present information that will help planners decide whether community-based distribution is an appropriate option for their setting, and to offer practical recommendations for developing a system of community-based distribution. Topics include strategy design, timelines, logistics, training, M&E, accountability, and SBCC. While most of the draft was completed in early Year Two, further finalization was placed on hold until the completion of the Zanzibar process evaluation in Quarter Two so that a more robust exploration of the Zanzibar experience could be reflected in the guide.

Status (including next steps, challenges, and opportunities, if any): VectorWorks completed the guide in Year Two. The guide was translated into French and circulated through the AMP and VCWG email list. It was also sent to subscribers of the VectorWorks newsletter, promoted through VectorWorks Facebook page and Twitter account, and posted on the VectorWorks and CD Toolkit websites**.**

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Community distribution guide	NMCPs, VCWG, implementing partners, PMI RAs, HWG consultants	Quarter 3	AMP email list, VCWG email list, PMI resident advisors, and ITN working groups in-country during technical assistance visits (USBs loaded with the guide and templates/tools will be shared in country); HWG consultant trainings and subregional network meetings	Completed July 25, 2016

IM.3 Usability Testing for Online Continuous Distribution Toolkit

Brief activity description: VectorWorks conducted usability testing of the online CD Toolkit in Tanzania during Year One. Usability testing of the Toolkit is done with stakeholders who may use the Toolkit and helps to inform improvements to the Toolkit. During the first half of Year Two, VectorWorks analyzed the data from the usability testing conducted in Year One, and finalized a usability report that was submitted to PMI and approved.

Status (including next steps, challenges, and opportunities, if any): This activity was completed in the first half of Year Two. The usability testing results were used to inform the development of the new CD Toolkit (described in activity IM.8).

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Usability testing protocol and report	VectorWorks staff, AOR	Quarter 1	Staff email list, AOR submission	Complete

IM.4 Integrating Care SBCC into Implementation

Brief activity description: VectorWorks has disseminated products that summarize the evidence regarding net care SBCC strategies and the effect on increased net longevity, including the results of pilots in Nigeria and Uganda and the NetWorks Summary Series: Care and Repair. A next step is for organizations and entities that communicate about malaria prevention to incorporate net care messaging into their communication strategies. To facilitate this transition, VectorWorks developed a practical and easy-to-follow guide on how to integrate net care messaging into malaria SBCC strategies. During the current reporting period, VectorWorks completed and obtained PMI approval of this guide, titled *Incorporating Net Care into Malaria Social and Behavior Change Communication Strategies: A Step-by-step Guide*. The guide applies the five steps of CCP's P-process, a tool for planning strategic, evidence-based health communication programs, to develop net care messaging, summarizes existing formative research, lists the key behaviors to promote and options for gender inclusivity in messaging, and provides practical methods for integrating net care SBCC into an existing malaria prevention SBCC strategy.

Status (including next steps, challenges, and opportunities, if any): VectorWorks presented the guide at the annual meeting of the RBM Communication Community of Practice in Dakar, Senegal, in September 2016. The completed guide has been disseminated through the AMP and VCWG email lists as well as through the VectorWorks quarterly newsletter. VectorWorks has also completed a translation of the guide in French. Dissemination of the guide will continue over the next several months.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Step-by-step guide to integrating gender-inclusive ITN care key messages into existing ITN SBCC platforms	NMCPs, SBCC officers, PMI resident advisors	Quarter 4	AMP, VCWG, CCoP, HC3-Springboard, Core Group email groups	Complete

IM.5 Designing Accountability Mechanisms for ITN Distribution

Brief activity description: With the recent cancellation of the Tanzania national voucher scheme by DFID due to fraud, and the recent attention by the USAID Office of Inspector General into the theft of PMI drugs and commodities, the issue of improved accountability for commodity distribution is rapidly gaining importance for maintaining long-term community access to ITNs. Better methods for including fraud prevention and documenting the susceptibility of continuous distribution channels to fraud losses are important factors for consideration by planners of continuous distribution programs.

Status (including next steps, challenges, and opportunities, if any): During Year Two, a team of two consultants, Hamisu Hassan and Kate Kolaczinski, conducted interviews with personnel from a number of donors, NMCP representatives, and implementing partners. The draft report contains a review of the risks at each point of the ITN supply chain; best practices used and recommended by key informants for preventing, identifying, and mitigating the effects of fraud, theft, or diversion of ITNs; and a summary of available guidance. The report covers both mass campaigns and continuous distribution. It is currently being edited and will be submitted in Year Three, Quarter One.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Report on fraud prevention and risk mitigation measures for ITN distribution programs. If deemed valuable, report and recommendations for wider distribution will be prepared.	Project team, AOR, PMI Potentially other donors, implementing partners, and NMCPs	Delayed to Quarter 1, Year 3	Review by project and AOR, PMI	In process

IM.6 Updating School Distribution Guide

Canceled in Modification 1, Year Two (June 3, 2016)

IM.7 Assessing the Utility of Validation Exercises for School Distribution

Brief activity description: Validation exercises occur following quantification in mass campaigns and in school distributions. They are intended to minimize leakage of nets due to inflation of local population or enrollment numbers by local planners. Validation assists in calculating exact quantities of ITNs required at each distribution point, to avoid the transport costs of repositioning ITNs after distribution.

In Year Two, VectorWorks conducted interviews with in-country personnel to understand and document the validation processes used for school distribution in Ghana, Nigeria, and Tanzania. The resulting report included an overview of issues found in quantification data, best practices for ensuring the quality of the data, and sample training and quality assurance tools.

Status (including next steps, challenges, and opportunities, if any): This report was submitted and approved in Quarter Four. It was disseminated through the VectorWorks newsletter, Facebook, Twitter, and posted to the website.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Report	NMCPs, AMP, PMI resident advisors	Quarter 4	AMP	Completed

IM.8 Online Continuous Distribution Toolkit

Brief activity description: VectorWorks worked with a consultant to synthesize the resources created under NetWorks and other ITN projects to create a simple step-by-step online CD Toolkit. The CD Toolkit includes tools, how-to guides, generic templates, and the steps required to implement each CD channel. This will replace the former CD Toolkit that underwent usability testing in Year One under IM.3. The CD Toolkit will take the user through steps to decide what channel(s) to select for their context, what tools to use, when to use the different tools, and instructions on how to use the resources.

Status (including next steps, challenges, and opportunities, if any): VectorWorks completed the site architecture of the CD Toolkit and the draft text. In Quarter One of Year Three, the Toolkit text will be copy edited, finalized, and entered into the site. A beta version of the Toolkit site will be launched in Quarter One. Any feedback or suggestions will be noted and used to inform the final version of the CD Toolkit.

In addition to finalizing the CD Toolkit site, VectorWorks is working with partners and PMI to create a list of PMI and other funded countries doing continuous distribution as a target for dissemination and testing of the CD Toolkit. The list will be a great resource for CD outreach and promotion of specific CD-related VectorWorks resources.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. CD Toolkit Outline	PMI and implementing partners	Delayed to Quarter 1 Year 3	Share by email	In process
2. CD Toolkit	Implementing partners	Delayed to Quarter 2, Year 3	Share via AMP email list, VCWG email list, PMI resident advisors, and ITN working groups in-country during technical assistance visits	In process

IM.9 Private-Sector Approaches and Considerations

IM.9.1 Private-Sector Model Design

Brief activity description: Based on the *Making Markets Work for the Poor* model,[3] VectorWorks intended to design a total market approach model specifically for nets, and robust enough to launch a pilot to generate evidence that the private sector can be a feasible, cost-effective channel in specific settings. This was to be based on consultant desk literature review, and field meetings with in-country stakeholders including manufacturers. In March 2016 we focused this activity on Tanzania for greater specificity in the model design and to leverage similar private sector pilot development activities in the Tanzania Year 2 workplan (IM.14). However, delays in implementation of Core IM.9.2 and Tanzania IM.14 have prevented sufficient data from being collected in time to inform this model design in Year 2.

[3] de Ruijter de Wildt M, Elliott M, Hitchins R. *Making Markets Work for the Poor: Comparative Approaches to Private Sector Development*. Bern (Switzerland): The Springfield Centre; 2006. Available from: http://www.springfieldcentre.com/wp-content/uploads/2012/10/sp0602.pdf

Status (including next steps, challenges, and opportunities, if any): An EIWG call in Quarter 4 of Year 1 sparked discussion on the contributions of private sector models. In Quarters 1 and 2 of Year 2, PSI developed terms of reference for consultants to conduct a market analysis, and, given the need for the analysis to be context specific, the market analysis component of this activity was merged with the Tanzania work plan activity IM.14 as described in the semiannual report., This permits the analysis to be specific to a time and place in order to best stimulate manufacturer and distributor investment in retail distribution. PSI Tanzania conducted the market landscape analysis in Tanzania in Quarter Four, and currently has the following deliverables in preparation:

- Landscape analysis: draft report by consultants being revised.
- Retail audit of outlets selling ITNs being done as part of the ACTWatch survey; results expected in December 2016.
- Focus groups on consumer preferences currently on hold, pending finalization of the landscape analysis.

Findings from the discrete choice experiment report (ME.3.B) will also feed into the activity. The project had planned to work with the EIWG through a task force, which has not yet occurred given data delays, and then to develop a concept note with this task force for the pilot model. In Year 3, this data will be compiled and presented to Tanzania stakeholders in a stakeholders' meeting (Tanzania IM.14.B). In the Year 3 core workplan, a separate activity (IM.9.4) has been developed which will obtain a decision from manufacturers about participation in a potential pilot. If we cannot obtain a positive decision on participation in a pilot from sufficient manufacturers, we will move to formally cancel core deliverable IM.9.1.

IM.9.2 Landscape Market Analysis

Brief activity description: A series of very informative and useful meetings were held at ASTMH 2015 and at the February 2016 VCWG meeting with representatives of several ITN manufacturers. Valuable contacts were made in these meetings, and they have contributed to useful input into the design of the market analyses currently being finalized by Population Services International (PSI) in Tanzania. All manufacturers we met with showed some interest in retail sales, although each one had specific reservations about doing so.

Status (including next steps, challenges, and opportunities, if any): A report on the discussions from ASTMH was submitted to PMI in January 2016; follow—up discussions held at VCWG were described in Charlotte Eddis' trip report, and PSI submitted an updated and combined report to CCP in June 2016. Through an oversight, this deliverable was not submitted to PMI. Some key points made during the meetings included:

- Manufacturers felt they needed a solid market analysis in order to make a decision as to whether they would be interested in entering/re-entering the retail market in any countries.
- Significantly, none of the manufacturers interviewed mentioned a consumer subsidy as a necessary feature for their decision.
- National registration processes and identifying a reliable national distributor were two other points of concern expressed.

IM.9.3 Operational Issues for Introduction of Next-Generation Nets

Brief activity description: The switch from untreated nets to ITNs may provide key insights relevant for the switch from ITNs to next-generation nets, in terms of operational issues for distribution (how to procure, distribute, and differentiate them). VectorWorks is gathering experiences to inform potential recommendations to feed up through VCWG.

Status (including next steps, challenges, and opportunities, if any): VectorWorks met with LLIN manufacturers in conjunction with the activities above, and conducted additional interviews to gain insights and recommendations based on experiences during the transition from untreated nets bundled with insecticide treatment kits to LLINs. Key issues around procuring, distributing, and differentiating next-generation nets from pyrethroid LLINs were identified. The project also raised these issues at the LLIN Priorities workstream meeting at VCWG in February 2016, but lack of time inhibited a full discussion. VectorWorks drafted recommendations for submission to PMI in Quarter 1 of Year 3.

The next steps will be to share the finalized report with PMI.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Landscape market analysis (desk review)	AMP EIWG Task Force members (PMI, implementing partners, NMCPs, other market players)	Delayed to Quarter 2, Year 3	Share desk review analysis with members of the task force via email	In process
2. Landscape market analysis (interviews with manufacturers—key market players)	AMP EIWG Task Force members	Delayed to Quarter 2, Year 3	Share market intelligence report with members of the task force via email	To be submitted
3. Draft recommendations for introducing next-generation nets	PMI	Delayed to Quarter 1, Year 3	Submit to AOR	Submitted

IM.10 ITN Distribution Technical Assistance Emergency Fund

Brief activity description: VectorWorks is responding to requests from PMI countries for technical assistance with mass ITN campaigns. We are providing specific technical assistance from a revolving fund, to allow for timely deployment of consultants while waiting for PMI country obligations to be processed.

Status (including next steps, challenges, and opportunities, if any): VectorWorks has provided technical assistance for campaign assistance in Senegal, Malawi, and Uganda. We set up master consulting contracts with designated AMP-trained consultants:

In Senegal, Yves Cyaka completed three missions, in January, April, and June 2016 and an in-country consultant, Moussa Ndour, provided ongoing assistance to the Senegal NMCP from February 2016 through the end of the campaign in December 2016. Weekly situation reports (40) were written and circulated through AMP. The total Year 2 budget was $190,000. The Year 2 activities cost $80,637, leaving $109,363 to be used for activities in Year 3.

In Malawi, Yves Cyaka and Jeronimo Zandamela provided two and three weeks, respectively, of technical assistance from February 2 – March 6, 2016 using an approved budget of $57,200, that was forward-funded from the core budget. During these missions the consultants worked with the Malawi NMCP to plan and carry out the mass LLIN campaign in 19 districts using the phased approach by zone. Primary responsibilities of the VectorWorks consultants included transportation logistics where plans and tracking systems were developed and technical assistance including cascade trainings and distribution at site level.

In Uganda, Dorothy Onyango, Jeronimo Zandamela, and Greg Pirio provided technical assistance to Uganda's LLIN mass campaign in two sets of missions with dates spanning from April 16 – June 12, 2016. The consultants worked with the Uganda NMCP to plan for an upcoming mass LLIN Distribution. By the end of their mission the VectorWorks consultants drafted and finalized a training package, budget, micro planning package, macro and micro-logistics plans and tools, procurement request for transportation of nets, preliminary logistics plan of action, communication budget and a micro-planning tool. Mr. Pirio worked on developing a communication implementation timeline, which was integrated into the overall UCC timeline. The consultants faced the challenge of low attendance from critical staff from the Uganda NMCP due to conflicting priorities, causing delays. There were other delays in the planning stage in Uganda such as confirming sources of operational funding and shifting responsibilities amongst implementing partners. VectorWorks spent the approved budget of $150,000 that was forward-funded from the core budget.

Mission reports have been shared with the respective missions and NMCPs as per the consultants' contract terms.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Trip reports for each technical assistance mission	NMCP, PMI team, AMP	Ongoing	AMP website	Complete

Project Management (PM)

[PM.1 Start-up was completed in Year One.]

PM.2.A Website Enhancements and Maintenance

Brief activity description: VectorWorks continues to keep the VectorWorks website (www.vector-works.org) up to date with new resources, blog posts, and country information when available. VectorWorks also hosts M&E Malaria SBCC and NetCALC online training modules through the Johns Hopkins University training management system (TRAMS) site. VectorWorks continues to add new followers and likes to Facebook and Twitter on a regular basis through continued posting and promoted postings on Facebook.

Status (including next steps, challenges, and opportunities, if any): VectorWorks enhanced the website to have a few new features including "News" and "Opportunities" pages. It also simplified language and improved site architecture including search and other functionality.

The TRAMS site will transfer all of its courses over to CoursePlus in Year 3, which means all of our users will have to register for a new platform and will lose past data. VectorWorks has a transition plan to inform all users of the switch ahead of time to ensure a smooth transition.

Website Statistics, October 1, 2015 – September 30, 2016

Site	Page Views[a]	Bounce Rate[b]	Average Session Duration
DurabilityMonitoring.org	3,526	74.45%	2:45
Vector-Works.org	13,760	69.04%	2:23

[a] Page views: the total number of pages viewed. Repeated views of a single page are counted.
[b] Bounce rate: the percentage of single-page visits (i.e., visits in which the person left the site from the entrance page without interacting with the page).

Deliverable	Audience	Timing	Dissemination Plan	Status
1. VectorWorks website	PMI, implementing partners, NMCPs, malaria technical community	Ongoing	Including website address in correspondence, project documents, and maintaining a project email list	Ongoing
2. Online training modules for SBCC M&E and NetCALC	PMI, implementing partners, NMCPs, malaria technical community	Ongoing	MailChimp and email lists, social media	Hosting ongoing

PM.2.B Knowledge Management Dissemination and Improved Communication

Brief activity description: VectorWorks worked with working groups and partners to put together a list of people to receive updates and newsletters from the project. In addition, VectorWorks created a Facebook page (VectorWorks Malaria) and a Twitter account (@vectormalaria) that continue to gain followers. New VectorWorks promotional materials were created, including a brochure and a fact sheet. We will also upload NetWorks and VectorWorks photographs to Photoshare, where they can be used effectively, with pertinent captions and appropriate crediting, by PMI and other implementing partners for high-impact reports.

Status (including next steps, challenges, and opportunities, if any): VectorWorks established a contact list and will continue to add to it as new contacts become available. We are posting new content daily to the Facebook and Twitter accounts. Twitter had 319 followers by the end of Quarter Four, and Facebook had 444 likes.

Facebook and Twitter continue to bring visibility to VectorWorks. We gain new followers daily and create innovative content to bring in new followers/likes. In the coming year, we will continue to make dynamic and interesting content using platforms like Exposure.co and writing blog posts. There is a great opportunity to reach more people and new audiences.

Twitter Monthly Statistics, October 2015–September 2016, Total Followers = 319

Monthly	New Followers	Impressions	Profile Visits
October	26	2,969	213
November	23	1,744	181
December	63	8,586	580

January	19	5,948	309
February	57	7,378	555
March	27	12,100	536
April	15	17,600	559
May	20	13,500	180
June	17	8,723	254
July	12	7,315	304
August	18	10,600	452
September	21	7,453	218

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PM.2.B.1 internal procedures manual; PM.2.B.2 dissemination strategy.				
3. Newsletter	RBM partners and working groups, other vector control actors	Ongoing/quarterly	MailChimp and email lists	Four completed, last one sent in early October 2016
4. Contact list	VectorWorks team	Quarter 1	Email	Completed
5. VectorWorks Twitter and Facebook accounts	RBM partners and working groups, other vector control actors	Ongoing/monthly	Social media	Ongoing
6. Photoshare	PMI, implementing partners	Quarter 1	Photoshare	Ongoing

PM.2.C American Society of Tropical Medicine and Hygiene

Brief activity description: In Year Two, the project director spoke as part of a symposium on new vector control tools, organized by Abt Associates, and two posters were presented at the 2015 ASTMH annual meeting. VectorWorks met with PMI resident advisors, research colleagues, and updated themselves on new developments in ITNs and other technologies.

Status (including next steps, challenges, and opportunities, if any): The 2015 ASTMH annual meeting was attended by select staff. VectorWorks met with colleagues from Ghana, Tanzania, Nigeria, Zambia, and Zimbabwe to draft work plans and address implementation issues, and met with partners, including PSI and WHO-TDR. Matt Lynch presented on the panel "Next-Generation LLINs: Programmatic Issues." VectorWorks organized a 90-minute RBM Transition Oversight Committee, Partner Committee Work Stream briefing. In addition, Rebecca Shore live-tweeted the event on Twitter (@vectormalaria) and gave away 100 brochures.

At the 2016 meeting in November, VectorWorks will present or support the following presentations:

1. Hydrology Oral Presentation
2. Discrete Cost Experiment Poster Presentation
3. School Net Distribution in Tanzania Round 3 and 4 Poster Presentation
4. Zanzibar Poster Presentation
5. School Net Distribution in Tanzania Costing Poster Presentation

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Trip report	AOR	Quarter 1	AOR	Completed

PM.3 Gender Aspects of ITN Distribution and Use

Brief activity description: In Year Two, VectorWorks carried out activities aimed at integrating gender across project activities, and elevating the issue of gender and malaria through engagement with other projects and organizations working on the topic. VectorWorks operationalized the project's gender strategy, created in project Year One, and strengthened capacity in the two largest country programs—Tanzania and Ghana. This included developing and implementing a gender training curriculum for field staff, developing country-specific plans for integrating gender, identifying gender champions, and highlighting the work of gender champions through a blog post. VectorWorks also actively engaged with other groups working on gender and malaria, including the Global Fund Human Rights and Gender Working Group, University of Arizona, International Public Health Advisors, and the Africa Indoor Residual Spraying project.

Status (including next steps, challenges, and opportunities, if any: In order to sustain gains made to date, the VectorWorks project will provide ongoing support to field teams internally to ensure that gender issues are addressed across VectorWorks project activities, and continue engagement on gender and malaria issues with external projects and organizations.

PM.3.A Gender Analysis

[Completed in Year 1]

PM.3.B Gender Strategy

[Completed in Year 1]

PM.3.C Gender Analysis Toolkit for Country-Level ITN Distribution Programs

Canceled in Modification 3, Year Two (August 15, 2016)

PM.3.D Gender Training for VectorWorks Field Staff

Brief activity description: In Year Two, VectorWorks developed and implemented a gender training curriculum for field staff in Ghana and Tanzania. Through the training, VectorWorks engaged field teams to develop country-specific addendums to the project gender strategy, and identified two gender champions

per country from existing field staff to lead the gender initiative. VectorWorks highlighted the work of the Tanzania gender champions and discussed gender and malaria in a Year Two blog post.

Status (including next steps, challenges, and opportunities, if any): In Year Three, VectorWorks gender focal persons will provide technical assistance to gender champions in Tanzania and Ghana to operationalize country-specific gender activities, make better use of M&E data to identify and address gender gaps, and ensure gender is included in project reporting. This will include ongoing communication between Baltimore and gender champions, facilitation of discussions across Ghana and Tanzania gender champions, as well as providing direct technical support during supportive supervision visits. VectorWorks gender focal persons will also carry out gender training for other country programs, as needed.

Deliverables	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: PM.3.A gender analysis; PM.3.B gender strategy				
C. Gender Analysis Toolkit for ITN Distribution Programs	PMI; AMP	Quarter 4	PMI; added to AMP Toolkit	Canceled
D.1 Training curriculum	PMI; VectorWorks staff	Delayed to Quarter 4	PMI	Submitted
D.2 Country-specific addendums to VectorWorks gender strategy for Tanzania and Ghana	PMI; VectorWorks staff	Quarters 3, 4	PMI	Submitted

PM.4 Project Communications, Coordination, and Reporting

Brief activity description: The VectorWorks project implements robust systems to coordinate among its own staff, assess its performance, and document progress.

Status (including next steps, challenges, and opportunities, if any): VectorWorks continues to meet on a weekly basis to go over pertinent administrative, technical, and operational aspects of the project. Financial reports are submitted quarterly, and narrative progress reports, such as this one, are submitted twice a year. Oversight, planning, and management of collaborative activities in many of our country programs require supervisory visits by either the project director, deputy director, or field operations director. During this reporting period, the project director has been on three supervisory trips to Tanzania, one of which was cost-shared with another project, and one supervisory trip to Ghana. The field operations director has been on six supervisory trips to Tanzania, Liberia, and Ghana.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Weekly internal conference call (annotated agendas)	VectorWorks team	Weekly	n/a	On track

2. Weekly PMI/project director and deputy director coordination call (call minutes)	AOR, project director, deputy director	Weekly	n/a	On track
3. Annual project work plan planning meeting	Partners, PMI project team	Quarter 4	PMI project team	On track
4. Internal planning meeting	Project team	Quarter 4	n/a	On track
5. Bi-monthly PMI update meetings	PMI		n/a	On track
6. Narrative progress reports	PMI	(Due from partners at the end of October and end of April; due to USAID November 15, May 15)	Via email	On track
7. Financial reports	PMI	Quarterly to PMI	Via email	On track
8. Financial training workshop for field officers on compliance and new White House Office of Management and Budget regulations	CCP field offices	Quarter 1	n/a	Complete
9. Project supervision (trip report)	AOR, PMI/Ghana; PMI/Tanzania	Quarter 3	AOR, PMI/Ghana	Complete

Cost-Share Update

As of September 20th 2016, we calculate the cost-share contributions for VectorWorks as described in the table below. With the signature of the DFID grant for PSMP (Private Sector Marketing Project) in Ghana on July 4th, we anticipate being able to meet 100% of VectorWorks cost-share requirements with those funds (approximately 5 million GBP) in the coming years.

Category	Description	Doc Number	Type	Valuation Method	Value	Date Added
Funded Project Cost	Entire ESMI grant 116667- Oct 2014-Jun 2015 less items from prior periods	Entire grant Oct14-Jun15 less prior period amts	Other Expenses	Actual Cost	$ 549,739.13	7/27/2015
Funded Project Cost	Entire ESMI grant 116667- Jul 2015-Sept 2015	Entire grant Jul15-Sep15	Other Expenses	Actual Cost	$ 328,006.44	11/2/2015
Funded Project	Severance Expenses for ESMI grant	115158674	Salary	Actual Cost	$ 45,000.00	11/2/2015

Cost	(116667) which were funded from discretionary					
Funded Project Cost	Trailing Severance Expenses for ESMI grant (116667) which were funded from discretionary	115163231	Salary	Actual Cost	$ 367.76	11/2/2015
Funded Project Cost	ATLANTA - Matt Lynch Airfare paid externally for activities that benefit VectorWorks concurrently		Air Ticket	Actual Cost	$ 493.76	
Funded Project Cost	DOMINICAN REPUBLIC - Matt Lynch Airfare paid externally for activities that benefit VectorWorks concurrently		Air Ticket	Actual Cost	$ 663.60	
Funded Project Cost	Entire Agreement 123843 Jul 2016 - Sep 2016 Inception period invoice - fixed amount per budget		Other Expenses	Actual Cost	$ 382,152.00	10/31/2016
				Total	**$ 1,306,422.69**	
Potential Required Cost Share per VectorWorks Obligations through Sept 30, 2016:					$ 1,699,747.50	
*Note: Required cost share is 10% of obligated costs, therefore it will change as obligation is added						

Environmental Monitoring and Mitigation Report

While the majority of the EMMR is reported annually, as per EMMR Part 2 of 3, VectorWorks is required to report semiannually on the following:

Category of activity from Section 5 of VectorWorks IEE	**Describe specific environmental threats of your organization's activities**	**Description of mitigation measures for these activities**	**Who is responsible for monitoring**	**Monitoring indicator**
Education, technical assistance, training, etc.	This activity involves classroom training only and has no negative impacts on the environment	Note: The majority of VectorWorks activities involve technical leadership and support, rather	N/A	N/A

		than distribution of nets. VectorWorks does not procure insecticide-impregnated products. N/A		
Distribution of Public Health Commodities	Reduced efficacy of ITNs and environmental/human health impacts of ITNs are misused	Applies only in countries where VectorWorks distributes ITNs and is responsible for SBCC messaging	VectorWorks project director and AOR	Project Indicators (GHANA): 17,603 people reached through SBCC messages on ITN care, particularly washing of nets. This was through training of health workers and district officials.
				Communication materials (radio, print, TV) developed on correct ITN care and use: (CORE): This year *Incorporating Net Care into Social and Behavior Change Communication Strategies: A Step-by-Step Guide* was completed and distributed. In this guide, we recommended washing nets in a basin or bucket as an environmental precaution.
		Applies only in countries where VectorWorks distributes ITNs and is not responsible for SBCC messaging: Active coordination with SBCC partner to ensure messaging is adequate and comprehensive	VectorWorks project director, AOR, with cooperation of activity manager for SBCC bilateral and activity manager for VectorWorks	VectorWorks project collaborated with Tanzania Communication and Development Center (TCDC) in a message design workshop where different communication materials in a phased stages were conceived, prototype-developed, pretested, re-edited, approved by government authorities and eventually mass produced and distributed widely through different

				channels. The project team ensured that the environmental mitigation and monitoring plan requirements on SBCC materials are adhered to during all stages.

Appendix A: Deliverables Table

Note: Text in gray indicates Year One deliverables that were completed.

Code	Deliverable	Status	Year Completed	
		09/30/2016	1	2
PC.1.A.1	VCWG meeting conducted	**Completed**	**X**	
PC.1.A.2	VCWG meeting conducted	**Completed**		**X**
PC.1.B.1	RBM 12/2014 board meeting trip report	**Completed**	**X**	
PC.1.B.2	RBM 12/2014 task force meeting trip report	**Completed**	**X**	
PC.1.B.3.1	RBM 3/2015 board meeting trip report	**Completed**	**X**	
PC.1.B.3.2	RBM Transition Oversight Committee Meeting	**Completed**		**X**
PC.1.B.4.1	RBM additional task force meeting trip report	**Completed**	**X**	
PC.1.B.4.2	December 2015 RBM Board meeting trip report	**Completed**		**X**
PC.1.B.5.1	RBM 5/2015 Board meeting trip report	**Completed**	**X**	
~~**PC.1.B.5.2**~~	~~May 2016 board meeting trip report~~	**Canceled**		
PC.1.C.1	VCWG meeting joint trip report	**Completed**	**X**	
PC.1.C.2	Presentations from VCWG meeting	**Completed**	**X**	
PC.1.C.3	CD and Durability Work Stream work plans	**Completed**	**X**	
PC.1.C.4	VCWG Annual meeting report	**Completed**	**X**	
PC.1.D.1	Presentations from AMP meeting	**Completed**	**X**	
PC.1.D.2	AMP meeting joint trip report	**Completed**	**X**	
PC.1.D.3	Revised AMP Toolkit	**In Process**		
PC.1.D.4	Four Presentations Year 2	**Completed**		**X**
PC.1.D.5	Trip Report AMP/VCWG Meeting Year 2	**Completed**		**X**
PC.2.A.1	Input on vector control "graduation" document	**Completed**	**X**	
PC2.A.2	Support to SwissTPH to liaise with GMP on 'graduation' document	**Completed**		**X**
PC.2.B.1	Manuscript on transitioning from campaigns to CD	**In Process**		
PC.2.B.2	Coordination meetings on transitioning from campaigns to CD	**Completed**		**X**
PC.2.B.3	Presentation to SRN/HWG meetings/workshops	**Postponed**		
PC.3.A.1	Training materials on use-to-access ratio indicator	**Completed**	**X**	
PC.3.A.2	Update HWG guidance on use-to-access ratio indicator	**Completed**	**X**	
PC.3.A.3	Presentation of rationale and method for improved access indicator for AMP and RBM/WHO and MERG	**Completed**		**X**
PC.3.A.4	Tools for M&E program staff on the RBM and/or VectorWorks websites	**In Process**		
PC.3.A.5	Publishable quality paper on the new calculation and its application	**Postponed**		
PC.3.B.1	Narrative analysis plan with do-files for source of nets data	**Completed**		**X**
PC.3.B.2	Report on PMI countries using the analysis plan	**In Process**		
PC.4.1	Literature review summarizing evidence addressing ITN misuse for fishing	**Completed**		**X**

Code	Deliverable	Status	Year Completed	
		09/30/2016	1	2
PC.4.2	GIS report on population estimates	**Submitted**		**X**
PC.4.3	Potential harm from insecticide leaching report	**Completed**		**X**
PC.4.4	Potential harm from small-mesh nets report	**Completed**		**X**
PC.4.5	Set of survey instruments	**Submitted**		**X**
PC.4.6	Summary process manual	**Not Started**		
PC.4.7	Pilot test survey instruments in two sites (TBD) report	**Not Started**		
PC.4.8	Final decision tree	**Not Started**		
PC.4.9	Complete net misuse Toolkit	**Not Started**		
~~**PC.5.1**~~	~~MIP WG trip report and presentation~~	**Canceled**		
PC.5.2	MIP WG trip report and presentation (Geneva)	**Completed**	**X**	
PC.5.3	MIP advocacy strategy	**Completed**	**X**	
PC.5.4	MIP Working Group Meeting	**Completed**		**X**
~~**PC.5.5**~~	~~F/U activity from advocacy strategy~~	**Canceled**		
PC.5.6	Tracking ANC attendance in Tanzania before and after ITN distribution report	**Not Started**		
PC.6	Working paper on alternative distribution strategies in urban areas	**In Process**		
PC.7	Maps for PBO net pilot areas	**Completed**		**X**
ME.1.1	Durability monitoring guidelines	**Completed**		**X**
ME.1.2	Durability monitoring standardized tools	**Completed**		**X**
ME.1.3	Durability monitoring data repository	**In Process**		
~~**ME.1.4**~~	~~Validation of Resistance to Damage score - inter-lab (consultative meeting/writing)~~	**Canceled**		
ME.2.A.1	Landscape report on alternative vector control tools	**Completed**	**X**	
ME.2.B.1	Quarterly newsletter alternative vector control tools	**Completed**	**X**	
ME.2.B.2	Quarterly newsletter alternative vector control tools	**Completed**		**X**
~~**ME.3.A.1**~~	~~Madagascar costing and output data report~~	**Canceled**		
ME.3.A.2	Tanzania costing and output data report	**Completed**		**X**
ME.3.A.3	Ghana health facility costing update	**In Process**		
ME.3.A.4	Mali health facility costing and output data report	**In Process**		
ME.3.A.5	Zanzibar CD costing	**Completed**		**X**
ME.3.B.1	Experimental Auctions Trip report	**Completed**		**X**
ME.3.B.2	Experimental Auctions Study report	**In Process**		
ME.4.1	External review of DWL study Tanzania trip report	**Completed**	**X**	
ME.4.2	Trip Report review panel meeting in Tanzania Durable Wall lining	**Completed**		**X**
ME.5.A.1	NetCALC 3.0	**Completed**		**X**
ME.5.B.1	Manuscript Madagascar community distribution pilot	**In Process**		
ME.5.B.2	Manuscript on Ghana school distribution pilot	**In Process**		
ME.5.B.3	Nasarawa community drug distributors pilot report	**Completed**	**X**	

Code	Deliverable	Status	Year Completed	
		09/30/2016	1	2
ME.5.B.4	Publishable quality manuscript on community CD pilot in South Sudan	**In Process**		
ME.6.1	Campaign strategies comparison paper	**Completed**		**X**
ME.6.2	Uganda Hang Up paper published	**Completed**	**X**	
ME.6.3	Ghana outdoor sleeping paper published	**Completed**	**X**	
ME.6.4	Nigeria durability paper published	**Completed**	**X**	
ME.6.5	Uganda care and repair endline published	**Completed**	**X**	
ME.6.6	Nigeria Cross River schools published	**In Process**		
ME.6.7	Hole Index Methods paper published	**In Process**		
ME.7.1	PMI report on access indicator	**Completed**	**X**	
ME.7.2	Subnational use of use-to-access ratio published	**In Process**		
ME.7.3	Updated PMI report on access indicator showing stratification by region, season and risk group	**Completed**		**X**
ME.7.4	Annex to ITN Use and Access for PMI Countries report containing country maps	**Completed**		**X**
ME.8.A.1	VectorWorks research agenda	**Completed**	**X**	
ME.8.A.2	Updated research agenda in line with PMI priorities	**Completed**		**X**
ME.8.B.1	Concept note on ITN monitoring	**Completed**	**X**	
ME.8.B.2	Concept note parasitemia and net integrity	**Completed**	**X**	
ME.8.B.3	Concept note on risk of outdoor transmission	**Completed**		**X**
~~**ME.8.B.4**~~	~~Concept note on DWL operational issues~~	**Canceled**		
ME.8.B.5	Concept note for linking Resistance to Damage scores with field damage	**Completed**	**X**	
ME.9	Net preference literature review	**Completed**		**X**
ME.10.1	Cost tradeoff report - conical nets	**Completed**		**X**
ME.10.2	Spreadsheet tool - conical nets	**Completed**		**X**
ME.11	Publishable review of lit on outdoor malaria transmission	**In Process**		
ME.12	Revised malaria SBCC indicator guide	**In Process**		
ME.13	ITN use in the context of IRS report	**Completed**		**X**
~~**IM.1**~~	~~ANC-EPI guide~~	**Canceled**		
IM.2	Community distribution guide	**Completed**		**X**
IM.3.1	Usability testing protocol and report for CD Toolkit	**Completed**	**X**	
~~**IM.3.2**~~	~~Updated CD Toolkit~~	**Canceled**		
IM.4	Guide for integrating Care into ITN SBCC platforms	**Completed**		**X**
IM.5	CD accountability recommendations report	**In Process**		
~~**IM.6**~~	~~Update school distribution guide~~	**Canceled**		
IM.7	Assessing the utility of validation exercises in school distribution report	**Completed**		**X**
IM.8.1	Online Continuous Distribution Toolkit V2 Outline	**Completed**		**X**
IM.8.2	Online Continuous Distribution Toolkit V2	**In Process**		

Code	Deliverable	Status	Year Completed	
		09/30/2016	1	2
IM.9.1	Landscape Market Analysis desk analysis	**In Process**		
IM.9.2	Landscape Market Analysis interviews	**In Process**		
IM.9.3	Operational issues for introduction of next generation nets	**In Process**		
IM.10	Trip reports for each technical assistance mission	**Completed**		**X**
PM.1.1	Field operations director hired	**Completed**	**X**	
PM.1.2	KM officer hired	**Completed**	**X**	
PM.1.3	Budget Analyst hired	**Completed**		**X**
PM.1.4	Tropical Health subaward	**Completed**	**X**	
PM.1.5	PSI subaward	**Completed**	**X**	
PM.1.6	Tulane subaward	**Completed**	**X**	
PM.1.7	MEDA subaward	**Completed**	**X**	
PM.1.8	Swiss Tropical and Public Health Institute subaward	**Completed**		**X**
PM.1.9	Branding and marking plan	**Completed**	**X**	
PM.1.10	Core work plan	**Completed**	**X**	
PM.1.11	Performance monitoring plan	**Completed**	**X**	
PM.2.A	Website	**Ongoing**		
PM.2.B.1	Internal KM procedures manual	**Completed**	**X**	
PM.2.B.2	Dissemination strategy	**Completed**	**X**	
PM.2.B.3	Newsletter	**Ongoing**		
PM.2.B.4	Contact List	**Ongoing**		
PM.2.B.5	VectorWorks Twitter and Facebook Account	**Ongoing**		
PM.2.B.6	Photoshare	**Ongoing**		
PM.2.C.1	ASTMH 2015 Trip Report	**Completed**		**X**
PM.3.A	Gender Analysis	**Completed**	**X**	
PM.3.B	Gender Strategy	**Completed**	**X**	
~~**PM.3.C**~~	~~Gender Analysis Toolkit for ITN distribution programs~~	**Canceled**		
PM.3.D.1	Training Curriculum	**Submitted**		
PM.3.D.2	Country-specific addendums to VectorWorks gender strategy for Tanzania and Ghana	**Submitted**		
PM.4.1	Weekly internal conference call agendas	**Ongoing**		
PM.4.2	Weekly PMI/VectorWorks coordination call	**Ongoing**		
PM.4.3	Annual work plan meeting	**Ongoing**		
PM.4.4	Internal planning meeting	**Ongoing**		
PM.4.5	CCP worldwide meeting	**Completed**	**X**	
PM.4.6	Finance orientation for subaward monitoring	**Completed**	**X**	
PM.4.7	Bi-monthly PMI update meetings	**Ongoing**		
PM.4.8	Narrative progress reports	**Ongoing**		
PM.4.9	Financial reports	**Ongoing**		

Code	Deliverable	Status	Year Completed	
		09/30/2016	1	2
PM.4.10	Project supervision Ghana trip report	Completed	X	

Appendix B: Year Two Core Performance Monitoring Plan

VectorWorks
Core Performance Monitoring Plan
Annual Report: Year Two

Reporting period: October 1, 2015 to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

ANC	antenatal care
EPI	Expanded Programme on Immunization
HWG	Harmonization Working Group
IRB	institutional review board
ITN	insecticide-treated net
JHU	Johns Hopkins University
LOP	life of project
MOP	Malaria Operational Plan
MPAC	Malaria Policy Advisory Committee
NMCP	National Malaria Control Program
OR	operations research
PMI	President's Malaria Initiative
PMP	performance monitoring plan
RBM	Roll Back Malaria
SBCC	social and behavior change communication
TBD	to be determined
USAID	U.S. Agency for International Development
VCTEG	Vector Control Technical Expert Group
WHO	World Health Organization

Overview

This performance monitoring plan (PMP) provides a framework for systematically collecting and using data to monitor the activities and achievements of the VectorWorks project. It describes the relationship between project activities and the project's overall goal of supporting countries to achieve and maintain high rates of coverage and use of vector management interventions. It also documents the specific results that VectorWorks strives to achieve and the progress it makes toward its targets.

To accomplish these functions, the PMP consists of several components—a results framework, summaries of objectives and related indicators, indicator reference sheets, and a reporting flow chart.

The results framework describes the pathways linking activities to the overall project goal— that is, each activity contributes to the fulfillment of objectives, which in turn contribute to the goal. Documenting improvements along these pathways helps attribute achievements in project objectives to the project's activities.

Next, the document summarizes VectorWorks activities by objective and relevant indicators. The indicators were chosen based on several criteria: (1) objectivity, (2) ability to reflect outcomes and outputs that are central to the project's work, (3) feasibility and cost of data collection, (4) data are available when needed, and (5) usefulness for management decision-making. The indicator reference sheets provide details on the definition, frequency, level of disaggregation, and reporting unit of each indicator. Lastly, a reporting flow chart illustrates the flow of data and levels of reporting, aggregation, and data quality assurance.

VectorWorks designed this PMP to track key results globally. VectorWorks receives its core funding from the U.S. President's Malaria Initiative (PMI) with several U.S. Agency for International Development (USAID) mission buy-ins. To this end, the PMP tracks a few standard indicators across countries where those indicators are relevant; however, field support programs will have their own PMPs and track indicators specific to their objectives and work plans.

The intention of the indicators in this PMP is not to provide a comprehensive understanding of how an activity resulted in a change in the project objectives or why an activity was not as effective as expected. Rather, indicators suggest that a change occurred over time, with discussions in semiannual narrative reports providing more thorough answers on how and why VectorWorks activities achieved their results.

The project will use routine data collection forms and activity tracking spreadsheets. These include training summary forms, media monitoring reports, distribution summary forms, activity summary forms, and travel and research tracking spreadsheets. Indicator reference sheets will document the selection of targets and details on progress toward annual targets. These indicator tracking sheets and supporting documents will make it possible to document each indicator's history and will enable project managers to review the quality of the data being reported and make recommendations.

Several critical assumptions inform the PMP:

- Insecticide-treated net (ITN) distribution will continue to be a major focus for PMI.
- The mechanisms for global malaria policy adoption will remain stable and largely unchanged.

- USAID missions will seek assistance for country-level research, policy, or implementation of vector management programs.

Changes to these assumptions will have major implications on the overall direction of the project and the PMP. Project managers will review the PMP and these assumptions internally and with PMI on a semiannual basis to track trends and discuss opportunities for refining program activities.

VectorWorks intends to use this PMP as a management tool. During annual work plan retreats and in the annual report, VectorWorks will discuss progress made toward targets, challenges faced, and recommendations.

Background

The VectorWorks project is a five-year (2014–2019) project funded by PMI. The project goal is to support countries to achieve and maintain high rates of coverage and use of vector management interventions. Specifically, the project aims to attain this goal through activities clustered around three main objectives:

Objective 1: Policy. Develop and promote policies at both the international and national levels to encourage sustained, high-level coverage and use of ITNs and/or alternative vector management interventions.

Objective 2: Monitoring, evaluation, and operations research. Design, conduct, and analyze results from monitoring, evaluation, and operations research (OR) activities in order to improve current best practices for ITNs and/or alternative vector management interventions.

Objective 3: Implementation. Promote and support country-level implementation of malaria prevention activities to ensure sustained, high-level coverage and use of ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

A consortium led by the Johns Hopkins Center for Communication Programs leads the project under Cooperative Agreement AID-OAA-A-14–00057. Other partners include Tropical Health LLP, Swiss Tropical and Public Health Institute, Population Services International, Mennonite Economic Development Associates, and the Tulane University Center for Applied Malaria Research and Evaluation. The project will partner with national malaria control programs as well as PMI resident advisors and other malaria partners in each country.

Results Framework

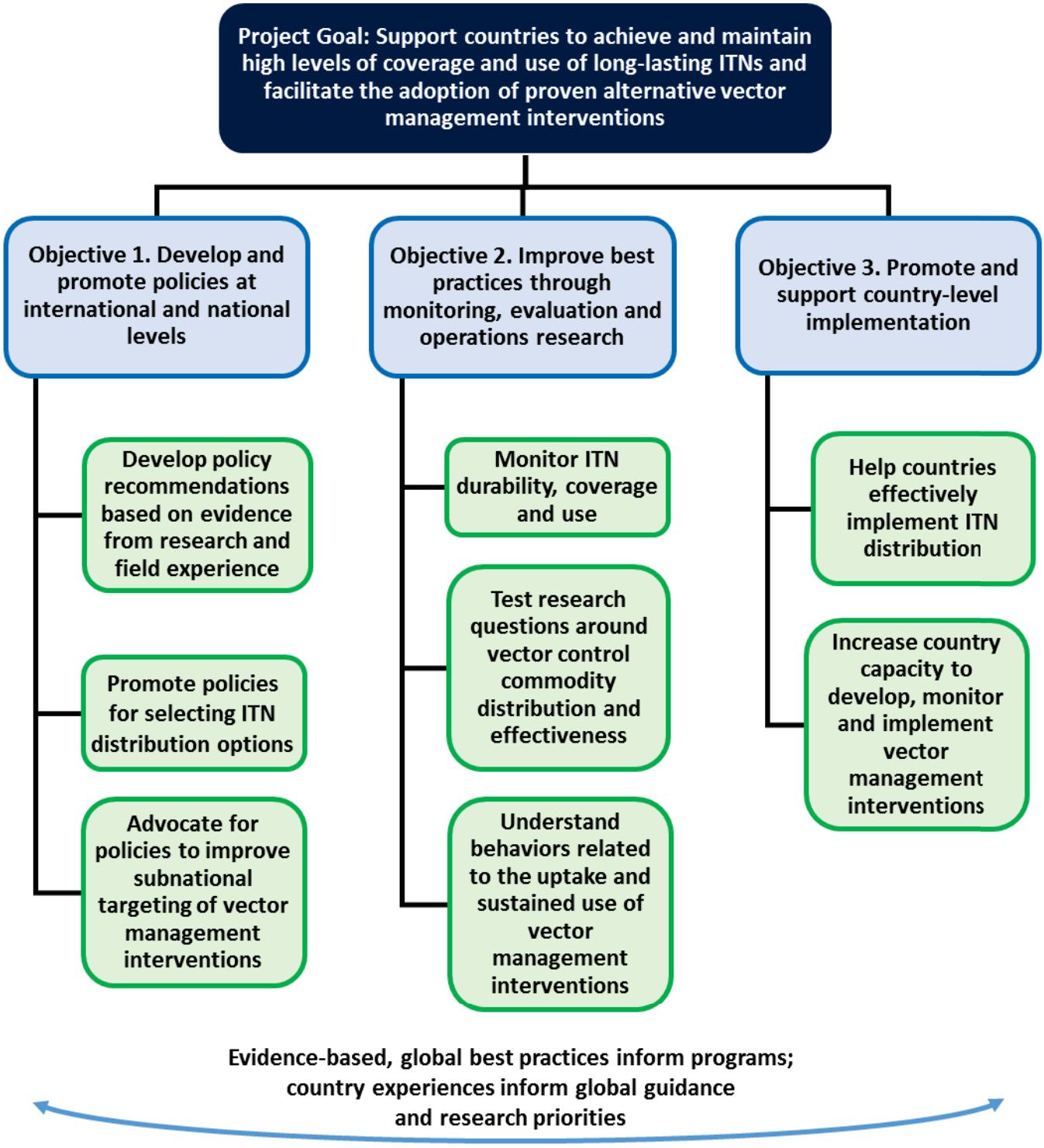
The VectorWorks results framework (see Figure 1) describes the pathways linking activities to the project goal of supporting countries to achieve and maintain high levels of coverage and use of ITNs and facilitate the adoption of proven alternative vector management interventions. In this framework, each activity contributes to the fulfillment of project objectives, which in turn contribute to the overall project goal.

The project will contribute to the goal through three objectives:

1. Develop and promote policies at international and national levels
2. Improve current best practices through monitoring, evaluation, and operations research
3. Promote and support country-level implementation

VectorWorks will develop and promote improved policy, standards, and guidance (Objective 1) via World Health Organization (WHO) and Roll Back Malaria (RBM) channels, informed by monitoring and evaluation activities undertaken under Objective 2, and issues and challenges from field implementation experience from Objective 3. Work in policy and research will bear fruit in Objective 3, when VectorWorks will strengthen country capacity to reach and sustain universal coverage with the right mix of distribution channels and approved alternative tools that are adapted to the country context, and closely coordinated with other vector control measures.

Figure 1. Results framework



Summary of Project Objectives and Related Performance Indicators

Objective 1: Develop and promote policies at both the international and national levels to encourage sustained, high levels of coverage and use of long-lasting ITNs and/or alternative vector management interventions.

Countries are now considering the use of ITN distribution channels beyond mass campaigns, and they need guidance on which channels to use, and when, where, how, and whether to use these channels alongside mass campaigns. Similarly, different contexts vary in their epidemiology, resources, and type of malaria vector, which may require adapting vector management strategies at regional and district levels. VectorWorks will use evidence-based and participatory approaches to advocate policies that provide countries with the guidance to (1) choose their mix of ITN distribution channels and (2) improve subnational targeting of vector management interventions. Using experience and evidence collected and analyzed under Objectives 2 and 3, VectorWorks will identify policy issues and engage relevant stakeholders in developing a common policy agenda. Next, VectorWorks will draft policy recommendations and circulate it among stakeholders for feedback. These two steps in particular will entail collaborating with and presenting to several working groups and target audiences. VectorWorks policy efforts will bear fruit when the Malaria Policy Advisory Committee (MPAC) at WHO, PMI, or the Harmonization Working Group (HWG) at RBM officially endorses the policy, opening the way for use of PMI and Global Fund resources for country implementation on a larger scale.

Indicator	Definition	Source, frequency, and reporting unit	Targets	Actuals
1.1 Number of VectorWorks-supported policy documents submitted to VCTEG	Number of VectorWorks-supported policy documents drafted and submitted to VCTEG.[a] Documents may be accompanied by presentations as part of the dissemination strategy or to promote them at VCTEG, but the deliverable to be counted is the number of policy documents.	• Source: Project reports • Frequency: Semiannual • Reporting units: Core	Year 1: 1 Year 2: 2 Year 3: 3 Year 4: 2 Year 5: 2 LOP: 10	Year 1: 0 Year 2: 1 Year 3: – Year 4: – Year 5: – LOP: –
1.2 Number of VectorWorks-supported policies endorsed by VCTEG	Number of VectorWorks-supported policies endorsed by VCTEG.[a] The policy must be endorsed in the VCTEG meeting reports.	• Source: VCTEG meeting reports • Frequency: Semiannual • Reporting units: Core	Year 1: 0 Year 2: 1 Year 3: 2 Year 4: 2 Year 5: 2 LOP: 7	Year 1: 0 Year 2: 0 Year 3: – Year 4: – Year 5: – LOP: –
1.3 Number of VectorWorks-supported policies endorsed by MPAC	Number of VectorWorks-supported policies endorsed by MPAC.[a] The policy must be endorsed in the MPAC meeting reports published in *Malaria Journal*.	• Source: MPAC reports • Frequency: Annual • Reporting units: Core	Year 1: 0 Year 2: 1 Year 3: 0 Year 4: 1 Year 5: 1 LOP: 3	Year 1: 0 Year 2: 0 Year 3: – Year 4: – Year 5: – LOP: –

1.4 Number of VectorWorks-supported policies incorporated into HWG or PMI guidance	Number of VectorWorks-supported policies incorporated into HWG or PMI guidance.[a] The policy must have been incorporated into the HWG or MOP guidance notes or circulated as PMI guidance.	• Source: HWG and PMI MOP guidance notes • Frequency: Semiannual • Reporting units: Core	Year 1: 2 Year 2: 1 Year 3: 0 Year 4: 1 Year 5: 1 LOP: 5	Year 1: 2 Year 2: 2 Year 3: – Year 4: – Year 5: – LOP: –
1.5 Number of PMI countries adopting at least one VectorWorks-supported policy or guideline	The number of PMI countries that have adopted VectorWorks-supported policies.[a] A country is considered to have adopted the policy if the PMI MOP states that they are following that guideline or if the USAID mission is funding its implementation.	• Source: Review of PMI MOPs • Frequency: Annual • Reporting units: Core	Year 1: 0 Year 2: 2 Year 3: 4 Year 4: 4 Year 5: 4 LOP: 14	Year 1: 18 Year 2: 18 Year 3: – Year 4: – Year 5: – LOP: –

[a] A policy document is considered to have been supported by VectorWorks if VectorWorks provided funds for its drafting and presentation or if VectorWorks provided technical input on the draft.

Objective 2: Design, conduct and analyze results from monitoring, evaluation, and operational research activities in order to improve current best practices of long-lasting ITNs and/or alternative vector management interventions.

VectorWorks research activities will center on (1) monitoring ITN durability, coverage, and use; (2) testing research questions around commodity distribution and effectiveness; and (3) understanding behaviors related to the uptake and sustained use of vector management interventions. VectorWorks will choose monitoring, evaluation, and operations research activities based on the advice of its expert committee and in consultation with PMI. Such activities are selected based on priorities identified by national malaria control programs, PMI, international stakeholders (WHO, RBM, Global Fund), and the expert committee's assessment of their relevance to the project's scope and feasibility. Once VectorWorks has identified research topics, it will draft research protocols, collect data, and analyze and disseminate results. The project will use the results to inform global and national guidance and implementation.

Indicator	Definition	Source, frequency, and reporting unit	Targets	Actuals
2.1 Number of research protocols completed	The number of research protocols that have been completed, disaggregated by OR and non-OR protocols. An OR protocol is defined as complete when it has been submitted and approved by the PMI OR committee and Johns Hopkins University School of Public Health (JHSPH) Institutional Review Board (IRB). A non-OR protocol is defined as completed when it has been submitted and approved by the JHSPH IRB; non-OR protocols do not go through the PMI OR committee. The JHSPH IRB officially approves protocols upon internal review and upon receiving approval from in-country IRBs.	• Source: Research tracking spreadsheet • Frequency of reporting: Semiannually • Reporting units: Core and field sites	**OR** Year 1: 1 Year 2: 1 Year 3: 1 Year 4: 0 Year 5: 0 LOP: 3 **Non-OR** Year 1: 3 Year 2: 5 Year 3: 7 Year 4: 3 Year 5: 2 LOP: 20	**OR** Year 1: 0 Year 2: 1 Year 3: – Year 4: – Year 5: – LOP: – **Non-OR** Year 1: 0 Year 2: 6 Year 3: – Year 4: – Year 5: – LOP: –
2.2 Percentage of PMI-funded durability monitoring surveys with core indicator reports available online	**Numerator:** Number of durability monitoring surveys for which consistently defined core indicator reports have been posted on the website. Consistency is defined as a data collection or reporting method that is in line with PMI global guidance. **Denominator:** Total number of PMI-funded durability monitoring surveys.	• Source: Durability monitoring website • Frequency of reporting: Semiannually • Reporting units: Core	Year 1: 90% Year 2: 90% Year 3: 90% Year 4: 90% Year 5: 90% LOP: 90%	Year 1: 0% Year 2: 0% Year 3: – Year 4: – Year 5: – LOP: –

Use/outcomes from durability monitoring data	Indicator to be finalized: VectorWorks will review the possibility of adding an indicator to measure outcomes from the durability monitoring activities. Outcomes may include uptake by other donors and institutions, secondary analyses, and, if deemed feasible, changes in policies and procurement practices.			To be reviewed in Year 3. No baseline reports were available at the time of the submission of the annual report.
2.3 Number of research reports produced and disseminated	The number of research reports that have been produced and disseminated. The report must have been posted on the VectorWorks website and shared through electronic mailing lists and in-person or remote presentations at least twice. The report can take the form of a full document or a presentation.	• Source: VectorWorks website; research tracking spreadsheet • Frequency of reporting: Semiannually • Reporting units: Core	Year 1: 2 Year 2: 5 Year 3: 7 Year 4: 10 Year 5: 10 LOP: 34	Year 1: 2 Year 2: 5 Year 3: – Year 4: – Year 5: – LOP: –
2.4 Number of peer-reviewed journal articles published	The number of peer-reviewed journal articles published for which VectorWorks funded significant inputs, such as data collection, analysis, or write-up.	• Source: Research tracking spreadsheet • Frequency of reporting: Semiannually • Reporting units: Core	Year 1: 5 Year 2: 4 Year 3: 4 Year 4: 4 Year 5: 6 LOP: 23	Year 1: 4 Year 2: 2 Year 3: – Year 4: – Year 5: – LOP: –

Objective 3: Promote and support country-level implementation of malaria prevention activities to ensure sustained high level coverage and use of long-lasting ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

VectorWorks will provide assistance to national malaria control programs to develop and implement state-of-the-art practices for ITN distribution. Related activities will include technical assistance visits, development of implementation guides, documentation and sharing of country experiences, training implementers and supervisors, and direct implementation of ITN distribution programs.

Indicator	Definition	Source, frequency, and reporting unit	Targets	Actuals
3.1 Number of documents produced to improve implementation of vector management interventions	Number of documents produced by VectorWorks to improve implementation of vector management interventions. Documents can include guides, toolkits, case studies, and tools such as NetCALC. Journal articles are counted elsewhere and are not included in this indicator.	• Source: Semiannual report • Frequency of reporting: Semiannually • Reporting units: Core	Year 1: 3 Year 2: 7 Year 3: 7 Year 4: 7 Year 5: 9 LOP: 33	Year 1: 0 Year 2: 1 Year 3: 5 Year 4: – Year 5: – LOP: –
3.2 Number of USAID country missions that contribute funds	Number of USAID country missions that obligate funds to VectorWorks each year. Missions may be counted multiple times in the LOP total.	• Source: Cooperative agreement modifications • Frequency: Semiannually • Reporting units: Core	Year 1: 6 Year 2: 7 Year 3: 6 Year 4: 7 Year 5: 6 LOP: 32	Year 1: 6 Year 2: 12 Year 3: – Year 4: – Year 5: – LOP: –

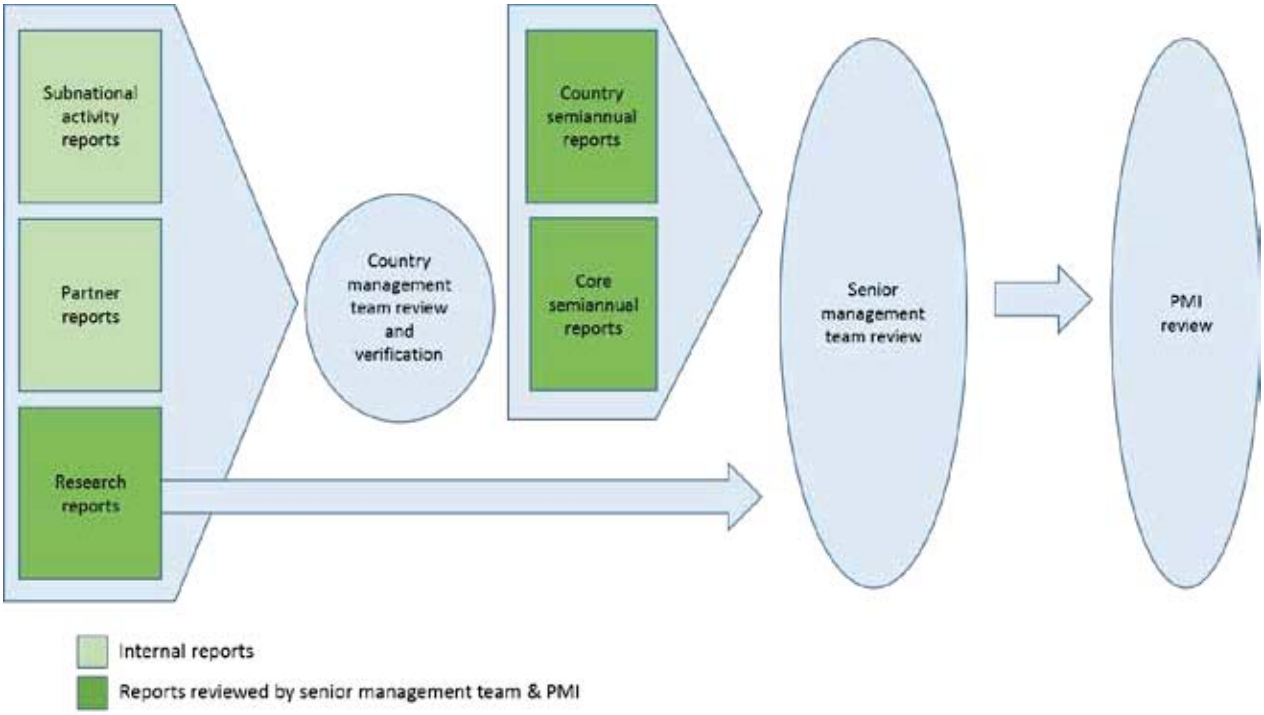
Research and Evaluation Plan

Descriptions of research and evaluation activities are found under Objective 2 of the work plan.

Reporting

The following reporting flow chart (Figure 2) illustrates the flow of data and levels of reporting, aggregation, and data quality assurance.

Figure 2. Reporting flow chart



Partners and activity managers will complete activity reports. Country management teams will be responsible for reviewing the reports and verifying the data reported by cross-checking primary data sources and summary forms. Team members on technical assistance visits will also check on data quality, reporting frequency, and completeness during their visits. Semiannual reports and accompanying PMPs drafted by country teams will summarize activity reports, partner reports, and research reports. Semiannual and research reports will receive final review by the senior management team before submission to PMI. The monitoring and evaluation officers or focal points for each program should archive supporting documents and data sets and provide them upon request to confirm the reported results.

Indicator Reference Sheets

Objective 1: Develop and promote policies at international and national levels

Indicator 1.1: Number of VectorWorks-supported policy documents submitted to VCTEG

Year	Target	Actual
1	1	0
2	2	1
3	3	–
4	2	–
5	2	–
Life of project	10	–

Unit of measure: Number

Disaggregation: None

Definition: The total number of VectorWorks-supported policy documents drafted and submitted to the Vector Control Technical Expert Group (VCTEG). A policy document is considered to have been supported by VectorWorks if VectorWorks provided funds for its drafting and presentation or if VectorWorks provided technical input on the draft. Documents may be accompanied by presentations as part of the dissemination strategy or to promote them at VCTEG but the deliverable to be counted is the number of policy documents.

Source: Project reports

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Year One potential targets: Guidance on subnational targeting, vector control graduation document, and continuous distribution.

Year One actuals: The WHO Global Malaria Programme funded the vector control graduation document. Matt Lynch provided review comments to the draft version, but VectorWorks otherwise did not make substantive contributions. The document focused on removal of vector control interventions, but did not address scaling back, targeting, or replacing with less intensive interventions.

Year Two potential targets: School distribution, geographical targeting, mass campaigns in urban settings..

Year Two actuals: Net Preferences paper.

Indicator 1.2: Number of VectorWorks-supported policies endorsed by VCTEG

Year	Target	Actual
1	0	0
2	1	0
3	2	–
4	2	–
5	2	–
Life of project	7	–

Unit of measure: Number

Disaggregation: n/a

Source: VCTEG meeting reports

Definition: The number of VectorWorks-supported policies endorsed by VCTEG. The policy must be endorsed in the VCTEG meeting reports. A document is considered to have been supported by VectorWorks if VectorWorks provided funds for its drafting and presentation or if VectorWorks provided technical input on the draft.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Year One actuals: VectorWorks did not provide any substantial technical or financial input on any documents for the VCTEG this year.

Year Two actuals: We anticipate a VCTEG meeting on the net preferences paper in early Year 3.

Indicator 1.3: Number of VectorWorks-supported policies endorsed by the Malaria Policy Advisory Committee

Year	Target	Actual
1	0	0
2	1	0
3	0	–
4	1	–
5	1	–
Life of project	3	–

Unit of measure: Number

Disaggregation: None

Source: MPAC reports

Definition: The number of VectorWorks-supported policies endorsed by MPAC. The policy must be endorsed in the MPAC reports published in *Malaria Journal*. A document is considered to have been supported by VectorWorks if VectorWorks provided funds for its drafting and presentation or if VectorWorks provided technical input on the draft.

Frequency of reporting: Annually

Reporting format: Annual report

Reporting units: Core

Notes:

MPAC endorsements, although powerful, are very high level and relatively infrequent. Hence, we do not anticipate frequent examples of such endorsements.

Year One actuals: VectorWorks did not provide any substantial technical or financial input on any documents for the MPAC this year.

Year Two: VectorWorks did not provide any substantive input on documents for the MPAC in this year.

Indicator 1.4: Number of VectorWorks-supported policies incorporated into Harmonization Working Group or PMI guidance

Year	Target	Actual
1	2	2
2	1	2
3	0	–
4	1	–
5	1	–
Life of project	5	–

Unit of measure: Number

Disaggregation: n/a

Source: HWG and PMI Malaria Operational Plan (MOP) guidance notes

Definition: Number of VectorWorks-supported policies incorporated into HWG or PMI guidance. The policy must have been incorporated into the HWG or MOP guidance notes or circulated as PMI guidance.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Year One target: Carry-over from the NetWorks project—net misuse guidance and use-to-access ratio.

Year One actuals: Durability monitoring (MOP guidance); use-to-access ratio (MOP and HWG guidance).

Year Two actuals: school distribution (MOP guidance); net care (MOP guidance). VectorWorks also provided input on the Global Fund guidance.

Indicator 1.5: Number of PMI countries adopting at least one VectorWorks-supported policy

Year	Target	Actual
1	0	18
2	2	18
3	4	–
4	4	–
5	4	–
Life of project	14	–

Unit of measure: Number

Disaggregation: By policy

Source: Review of PMI MOPs

Definition: The number of PMI countries that have adopted policies advocated by VectorWorks. A document is considered to have been advocated by VectorWorks if VectorWorks provided funds for its drafting and presentation or if VectorWorks provided technical input on the draft. A country is considered to have adopted the policy if the PMI MOP states that they are following that guideline or if the USAID mission is funding its implementation.

Frequency of reporting: Annually

Reporting format: Annual report

Reporting units: Core

Notes:

The Year One target was set to zero because the first set of MOPs that may reflect the influence of VectorWorks would not be released until November 2015 (Year Two). However, they were released before November 15, so VectorWorks was able to review them in time for the Year Two annual report submission.

Annual results by country:

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Angola	Durability monitoring is in the national strategy; PMI will fund technical assistance for continuous distribution (CD)	Shifted from a rolling campaign to a nationwide campaign.			
2. Benin	Durability (past	School			

	data being reviewed)	distribution, durability monitoring			
3. Democratic Republic of the Congo	NMCP strategic plan 2016–2020 includes continuous distribution (all channels); PMI will fund continuous distribution	Not released as of Nov 12, 2016			
4. Ethiopia	Continuous distribution by health extension workers	CD with HEWs			
5. Ghana	Will continue continuous distribution	Net care SBCC			
6. Mekong	Durability monitoring	None			
7. Guinea	Durability monitoring	Durability monitoring			
8. Kenya	Continuous distribution	CD, durability monitoring			
9. Liberia	None (continuing antenatal care clinic distribution, no durability monitoring)	Durability monitoring			
10. Madagascar	Durability monitoring, expansion of CD	Durability monitoring expansion of community distribution			
11. Malawi	Durability monitoring	Durability monitoring, net care SBCC			
12. Mali	None	Durability monitoring, net care SBCC			
13. Mozambique	Durability monitoring	School distribution			
14. Nigeria	No MOP online as	Durability			

	of November 13, 2015, but counted because Nigeria is funding durability monitoring	monitoring, net care SBCC, CD mentioned but not enough nets available			
15. Rwanda	"Targeted" community-based distribution, net durability, care and repair	Net durability			
16. Senegal	Durability monitoring, CD	net care SBCC			
17. Tanzania	CD & net care	CD & durability monitoring			
18. Uganda	CD (schools), net care, durability monitoring	Net durability, school distribution (traditional and "novel"), durability monitoring			
19. Zambia	CD, durability monitoring,	CD, durability monitoring			
20. Zimbabwe	CD, durability	Durability monitoring, SBCC for net durability			

Objective 2. Improve best practices through monitoring, evaluation, and operations research

Indicator 2.1: Number of research protocols completed, disaggregated by OR and non-OR protocols

Operations research:

Year	Target	Actual
1	1	0
2	1	1
3	1	–
4	0	–
5	0	–
Life of project	3	–

Non-operations research:

Year	Target	Actual
1	3	0
2	5	6
3	7	–
4	3	–
5	2	–
Life of project	20	–

Unit of measure: Number

Disaggregation: Disaggregated by OR and non-OR protocols, and source of funds

Source: Research tracking spreadsheet

Definition: The number of research protocols that have been completed, disaggregated by OR and non-OR protocols. An OR protocol is defined as complete when it has been submitted and approved by the PMI OR committee and the Johns Hopkins University School of Public Health (JHSPH) IRB. Non-OR protocols did not go through the PMI OR committee. Non-OR protocols have been defined as completed when they have been submitted and approved by the JHU IRB. The JHU IRB officially approves protocols upon internal review and upon receiving approval from in-country IRBs.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core and field sites

Notes: Targets based on previous experience under the NetWorks project

Year One actuals:

Operations research: VectorWorks submitted three concept notes, but the OR committee did not approve them.

Non-operations research: The JHSPH IRB considered only the Mozambique durability monitoring protocol to be research but had not approved it by the end of Year One. Other applications that the IRB did not classify as research were the accountability report, Continuous Distribution Toolkit usability testing, and the Zimbabwe process evaluation.

Year Two actuals:

Operations research: Outdoor transmission in Tanzania.

Non-operations research: Mozambique, Nigeria, Myanmar, DRC, and Zanzibar durability monitoring protocols and the DCE study.

Activities deemed non-research by the JHSPH IRB (they do not count as OR or non-OR): Tanzania process evaluation (public health practice), and the Tanzania commodity management audit (public health practice), and the Zanzibar process evaluation (public health practice).

Indicator 2.2: Percentage of PMI-funded durability monitoring surveys with core indicator reports available online

Year	Target	Actual
1	90%	0%
2	90%	0%
3	90%	–
4	90%	–
5	90%	–
Life of project	90%	–

Unit of measure: Percentage

Disaggregation: None

Source: Durability monitoring website

Definition:

Numerator: The number of durability monitoring surveys for which consistently defined core indicator reports have been posted on the website. Consistency is defined as the data collection or reporting method being in line with PMI global guidance.

Denominator: All PMI-funded durability monitoring surveys.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Year One actuals: PMI had not yet approved the durability monitoring protocol at the end of the fiscal year and the website was not yet live.

Year Two semiannual actuals: Baseline data from Mozambique and Nigeria are expected by the end of Year Two.

Indicator 2.3: Number of research reports produced and disseminated

Year	Target	Actual
1	2	2
2	5	5
3	7	–
4	10	–
5	10	–
Life of project	34	–

Unit of measure: Number

Disaggregation: None

Source: VectorWorks website, research tracking spreadsheet

Definition: The number of research reports that have been produced and disseminated. The report must have been posted on the VectorWorks website and linked to from online mailing lists and in-person or remote presentations at least twice. The report can take the form of a full document or a presentation.

Frequency of reporting: Semiannually

Reporting format: Semiannual reports

Reporting units: Core

Notes:

Targets based on previous experience under the NetWorks project.

Year One targets: Nasarawa community-based distribution report; access-to-use ratio report.

Year One actuals: Nasarawa community-based distribution report; access-to-use ratio report.

Year Two actuals: Access:Use Ratio report; SNP3 costing report; Zanzibar costing report; ITN use in context of IRS report; and the net preferences report.

Indicator 2.4: Number of peer-reviewed journal articles published

Year	Target	Actual
1	5	4
2	4	2
3	4	–
4	4	–
5	6	–
Life of project	23	–

Unit of measure: Number

Disaggregation: None

Source: Research tracking spreadsheet

Definition: The number of peer-reviewed journal articles published for which VectorWorks funded significant inputs such as data collection, analysis, or write-up.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Targets based on previous experience under the NetWorks project.

Year One actuals: Uganda Care and Repair, Ghana Outdoor Sleeping, Uganda Hang Up, Nigeria Durability.

Year Two actuals: Multi-country analysis of campaign outcomes (Zegers); ANC-EPI four-country assessment (Theiss-Nyland)

Objective 3. Promote and support country-level implementation

Indicator 3.1: Number of documents produced to improve implementation of vector management interventions

Year	Target	Actual
1	3	0
2	7	5
3	7	–
4	7	–
5	9	–
Life of project	33	–

Unit of measure: Number

Disaggregation: None

Source: Semiannual report

Definition: The number of documents produced to improve implementation of vector management interventions. Documents can include guides, toolkits, case studies, and tools such as NetCALC. Journal articles are counted elsewhere and are not included in this indicator.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core

Notes:

Target based on previous experience under the NetWorks project and planned Year One core activities.

Year One actuals: VectorWorks drafted the community distribution guide but has not yet finalized it. The project collected tools for the ANC-EPI guide and posted them online but has not yet drafted the insert with new technical content. VectorWorks hired the accountability report consultant at the end of the fiscal year.

Year Two actuals: MIP advocacy strategy; validation report; community distribution guide; net care and repair strategy guide; durability monitoring data collection toolkit

Indicator 3.2: Number of USAID country missions that contribute funds to the project

Year	Target	Actual
1	6	6
2	7	10
3	6	–
4	7	–
5	6	–
Life of project	32	–

Unit of measure: Number

Disaggregation: None

Source: Modifications to VectorWorks Cooperative Agreement

Definition: The number of USAID country missions that obligate funds to VectorWorks per year.

Frequency of reporting: Annually

Reporting format: Annual report

Reporting units: Core

Notes:

Missions can be counted multiple times in the life of project (LOP) total.

Year One actuals: Ghana, Liberia, Mozambique, Nigeria, Tanzania, and Zimbabwe.

Year Two actuals: Ghana, Liberia, Mozambique, Nigeria, Tanzania, Zimbabwe, Senegal, Democratic Republic of the Congo, Myanmar, Malawi, Kenya, and Uganda

VectorWorks Angola Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

ANC	antenatal care
EPI	Expanded Programme on Immunization
ITN	insecticide-treated net
NMCP	national malaria control program
PMI	U.S. President's Malaria Initiative

Background

Project Objectives

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs) and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

Objective 1: Policy. Develop and promote policies at both international and national levels to encourage sustained, high-level coverage and use of ITNs and/or alternative vector management interventions.

Objective 2: Monitoring, evaluation, and operational research. Design, conduct, and analyze results from monitoring, evaluation, and operational research activities to improve current best practices for ITN distribution and use and/or alternative vector management interventions.

Objective 3: Implementation. Promote and support country-level implementation of malaria prevention activities to ensure sustained, high-level coverage and use of ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

Context

The Angola National Malaria Control Program's (NMCP) objectives for ITNs are to achieve universal coverage (that is, provide one ITN for every two people) through a mass distribution campaign and to maintain coverage through routine distribution to pregnant women and children under five through antenatal care (ANC) and the Expanded Programme on Immunization (EPI). The government's target is to ensure by 2020 that at least 80% of the target population use an adequate preventive measure (that is, at least 80% of households have at least one ITN for every two people in the household; 80% of people slept under an ITN the previous night; and 80% of pregnant women and children under five slept under an ITN the previous night).

In April 2014, NetWorks conducted an ITN continuous distribution workshop in Luanda for the NMCP and its partners. Participants concluded that Angola would have to complete its mass ITN distributions before using continuous distribution to improve and sustain coverage. The current round of mass campaigns is supposed to be completed in 2016, and there are plans to start a new round of campaigns in 2017. Inefficiencies have plagued both routine distribution through ANC and EPI and the mass distribution campaigns. To follow up on the discussions from 2014, PMI has requested that VectorWorks provide technical assistance for reviewing and updating the national ITN strategy.

Implementation and Capacity Building

A.IM.1 ITN Strategy Review

Brief activity description: The purpose of this activity is to support the NMCP and its partners in thoroughly reviewing the current ITN distribution strategy and its implementation. The goal is to highlight strengths, weaknesses, and limitations and to facilitate the development of a revised ITN strategy and a transition plan that defines priorities for achieving and sustaining universal coverage with ITNs and an appropriate mix of mass campaign and continuous distribution mechanisms. The activity is divided into two phases: the assessment and analysis of the current situation and a two-day workshop to discuss findings and the way forward.

Status (including next steps, challenges, and opportunities, if any): The first phase of the activity was carried out between August 5 and 15. Led by Kate Brownlow (Optimoz) and Emmanuel Obi (Tropical Health), on behalf of VectorWorks, it was preceded by the study of relevant documents and literature. After a briefing by PMI Angola and discussions with the NMCP and partners, Kate and Emmanuel conducted field visits to five sites (Uige, Songo and Dando in Uige Province; Bengo and Ambriz in Bengo Province) where campaign and routine distributions had taken place. After further key informant interviews, they presented preliminary findings to the NMCP, partners, and PMI. Findings indicated that, to date, universal coverage had not been fully achieved and that one of the key problems was the lack of a coordinated effort in both campaign and routine distributions.

After further review of available data, including projections of ITN coverage achieved to date, the second phase took place September 5–8. This was a two-day workshop facilitated by the VectorWorks team to discuss four priority areas previously agreed on:

1. The need for integrated ITN strategies
2. The need to clarify roles and responsibilities
3. The need to establish an integrated approach to planning and coordination arrangements
4. The need to analyze required resources (financial, human, and technical skills)

Although there were some limitations regarding time available, the discussions were very positive and constructive. The group agreed on the following priority next steps:

Step 1: Review and finalize this document and approve it for implementation.
Step 2: Develop terms of reference and engage the training and/or technical support to enable the program to complete Step 3.
Step 3: Develop the management plan for the ITN campaigns, including detailed information on scope, scale, financing, schedule, risk, human resources (roles and responsibilities), coordination and communications (including stakeholder management), procurement, governance, performance management, quality standards, and so on.
Step 4: Clearly define roles and responsibilities and engage stakeholders to secure financial and operational support.

Step 5: Establish and implement the planning, coordination, and support structures essential to enabling efficient campaigns.
Step 6: In parallel, initiate planning and resource mobilization for continuous distribution mechanisms (routine distributions immediately and comprehensive continuous distribution where feasible in the medium term).

A detailed first draft of the "2016 National ITN Strategy, Implementation Approach, and Next Steps for Mobilizing Efforts to Reach and Sustain Universal Coverage" was submitted to PMI and workshop participants in early October 2016.

Next steps:

1. Finalize draft and recommendations for the transition plan based on comments from partners.
2. Meet with NMCP and key stakeholders to define roles and responsibilities to improve coordinating mechanisms ahead of December 2016 macroplanning workshop for mass campaign.

Deliverable	Audience	Timing	Dissemination plan	Status
Final agenda for ITN workshop	PMI, NMCP	Quarter 4	Shared by email prior to the workshop	Submitted
Field assessment and meeting schedule	PMI, NMCP	Quarter 4	Shared by email before arrival	Submitted
ITN workshop presentations	PMI, NMCP, implementing partners	Quarter 4	Shared with participants after the workshop	Submitted
Trip report	PMI, NMCP	Quarter 4	Initial observations and recommendations to be presented in person; the report to be shared by email	Submitted
ITN strategy: draft justification, description, and transition plan	PMI, NMCP, implementing partners	Quarter 4	Shared by email	Out for comment

A.IM.2 Technical Assistance for ITN Distribution

Brief activity description: Angola is scheduled to begin a mass ITN distribution campaign in May 2017. VectorWorks will support the NMCP, implementing partners and other key stakeholders during planning and the first phase of campaign implementation scheduled to begin in May 2017. The ITN strategy review (see above) identified challenges, weaknesses, and opportunities that provide recommendations for an updated national ITN distribution strategy. The upcoming mass campaign will be done in a three-phase approach, a significant shift from the previous campaign, which was implemented in a province-by-province manner. The new approach and potential strategy shifts will require technical assistance in key areas, including social and behavior change communication, logistics, and macro-and micro-planning. VectorWorks will support the NMCP through a network of international and local consultants.

Status (including next steps, challenges, and opportunities, if any): This activity will begin in Year Three. To build on the findings and discussions from IM.1, we anticipate providing technical assistance to follow up on the next steps outlined in section IM.1, and put in place stronger coordination structures for the benefit of the campaign planning process and beyond. International consultants with expertise in mass campaign planning and implementation have been identified, and the first technical assistance mission will occur in December 2016, leading up to and including the national macroplanning workshop. A local consultant, who will serve as an ITN distribution focal person has been identified and is in the process of being contracted.

Next steps:

1. First technical assistance mission to occur in December 2016 to coincide with national macroplanning workshop for mass campaign.
2. Contracting a local consultant to serve as an ITN distribution focal person, to begin in December 2016.
3. Organize a workshop for January 2017 to review current social and behavior change communication and social mobilization strategies and provide recommendations to the NMCP. These recommendations will then guide the development and revision of these strategies to be implemented for the 2017 mass campaign.

Deliverable	Audience	Timing	Dissemination plan	Status
Trip reports	PMI, NMCP	Year 3, Quarters 1-4	Initial observations and recommendations to be presented in person; the report to be shared by email	To begin December 2016

Project Management

Work Plan and Reporting

Brief activity description: VectorWorks will provide an annual work plan to be approved by PMI Angola, as well as quarterly financial and semiannual and annual progress reports. VectorWorks understands that information may be requested by the U.S. Agency for International Development for the purposes of the PMI annual report, strategic planning, VIP visits, congressional reports, and similar purposes.

Status (including next steps, challenges, and opportunities, if any): The Year Two work plan was approved in March 2016. The Year Three work plan has been submitted, and approval was received in October 2016.

Deliverable	Audience	Timing	Dissemination plan	Status
Annual work plan approved by PMI Angola	PMI	Quarter 2	Shared by email	Completed
Quarterly financial reports	PMI	Quarters 2,3,4	Shared by email	Completed
Semiannual progress report	PMI	Quarter 2	Shared by email	Completed
Annual progress report	PMI	Quarter 4	Shared by email	Herein

VectorWorks Burma Annual Report: Year Two

Reporting period: October 1, 2015 to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

CCP	Johns Hopkins Center for Communication Programs
IRB	institutional review board
ITN	insecticide-treated net
JHU	Johns Hopkins University
NMCP	national malaria control program
PMI	U.S. President's Malaria Initiative
PSI	Population Services International
RBM	Roll Back Malaria
USAID	U.S. Agency for International Development
WHO	World Health Organization

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of insecticide-treated mosquito nets (ITNs), and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

VectorWorks has supported Burma in monitoring the physical durability and survival of two brands of ITNs, providing the national malaria control programs, Roll Back Malaria (RBM) partners, and PMI with valuable information regarding the performance and estimated useful life of the ITNs distributed during the current round of mass campaigns.

ITN use is the main effective malaria prevention measure in Burma to provide personal protection and reduce malaria transmission. The Burma National Malaria Control Program (NMCP) aims to achieve universal coverage with ITNs for populations in areas of malaria transmission. ITNs are free for these targeted populations through mass campaigns and continuous distribution channels with locally appropriate information, education, and communication approaches to ensure correct and effective usage of ITNs.

In 2011 and 2012, 1.3 million ITNs were distributed and 2.5 million conventional nets were re-treated (fiscal year 2015 Malaria Operational Plan). In mid-2015, about 200,000 nets were distributed, with a remaining 357,000 to be distributed following the November 2015 elections. These nets were monitored using PMI's durability monitoring guidance.

Recent durability monitoring studies from Nigeria and elsewhere have shown significant site variation in median ITN survival, with a range of 3.0 to 4.7 years[1][2][3]. This variation was driven mainly by differences in household attitudes and behavior. The factors determining ITN durability need to be considered to achieve universal coverage of ITN for effective protection of malaria. Factors affecting ITN durability and insecticide integrity include washing frequency, detergent usage during washing, location of kitchen inside the house, type of cooking fuel, and other net-maintenance behaviors[4].

Net durability and the average useful life of a net are increasingly recognized as critical issues a malaria program needs to know as it determines the frequency at which nets need to be replaced and the type of

1 Kilian A, Koenker H, Obi E, Selby RA, Fotheringham M, Lynch M. Field durability of the same type of long-lasting insecticidal net varies between regions in Nigeria due to differences in household behavior and living conditions. Malar J. 2015;14:123.
2 Morgan J, Ab 'ilio AP, do Rosario Pondja M, Marrenjo D, Luciano J, Fernandes G, Set al. Physical Durability of Two Types of Long-Lasting Insecticidal Nets (LLINs) Three Years after a Mass LLIN Distribution Campaign in Mozambique, 2008-2011. Am J Trop Med Hyg. 2014;92(2):286-93.
3 Wills AB, Smith SC, Anshebo GY, Graves PM, Endeshaw T, Shargie EB, et al. Physical durability of PermaNet 2.0 long-lasting insecticidal nets over three to 32 months of use in Ethiopia. Malar J. 2013;12:242.
4 Hii J, Thakur GD, Marasini BR, Pokhrel YR, Upadhyay MP, Rijal KR, et al. Monitoring the durability of long-lasting insecticidal nets in field conditions in Nepal. WHO South-East Asia Journal of Public Health. 2014;3(1). Available from: http://www.searo.who.int/publications/journals/seajph/seajphv3n1p81.pdf

net to be procured. This is reflected in the WHO guidelines for monitoring of ITNs in the field, which recommend that countries routinely monitor net durability[5].

Monitoring and Technical Assistance Activities

MM.1 ITN Durability Monitoring

Brief activity description: VectorWorks oversees durability monitoring for campaign ITNs in two sites in Burma in order to provide the NMCP, RBM partners, and PMI with information regarding the performance and estimated "useful life" of ITNs distributed during the second round of the mass campaign and strengthen in-country capacity to undertake future durability monitoring. Based on campaign distribution timing, high malaria transmission potential[6], and logistic accessibility, Tamu Township in Sagaing was selected as the site for durability monitoring. Mass distribution of ITNs was done in November–December 2015, evenly split between two brands: the DawaPlus 2.0 and PermaNet 2.0. The primary objectives of the ITN durability monitoring are to:

- Monitor the physical durability of the two brands of ITNs in two areas of Tamu Township, Sagaing, over a three-year period and estimate median ITN survival.
- Monitor the insecticidal activity of the two brands of ITNs through bioassays.
- Strengthen capacity of the NMCP and other partners in the design, implementation, analysis, and interpretation of ITN durability monitoring according to PMI guidelines.
- Assess major behavioral aspects of net care and repair and their impact on physical durability.

Status (including next steps, challenges, and opportunities, if any): A kick-off planning meeting with the NMCP, PMI Burma, the University Research Co. LLC, and the Department of Medical Research was organized and ethical clearance obtained from the Institutional Ethical Review Committee for Biomedical Research and the JHU IRB before conducting a baseline assessment six months after distribution of the two branded ITNs in villages of Tamu Township. Pre-shipment testing from the manufacturers and conformance testing from USAID | DELIVER PROJECT confirmed the compliance of both ITN brands on physical and chemical quality parameters, such as mesh size, dimensional stability on washing, netting burst strength, and total deltamethrin content.

Fifteen clusters of households were sampled for each brand, and 10 households were interviewed per cluster. There were four field teams deployed from Population Services International (PSI) Burma, each comprising two enumerators and one team leader to visit a total of 300 households from the 30 clusters. The field teams were supported by Burma staff from the NMCP and Ministry of Health and Sports. The survey teams identified and labeled a total of 582 campaign nets from these households. Field team training was done in Tamu the week of May 16–20, 2016, with the support of a training consultant from Tropical Health. Data collection started one week after IRB approval was obtained from JHU and PSI and lasted 10 days in the field on June 10–19, 2016.

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5 World Health Organization (WHO). Guidelines for monitoring the durability of long-lasting insecticidal mosquito nets under operational conditions. Geneva: WHO; 2011. Available from: http://apps.who.int/iris/bitstream/10665/44610/1/9789241501705_eng.pdf

6 Annual parasite incidence of Tamu Township in 2015 was 1.66 according to NMCP.

As the study focused on the different brands of campaign ITNs distributed in the same area, no major differences in household characteristics, knowledge, attitude, and practices between the sites were expected nor found during this baseline study.

The study was done in the rural area of upper Burma. Consequently, average household sizes were slightly higher than the national figures. The majority used firewood as cooking fuel. Safe water supply was not optimal, but latrine access was nearly universal. Only one-third of households had radios, but mobile phone coverage was nearly 80%. More than half of households sometimes stored food in the sleeping room, but the majority never cooked there. Rodents were reported present in about two-thirds of households.

Handling of nets, washing, and detergent use were similar between the sites. Only about one-fifth were exposed to net-related messages, and recall was vague. Overall attitude scores toward nets and net care were similar and positive in both sites. More than half of households had experience with net repair.

Campaign ITN usage was only about 52%. Usage patterns were similar between the sites, and campaign ITNs were preferentially used by children under 10 years compared to non-campaign nets. Non-campaign nets were present in all households and were mostly obtained from the private sector.

The proportion of households with at least one ITN for every two people was about 60%, and population access to ITN was nearly 85%. After six months of campaign net distribution, overall attrition was nearly 20%, although nearly all due to giving ITNs away. Fifteen percent of the remaining nets had a few holes in them. However, almost every campaign ITN was still in serviceable condition at the time of the survey.

Next steps: Fieldwork for the 12-month durability assessment will occur at the two sites in Tamu Township between late November and mid-December 2016. The report will be complete and available by March 2017.

Deliverable	Timing	Responsible	Status
Final durability monitoring protocol	January 2016	PSI	Complete
Final research tools	January 2016	PSI	Complete
Ethical committee package submitted at JHU and in Burma	January 2016	PSI	Complete
Baseline fieldwork	June 2016	PSI	Complete
Baseline assessment report	October 2016	PSI	Submitted for the final approved technical report

MM.2 Data Analysis and Dissemination Workshop

Brief activity description: Capacity strengthening is a key component of the ITN durability monitoring activity. PSI Burma will conduct a data analysis and dissemination workshop for the NMCP and other partners who may lead or support ITN durability monitoring, with the aim of providing a technical base of knowledge that will allow participants to conduct these activities in the future. The workshop will be held for one week and will use data collected from the six-month baseline assessment of ITNs.

Status (including next steps, challenges, and opportunities, if any): A data analysis workshop was conducted by the PSI Burma research team, utilizing baseline assessment on August 22–26, 2016. PSI facilitated the workshop, which focused on familiarizing participants with methods of analysis and data preparation from VectorWorks for producing durability monitoring reports. PSI is also planning to conduct a separate dissemination workshop to release baseline results from the durability monitoring study with NMCP and partners at the end of November 2016. This was originally scheduled to occur earlier, during Year Two of the VectorWorks project, but has been postponed due to NMCP participant availability.

The principal investigator and malaria program director from PSI, one NMCP investigator, and a Department of Medical Research representative will attend the American Society of Tropical Medicine and Hygiene annual meeting in Atlanta in November 2016 and will also participate in side meetings for ITN durability monitoring investigators organized by JHU Center for Communication Programs (CCP).

Deliverable	Timing	Responsible	Status
Dissemination workshop agenda and workshop report	November–December 2016	PSI	Year 3 deliverable
Ethical committee review for 12-month assessment	November 2016	PSI and CCP	In progress
12-month assessment: fieldwork	December 2016	PSI	Planning
12-month assessment: report	March–April 2017	PSI	Year 3 deliverable

Project Management

MM.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks will provide an annual work plan to be approved by PMI Burma, quarterly financial reports, and semiannual progress reports. VectorWorks understands that they may be asked to provide information as needed by USAID for the purposes of the PMI annual report, such as strategic planning, VIP visits, and congressional reports.

Deliverable	Timing	Responsible	Status
Work plan	November 2015	CCP	Complete
Quarterly financial reports	Quarterly	CCP and PSI	Complete
Semiannual progress reports	April 15 and November 15, 2016	CCP and PSI	Complete and herein
Trip report(s)	Within two weeks of travel	Person traveling, via CCP	N/A

VectorWorks DRC Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

CCP	Johns Hopkins Center for Communication Programs
DRC	Democratic Republic of the Congo
ITN	insecticide-treated net
NMCP/PNLP	National Malaria Control Program/Programme National de Lutte Contre le Paludisme
PMI	U.S. President's Malaria Initiative

Background

The VectorWorks project is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs) and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

Project Objectives

Objective 1: Policy. Develop and promote policies at both international and national levels to encourage sustained, high-level coverage and use of ITNs and/or alternative vector management interventions.

Objective 2: Monitoring, evaluation, and operational research. Design, conduct, and analyze results from monitoring, evaluation, and operational research activities to improve current best practices for ITN distribution and use and/or alternative vector management interventions.

Objective 3: Implementation. Promote and support country-level implementation of malaria prevention activities to ensure sustained, high-level coverage and use of ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

Context

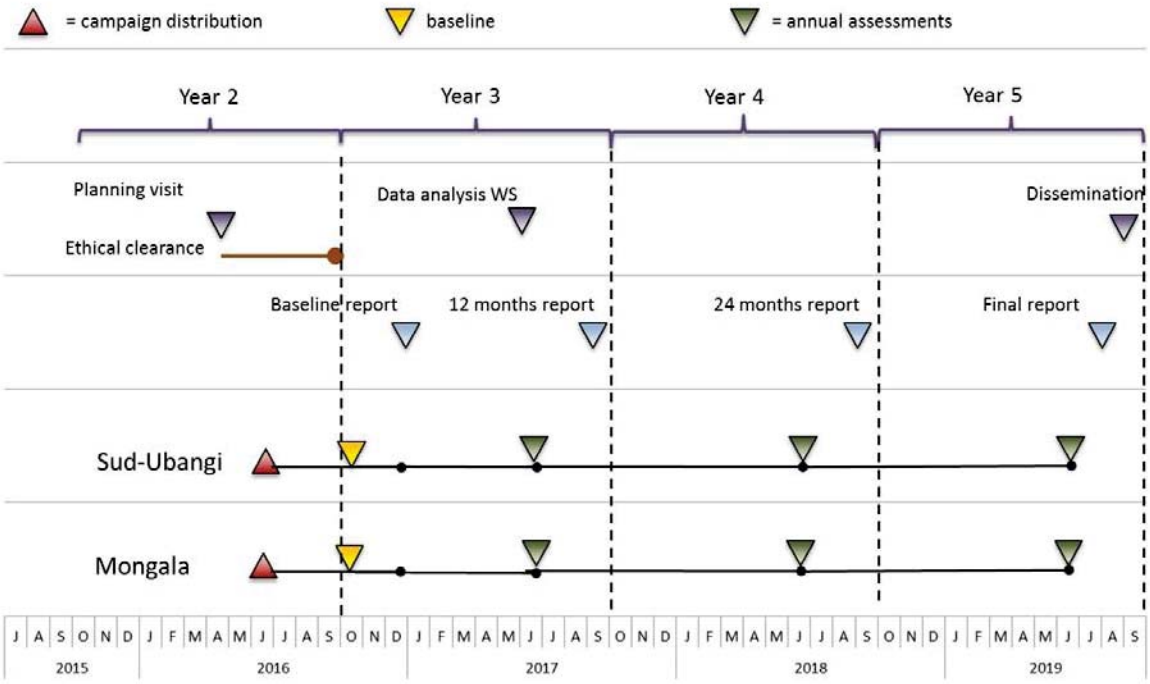
The VectorWorks project was asked to support PMI in monitoring the durability of ITNs in the Democratic Republic of the Congo (DRC). The durability monitoring will provide the DRC National Malaria Control Program (NMCP), Roll Back Malaria partners, and PMI with valuable information regarding the performance and estimated "useful life" of the ITNs distributed during the current round of mass campaigns.

Since 2011, DRC and international partners (U.K. Department for International Development, the Global Fund to Fight AIDS, Tuberculosis and Malaria, PMI, United Nations Children's Fund, and the World Bank) have distributed more than 40 million ITNs in universal-coverage campaigns in all provinces, complemented by routine distribution in health facilities. In 2015, a new round of mass distributions was planned, and 10 out of 26 provinces organized campaigns between October 2015 and February 2016.

While DFID funded a retrospective ITN durability assessment in DRC implemented by PSI in April 2015, the recall period ranged from 5 months to 3 years. Some anecdotal reports have led some partners to assume that the useful life of an ITN may be as low as 1.5 years (*NetWorks Evaluation of Routine Distribution and Options for Continuous Distribution in DRC*, 2014). If confirmed at a population level, this information would have significant impact on the country's malaria prevention efforts. Thus, collecting reliable data on ITN durability and building capacity in-country for repeated durability monitoring are crucial at this point in time.

DRC.1 ITN Durability Monitoring

Brief activity description: The ITN durability activity in DRC follows the general guidance of PMI: in each of the selected sites, one administrative unit (Zone de Santé) is selected, and—following the mass distribution of ITNs—a representative sample of households is selected for a baseline survey. All nets in these households that can be verified to be from the campaign are labeled with a unique identification number and designated for follow-up. An assessment of attrition and physical condition of these nets is done 12, 24, and 36 months following the mass campaign (see figure below). In addition, at each round of follow-up, a sample of 30 additional campaign nets is collected at each site for laboratory assessment of insecticidal effectiveness (bioassay). These extra nets are taken from outside the campaign net cohort at 12 and 24 months of follow-up and directly sampled from the cohort at 36 months. At all follow-up points, various environmental and behavioral risk factors for durability are monitored. The ITN brands being monitored are the polyester-based DawaPlus 2.0 and the polyethylene-based DuraNet. The sites are directly bordering each other so that a comparison between the brands can be made.



Status (including next steps, challenges, and opportunities, if any): An initial planning visit by Dr. Albert Kilian took place in April 2016. At this time, Dr. Killian identified project partners (NMCP and Ecole de Santé Publique, with Professor Paul Mansiagi as coordinator). He presented the concept and methodology of durability monitoring, based on priorities of NMCP, and identified the timing and sites of the campaigns: Sud-Ubangi Province (Ndage ZS) and Mongala Province (Binga ZS).

In the following months, project partners prepared the protocol and submitted it for ethical clearance in DRC, at Johns Hopkins University, and at the U.S. Centers for Disease Control and Prevention. These ethical

clearances were obtained in August 2016. By this time, a memorandum of understanding had also been completed with Ecole de Santé Publique and funds for fieldwork transferred.

The start of fieldwork was planned for the last week of September but had to be postponed due to civil unrest in Kinshasa in early September. A consultant for Tropical Health/VectorWorks (Arturo Garcia Fernandez, Relief Applications) then traveled to DRC in early October. Data collection for baseline occurred in October 11-28, 2016.

Next steps:

1. Finish training and baseline with monitoring of data
2. Process data and prepare report
3. Prepare for data analysis workshop and 12-month data collection in July and August 2017

Deliverable	Timing	Responsible	Status
1. Final durability monitoring protocol	April 2016	Tropical Health	Done
2. Final research tools	April 2016	Tropical Health	Done
3. Ethical committee package submitted to CCP and in DRC	May 2016	Tropical Health	Done
4. Baseline fieldwork	October 2016	Tropical Health	Ongoing at time of reporting
5. Baseline assessment report	December 2016	Tropical Health	N/A

Project Management

DRC.PM.1 Work Plan and Reporting

Brief activity description: The VectorWorks project will provide an annual work plan to be approved by PMI DRC, as well as quarterly financial and semiannual progress reports. The VectorWorks project understands that information may be requested by the U.S. Agency for International Development for the purposes of the PMI annual report, strategic planning, VIP visits, congressional reports, and similar purposes.

Status (including next steps, challenges, and opportunities, if any): The Year Three work plan has been submitted and was approved in October 2016. A trip report from the planning visit was also submitted.

Deliverable	Timing	Responsible	Status
Work plan	November 2015	CCP	Completed
Quarterly financial reports	Quarterly	CCP	Submitted
Semiannual reports	May 15 and November 15, 2016	CCP	Complete and herein

Trip report(s)	Within two weeks of travel	Traveler, via CCP	To be submitted following fieldwork

VectorWorks Ghana Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

AMP	Alliance for Malaria Prevention
ANC	antenatal clinic
BCC	behavior change communication
CWC	child welfare clinic
DHIMS	District Health Information Management System
DHMT	district health management team
DMT	district monitoring teams
EMIS	Education Management Information System
EPI	Expanded Programme on Immunization
GES	Ghana Education Service
GHS	Ghana Health Service
ITN	insecticide-treated net
LOE	level of effort
MaVCOC	Malaria Vector Control Oversight Committee
MCH	maternal and child health
NGO	nongovernmental organization
NMCP	national malaria control program
NMT	national monitoring team
Peers RUN	Peers for Regular Use of Nets
PMI	U.S. President's Malaria Initiative
RHMT	regional health management team
RMT	regional monitoring teams
SHEP	School Health Education Program
USAID	U.S. Agency for International Development
VCWG	Vector Control Working Group

Background

The VectorWorks project is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs), and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. The VectorWorks project activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

The purpose of the planned project activities in Year Two was to build upon the successes achieved in Year One and to continue to provide assistance to the National Malaria Control Program (NMCP) of the Ghana Health Service (GHS) to achieve its goal of sustaining universal coverage of ITNs through continuous distribution and mass ITN distribution campaigns.

Project Objectives

Three main objectives guide the implementation of the VectorWorks project in Ghana:

Objective 1: Increase the intensity and effectiveness of adoption of continuous distribution channels for ITNs:

- Antenatal clinics (ANCs), targeting pregnant women and their first ANC visit.
- Child welfare clinics (CWCs), targeting children receiving their measles 2 vaccination through the Expanded Programme on Immunization (EPI).
- Primary schools, targeting children in primary classes 2 and 6.

Objective 2: Provide technical and other levels of support to improve the effectiveness of mass ITN distribution campaigns.

Objective 3: Collaborate with other programs and organizations to promote sustained ownership and appropriate use and care of ITNs through effective mobilization and behavior change communication (BCC).

Summary

A key focus for Year Two was capacity strengthening for GHS personnel at the regional, district, and health facility levels, with the goal of sustaining improvements in health-facility-based ITN distribution. Ghana continued with its mixed-model of ITN distribution, focusing primarily on mass distribution campaigns, school-based distribution, and health facility-based distribution. Ghana conducted a second round of ITN mass distributions in the Volta and Eastern regions in October-November of 2014 and in Ashanti, Brong Ahafo, Central and Western regions in 2015. In 2016, the mass net distribution campaign concluded with the Upper East, Northern, Greater Accra and Upper West regions. Cumulatively, 11,258,171 ITNs were distributed in nine regions (Volta, Eastern, Ashanti, Brong Ahafo, Central, Western, Upper East, Northern

and Greater Accra). The Upper West Region, which received 436,694 ITNs, was the last of the regions to be served and its post campaign validation report is yet to be finalized.

For health facility-based ITN distribution, VectorWorks built on the success of the regional, district and health facility monitoring team training conducted in the Ashanti, Brong Ahafo, Northern and Upper East regions in Year One. In Year Two, VectorWorks worked with the national monitoring team (NMT) to reorient regional- and district-level personnel involved in the health-facility-based ITN distribution program in an additional five regions- Greater Accra, Central, Eastern, Western, and Volta. In these regions, VectorWorks trained targeted regional and district personnel to serve as trainers of health-facility-level workers. The trainings focused on capacity building of teams to effectively manage ITN distribution at the health facility level, specifically in the area of stock management. This included training on: inventory control, documentation of ITNs received and issued, reporting, and the role of regional, district and health facility teams. Since being trained, these regional and district trainers have completed on-the-job trainings on ITN distribution for health-facility-level workers in these five regions.

VectorWorks led and funded regional review meetings to provide a platform for district health management teams (DHMTs) to share updates, experiences, and lessons learned on health-facility-based ITN distribution with their regional health management teams (RHMTs). Review meetings were conducted in seven regions in Year Two-Ashanti, Brong Ahafo, Eastern, Northern, Upper East, Volta, and Western. These review meetings also afforded NMT members the opportunity to provide direct feedback to regional and district teams on their observations of the health-facility-based ITN distribution monitoring and to share corresponding recommendations for improved implementation.

Major challenges presented during these review meetings included: funding for transportation of ITNs from districts to health facilities, ITN stock outs, non-adherence to re-ordering protocols, and poor documentation by health facility staff. VectorWorks remains in frequent contact with the NMCP, which is responsible for supply of ITNs to the districts, to address the stock outs. District and regional teams, with support from VectorWorks, continue to provide routine supervision to health facilities, especially those with challenges in stock management, documentation, and reporting. The issue of funding for movement of ITNs from district stores to health facilities remains a challenge.

In Year Two, the VectorWorks project also provided support to the NMCP for improving the implementation of the mass ITN distribution campaigns in the remaining five regions earmarked for mass campaigns- Central, Ashanti, Upper East, Northern, and Greater Accra. VectorWorks supported the revision of the mass ITN distribution guidelines document in October, 2016, and also provided technical support for training sub district staff in validating household registration data collected for ITN quantification in five regions-Ashanti, Central, greater Accra, Northern, and Upper East. Upon request from the NMCP, VectorWorks led the planning, organization, and implementation of the mass ITN distribution campaign in the Upper East Region in January 2016. A total of 695,061 ITNs were distributed in the Upper East, with 98.60% coverage.

A major challenge faced by the campaign was the fact that most households presenting coupons did not understand the principle of universal coverage (one ITN for two people in a household) and therefore came to the distribution point demanding ITNs corresponding to the number of people in their households. Other challenges included: presentation of many coupons from numerous households by one person; accusation by some community members of volunteers stealing nets leading to tension in some

prepositioning sites; and overcrowding at distribution points in the larger urban towns such as Wa and Nandom. Strict leadership and continuous education of community members and volunteers, coupled with immediate efforts to resolve conflicts, helped to reduce the effects of these challenges.

Finally, the VectorWorks project led the implementation of the 2016 school distribution of ITNs in partnership with the NMCP, the School Health Education Program (SHEP) of the GES, and the USAID | DELIVER project. 936,359 ITNs were distributed to pupils in primary classes two and six in 16,026 public and private schools in six regions that completed mass campaigns by the end of 2015-Ashanti, Brong Ahafo, Central, Eastern, Volta and Western. This work was accompanied by the launch of an ITN use and care BCC campaign in which GES school health and cultural officers, malaria focal persons, and district health promotion officers were trained. BCC materials (i.e., a teacher's guide on malaria education and posters on ITN use and care) were produced and deployed to all schools. During the implementation of the school-based ITN distribution, strong collaborations and partnerships were formed among the key stakeholders, including the NMCP, the Health Promotion Department of the GHS, SHEP, the Communicate for Health project, and Peace Corps Ghana. These partnerships set the tone for improving collaboration in school-based and other malaria prevention activities in the future. A major challenge in this year's school distribution was the difficulty in obtaining accurate enrolment data from schools.

Policy Activities

GH.PC.1 Coordination

GH.PC.1.A ITN Subcommittee Meetings

Activity description: The ITN subcommittee is an important forum for various actors in the ITN distribution, and ITN use and care education environment. These key stakeholders include: USAID, PMI, DFID, UNICEF, World Vision International, NetsforLife, The Ghana Coalition of NGOs in Malaria, and others organizations that help the NMCP to review ITN distribution and ITN use and care issues. This forum also provides the appropriate stage for keeping the topic of ITN continuous distribution on the agenda of national stakeholders and decision makers.

Status: Four subcommittee meetings were held in Year Two, on a quarterly basis. These meetings served as the forum for planning and implementing the mass ITN distribution activities in the Ashanti, Central, Upper East, Northern, and Greater Accra regions. In these meetings, VectorWorks focused on accurate quantification and allocation of nets to the various districts and communities and the need for validation of community population data. For health-facility-based ITN distribution, VectorWorks provided updates on the training of district teams and health facility staff for ITN distribution through ANCs and CWCs. Progress was discussed, as were persistent challenges such as ITN stock outs, poor record keeping on ITNs distributed, and delays in requests for ITN restocking.

There is a need to re-energize the ITN subcommittee meetings in Year Three by ensuring that more stakeholders, including faith-based organizations and other community-level organizations (e.g. the Ghana Coalition of NGOs in Malaria, are motivated to be active participants in sub committee's meetings.The VectorWorks project will also liaise with the leadership of the NMCP vector control team to ensure that net use and care issues receive more attention.

GH.PC.1.B Malaria Vector Control Oversight Committee (MaVCOC) Meetings

Activity description: The Malaria Vector Control Oversight Committee (MaVCOC), with its current expanded nature, serves as a forum for all institutions, public and private, that are engaged in vector control activities. In this forum, partners report on the status of implementation of their programs, share experiences, and, when necessary, seek technical advice and support from other implementing partners. MaVCOC meetings provide VectorWorks the opportunity to interact with key stakeholders, improve coordination, promote effective implementation of vector control activities, and avoid duplication of efforts and activities among implementing partners.

Status: Four MaVCOC meetings were held during Year Two, on a quarterly basis. The meetings were held in Accra and Tamale alternately. During these meetings, the VectorWorks project updated the committee on the status of its ITN continuous distribution activities in health facilities and schools. Updates from organizations that are implementing indoor residual spraying (e.g. AngloGold Ashanti Malaria Control Ltd, Abt Associates, and USAID's Africa Indoor Residual Spraying Project) were also provided, while scientists from the Noguchi Memorial Institute for Medical Research and the Ghana Atomic Energy Commission discussed the entomological monitoring being carried out by their institutions. MaVCOC also served as a unit for preserving order in the vector control environment by inviting private sector companies marketing other vector control interventions, such as insecticidal paints and air conditioners, to provide scientific evidence on the efficacy of their products.

Discussions of ITN use and care, as well as disposal of used nets and resulting environmental impacts, were not greatly emphasized in MaVCOC meetings this year. The VectorWorks project will ensure these issues are featured on the agenda in Year Three by engaging the NMCP vector control team leadership in development of meeting agendas.

GH.PC.1.C Vector Control Working Group (VCWG) Meeting in Geneva

Activity description: The meetings of the Vector Control Working Group (VCWG) of the Roll Back Malaria partnership and the Alliance for Malaria Prevention (AMP) are important events that provide opportunities for various institutions, scientists, program managers, and implementers to showcase their work, share ideas and practices, and learn from each other. In the past, the VCWG and AMP meetings offered VectorWorks the chance to share the success of Ghana's school-based ITN distribution program with other countries that are planning to scale up school-based ITN distribution.

Status: The VectorWorks Ghana chief of party, senior technical advisor, and the lead officer of the Vector Control Team at the NMCP participated in the VCWG and AMP meetings in Year Two. These two global meetings provided an opportunity for diverse partners in the malaria vector control community to achieve a common understanding of the malaria vector control environment, current and emerging challenges, and opportunities for improving the results of the various ITN procurement and distribution programs. Having the public sector, private sector, civil society, and technical and scientific community share their knowledge and experiences was an exciting learning opportunity for all participants, including the VectorWorks Ghana project staff and the NMCP representative.

The AMP meeting, which focused on distribution of nets in complex environments, provided lessons on how to plan and manage campaign logistics to achieve maximum results. The discussions on insecticide

resistance and the need to investigate alternatives to current insecticides dominated the VCWG meeting and attracted the attention of the Ghana team, as the problem of resistance has begun to emerge in the northern part of the country. The poster and innovations sessions at the VCWG meeting also provided opportunities to interact with a variety of scientists and vector control equipment manufacturers.

In Year Three, VectorWorks will circulate the VCWG meeting invitation among MaVCOC members to encourage other vector control institutions in Ghana to attend. MaVCOC member organizations to be invited will include the Noguchi Memorial Institute for Medical Research and the Ghana Atomic Energy Commission.

Deliverable	Audience	Timing	Dissemination plan	Status
Trip report on AMP and VCWG meetings	PMI, NMCP, GHS, GES	Quarter 2	Shared via email	Completed and submitted

Implementation and Capacity-Building Activities

GH.IM.1 Support for Health-Facility-Based ITN Distribution

GH.IM.1.A [Year One Activity Only]

[Year One activities have been completed.]

GH.IM.1.B Reorientation of Regional and District Health Management Teams for Health-Facility-Based ITN Distribution

Activity description: In Year One, the VectorWorks project facilitated the formation of regional monitoring teams (RMTs) and district monitoring teams (DMTs) as steps toward addressing issues of poor management of ITN distribution, record keeping, and accountability in health facilities. In Year One, key regional and district personnel in four regions (Ashanti, Brong Ahafo, Upper East and Northern) were trained to provide trainings for all health workers in all health facilities that were involved in ANC and CWC services. The health workers were trained on proper ITN distribution, documentation, and reporting. The reorientation of regional and district personnel and subsequent trainings of health workers have led to effective monitoring of health-facility-based ITN distribution and improved reporting of ITN distribution at the health facility level and through the District Health Information Management System (DHIMS) platform. Over 80% of all ITNs distributed in health facilities were reported in DHIMS.

Status: In Year Two, the NMT trained key regional and district personnel in five additional regions (Volta, Eastern, Western, Central, and Greater Accra) to train health workers in ITN distribution. In these five regions, 65 regional team members and 389 district team members were trained (each regional and district team is made up of an average of 6 officers). This contributed to improved involvement of more officials and better management of ITN distribution activities at the regional and district levels.

Deliverable	Audience	Timing	Dissemination plan	Status
Summary report on reorientation of regional and district personnel	PMI, RHMTs, NMCP, MCH, EPI	Quarters 1, 2, 3, 4	Shared via email	Completed and submitted

GH.IM.1.C On-the-Job Training and Monitoring of Health-Facility-Based ITN Distribution

Activity description: In Year One, the VectorWorks project supported regional and district personnel to provide on-the-job training for all health facility staff involved in ITN distribution in four regions- Ashanti, Brong Ahafo, Northern, and Upper East. Beyond these trainings, RMTs and DMTs were responsible for effectively monitoring ITN distribution in health facilities as part of their quarterly routine integrated monitoring. The RMTs and DMTs used a checklist to assess health facility service data, logistics, inventory, and education on ITN use and care.

Status: In Year Two, the VectorWorks project, in partnership with the NMT, trained RMTs and DMTs in five additional regions- Central, Eastern, Greater Accra, Western, and Volta. The RMTs (65 members) and DMTs (389 members) conducted on-the-job training for 8,305 health workers in 2,413 health facilities in these five regions. The number of health workers trained represents approximately 70% of targeted health workers. The 30% not reached were off duty, either on vacation or on other assignment outside the district, during the training period. The health workers not reached will be targeted for training in Year Three during routine monitoring of health facilities by DMTs.

Deliverable	Audience	Timing	Dissemination plan	Status
Summary report on health-facility-level on-the-job trainings in five regions	PMI, RHMTs, NMCP, MCH, EPI	Quarters 1, 2, 3, 4	Shared via email	Report completed; to be submitted in Quarter 1 of Year 3
Summary report on monitoring of health-facility-based ITN distribution in nine regions	PMI, RHMTs, NMCP, MCH, EPI	Quarters 1, 2, 3, 4	Shared via email	Report completed; to be submitted in Quarter 1 of Year 3

GH.IM.1.D Regional Review Meetings

Activity description: Periodic regional review meetings provide participants with opportunities to discuss health service delivery in the regions. In these forums, district authorities provide updates on health facility performance and also shared experiences and recommendations for improving health service delivery. The VectorWorks project use this model of review meetings to share effective approaches for health-facility-based ITN distribution to foster performance improvement among districts in all regions.

Status: In Year Two, one review meeting was conducted in each of the seven regions- Ashanti, Brong Ahafo, Eastern, Northern, Upper East, Western, and Volta. The meetings provided a forum to review health-facility-level trainings and the monitoring and status of health-facility-based ITN distribution. District teams presented reports on trainings, findings from monitoring visits, and data from the DHIMS showing trends and comparisons in ANC and CWC attendance and ITN distribution. This forum also provided an opportunity for districts to learn best practices in ITN logistics and supply management, including ordering protocols and strategies for distribution and documentation of ITNs in outreach clinics.

Generally, the major implementation challenge found was ITN stock outs. These stock outs in health facilities were due mainly to competing demand for ITNs for mass ITN distribution campaigns, as the NMCP ordered the shifting of all available nets onto the mass distribution campaign. Review meetings in the Greater Accra and Central regions were postponed until Year Three due to these stock outs. VectorWorks will follow-up with the NMCP in Year Three to help address this challenge.

Deliverable	Audience	Timing	Dissemination plan	Status
Summary report of review meetings in seven regions	PMI, RHMTs, NMCP, MCH, EPI	Quarter 4	Shared via email	Reports for seven regions completed; to be submitted in Quarter 1 of Year 3

GH.IM.2 Support for Mass ITN Distribution

GH.IM.2.A Training of District and Subdistrict Supervisors in Validation of Community Population Data for ITN Quantification

Activity description: Upon review of the distribution processes from the early stages of implementation of mass ITN distribution in the Eastern and Volta regions, the VectorWorks project observed that household registration data collected from communities for ITN quantification varied in many cases from the expected population projection data. This discrepancy often led to over- or under quantification of ITNs. There was therefore a need to validate household registration data submitted by communities for ITN quantification. Building on a validation tool used during the last mass ITN distributions in Ghana in 2011–2012, VectorWorks developed a validation tool that has led to more informed ITN quantification and proper accountability for ITNs supplied to regions and districts for mass distribution. The tool has also helped to avoid over- and undersupply of ITNs.

Status: The VectorWorks project supported the NMCP in validating community population data in five regions for the mass ITN distribution campaigns in Year Two. Approximately 293 district and subdistrict supervisors in the five regions were trained to use the validation tool to detect variances (2% based on population growth) in population data received from communities for ITN quantifications. Through this process, the district and sub-district authorities checked community data received, and the regional and national teams further checked this data. Where significant variances (beyond the 2% threshold) were detected, supervisors from the national, regional, and district levels visited identified sub-districts and

worked with the sub-district supervisors to identify communities with data issues. VectorWorks worked with district validation teams to review the data from communities, and subsequently a sample of households were visited to confirm household size and membership.

Deliverable	Audience	Timing	Dissemination plan	Status
Summary report on proceedings of subdistrict-level trainings in five regions	PMI, NMCP, GHS, RHMTs, DHMTs	Quarters 1, 2, 3, 4	Shared via email	Completed and submitted

GH.IM.2.B Monitoring of Mass ITN Distributions

Activity description: Inadequate numbers of personnel providing supervisory and monitoring support to the actual mass ITN distribution process has been noted among the key challenges for the NMCP and its partners. Additional support in coordinating, monitoring, and supervising the mass ITN distribution activities has helped the NMCP achieve better implementation and achievement of targets.

Status: To ensure proper implementation of activities during mass distribution of ITNs per the agreed guidelines, in Year Two the VectorWorks project supported the NMCP and partners in implementing and monitoring mass campaigns in five regions- Ashanti, Central, Greater Accra, Northern, and Upper East. Typically, teams are formed and assigned to districts. All five VectorWorks program officers and their respective supervisors worked with the NMCP teams to visit districts and sub-districts distribution sites to ensure that health officers and volunteers distributed ITNs based on approved household registration data, and also to ensure that beneficiaries were given education on ITN use and care. Teams also worked with district and sub district teams to ensure ITNs moved from pre-position sites to distribution sites and addressed any challenges that arose.

Deliverable	Audience	Timing	Dissemination plan	Status
Report on monitoring of mass ITN distributions in five regions	PMI, RHMTs, NMCP, MCH, EPI	Quarters 1, 2, 3, 4	Shared via email	Completed and submitted

GH.IM.2.C Revision of Mass ITN Distribution Guidelines

Activity description: Toward the end of Year One, VectorWorks led a "lessons learned workshop" with the NMCP. This workshop brought together regional malaria focal persons and deputy directors of public health from the Volta, Eastern, Brong Ahafo, and Western regions, where point mass distribution campaigns had taken place. The results of this workshop revealed best practices and also challenges faced in applying the implementation guidelines to the campaigns. The meeting also offered suggestions for revising and improving the guidelines, and as a result, the point mass distribution guidelines were revised in Year Two.

Status: The VectorWorks project coordinated a two-day meeting to review the national guidelines for the implementation of mass ITN distributions in Ghana. VectorWorks led the technical revision and reorganization of the document, making sure the key activities to be undertaken in the three main phases of implementation—planning, implementation, and post-distribution—were properly outlined. The revised document also included an extensive list of stakeholders at all levels, to enable regions to develop the appropriate partnerships for mass distribution activities. Training of volunteers was also introduced to improve their performance in household registration and in the conduct of the distribution process also received attention in the revised document. The improved mass ITN distribution guidelines document was printed, distributed, and used to guide the campaigns in the five regions targeted for mass ITN distributions in Year Two.

From the mass ITN distribution activities that took place in the Greater Accra and Ashanti regions, both with large urban populations, the need to give due consideration to the unique characteristics of urban populations became evident. Characteristics such as high heterogeneity of populations and very mobile workers who are not as easily reachable as rural community dwellers require specific consideration in planning future mass distribution campaigns. Other recommendations for improving mass distribution of ITNs in the large urban areas include the following:

- Intensify social mobilization and allow sub-metros to help develop programs to utilize local resources, especially to improve understanding of universal coverage definition and strengthen logistics.
- Increase resources for the campaign to facilitate recruitment of more volunteers and supervisors to support more distribution sites, help control crowds, and allow fewer days for each phase of the campaign.
- Promote greater inclusion of sub-metro and metro teams in development of the micro plan to guide mass distribution campaigns.

Deliverable	Audience	Timing	Dissemination plan	Status
Revised point mass distribution guidelines	PMI, NMCP	Quarter 1	Shared via email	Completed and submitted

GH.IM.2.D Lead Mass ITN Distribution Activities in Upper East Region

Activity description: The VectorWorks project has supported the NMCP in all distribution campaigns since April 2015, and has led the validation of household and community population data collected during household registration to ensure that accurate data is obtained for the campaigns. To maximize efficiencies and to meet critical deadlines, the NMCP requested that VectorWorks lead the implementation of mass ITN distribution activities in the Upper East Region during Year Two, while the NMCP focused on the Central and Ashanti regions.

Status: The VectorWorks project conducted stakeholder meetings with the Upper East RHMT and DHMTs to plan and agree on timelines for the mass ITN distribution activities. Additionally, VectorWorks trained trainers for future supervisor and volunteer trainings. VectorWorks supervised the training of 2,800 volunteers and 273 supervisors to ensure that the household registration process was conducted correctly. Household registration took place in all communities from January 4-8, 2016. Data from households were allocated by trained supervisors and validated by teams from district, region and national levels. Approximately 23% of communities had their data showing variances. Households were sampled from these communities by teams to check household sizes and registration coverage to ensure household sizes were correct and all households were registered. VectorWorks also provided technical oversight and monitored all activities according to the agreed guidelines for mass ITN distribution. A total of 695,061 ITNs were distributed in 990 distribution sites in the Upper East Region through the mass distribution campaign in January 25-31, 2016.

One key challenge encountered was the difficulty by some community members to accept the universal coverage formula for the allocation of ITNs (2 people in a household receiving 1 LLIN). In some communities (mostly urban), volunteers had to visit households multiple times to meet them for registration. As usual, crowd control during the distribution was a challenge in some urban communities.

Deliverable	Audience	Timing	Dissemination plan	Status
Report on point mass distribution campaign in Upper East Region	PMI, NMCP, GHS, Upper East RHMT	Quarter 2	Shared via email	Completed and submitted

GH.IM.3 Community Mobilization and Behavior Change Communication

GH.IM.3.A Peers for Regular Use of Nets (Peers RUN) Program for Schools and Communities—Closeout

Activity description: Continuous distribution of ITNs requires continuous engagement of populations and communities to ensure that people are aware of distribution channels and know how to obtain ITNs, appropriately use ITNs, and properly care for ITNs. This work involves building social norms around proper net care and use and enabling communities to identify and develop their own solutions to ITN access, use, and care problems by encouraging collaboration among individuals, groups, and their leaders. The VectorWorks project piloted this concept through the Peers for Regular Use of Nets (Peers RUN) program in the first year and concluded it in the first quarter of the second year of project implementation.

Status: The Peers RUN pilot was brought to an end in Year Two with the VectorWorks project officers, district malaria focal persons, and district school health program officers conducting experience-sharing meetings in all seven pilot districts. The main stakeholders of the program, including district health and education officers, volunteers, community health officers, and community health nurses participated in these meetings. In the meetings, the district health and education authorities were advised to integrate Peers RUN activities, especially the activities promoting net use and care, into their malaria prevention initiatives.

During the Peers RUN pilot period, (June 2015 to November 2015) 253 people (74 volunteers known as Peers RUN Contacts, 70 health worker supervisors, 56 teacher Peers RUN Contacts, and 53 head teacher supervisors) were trained to implement the Peers RUN program in the seven pilot districts. Of this number, 157 were men and 96 were women. Across all the pilot districts, volunteers and community health officers visited 11,148 households or community health nurses to promote malaria prevention and net use and care. A total of 11,606 community members (7,494 women and 4,112 men) participated in the community durbars (meetings) that were held in 35 communities in the seven pilot districts to promote net use. Also, more than 5,000 individual class sessions and more than 3,000 daily malaria net use message dissemination activity sessions were held in 47 primary schools in the pilot communities.

Lessons learned from the Peers RUN program were beneficial to developing net use and care communication activities for the primary schools BCC program. These include organization of various school activities, such as: classroom pick and talk contests, debates, drawing contests, and drama (explicated in the teacher's guide distributed by VectorWorks) as well as community-based and general school assembly level talks on malaria prevention by health workers.

Deliverable	Audience	Timing	Dissemination plan	Status
Peers RUN pilot conclusion report	PMI, NMCP, SHEP, RHMTs and DHMTs of pilot regions and districts	Quarter 1	Shared at a dissemination meeting and via email	Completed and submitted

GH.IM.3.B [Year One Activity Only]

[Year One activities have been completed.]

GH.IM.3.C [Year One Activity Only]

[Year One activities have been completed.]

GH.IM.3.D [Year One Activity Only]

[Year One activities have been completed.]

GH.IM.4 Support for School-Based ITN Distribution

Activity description: The NMCP and its partners have recognized school-based distribution as an important channel for sustaining ITN coverage in households. In Year Two, VectorWorks led the implementation of the school-based distribution program with SHEP, NMCP and the USAID | DELIVER PROJECT as key partners. Six of Ghana's ten regions were covered with this program. VectorWorks provided strong leadership for the schooldistribution program and worked closely with the NMCP and the SHEP of the GES in carrying out the following key activities.

- Orientation of key stakeholders: officials of the GES and other stakeholders at the district level.
- Validation of class enrollment data for quantification of ITNs.
- Promotion of school-based behavior change communication (BCC) for ITN use and care.

- Facilitation of supervision and monitoring of the ITN distribution process to ensure that the right processes are followed and the nets reach the right locations and children in the targeted classes.

The USAID | DELIVER PROJECT facilitated the movement of ITNs from the central level to district stores and schools.

Status: In Year Two, a total of 936,359 ITNs were distributed to students in classes 2 and 6 in 16,026 primary schools (10,480 public and 5,546 private) in six target regions—Volta, Eastern, Central, Western, Ashanti, and Brong Ahafo.

GH.IM.4.A Orientation of Key Stakeholders

Activity description: Stakeholder engagement and orientation is an important component of the school-based ITN distribution process. To strengthen stakeholder and community member engagement in this activity, VectorWorks with partners (SHEP and NMCP) trained officers of the district education directorate, in particular the district directors of education, assistant directors in charge of supervision, and SHEP coordinators, in the implementation of the school-based ITN distribution program. VectorWorks provided orientation on the school-based distribution campaigns and on their role as additional channels for education and awareness to parent-teacher associations and school management committees, which are the main forums for mobilizing stakeholders from the community and schools.

Status: The VectorWorks project organized a meeting for national and regional partners in education to discuss and plan the 2016 school-based distribution and also to agree on timelines and responsibilities for implementation. To achieve the goal of increasing ITN access and sustained behavior change, VectorWorks oriented 1,939 stakeholders in the primary schools distribution process. These included: the Ghana Education Service district directors, assistant directors in charge of supervision, and district SHEP coordinators. Others oriented included: circuit supervisors, private school coordinators, storekeepers, and malaria focal persons from all district health directorates in the six target regions.

The orientation was conducted with the following goals:

- Equip district directors of education and their teams, as well as GHS malaria focal persons, with the appropriate knowledge and skills to implement and supervise the school-based ITN distribution in their respective districts or circuits.
- Ensure effective communication and promotion of behavior development and behavior change in relation to ITN acceptance, regular use, and proper care through the school-based ITN distribution.

Deliverable	Audience	Timing	Dissemination plan	Status
Report on orientation of key stakeholders	PMI, NMCP, SHEP, DHMTs	Quarter 2	Shared via email	Completed and submitted

GH.IM.4.B Validation of Class Enrollment Data for ITN Quantification

Activity description: Obtaining accurate data for school-based ITN distribution is fundamental to the success of the program. The Education Management Information System (EMIS) data has been used to quantify ITN needs in previous distribution exercises. This data is not up to date, however, and does not

include some private schools. To overcome this challenge, enrollment data for the 2015–2016 academic year was collected and compared with the EMIS data through a desk validation process. Schools with enrollment data that showed a variance greater than the agreed rate of 15% were flagged for followed up and enrollment data confirmed.

Status: Overall, field verification of enrollment data was required for approximately 4,808 schools (30% of primary schools), because the variance between the enrollment data provided and the EMIS data was greater than the agreed rate of 15%. The field validation process, led by VectorWorks and co-funded with the NMCP, involved both confirming the class enrollment data submitted in school registers and performing head counts for the actual number of students in the target primary school classes (2 and 6). The team comprised national officers (VectorWorks, NMCP and SHEP) and regional district SHEP coordinators in all participating districts. The validation process showed that some of the data submitted by schools were estimates and not based on actual enrollment. There were a few cases of deliberate inflation of enrollment data. It was also discovered, during the desk validation process, that there were 1,591 more schools and 141,968 more students in the six regions than were recorded in the EMIS database.

The major challenge for the validation process was the delay in submission of school enrollment data by district authorities. Although the process of data collection began during the first term, it took some districts up to the end of the second term to collect and submit enrolment data. During advocacy and preparatory meetings, VectorWorks discussed the validation process for the 2016–2017 school-based ITN distribution with officials of the GES in order to pick lessons for improved distribution processes for future campaigns. A key recommendation, from those discussions, was to collect enrollment data during the second term (January to April) when enrollment stabilizes. This suggestion poses a challenge in gathering data early enough for validation and distribution of nets in May. VectorWorks and partners will put in place measures to ensure timely submission of data. This includes providing circuits with a list of the 2016 schools for circuits to add on to avoid missing out schools.

Deliverable	Audience	Timing	Dissemination plan	Status
Data validation report, to include approved validated ITN quantifications	PMI, NMCP, SHEP, DHMTs	Quarter 2	Shared via email	Completed and submitted

GH.IM.4.C Facilitation of Supervision and Monitoring of the School-Based ITN Distribution

Activity description: Circuit supervisors have the responsibility of transporting ITNs from district stores to schools for distribution. They are also required to ensure that distribution is done in accordance with class enrollment and that students are educated on the benefits of ITN use and care.

Status: In Year Two, VectorWorks funded supervision activities for school-based ITN distribution at all levels. Each implementing district had a team of supervisors consisting of the assistant director in charge of supervision, the district SHEP coordinator, the private school coordinator, and the district malaria focal person. Each team was led by the district director of education Using a checklist, developed during the

NetWorks project, the team members ensured that all schools had received the required number of ITNs, that distribution and documentation had been done properly, and that the right messages on ITN use and care had been passed on to the students. Each district team had the malaria focal person of the GHS as a supervisor to ensure effective collaboration between the GES and GHS while VectorWorks staff provided oversight. Regional and national supervisors travelled through as many districts as possible to support the district teams in monitoring the work of the circuit supervisors to ensure that the right quantities of nets were distributed to the schools.

Deliverable	Audience	Timing	Dissemination plan	Status
School-based ITN distribution monitoring report	PMI, NMCP, SHEP, RHMTs, DHMTs	Quarter 2	Shared via email	Report completed; to be submitted in Quarter 1 of Year 3

GH.IM.4.D Promotion of School-Based BCC for Malaria Prevention: ITN Use and Care

Activity description: In Year One, VectorWorks supported the school net use and care BCC activities that began in the second and final year of the NetWorks project. These included promoting drama performances by schoolchildren on malaria prevention behaviors. The pilot Peers RUN program, implemented in 35 communities in Year One and concluded in first quarter of Year Two, also engaged school head teachers and used them as agents in promoting malaria prevention behaviors among schools through a series of weekly activities. Both programs provided opportunities for schoolchildren to hear messages on malaria prevention on a regular basis and also to demonstrate such behaviors to their peers and community members at community events. The VectorWorks project therefore worked in Year Two to pull these activities together into a comprehensive program for malaria prevention BCC in primary schools in the six regions where the school-based ITN distribution campaigns took place.

Status: The VectorWorks project worked with its partners SHEP, the NMCP, the GHS's Health Promotion Department, USAID's Communicate for Health project, and Peace Corps Ghana to develop and launch a primary schools malaria prevention and net use and care BCC campaign. The campaign, which was formally launched by the deputy minister of health, Dr. Victor Bampoe, brought together about 1,000 people including 700 primary school students and their teachers, parents, and community leaders from the Lower Manya Municipality in the Eastern Region. Also present at the launch were the NMCP program manager, the director of basic education of the GES, the director of SHEP, the deputy regional director of health of the Eastern Region, and members of the traditional council of chiefs and queen mothers.

Throughout Year Two, 618 district officers of education (district SHEP coordinators and cultural officers) and health officers (malaria focal persons and health promotion officers) were trained on the primary schools ITN use and care BCC campaign, in six regions. This training included review of the key audience for the BCC campaign (students, teachers, community members, and opinion leaders) and the key messages, materials, and activities (e.g. class room pick and talk contest, debates, drawing contest, drama in schools and community all of which are explicated in the Teacher's Guide distributed by VectorWorks) for the campaign. These officers then trained 7,641 school-based SHEP coordinators from 50 schools in each

district of the six regions planned for the 2016 school-based distribution. The school-based SHEP coordinators were entrusted with the role of ensuring that malaria prevention communication activities were organized in the schools and also in the communities.

In addition, 1,695 GES officers across the six regions were trained in ITN distribution and promotion of BCC activities in schools. These officers included regional SHEP coordinators, district directors of education, assistant directors in charge of supervision, private school coordinators, logistics and supply officers, circuit supervisors of the GES, and regional and district malaria focal persons from the GHS.

VectorWorks produced four types of BCC materials and trained school-based SHEP coordinators and circuit supervisors who latter trained teachers in using the BCC materials to promote malaria prevention (net use and care) activities in the schools. During the year, the following BCC materials were distributed to all 16,026 schools in the six regions:

- 56,000 copies of the booklet "Promoting Malaria Prevention through Primary Schools—Communication Guide for Teachers"
- 30,000 copies of the poster "Free ITN Distribution Campaign—Malaria-Free Children"
- 40,000 copies of the chart "Key Facts on ITN Use and Care"
- 1,962 copies of drama scripts on malaria.

The primary schools BCC campaign was launched in May 2016 and in June the schools broke for their long holidays causing activities to be put on hold for about six weeks. With the reopening of schools in September, intensive review and reactivation of the schools' BCC program started in October 2016 and will continue to be carried out during Year Three.

Deliverable	Audience	Timing	Dissemination plan	Status
Report on BCC materials development and distribution	PMI, NMCP, GES (regional and district directorates)	Quarter 4	Share via email	Report completed; to be submitted in Quarter 1 of Year 3

Project Management

GH.PM.1 Project Setup and Operations

GH.PM.1.A Headquarters Staff

Technical and administrative support from VectorWorks headquarters in Baltimore focused on responding to field office needs. Ms. April Monroe provided technical backstopping for the project at 60% level of effort (LOE), Mr. Chris Matroniano supported financial administration at 10% LOE, and Mr. Matthew Lynch and Ms. Andrea Brown provided higher-level management support at 10% LOE and 5% LOE, respectively. Ms. Shola Robinson, later replaced by Ms. Hui Xie, provided remote imprest financial documentation support at 20% LOE.

GH.PM.1.B Field Operations

Dr. Ato Selby, field operations director for VectorWorks, provided technical assistance and field operations support for the project at 30% LOE.

GH.PM.1.C Field Staff

During Year Two, six technical staff supported project implementation. These included the senior technical adviser and five program officers. The finance and administration manager and one assistant provided administrative and financial management support, while the chief of party had overall technical and administrative oversight. There were also four drivers to support the VectorWorks project activities.

The VectorWorks project conducted a two-day training for its technical staff on the primary school distribution program and the implementation of the primary schools BCC program. This training, which was led by the Chief of Party and supported by Ms. Monroe, also provided the opportunity to clarify the role of the VectorWorks project and its program officers in supporting the point mass distribution campaigns of the NMCP. Capacity building for staff in the application of gender issues in project implementation also took place during Year Two; one program officer, Ms. Vivian Abiwu, and the monitoring and evaluation manager, Mr. Richard Kpabitey, were voted Gender Champions. Responsibilities of the Gender Champions, include: spearheading gender mainstreaming into project activities, and ensuring key recommendations for gender integration in VectorWorks HR Policy, practice and implementation of M&E, and operational research activities.

Weekly staff update meetings led by the chief of party also provided opportunities for staff to continually learn from each other and share experiences. The chief of party will continue to lead weekly and biweekly update meetings in Year Three to keep staff abreast of various developments in the areas of program implementation, partnerships, malaria prevention, and net use BCC activities.

The VectorWorks project will continue to operate with the current level of staff for both program and administrative support. The monitoring and evaluation manager and finance and administrative staff will, however, share their time with the new Private Sector Malaria Prevention Project, sponsored by the U.K. Department for International Development, at various LOE levels as described in the Year Three work plan.

GH.PM.1.D Field Office

At the beginning of Year Two, the Enhanced Social Marketing Initiative project, sponsored by the U.K. Department for International Development, ended abruptly. VectorWorks had until then shared some facility and some logistics management costs, such as office rent, with the project. The main operating costs in Year Two included fuel, vehicle insurance, vehicle maintenance, office rent, generator fuel, generator and air-conditioning maintenance, and information technology support. In Year Three, VectorWorks will resume sharing of costs on these items with the new Private Sector Malaria Prevention (PSMP) project.

GH.PM.1.E Local Travel

Local travel in Year Two included ground transportation with the VectorWorks project vehicles. Some journeys to the Northern and Upper regions were undertaken using local air travel. Local travel has

received a boost with the purchase of two new four-wheel-drive vehicles that will promote smooth and safe travel for program staff and therefore enhance performance.

GH.PM.1.F Vehicle Repair

Three available vehicles were repaired to ensure safe and reliable local transportation for project activities. One of the vehicles, a 2009 Ford Explorer, finally had to be grounded as it was considered unsafe to travel in the field after constant breakdowns and many bouts of repairs.

GH.PM.1.G Two Four-Wheel-Drive Vehicles to Support Project Implementation

Two new Nissan Patrol vehicles have been delivered by Japan Motors to the VectorWorks project and are ready for use supporting project implementation in Year Three and beyond.

GH.PM.2 Technical Assistance and Travel

GH.PM.2.A Technical Assistance Trips: Field Operations Director

During Year Two, Dr. Selby traveled from Nairobi to Accra on three separate occasions to provide technical assistance to the VectorWorks project team. He provided technical assistance for the regional review meeting on health-facility-based ITN distribution, review of project implementation and development of the Year Three work plan, and a national review meeting on overall ITN distribution in Ghana in September 2016. The final trip was taken in Quarter One of Year Three. Technical support visits by Dr. Selby will continue in Year Three.

GH.PM.2.B Technical Assistance Trips: Chapter Lead

Ms. Monroe traveled from Baltimore to Accra in Year Two to provide technical assistance to the country team. She supported orientation of technical staff in school-based ITN distribution, program review and work planning, and development of a gender strategy for the VectorWorks project. Technical support visits by Ms. Monroe will continue in Year Three.

GH.PM.2.C Travel: Chief of Party to Headquarters

The chief of party, Mr. Emmanuel Fiagbey, attended the global VectorWorks project partners and Year Three work plan development meeting in Baltimore in June 2016. The trip provided the opportunity for members of the VectorWorks consortium and staff from other implementing countries to share experiences. It also enabled the chief of party to better appreciate the context and rationale for activities planned for Year Three. The chief of party will participate in the Year Four project partners and work planning meeting in June 2017.

GH.PM.2.D Travel: Senior Technical Advisor to Headquarters

The VectorWorks project's senior technical advisor, Mr. Prince Owusu, traveled to Baltimore for the Year Three work planning meeting in June 2016. In addition to meeting with headquarters staff to plan for Year Three activities in Ghana, the trip provided an opportunity for the senior technical advisor to share in-country experiences and to better appreciate the context and rationale for activities planned for Year Three. The senior technical advisor will participate in the Year Four project partners and work planning meeting in June 2017.

VectorWorks Ghana
Performance Monitoring Plan
Annual Report: Year Two

Reporting period: October 1, 2015 to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

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Contents

Abbreviations

ANC	Antenatal care
BCC	Behavior change communication
CCP	Johns Hopkins Center for Communication Programs
DHIMS	District health management information system
EPI	Expanded Programme on Immunization
GES	Ghana Education Service
GHS	Ghana Health Service
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
GOG	Government of Ghana
ITN	Insecticide-treated net
JHU	Johns Hopkins University
LLIN	Long-lasting insecticidal nets
LOP	Life-of-project
MaVCOC	Malaria Vector Control Oversight Committee
MOH	Ministry of Health
MOP	Malaria Operational Plan
NMCP	National Malaria Control Program
NMT	National Monitoring Team
Peers RUN	Peers for Regular Use of Nets
PMI	U.S. President's Malaria Initiative
PMP	Performance monitoring plan
PO	Program Officer
SHEP	School Health Education Program
TBD	To be determined
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization

I. PMP Purpose, Components and Critical Assumptions

A. Purpose

This Performance Monitoring Plan (PMP) report describes how the framework for systematically collecting and using data to monitor the activities and achievements of the VectorWorks Project in Ghana was used. It describes the relationship between project activities and the overall goal to "increase country capacity to develop, monitor and implement vector management interventions." It also documents the key specific results that VectorWorks Ghana achieved and the progress it made towards achieving its targets.

B. Components

The report presents the various components of the PMP. These include the results framework, which describes the pathways linking activities to the project goal. Each activity contributes to the fulfilment of project objectives, which, in turn, contribute to the overall project goal. Documenting improvements along these pathways assisted in the attribution of achievements in agreement with objectives to the project's activities.

VectorWorks's activities in each result area with a minimum number of selected key indicators most relevant to each area, were also presented. These indicators were chosen based on several criteria: a) objectivity, b) ability to reflect outcomes and outputs that are central to the project's work, c) feasibility and cost of data collection, d) data availability when needed and e) usefulness for management decision-making. The completed indicator reference sheets in this report provide details on the definition of the indicators, their frequency, level of disaggregation, and reporting unit. Lastly, a reporting flow chart illustrates the flow of data and levels of reporting, aggregation and data quality assurance.

This PMP report covers key indicators specific to the VectorWorks Ghana project. In addition, it reports on two standard indicators from the global VectorWorks agreement in the Ghana work plan where those indicators are relevant.

The indicators described in this PMP report are not intended to provide a comprehensive understanding of how an activity resulted in a change in the agreement objectives or why an activity was not as effective as expected. Rather, the indicators provide an indication that a change occurred over time, with discussions in the annual narrative report providing more thorough answers on how and why VectorWorks activities achieved their results.

The project uses routine data collection forms and activity tracking spreadsheets to collect data and track activities. These include training summary forms, media monitoring reports, distribution summary forms, activity summary forms and travel and research tracking spreadsheets. Indicator tracking sheets documented how targets were selected and details on progress toward annual targets. These indicator tracking sheets and supporting documents made it possible to document each indicator's history and for project managers to review the quality of the data being reported and make recommendations.

C. Critical Assumptions

The PMP is based on several critical assumptions. Changes to these assumptions will have major implications on the overall direction of the project and the PMP.

- Insecticide-treated net (ITN) distribution will continue to be a major focus for the Ghana National Malaria Control Program (NMCP) and the United States Agency for International Development/President's Malaria Initiative (PMI) Ghana;
- The national mechanisms for malaria policy implementation through the NMCP will remain stable and largely unchanged;

The VectorWorks Ghana Project chief of party is expected to review the PMP and the assumptions internally with USAID/PMI Ghana on semi-annual basis to track trends and discuss opportunities for refining program activities and the PMP indicators.

In Year Two, the VectorWorks Ghana chief of party and the senior technical adviser, had two review meetings with teams from the USAID | Evaluate for Health project to track trends and discuss opportunities for refining program activities and the PMP indicators. In June 2016, a PMI team, led by the PMI Resident Adviser, also visited VectorWorks to discuss updates on project activities and status of the indicators.

II. Project Goal and Objectives

The VectorWorks (VW) Project is a five-year (2014-2019) global project funded by United States Agency for International Development's President's Malaria Initiative (USAID/PMI). The global project goal is to support countries to achieve and maintain high rates of coverage and use of vector management interventions. Specifically, the project is tasked with attaining this goal through activities clustered under three main objectives:

> **Objective 1: Policy** - Develop and promote policies at both the international and national levels to encourage sustained, high levels of coverage and use of long-lasting insecticide-treated nets (ITNs) and/or alternative vector management interventions.
>
> **Objective 2: Monitoring, Evaluation & Operations Research**- Design, conduct and analyze results from monitoring, evaluation, and operational research activities in order to improve current best practices of long-lasting ITNs and/or alternative vector management interventions.
>
> **Objective 3: Implementation** - Promote and support country-level implementation of malaria prevention activities to ensure sustained high level coverage and use of long-lasting ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

The project is implemented by a consortium led by the Johns Hopkins Centre for Communication Programs (CCP) under Cooperative Agreement # AID-OAA-A-14-00057. Other partners include Tropical Health LLP, Swiss Tropical and Public Health Institute, Population Services International, Mennonite Economic Development Associates and the Tulane University Centre for Applied Malaria Research and Evaluation. Key partners in Ghana include PMI Resident Advisers, the Ghana Health Service, the National Malaria Control Program (NMCP) and Ghana Education Service and its School Health Program, and other implementing partners.

In Ghana, our project goal is to "**increase country capacity to develop, monitor and implement vector management interventions**." This goal incorporates three objectives, consistent with the objectives of the overall global VW cooperative agreement. These objectives are:

1. Strengthen multi-sectoral and stakeholder coordination
2. Support the NMCP to achieve and maintain high levels of ITN coverage
3. Promote the uptake and sustained use of vector management interventions

III. Results Framework

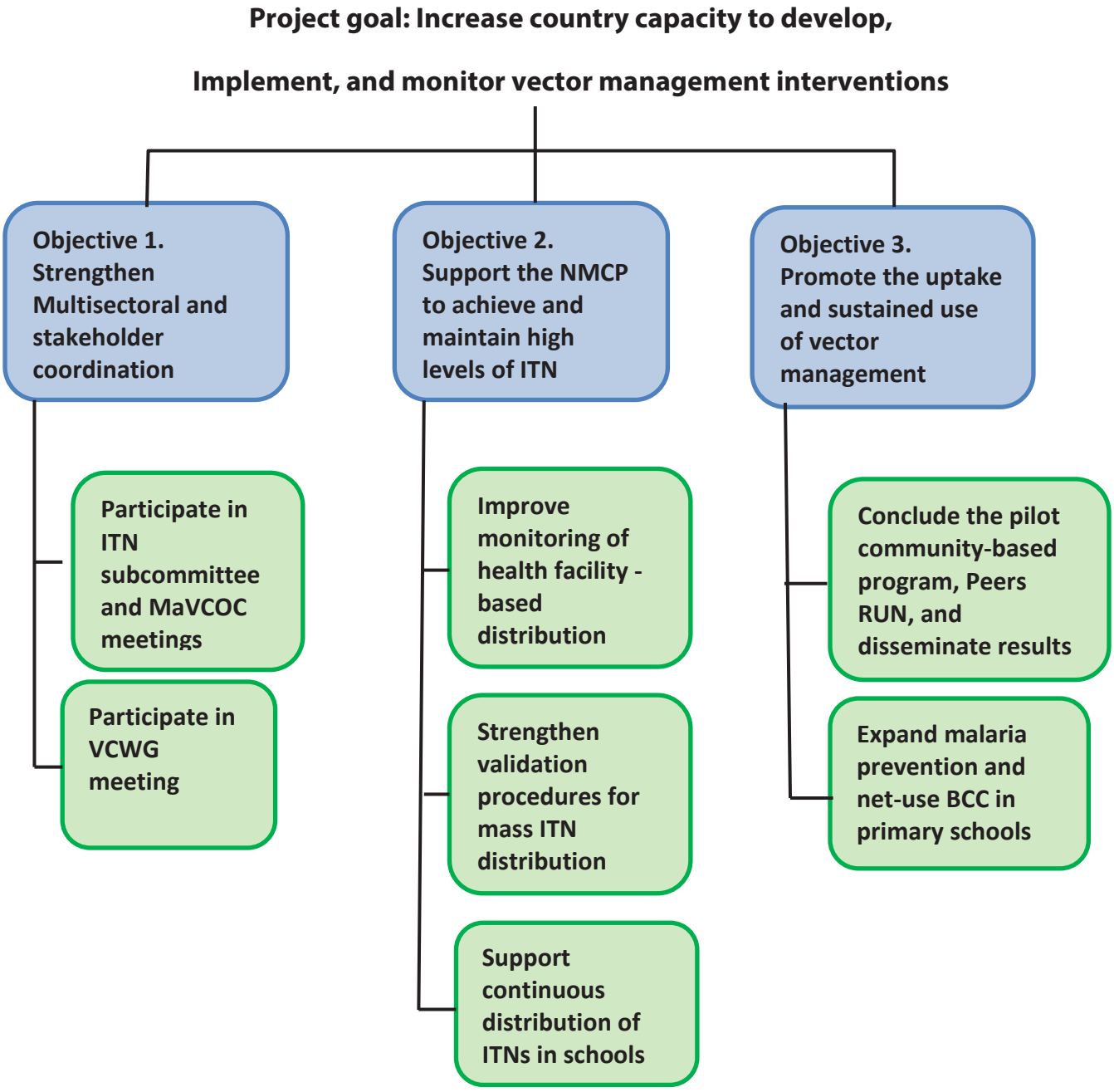
The VectorWorks Ghana results framework describes the pathways linking activities to the long-term project goal of increasing country capacity to develop, implement and monitor vector management interventions. In this framework, each activity contributes to the fulfilment of project objectives, in turn, contributing to the overall project goal. Documenting improvements along these pathways assists in the attribution of improvements in regards to the project goal and project objectives to the activities.

As stated above, the VW Ghana project was designed to contribute to the overall VectorWorks project goal through three objectives:

1. Strengthen multi-sectoral and stakeholder coordination
2. Support the NMCP to achieve and maintain high levels of ITN coverage
3. Promote the uptake and sustained use of vector management interventions

While the activities appear to occur in parallel, the three objectives function as an integrated and mutually supportive package. Under Objective 1, VectorWorks Ghana will facilitate and promote improved stakeholder communication and coordination on policy, standards, and guidance in line with the National Malaria Control Strategy 2014-2020. Challenges emerging from the field experience under Objective 2 will in return, inform the policy discussions and future modifications. The third objective will ensure wide dissemination and adoption of the NMCP's policies and guidance.

VectorWorks Ghana Results Framework



IV. VectorWorks Ghana Indicator Table and Performance Indicator Reference Sheets (PIRS)

A. Indicator Table for VectorWorks Ghana

Focus Area	*ID No*	*Indicator*	*Data Source*	*Frequency*
Objective GH1: Strengthen multi-sectoral and stakeholder coordination				
GH.1	1	Number of Malaria Alerts distributed	Project Activity Report	Semiannual
	2	Number of national ITN coordination meetings in which VectorWorks participated	Project Activity Report	Semiannual
Objective GH2: Support NMCP to achieve and maintain high levels of ITN coverage and use				
GH.2.1 Monitoring Health Facility Continuous Distribution	1	Number of meetings of the National Monitoring Team	Project Activity Reports	Semiannual
	2	Number of antenatal and immunization clinics visited by a monitoring team	Project Activity Report	Semiannual
	3	Percent of pregnant women who receive a net during their first antenatal care visit	DHIMS	Semiannual
	4	Percent of children who received a net during their last measles vaccine visit	DHIMS	Semiannual
GH.2.2 Validating Point Mass Distribution	1	Number of regional planning meetings held for mass ITN distribution	Project Activity Reports	Semiannual
	2	Number of sub-districts supported to validate community population data	Project Activity Reports	Semiannual
	3	Percentage of communities where variances were detected	Project Activity Report	Semiannual
GH.2.3 School Distribution	1	Number of schools implementing continuous distribution	Project Activity Report	Semiannual
	2	Number of pupils receiving ITNs	Project Activity Report	Semiannual
Cross-cutting (CC.)	1	Number of people trained in ITN distribution	Training summary forms	Semiannual
	2	Number of ITNs distributed	Transport	Semiannual

			waybills	
GH3: Promote the uptake and sustained use of vector management interventions				
	1	Number of BCC activities to promote ITN use	Project Activity Reports	Semiannual
	2	Number of people exposed to malaria messages	Project Activity Reports	Semiannual

B. Performance Indicator Reference Sheets

Objective GH.1: Strengthen multi-sectoral and stakeholder coordination

Indicator GH.1.1: Number of Malaria Alerts distributed

Year	Target	Actual (Total)
1	30,000	20,000
2	n/a	n/a
3	n/a	n/a
4	n/a	n/a
5	n/a	n/a
Life of Project	30,000	20,000

Unit of Measure: Number

Disaggregation: None

Source: Project activity reports

Definition: The Ghana Malaria Action Alert is a two-page publication targeting leadership of the health sector at all levels, the education sector, especially the School Health Program, and national and community leaders. It will also be distributed as an email bulletin to various stakeholder institutions to increase coverage. Distribution refers to print and electronic distribution.

Frequency of reporting: Semiannual

Reporting format: Semiannual & Annual Reports

Reporting units: Communications Officer

Notes: This activity was not included in the Year Two work plan due to budget constraints.

Indicator GH.1.2: Number of national ITN coordination meetings in which VectorWorks participated

Year	Target	Actual
1	6	4
2	12	12
3	12	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: By committee type

Committee type	Number of meetings held
ITN subcommittee meetings	2
MaVCOC meetings	4
Other ITN-related meetings	6
Total	12

Source: Project activity report

Definition: National ITN coordination meetings include, but are not limited to, meetings with the ITN subcommittee and the Malaria Vector Control Oversight Committee (MaVCOC). These two committees are the two main coordination mechanisms of interest to VectorWorks. Other potential coordination mechanisms include the malaria communication committee and the Malaria Inter-agency Coordinating Committee.

Frequency of reporting: Quarterly

Reporting format: Semiannual and annual reports

Reporting units: VectorWorks Ghana chief of party

Objective GH.2: Support NMCP to achieve and maintain high levels of ITN coverage and use

Indicator: GH.2.1.1: Number of meetings of the National Monitoring Team

Year	Target	Actual
1	3	3
2	4	4
3	4	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: None

Source: Project activity reports

Definition: The number of times the national monitoring team meets to plan and undertake training of regional teams and also monitor continuous distribution activities. Additional results might include finalization/approval of national continuous distribution guidelines. The national monitoring team's main role is to re-orient the district-level monitoring teams, and to provide supervision and support for health facility monitoring. These activities are tracked by other indicators.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: VectorWorks Ghana chief of party

Notes: Targets for Years Three-Five will be determined in discussion with USAID/PMI.

Indicator GH.2.1.2: Number of antenatal and immunization clinics visited by a monitoring team

Year	Target	Actual
1	800	1,428
2	3,217	3,251
3	3,300	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: Regions and districts

Source: Monitoring forms

Definition: The number of antenatal care (ANC) and EPI (expanded programme on immunization) clinics visited by monitoring/supervision teams.

Frequency of reporting: Semiannual

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Notes: Targets for Years Three-Five will be determined in discussion with USAID/PMI.

Indicator GH.2.1.3: Percent of pregnant women who receive an ITN during their first ANC visit

Year	Target	Actual
1	60%	50.65%
2	80%	37.93%
3	80%	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Percentage

Disaggregation: Regions, districts, and facility type (e.g., hospitals, health centers, CHPs)

Region	Coverage
Ashanti	28.1
Brong Ahafo	58.8
Central	11.6
Eastern	31.7
Greater Accra	25.7
Northern	54.7
Upper East	66.7
Volta	31.3
Western	32.8

Source: District health management information system (DHIMS)

Definition:

Numerator: Number of pregnant women who received an ITN during their first ANC visit

Denominator: Number of pregnant women who had a first ANC visit for a current pregnancy during the reporting period.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Continuous distribution manager

Notes: September report is yet to be finalized. DHIMS has been closed down for maintenance. The low coverage is the result of stock outs due to demand on ITNs for the completion of the point mass distribution campaign in all 10 regions. Due to the large number of districts (216) and health facilities, it

was not feasible to disaggregate data to that level. We therefore limited disaggregation of data to the regional level. `

Indicator GH.2.1.4: Percent of children who received a net during their last EPI visit

Year	Target	Actual
1	70%	73.05%
2	80%	47.71%
3	80%	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Percentage

Disaggregation: By region, district, and facility type (e.g., hospital, health center, Community Health Planning Services (CHPS))

Region	Coverage
Ashanti	27.9
Brong Ahafo	73.5
Central	16.3
Eastern	42.3
Greater Accra	37.0
Northern	63.3
Upper East	77.2
Volta	48.5
Western	43.4

Source: DHIMS

Definition:

Numerator: Number of children who received an ITN during their 18-month measles vaccine visit

Denominator: Number of children who received their 18-month measles vaccine visit

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Continuous distribution manager

Notes: September report yet to be finalized. Closure of DHIMS for maintenance is contributing to a delay in assessing data. The low coverage is as a result of stock outs due to demand on ITNs for the completion of the point mass distribution campaign in all 10 regions. Due to the large number of districts (216) and health facilities, it was not feasible to disaggregate data to that level. We therefore limited disaggregation of data to the regional level. `

Indicator G.H.2.2.1: Number of regional planning meetings held for mass distribution

Year	Target	Actual
1	12	12
2	12	14
3	N/A	
4	N/A	
5	N/A	
Life of Project	14	

* Target distribution number includes meetings held under the interim work plan.

Unit of measure: Number

Disaggregation: By regions

Definition: Number of regional planning meetings for mass distribution held, by region.

Region	Number
Upper East	4
Northern	3
Greater Accra	3
Ashanti	2
Central	2
Total	14

Source: Activity reports

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Indicator GH.2.2.2: Number of sub-districts supported to validate community population data

Year	Target	Actual
1	262	230
2	293	531
3	N/A	
4	N/A	
5	N/A	
Life of Project	555	

Unit of Measure: Number

Disaggregation: By regions and districts

Number of sub-districts supported to validate community population data, by region:

Region	Number of sub-districts
Upper East	91
Northern	112
Ashanti Region	148
Greater Accra	90
Central	90
Total	531

Definition: Number of sub-districts supported to validate community population data. Support is defined as technical or financial input from VectorWorks.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officer

Notes:

Indicator GH.2.2.3: Percentage of communities where variances were detected

Year	Target	Actual
1	25%	30%
2	20%	23.6%
3	N/A	
4	N/A	
5	N/A	
Life of Project	20%	

Unit of Measure: Percentage

Disaggregation: Regions/districts; Rural / urban

Definition:

Numerator: Number of rural/urban communities where variances were detected between number of nets allocated from census data and number of nets allocated from registration coupons.

Denominator: Total number of rural/urban communities checked for variance.

Source: Project activity reports

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Notes:

Indicator GH.2.3.1: Number of schools implementing continuous distribution

Year	Target	Actual
1	-	n/a
2	14,000	16,026
3	19,288	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: By region, district, school level (e.g., Lower Primary, Upper Primary)

Region	Public	Private	Total
Western	1588	907	2495
Eastern	1952	976	2928
Ashanti	2283	1441	3724
Brong Ahafo	1697	650	2347
Central	1401	1136	2537
Volta	1559	436	1995
Total	10480	5546	16026

Source: Training forms

Definition: The number of primary schools in which ITNs were distributed.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Notes: Targets were set using data obtained from the nationwide schools distribution of 2013, in consultation with GES. Due to the large number of districts, disaggregation was only done by region for this report. Disaggregation was provided for school type to demonstrate the number of private schools that are also benefiting from ITN distribution. Many of these private schools remain unregistered, and unaccounted for in the education management and information system (EMIS) data.

Indicator GH2.3.2: Number of pupils receiving ITNs

Year	Target	Actual
1	--	n/a
2	910,000	936,357
3	1,148,610	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: By region, district, and gender

Region	Boys	Girls	Total
Western	78174	74178	152352
Eastern	76889	58654	135543
Ashanti	132660	110658	243318
Brong Ahafo	80150	59951	140101
Central	98632	50153	148785
Volta	62425	53833	116258
Total	524934	411423	936,357

Source: Training forms

Definition:

The number of students receiving (1) an ITN from a school distribution, and (2) messages on ITN use through a school program.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Notes: Due to the large number of districts, disaggregation was only done by region and gender for this report.

Indicator GH.2.CC.1 Number of people trained in ITN distribution

(CC stands for cross-cutting indicators)

Year	Health Facility-Based Distribution *Target*	Health Facility-Based Distribution *Actual*	School Distribution *Target*	School Distribution *Actual*	Mass Distribution *Target*	Mass Distribution *Actual*	Total *Target*	Total *Actual*
1	3,200	6,904	n/a	n/a	230	281	3,420	7,185
2	9,984	9,882	1,761	1,939	478	814	12,223	12,635
3	1,500		9,747		N/A		11,246	
4	TBD							
5	TBD							
Life of Project	TBD							

Unit of measure: Number

Disaggregation: Regions/districts; type of personnel, channel and gender.

Number of regional, district, and health facility staff trained in ITN distribution, by region:

Region	Regional staff trained		District-level staff trained		Health facility staff trained		Total
	Male	Female	Male	Female	Male	Female	
Greater Accra	3	5	44	77	137	2069	2335
Western	6	2	85	61	303	1025	1482
Central	5	3	87	55	218	1279	1647
Volta	5	2	90	64	296	1230	1687
Eastern	5	4	102	58	227	1521	1917
Total	24	16	408	315	1181	7124	9068

Number of sub-district supervisors trained in data validation, by region:

Region	Number of -district officers trained
Central	373
Ashanti	148

Upper east	91
Greater Accra	90
Northern	112
Total	814

Source: Training forms

Definition: The number of people trained in ITN distribution with VectorWorks funds.

Frequency of reporting: Semiannually

Reporting format: Semiannual & Annual Reports

Reporting units: Program Officers

Notes: Approximately 30% of health facility staff expected to be a part of on-the-job training activities were not at their post at the time of training. They will be trained in future orientation activities in Year Three.

Indicator GH.2.CC.2: Number of ITNs distributed

Year	Health Facility-Based Distribution *Target*	Health Facility-Based Distribution *Actual*	School Distribution *Target*	School Distribution *Actual*	Mass Distribution *Target*	Mass Distribution *Actual*	Total *Target*	Total *Actual*
1	557,500	557,500	n/a	n/a	642,500	2,818,842	1.2 million*	3,376,342
2	700,700	874,905	910,000	936,357	7,189,300	8,641,087	8.8 million	10,452,349*
3	1,527,427		1,148,610		N/A		2,676,037	
4	TBD		TBD		TBD		TBD	
5	TBD		TBD		TBD		TBD	
Life of Project	TBD		TBD		TBD		TBD	

*Assumes on-time delivery of ordered nets

Differences: The differences between target and actual, for each distribution channel, are explicated below:

Health Facility: Target numbers are based on pipeline. The difference between target and actual is the result of LLINs left after mass distribution being used for health facility distribution.

School: Target numbers are based on Education Management Information System (EMIS) Data, whereas actual LLINs distribution is based on enrolment data for the 2015/2016 academic year.

Mass Distribution: Target numbers are based on population estimates, whereas actual LLIN distribution is based on validated household registration.

Unit of measure: Number

Disaggregation: Regions/districts; channel (such as ANC or EPI, Point Mass distribution, schools distribution)

Region	Health Facility-Based Distribution	School Distribution	Mass Distribution	Total
Ashanti	125,410	243,318	2,816,441	3,185,169
Brong Ahafo	94,434	140,101	1,449,264	1,683,799
Central	58,771	148,785		207,556
Eastern	71,690	135,543		207,233
Greater Accra	243,109		1,917,510	2,160,619
Northern	129,958		1,762,811	1,892,769
Upper East	30,866		695,061	725,927
Volta	52,143	116,258		204,495
Western	68,524	152,352		168,401
	874,905	936,357	8,641,087	10,452,349

Source: Waybills review, distribution reports, program officer reports

Definition: The number of ITNs distributed through mass, continuous or routine distribution channels for which VectorWorks provided facilitation services.

Frequency of reporting: Semiannually

Reporting format: Semiannual and Annual Reports

Reporting units: Program officers

Objective GH3: Promote the uptake and sustained use of vector management interventions

Indicator GH.3.1 Number of behavior change communication activities to promote ITN use

Year	Target	Actual
1	735	3,912

2	1785	1,895
3	2800	
4	TBD	
5	TBD	
Life of Project	TBD	

Unit of measure: Number

Disaggregation: Regions/district; rural/urban; channel (community mobilization, radio, etc.)

Source: Project activity reports

Definition: The number of community mobilization activities and mass media airings or postings funded by VectorWorks. Community mobilization activities include community meetings, home visits, etc.

Frequency of reporting: Semiannually

Reporting format: Semiannual and annual reports

Reporting units: Program officers

Disaggregated Results:

Region	Number of BCC Activities
Brong Ahafo	309
Volta Region	320
Ashanti Region	405
Western Region	265
Eastern Region	333
Central Region	263
Total	1895

Notes: This is a global PMI and VectorWorks indicator. VectorWorks has begun the process of obtaining information on urban/rural classification of communities involved in project activities. This level of disaggregation will be included in future reports. In Year Two, BCC activities were focused on inter-personal communications at schools and health facilities. VectorWorks did not lead radio or community mobilization activities; therefore, this level of disaggregation was not applicable.

GH.3.2 Number of people exposed to malaria messages

Year	Target	Actual
1	2,040,564	3,014,800
2	2,247,690	3,104,580
3	3,321,504	
4	TBD	
5	TBD	

Life of Project	TBD	

Unit of measure: Number

Disaggregation: Region/district, channel

Source: BCC activity reports

Definition: The number of people who were exposed to messages on ITN use through mass media or community mobilization activities. This indicator does not capture the numbers of patients and caregivers who received interpersonal counseling at health facilities. Community mobilization activities include community meetings, home visits, etc.

Frequency of reporting: Semiannually

Reporting format: Semiannual & annual reports

Reporting units: Program officers

Notes:

Health Facility: 874,905

Point mass campaign: 1,293,318

School distribution: 936,357

Total: 3,104,580

V. Reporting and Data Use

In implementing the VectorWorks Ghana project, five Program Officers (PO) are responsible for working closely with the Government of Ghana (GoG) Ministry of Health (MOH) and Ministry of Education counterparts at Regional, District, and sub-district levels. Their monthly reports are submitted to the senior technical adviser, who checks them in consultation with the monitoring and evaluation manager for completeness and accuracy, and provides feedback to the POs. These reports are then forwarded with indicator tally sheets to the chief of party for final review and submission to VectorWorks headquarters. VectorWorks leadership periodically reviews progress against targets to advise program officers, the monitoring and evaluation manager, the senior technical adviser, and the chief-of-party. PMP reports are submitted along with semi-annual and annual project reports.

VectorWorks Kenya Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

ITN	insecticide-treated net
MOE	Ministry of Education
MOH	Ministry of Health
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs), and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

In Kenya, the VectorWorks project's priority objective for Year Two, guided by PMI Kenya, was to provide technical support to the National Malaria Control Program (NMCP) and implementing partners in developing an informed ITN strategy for reaching the populations in malaria-endemic counties with ITNs and improving ITN coverage in target counties.

Specifically, VectorWorks planned to conduct the following activities:

- Meet with NMCP, implementing partners, and representatives from malaria-endemic counties to review the existing ITN strategies, guidelines, and plans and to determine the technical assistance needs, scope, and goals for improving and sustaining ITN coverage.
- Complete a desk review of documents and literature related to current and past channels for ITN distribution in Kenya since 2010.
- Conduct a field assessment to determine operational parameters of past, current, and potential channels based on current strategies, guidelines, and plans.
- Meet with NMCP, implementing partners, and representatives from malaria-endemic counties to further review the revised draft ITN strategy based on findings from the desk review and field assessment and determine next steps.

These activities were aimed to complement the activities planned by NMCP and implementing partners and to build on past achievements. The activities conducted to date are described in detail below.

Summary of Activities

PMI Kenya introduced the VectorWorks project to the Kenya NMCP in February 2016. The VectorWorks project then worked with the Kenya NMCP and PMI to identify a consultant to conduct a desk review of channels that had been used in Kenya to date for ITN distribution. The data collection and literature review were completed, and a draft report will be shared for review and finalization in early Year Three. In collaboration with the NMCP, the VectorWorks project also conducted a meeting with relevant stakeholders to discuss a comprehensive strategy for sustaining ITN coverage in Kenya. A draft strategy was discussed at the meeting: it included channels that were already being used for ITN distribution and also channels that are new to Kenya. It was agreed in this meeting that the field viability of the proposed channels, especially the new and piloted channels, should be assessed to further inform their use for ITN

distribution and have been shared with the NMCP for review. The VectorWorks team has been in regular contact with staff from NMCP and PMI Kenya to discuss and review timelines for the planned project activities.

Activities

KY.1 Initial Meeting to Review Existing and Draft ITN Strategies, Guidelines, and Plans and to Determine Technical Assistance Needs

Brief activity description: The VectorWorks project worked with the NMCP to convene a meeting for all implementing partners and representatives from the malaria-endemic counties to discuss and review strategies for ITN distribution that consider the situation of limited resources.

Status (including next steps, challenges, and opportunities, if any): In the meeting, participants reviewed NetCALC simulations of proposed revised strategies for ITN distribution. They also reviewed a draft plan of the counties to be targeted with ITN mass distributions or with specific ITN continuous distribution channels. Along with the NetCALC simulation, an ITN distribution strategy was drafted and submitted to the PMI Kenya mission on July 8, 2016.

Deliverable	Audience	Timing	Status
Draft revised national strategies for ITN distribution showing the NetCALC outputs of options and scenarios	PMI, NMCP, MOH, MOE, implementing partners	Year 2, Quarter 2	Completed

KY.2 Desk Review of Documents Related to ITN Distribution Since 2010

Brief activity description: The VectorWorks project and the NMCP worked with a consultant to conduct a web search, collect reports, and interview implementing partners at all levels on ITN distribution channels. The reports and information collected have been reviewed, and a draft report was produced that addressed implementation, challenges, best practices, and recommendations for all ITN distribution channels.

Status (including next steps, challenges, and opportunities, if any): The draft report will be reviewed by VectorWorks and then shared with NMCP and implementing partners for further review. The desk review will be finalized in early Year Three, and outcomes will inform further planned discussions on Kenya's ITN strategy and comprehensive approach to sustaining ITN coverage.

Deliverable	Audience	Timing	Status

Draft and final review report of channels used for ITN distribution in Kenya	PMI, NMCP, implementing partners	Year 3, Quarter 1	Desk review and interviews are complete. Final report is currently in internal review.

KY.3 Field Assessment to Determine Operational Parameters of Current and Potential Channels for ITN Continuous Distribution at County and Subcounty Levels

Brief activity description: During the stakeholders meeting conducted in 2016, it was agreed that a field assessment was necessary to inform effective implementation of the proposed channels for ITN distribution. The review of channels being used for ITN distribution will determine the channels to be considered in the revised ITN continuous distribution strategy. Also, the revised national strategy will further inform the viability of channels that can be used to sustain ITN coverage.

Status (including next steps, challenges, and opportunities, if any): A draft guide questionnaire for the field assessment has been developed and shared with NMCP for review. In early Year Three, the VectorWorks project will work with the NMCP to finalize the guide questionnaire and plan for the field assessment. Field assessment will include visits to selected counties to interact with relevant personnel and learn about how the structures for the proposed channels work at all levels and how they can be used to effectively distribute ITNs.

Deliverable	Audience	Timing	Status
Draft tool for field assessment to verify feasibility of proposed channels for ITN continuous distribution	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 1	Activity yet to be conducted
Trip report for field assessment to verify feasibility of proposed channels for ITN continuous distribution	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 2	Activity yet to be conducted

KY.4 Meeting to Further Review the Revised ITN Strategy Based on Findings from Desk Review and Field Assessment

Brief activity description: The VectorWorks project and the NMCP planned to convene a one-day meeting for all implementing partners and representatives from malaria-endemic counties to further discuss the country's draft strategy for sustaining ITN coverage.

Status (including next steps, challenges, and opportunities, if any): Discussions in this meeting will be guided by the findings and recommendations from the desk review on ITN distribution, the field assessment of proposed channels for sustaining ITN coverage, and cost-effectiveness studies of channels for ITN distribution. The meeting will result in an ITN strategy for Kenya that specifies the channels to be used for ITN distribution for target counties, and a consensus on the next steps for implementing the strategy to ensure that ITN coverage in the target counties is improved and sustained.

Deliverable	Audience	Timing	Status
Meeting report describing the firmed-up strategy options and outlining next steps for implementing the new national ITN strategy	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 2	Activity yet to be conducted

Project Management

KY.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks provided an annual work plan, quarterly financial reports, a semiannual report, and this current annual progress report to be approved by PMI Kenya.

Status (including next steps, challenges, and opportunities, if any): All reports have been submitted and approved by PMI Kenya in a timely manner.

Deliverable	Audience	Timing	Status
Annual work plan approved by PMI Kenya	PMI	Year 2, Quarter 1	Completed
Quarterly financial reports	PMI	Quarterly	On track
Semiannual and annual progress reports	PMI	Year 2, Quarters 2, 4	Completed

VectorWorks Liberia Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

AMP	Alliance for Malaria Prevention
ANC	antenatal care
CHMT	County Health Management Team
HMIS	Health Management Information System
ID	institutional delivery
LLIN	long-lasting insecticidal net
LSHC	Leadership in Strategic Health Communication
MOH	Ministry of Health
MOE	Ministry of Education
NHMT	National Health Management Team
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative
SBCC	social and behavior change communication
VCWG	Vector Control Working Group

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (LLINs) and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

In Liberia, the VectorWorks project's priority objectives for Year Two, guided by PMI Liberia, were to:

- Provide technical support to the National Malaria Control Program (NMCP) and implementing partners for effectively implementing and monitoring LLIN distribution through antenatal care (ANC) and institutional delivery (ID) channels, as part of the national malaria strategy.
- Assess the possibility of using additional channels to sustain LLIN coverage.
- Document lessons learned from past LLIN distributions.
- Strengthen the capacity of NMCP personnel in social and behavior change communication (SBCC).

Specifically, VectorWorks planned to conduct the following activities in Year Two:

- Support supervision of LLIN distribution through ANC and ID channels.
- Assess the availability of additional channels for LLIN distribution.
- Support LLIN distribution to target populations and households in identified communities.
- Document best practices for future mass LLIN distributions.
- Support trainings in SBCC for NMCP personnel.

These activities aimed to complement the activities planned by the NMCP and implementing partners and to build on past achievements. The activities conducted to date are described in detail below.

Summary of Activities

VectorWorks supported the NMCP and the Family Health Division of the Ministry of Health (MOH) to address the challenges of ANC/ID distribution processes. VectorWorks facilitated an orientation of the national monitoring team and worked with them, the NMCP, and other stakeholders to conduct orientations for county health personnel. To date, 76 county health personnel in 13 of the country's 15 counties have been oriented to conduct on-the-job training of health facility personnel on the processes for ANC/ID LLIN distribution and proper documentation and reporting of distributions. County monitoring teams were also formed to monitor and supervise LLIN distribution in health facilities. To date, personnel in 590 health facilities have been trained. County-level orientation in the remaining counties, Margibi and Montserrado, will be completed early in Year Three (by the end of October 2016).

Building on the efforts of the past two years, VectorWorks will continue to work with the NMCP and implementing partners to improve implementation of mass distribution and health-facility-based distribution of LLINs and to explore other viable channels to sustain LLIN coverage.

Specifically, VectorWorks will conduct the following activities in Year Three:

- Support improvement in the processes and reporting of ANC/ID LLIN distribution.
- Support the development of a comprehensive LLIN continuous distribution strategy.
- Provide technical assistance for planned mass LLIN distributions.

The proposed activities are to complement the planned activities by the NMCP and implementing partners and to build on achievements from Year One and Year Two. These activities are described in detail in the sections that follow.

LLIN Distribution Activities

L.IM.1 Supportive Supervision for ANC and Institutional Delivery Distribution

Brief activity description: VectorWorks provided support to the NMCP and the MOH Family Health Division for the orientation, planning, supervision, and management of LLIN distribution through ANC/ID channels as needed to strengthen the distribution of LLINs through health facilities. VectorWorks worked with the relevant authorities at national and county levels to ensure proper LLIN distribution processes, documentation, and reporting to the higher levels.

Status (including next steps, challenges, and opportunities, if any): In 13 of the country's 15 counties, VectorWorks, the national monitoring team, and the NMCP oriented county health personnel to conduct on-the-job training of health facility personnel on the processes for ANC/ID LLIN distribution and proper documentation and reporting of distributions. Two county-level orientations, in Margibi and Montserrado, will be completed in Year Three, Quarter One. Beyond the county-level orientations, members of the trained county health management teams (CHMTs) will be expected to provide on-the-job training for all health facility personnel in their counties.

Deliverable	Audience	Timing	Status
Revised HMIS reporting form to include LLINs distributed through institutional delivery channels	NMCP, MOH Family Health Division	Quarter 2	Ongoing
On-the-job orientation reports	NMCP, MOH Family Health Division, PMI	Quarter 2	Project is in the process of tracking down all reports from the 13 completed counties

Monitoring report, including updated tools	NMCP, NHMTs, CHMTs, implementing partners	Quarters 2,3,4	Pending

L.IM.2 Continuous Distribution Framework and Process Guidelines

Brief activity description: The VectorWorks project planned to work with the NMCP and the Ministry of Education (MOE) to conduct an exploratory trip to the field to collect information on existing structures that could be used to distribute LLINs through the school system and through existing community-based systems. Outcomes from the exploratory trip would inform the development of a draft process guideline document for implementation of viable channels for LLIN distribution.

Status (including next steps, challenges, and opportunities, if any): This activity has been delayed. It will take place in Year Three, Quarter Two. This activity will start with a field exploration to gather information on available structures and feasibility of channels for LLIN distribution. A stakeholders meeting will be organized to share and discuss findings from the exploratory trip and the draft process guidelines.

Deliverable	Audience	Timing	Status
Draft tool for field assessment	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 2	Draft assessment tool developed; yet to be shared with stakeholders
Trip report from field assessment	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 2	Pending
Meeting report from national stakeholders meeting	NMCP, key implementing partners, MOE, MOH Family Health Division	Year 3, Quarter 3	Pending
Final framework and process guidelines	PMI, NMCP, MOH, MOE, implementing partners	Year 3, Quarter 4	Pending

L.IM.3 LLIN Distribution Quality Assurance

[Canceled in Year Two in Modification 1 (approved 6/28/2016)]

As instructed by the Liberia Mission, VectorWorks canceled the Alliance for Malaria Prevention (AMP) technical assistance to develop a specific plan, training, and transportation for 100,000 nets in Montserrado that were missed during the mass campaign.

L.IM.4 Post-Net Process

Brief activity description: VectorWorks intended to work with PMI and the NMCP to develop a plan to get 5,000 LLINs to orphanages and hospitals and then, with the hospitals and orphanages, develop a strategy for distributing and monitoring the distribution process of 5,000 LLINs.

Status (including next steps, challenges, and opportunities, if any): This activity changed slightly. During an August 2016 technical assistance trip by Dr. Selby, Mr. Fosu, and Ms. Brown, VectorWorks met with the NMCP to discuss which institutions would receive nets, how many nets would be needed, and how to distribute the nets on an ongoing basis to the identified institutions. After meeting with the Ministry of Justice, it was decided that prisons would not be a part of the institutions to receive nets, as originally proposed. It was also agreed that after the first emergency distribution to the institutions, the process of distributing nets to institutions would be integrated into the next mass campaign plan. A draft implementation guideline was developed. It is currently under internal project review. VectorWorks expects to share it with the NMCP and PMI in November 2016.

Deliverable	Audience	Timing	Status
Distribution plan	PMI, NMCP	Year 3, Quarter 1	An implementation guideline for distributing nets to institutions has been drafted

Data Collection

L.ME.1 Mass Distribution Process Evaluation

[Canceled in Year Two in Modification 1 (approved 6/28/2016)]

As discussed with the Liberia Mission and PMI Washington, VectorWorks formally canceled this activity. If the project is asked to help plan the next campaign, at that point the project will incorporate findings and conclusions from past reports.

Deliverable	Audience	Timing	Status

Trip report on process evaluation (LLIN Mapping)	PMI, MOH, NMCP	Quarter 1	Canceled
Final report on process evaluation (LLIN Mapping)	PMI, MOH, NMCP	Quarter 2	Canceled

SBCC Capacity Strengthening

The VectorWorks project strengthened the SBCC skills and experience of key SBCC implementers in the NMCP through workshops and trainings.

L.PC.1 Leadership in Strategic Communication Workshop

Brief activity description: The Leadership in Strategic Health Communication (LSHC) workshop is a comprehensive training that integrates communication theory and experiential learning, as well as the latest thinking on leadership development.

Status (including next steps, challenges, and opportunities, if any): The NMCP program manager, Mr. Oliver Pratt, attended the three-week LSHC workshop in Baltimore, Maryland. This workshop was organized by the Johns Hopkins Center for Communication Programs and took place on May 1–21, 2016. In the three-week LSHC workshop, Mr. Pratt strengthened his knowledge and skills in leadership, management as well as participated in developing a strategic health communication campaign. Mr. Pratt took a pre-test, post-test, where significant improvement was demonstrated. He also participated in a final presentation on the strategic health communication campaign that he and his group developed. Upon returning to the NMCP Liberia Mr. Pratt has reported that his management has improved and that he has a deeper appreciation for behavior change and the strategic process necessary for change.

L.PC.2 SBCC Training

Brief activity description: VectorWorks identified Mr. Daniel Somah from the NMCP to attend the Roll Back Malaria Community of Practice Annual Meeting in Dakar, Senegal. The SBCC meeting would provide Mr. Somah the necessary skills and exposure in SBCC, affecting NMCP's planning and implementation of malaria-related SBCC activities.

Status (including next steps, challenges, and opportunities, if any): The SBCC meeting took place September 27-29, 2016. The theme of the meeting was "Improving the Impact of Malaria SBCC." The technical presentations and workshops included skill-building exercises—requested specifically by PMI. Mr. Somah traveled to Senegal and participated in this meeting. The three day meeting covered plenary sessions, capacity strengthening and poster sessions. Topics included Global Strategic Behavior Change Communication where examples and guidance on developing country specific SBCC frameworks were discussed, the practice of monitoring SBCC programs, and evaluation and operations research were among the topics presented and discussed at this meeting. The agenda and presentations can be found at http://rbmccop.org.

L.PC.3 AMP Working Group Attendance

Brief activity description: The AMP Annual Partners' meeting and the VCWG annual meeting of the Roll Back Malaria partnership provide opportunities for exchanging information between field- and global-level implementers. Challenges and evidence-based best practices from the field are presented and discussed, and evidence gaps are identified. The meetings provide a forum for program managers and implementers to showcase their work, share ideas and practices, and learn from each other. Pertinent to Liberia, AMP is an important forum for LLIN distribution issues with a growing interest in continuous distribution.

Status (including next steps, challenges, and opportunities, if any): VectorWorks Liberia supported Mr. Oliver Pratt to attend the AMP Annual Partners' meeting in Geneva in February 2016. The theme for the meeting was Complex Operating Environments, and he presented on Liberia's experience with LLIN distribution in the context of Ebola. The presentations included a number of relevant topics such as Advocating for increased investment in complex environments Health and Human Rights presented by MSH, Continuous delivery of health commodities in complex settings in Liberia during the Ebola Crisis presented by Deliver and Strengthening facility and community level approaches to reach the most vulnerable in emergency settings presented by Mentor. Mr. Pratt presented on mass LLIN distribution in the Ebola context. All of these presentations can be found online at the following link: http://allianceformalariaprevention.com/about/amp-annual-partners-meeting/.

Deliverable	Audience	Timing	Status
Trip report for LSHC workshop	PMI	Quarter 3	Travel and workshop participation complete; trip report pending
Trip report for SBCC training	PMI	Quarter 4	Travel and meeting participation complete; trip report pending

VectorWorks Mozambique Annual Report: Year Two

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Contents

Abbreviations

AMP	Alliance for Malaria Prevention
CCP	Johns Hopkins Center for Communication Programs
INS	Instituto Nacional de Saude
IRB	institutional review board
ITN	insecticide-treated nets
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative
SNP4	School Net Program Round 4
VCWG	Vector Control Working Group

Background

VectorWorks is a five-year global malaria prevention project funded by the President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs), and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation (M&E), and implementation support.

Project Objectives

Objective 1: Policy. Develop and promote policies at both the international and national levels to encourage sustained, high levels of coverage and use of insecticide-treated nets (ITNs) and/or alternative vector management interventions.

Objective 2: Monitoring, evaluation, and operational research. Design, conduct, and analyze results from monitoring, evaluation, and operational research activities to improve current best practices for ITN distribution and use and/or alternative vector management interventions.

Objective 3: Implementation. Promote and support country-level implementation of malaria prevention activities to ensure sustained, high-level coverage and use of ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

Context

In 2014, Mozambique began distribution of more than 7 million insecticide-treated nets (ITNs). Roughly 2 million of these ITNs were distributed in early 2015. In a preliminary review of Mozambique's Global Fund Concept Note in late November 2014, the Technical Review Panel indicated that a more specific ITN distribution strategy would be needed in order for Mozambique to qualify for incremental funding to cover nationwide distribution in 2017.

At the same time, Mozambique is beginning durability monitoring of ITNs per updated technical guidance from the U.S. President's Malaria Initiative (PMI). Mozambique's geography and transmission zones vary from hot and high transmission in the north, to drier desert areas in the inland provinces, to lower-transmission areas in the south. ITNs may not have the same longevity in each context.

MZ.1 Technical Assistance for ITN Strategy Update (CCP)

[Year One technical assistance has been completed.]

MZ.2 ITN Durability Monitoring

Brief activity description: The ITN durability activity in Mozambique follows the general guidance by PMI with the one exception that sample size is slightly higher than PMI guidance as this activity was planned before PMI guidance was finalized. The activity takes place in three Provinces, Nampula, Tete and Inhambane. In each of the selected sites one district is selected and – following the mass distribution of LLINs – a representative sample of households is selected for baseline survey. All nets in these households that can be verified to be from the campaign are labeled with a unique ID number and tagged for follow-up. An assessment of attrition and physical condition of these nets is done 12, 24 and 36 months following the mass campaign (see also Table below). In addition, a sample of 30 additional campaign nets is collected at each round of follow-up and site for laboratory assessment of insecticidal effectiveness (bio-assay). These extra nets are taken from outside the campaign net cohort at 12 and 24 months of follow-up and directly sampled from the cohort at 36 months. At all time-points various environmental and behavioral risk factors for durability are monitored. The LLIN brands being monitored in all three sites is the polyethylene-based MagNet and Royal Sentry.

Overview of monitoring schedule:

Province, District	Campaign distribution	Sampling (establish cohort)	Year One assessment	Year Two assessment	Year Three assessment
Tete, Changara	May 2015	November 2015	June 2016	May 2017	May 2018
Inhambane, Jangamo	October 2015	November 2015	August 2016	October 2017	October 2018
Angoche, Nampula	October 2015	November 2015	August 2016	October 2017	October 2018

Status (including next steps, challenges, and opportunities, if any): A first planning visit by the VectorWorks team (Harriet Lawford and Albert Kilian) occurred in May 2015 (Year 1 of VectorWorks) during which partners were briefed on the concept and methodology, sites and key staff were identified and preparations made for protocol development and submission.

The baseline assessment and establishment of the cohort of campaign nets to be followed then took place in November of 2015 which was six months post-distribution for Tete and one month for Nampula and Inhambane. The exercise was successful, achieving 97% of target for sampled households and 84% for campaign nets (the latter due to the fact that in Nampula and Inhambane also other LLIN brands had been distributed during the campaign). There were some challenges in one survey cluster in Nampula caused by general concerns of the population with government which were not related to the activity. These were overcome by joint efforts by the teams and by involving local leaders. It also became evident that a large proportion of the campaign nets were still in their packages. This was addressed by the field teams by encouraging participating households to start using their campaign nets immediately.

The 12 month follow-up took place for the Tete site in June 2016 and generally went smoothly. The only challenge was that in spite of efforts to establish a MoU with INS and channel funds for field work through this mechanism, this was not possible due to administrative challenges at INS. Funds were then handled directly by Tropical Health/VectorWorks.

Twelve-month data collection for Nampula and Inhambane was originally planned for September/October but was brought forward to August as a second round of campaign was planned for Nampula for September/October. At the end of the data collection preliminary results from the 12 month follow-up survey were communicated to PMI and partners. These showed a functional survival of the LLIN of 96.8% in Inhambane, 95.2% in Tete and 93.2% in Nampula. This reflects the level of risk factors for durability found at baseline between the three sites.

Nets for the bio-assays were collected (and replacements given) and are currently being examined at INS. These results are expected by the end of the year 2016.

Next steps:

1. Processing of 12 months data and preparation of report
2. Discuss with INS better ways of channeling funds for field work

Deliverable	Audience	Timing	Status
Schedule of fieldwork	PMI, NMCP, INS and co-investigators	Quarter 3	Completed
Template for baseline report	PMI	Quarter 2	Approved
Travel reports	PMI		three travel reports submitted
Baseline survey report (3 sites)	PMI, NMCP, INS and co-investigators	Quarter 3	Submitted (October 2016)

MZ.3 Data Dissemination and Translation

Brief activity description: One of the objectives of the ITN durability activity is building the capacity of partners at NMCP and INS. For this purpose a two day workshop was organized that focuses on data analysis and interpretation with the objective to enable partners to successively take over parts of the activity and at the conclusion be able to carry out ITN durability monitoring on their own.

Status (including next steps, challenges, and opportunities, if any): The data analysis workshop took place June 16-17 in Maputo and was facilitated by Albert Kilian. All materials and resources for the workshop were provided to participants on a USB drive at the start of the workshop.

The first day started with an overview of the concept of durability monitoring and how each of the key indicators (attrition due to different reasons, net integrity and insecticidal effectiveness) are constructed and combined to the overall "LLIN survival in serviceable condition" indicator. Possible limitations were discussed. The second focus was the extraction of the raw data from the tablet PCs to an Excel readable "comma delimited" file format that combines data from one team and day to be explored for correctness

immediately after completion of a day of field work. After the process was explained practical exercises were performed until all participants were comfortable with the process. The process of data cleaning and labeling was explained and the resulting data dictionary demonstrated. However, practical exercises for this section were not possible due to limited basic skills in this area and also limited access to respective software. Similarly, the detailed practice of creating maps was omitted due to time constraints, but a tutorial how to use the free mapping software QGIS was provided.

For the second day the original agenda was adapted to better match the participant's skill levels. It started with some basic principles of statistical analysis and then focused on the DM baseline report template, its structure and core elements as part of the analysis plan. The filled tables and prepared graphs were presented and content discussed in detail, particularly the differences between the three DM sites in some basic determinants and behaviors regarding LLIN durability. Participants agreed that the expected LLIN performance is lowest in Nampula followed by Tete and Inhambane.

Deliverable	Audience	Timing	Status
Workshop agenda and report	PMI, NMCP, and co-investigators	Quarter 4	Report submitted (as part of travel report)

MZ.4 Mass Campaign Technical Assistance

Brief activity description: VectorWorks provided technical assistance to the NMCP in the planning and implementation of a mass LLIN distribution campaign through a network of international consultants. Consultants with technical expertise and experience in campaigns areas like logistics and social and behavior change communication participated in national-level stakeholder meetings, create and modify campaign documents, and assist in the coordination of campaign events and timelines. In the first half of project Year Two, VectorWorks coordinated with the Alliance for Malaria Prevention (AMP) to send Alain Daudrumez and Greg Pirio for 49 days of technical assistance for distribution in Angoche.

Status (including next steps, challenges, and opportunities, if any): Vectorworks provided additional technical assistance to the NMCP through two missions in June 2016. Alain Daudrumez (three weeks) and Greg Pirio (one week) supported the NMCP's preparations for the Nampula phase of distribution to occur in November 2016. Alain provided logistics support, and Greg, communications support. Additional technical assistance has been requested, but due to budget constraints will be provided through an alternate channel to VectorWorks. The NMCP is currently distributing LLINs in Nampula province and will continue distribution into 2017, ending in Maputo.

Deliverable	Audience	Timing	Status
Technical assistance mission reports	PMI	Quarter 2	Submitted

MZ.5 Mass and Continuous Distribution Capacity Building

MZ.5.A Participation at AMP and VCWG Meetings

Brief activity description: The AMP and VCWG meetings were held in Geneva from February 1-5, 2016. Both meetings were excellent learning opportunities for implementation of mass campaigns and continuous distribution. VCWG also highlighted additional vector control topics, including using ITNs and IRS in combination, ITN durability monitoring, and residual transmission. VectorWorks sent two NMCP representatives to these meetings to gather valuable information that can be used to combat malaria in Mozambique.

Status (including next steps, challenges, and opportunities, if any): The program manager, Dr Candrinho, and Silvia Pedro, the ITN focal point for the NMCP of Mozambique traveled to Geneva on February 1-5, 2016 to participate in both the AMP and VCWG meetings. The AMP and VCWG meetings were very productive and highlighted the evolving landscape of malaria control and emphasized improved methods for addressing the needs of malaria endemic countries. The participants were able to share new ITN distribution- related practices and current global malaria control issues with colleagues at the NMCP upon their return to Mozambique.

Deliverable	Audience	Timing	Status
Presentation(s) from the meetings	PMI	Quarter 2	Available online at the Alliance for Malaria Prevention and Roll Back Malaria websites

MZ.5.B Study Tour of Tanzania School Net Distribution Round 4

Brief activity description: Tanzania has now concluded four rounds of school-based LLIN distribution as part of a national ITN distribution strategy. School-based distribution has not previously been attempted at scale in Mozambique, but may be considered in the future as a viable channel for distribution. NMCP staff from Mozambique traveled to Tanzania to meet with staff from CCP's Tanzania office, implementing partners of the school-based distribution, and the Tanzania NMCP. The NMCP staff members from Mozambique also had the opportunity to witness school-based distribution in Geita and were briefed on the planning activities for school distribution.

Status (including next steps, challenges, and opportunities, if any): Silvia Pedro and Carmina Fernando de Melo Isodoro traveled to Dar es Salaam and the Geita Region in the Lake Zone to meet with key school-based distribution stakeholders and observe preparations from August 8-12, 2016. During their visit, NMCP and CCP were able to discuss the processes involved with school-based distribution, and also the changes that have been made since the inception of this method of distribution in 2013. Due to a scheduling conflict, they were unable to observe actual net distribution, but were able to observe or discuss all other aspects of the SNP4. Silvia and Carmina enjoyed their visit and gained valuable information that they were able to share with fellow NMCP Mozambique staff as they consider school-based distribution in the future.

Deliverable	Audience	Timing	Status
Trip report	PMI	August 2016	In process

MZ.6 Nampula Process Evaluation

Brief activity description: Mozambique is currently conducting a national mass LLIN distribution campaign, scheduled to run into 2017. VectorWorks is conducting a process evaluation over the course of two missions. A Portuguese-speaking consultant will identify best practices and lessons learned from distribution in Nampula. All stages of distribution, including coordination, supply chain management, training, supervision, data collection, and communication will be included in the process evaluation. The final process evaluation report will help to inform the NMCP and implementing partners for subsequent phases of distribution in Mozambique for this campaign and future campaigns.

Status (including next steps, challenges, and opportunities, if any): The first process evaluation mission was conducted in September 2016 by consultant Kamel Maina. During the mission, Kamel met with district health and malaria campaign teams in Nampula province, visited warehouses where LLINs are stored, and was able to directly observe household registration. Kamel will return to Nampula when distribution is ongoing in Nampula to complete the process evaluation in November 2016. In addition, he will travel to Maputo to meet with NMCP and PMI staff and debrief them on his key findings from the process evaluation. The final process evaluation report will be completed in December 2016.

Deliverable	Audience	Timing	Status
Trip Reports	PMI	Year 2 Q4 and Year 3 Q1	Submitted and December 2016
NMCP Meeting Presentation	PMI, NMCP, Implementing partners	Year 3 Q1	December 2016
Process Evaluation Report	PMI, NMCP, Implementing Partners	Year 3 Q1	December 2016

Project Management

MZ.PM.1 Year 1 Work Plan and Reporting

[Year One work plan and reporting has been completed.]

MZ.PM.2 Year 2 Work Plan and Reporting

Brief activity description: The VectorWorks project provided an annual work plan to be approved by PMI Mozambique, as well as quarterly financial and semiannual progress reports. The VectorWorks project understands that information may be requested by the U.S. Agency for International Development for the purposes of the PMI annual report, strategic planning, VIP visits, congressional reports, and similar purposes.

Status (including next steps, challenges, and opportunities, if any): The Year Three work plan was submitted in October 2016 and awaits approval.

Commented [SB1]: Although agreed upon, USAID will not approve until additional money obligation comes in January, can only agree to our current obligation+pipeline need about 30k more for proposed activities.

Deliverable	Audience	Timing	Status
Year Two annual work plan and Mozambique-specific performance monitoring plan approved by PMI Mozambique	PMI	Quarter 1	Complete
Quarterly financial reports	PMI	Quarterly	Complete
Semiannual progress report	PMI	Quarter 2	Complete

MZ.PM.3 Supervision

Brief activity description: A VectorWorks staff member will provide supervision for activities and make a five-day visit to Mozambique. This activity may coincide with data dissemination activities for initial durability monitoring findings, or with mass campaign technical assistance.

Status (including next steps, challenges, and opportunities, if any): This activity has been moved to Year Three of the VectorWorks project. PMI Mozambique has requested that the supervisory visit occur early in Year Three in support of the ongoing mass campaign and ITN durability monitoring activities; however no fixed date has been set.

Deliverable	Audience	Timing	Status
Trip Report	PMI	Year 3	2017
Presentations	PMI	Year 3	2017

VectorWorks Nigeria Annual Report: Year Two

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Contents

Abbreviations

ITN	insecticide-treated net
IVM	integrated vector management
LGA	local government area
NMEP	National Malaria Elimination Programme
PMI	U.S. President's Malaria Initiative
SMEP	State Malaria Elimination Programme
USAID	U.S. Agency for International Development

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs) and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

Context

In Nigeria, after a period of localized and targeted campaigns for ITN distribution between 2005 and 2009, the National Malaria Elimination Programme (NMEP) shifted to a universal coverage approach. A first round of mass distribution campaigns, which allocated two ITNs to each registered household as a strategy for malaria prevention, began in 2009 and continued until the end of 2013, distributing approximately 57 million ITNs in all 36 states and the Federal Capital Territory. In addition, routine ITN distribution was done through antenatal and immunization services in some states as well as through school pilot schemes (Cross River State) and community-based distribution (Nasarawa State). However, ITN coverage rates in states with early implementation had started to drop before full coverage could be achieved via the continuous distribution strategies. Thus, the NMEP and partners started a second round of mass campaigns in late 2014. To date, 17 states have been covered by campaigns that target each household, with one ITN for every two people (and upwards adjustment for odd-numbered households). These campaigns have distributed close to 34 million ITNs.

Monitoring of ITN durability in Nigeria started in 2012 in the context of the NetWorks project (the predecessor of VectorWorks), funded by PMI. Three-year retrospective monitoring of the physical survival of campaign nets (made from 100-denier polyester) was carried out in three different eco-geographical zones in Zamfara, Nasarawa, and Cross River. The study showed a significant between-site variation of median ITN survival of 3.0 to 4.7 years, which was driven mainly by differences in household attitudes and behaviors.[1] The study also found that in the context of retrospective durability monitoring, a significant recall bias can occur, which would lead to overestimation of ITN survival unless it is adjusted for. This knowledge contributed to PMI's current recommendation of prospective study designs whenever possible.

VectorWorks has been charged with conducting durability monitoring in three sites in Nigeria. Durability monitoring will provide the NMEP, Roll Back Malaria partners, and PMI with valuable information regarding the performance and estimated "useful life" of the ITNs distributed during the current round of mass campaigns. The data will be collected in a manner that allows it to be linked with some of the PMI-supported entomological monitoring sites. This will allow ITN durability data to be interpreted in the context of information on vector dominance, biting behavior, and insecticide resistance.

[1] Kilian A, Koenker H, Obi E, Selby RA, Fotheringham M, Lynch M. Field durability of the same type of long-lasting insecticidal net varies between regions in Nigeria due to differences in household behaviour and living conditions. *Malaria Journal*. 2015;14:123.

NG.1 ITN Durability Monitoring

Brief activity description: The ITN durability monitoring activity in Nigeria follows the general guidance of PMI: in each of the selected sites, one local government area (LGA) is selected and—following the mass distribution of ITNs—a representative sample of households is selected for a baseline survey. All nets in these households that can be verified to be from the campaign are labeled with a unique identification number and designated for follow-up. An assessment of attrition and physical condition of these nets is done 12, 24, and 36 months following the mass campaign (see Figure 1). In addition, at each round of follow-up, a sample of 30 additional campaign nets is collected at each site for laboratory assessment of insecticidal effectiveness (bioassay). These extra nets are taken from outside the campaign net cohort at 12 and 24 months of follow-up and directly sampled from the cohort at 36 months. At all follow-up points, various environmental and behavioral risk factors for durability are monitored. The ITN brand being monitored in all three sites is the polyester-based DawaPlus 2.0.

Status (including next steps, challenges, and opportunities, if any): Mass campaigns in Ebonyi and Zamfara States were carried out according to plan in September 2015. The selected LGAs are Ishielu in Ebonyi and Bakura in Zamfara. Tropical Health, VectorWorks' primary monitoring and evaluation partner, coordinated with the State Malaria Elimination Programme (SMEP) and partners at the NMEP, to establish sampling frames and sample 15 clusters. The state teams then started to identify field staff for training.

In February 2016, the VectorWorks team (Emmanuel Obi and Albert Kilian) organized a two-day workshop in Abuja to train partners from NMEP and SMEP, principal investigators from the entomological surveillance sites, and other interested projects on the concept of ITN durability monitoring and the specifics of activity implementation. In addition, a refresher training on the NetCALC tool was carried out. All activities were well received with very active participation and discussion.

Immediately following the workshop, the VectorWorks team traveled to Ebonyi State (Abakaliki) for a four-day training of the Ebonyi State field teams. The coordinator from Zamfara also participated in order to become familiar with the training. Emmanuel Obi then carried out the Zamfara team training the following week. Fieldwork in Ebonyi and Zamfara generally went very well, and any minor challenges (temporary misplacement of some net labels, poor internet connection in some locations) were quickly resolved by an excellent team effort. The baseline assessment achieved 97% of targeted households and 106% of targeted campaign nets. An interesting observation was that in Zamfara 40% of sampled households still had nets from the previous campaign, which had occurred five years prior, confirming findings from a previous study by the NetWorks project showing relatively good ITN survival in this area.

The 12-month follow-up survey in Zamfara and Ebonyi was carried out between September 26 and October 3, 2016, and preceded by a three-day refresher training in Abuja for survey teams from both sites. Data collection went smoothly and, thanks to daily data upload, preliminary results could be communicated to NMEP, SMEP, and PMI on the last day of fieldwork. Of the previously recruited households, 99.6% were tracked and 96.5% were interviewed. As expected, the estimated survival of ITNs in Zamfara after 12 months was slightly better (97.5%) than in Ebonyi (95.3%). At both sites, 30 additional ITNs from the campaign were collected for bioassay tests (and replacement nets given).

The start of the Oyo site was originally anticipated for June/July 2016 but was postponed due to delayed arrival of campaign nets. The campaign was implemented in September 2016, and the baseline survey for

the site at Akinyele LGA is planned for November/December 2016 (Year Three of VectorWorks). This delay has consequences for the last round of data collection, which is now outside the time frame of the VectorWorks project (see Figure 1). In initial discussions with the Nigeria PMI team, it was decided that an alternative mechanism for funding this survey round will need to be identified, beginning in Year Four for transition during Year Five.

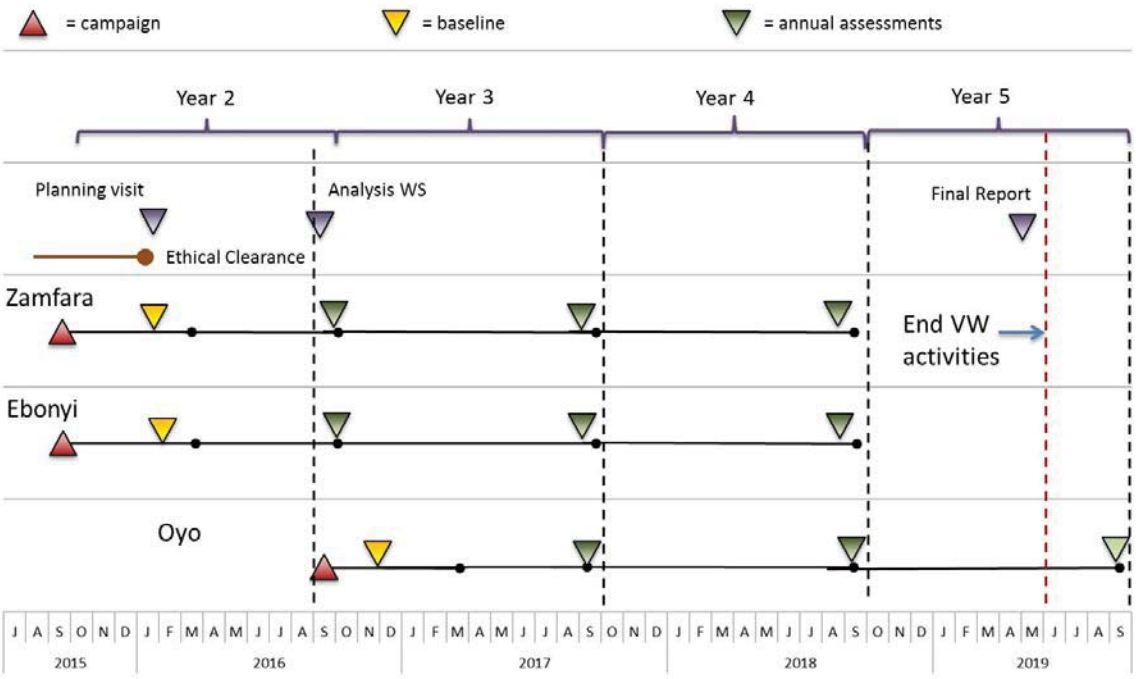
Next steps:

1. While the major findings from the baseline survey have been circulated and discussed at the 12-month refresher training, the formal report has yet to be finalized. This is expected for December 2016 and will be combined with the Oyo baseline data.
2. Data from the 12-month follow-ups will be processed and the follow-up report prepared (expected February 2017).
3. Preparation of the Oyo baseline (sampling frame, selection of field teams) and the baseline training and survey are scheduled to occur in November/December 2017, followed by data analysis and a baseline report (see Step 1 above).

Year Two Activities:

Deliverable	Audience	Timing	Status
Durability monitoring protocol and research tools	PMI, NMEP, IVM subcommittee, and co-investigators	Year 2, Quarter 1	Completed
Schedule of fieldwork	PMI and co-investigators	Year 2, Quarter 1	Completed
Baseline results summary	PMI, NMEP, IVM subcommittee, and co-investigators	Year 3, Quarters 1 and 2	Summaries for Ebonyi and Zamfara submitted in July 2016; full report in progress (expected December 2016); Oyo summary to follow in January 2017
12-month results summary	PMI, NMEP, IVM subcommittee, and co-investigators	Year 3, Quarter 2	The 12-month preliminary results for Ebonyi and Zamfara circulated October 2016; full report in progress (expected early 2017); Oyo preliminary results to be available in October 2017

Figure 1. Revised timeline for durability monitoring assessments



Note: The final Oyo assessment will now be due in September 2019, which is outside the time frame for VectorWorks project activities and will have to be undertaken by another partner. "WS" stands for workshop.

NG.2 Data Analysis and Dissemination Workshop

Brief activity description: One of the objectives of the ITN durability monitoring activity is building the capacity of partners at the NMEP and SMEP and among the principle investigators from the entomological surveillance sites. A first step in this direction was accomplished with the two-day workshop on the concept and methodology of ITN durability monitoring (see previous section). The second step is to undertake another two-day workshop that focuses on data analysis and interpretation, with the objective to enable partners to successively take over parts of the activity and carry out ITN durability monitoring on their own at the conclusion.

Status (including next steps, challenges, and opportunities, if any): The data analysis workshop took place September 22–23, 2016, in Abuja and was facilitated by Albert Kilian. Participants included a core of people from the survey training, namely the staff from the NMEP and the SMEP and the principal investigator of the entomological sites. Other participants included members of the core monitoring and evaluation team at the NMEP, partners such as the Africa Indoor Residual Spraying Project (Abt Associates) and the World Health Organization, and the PMI team from USAID.

The major challenge—as had already been seen in Mozambique—was the very limited skills among participants in data processing, management, and analysis using statistical software. The workshop therefore focused on the front and end of data processing, namely the extraction of data from the Open

Data Kit questionnaire on the tablets, conversion into reviewable "comma delimited" data files using the Open Data Kit briefcase, and the management and interpretation of results. In addition, a new tool was presented that allows those monitoring the data collection process on a daily basis to immediately extract the core outcomes cluster by cluster and have a preliminary result for attrition, integrity, and functional survival available by the time the last cluster summary data is entered.

Participants in the workshop were very active and, using practical examples, they mastered data conversion. In addition, all participants obtained a high level of understanding and practical skills in converting results of physical survival of ITN at a given time point into a "median survival time" using the adequate tool and in interpreting the results.

Next steps:

1. Organize a second data analysis workshop in the context of the baseline survey in Oyo State, planned for end of November 2016. This training will include a few qualified staff of the monitoring and evaluation unit at the NMEP and will focus on the data cleaning, preparation, and analysis steps.

Deliverable	Audience	Timing	Status
Workshop agenda	PMI, NMEP, IVM subcommittee, and co-investigators	Year 2, Quarter 4	Completed
Report	PMI, NMEP, IVM subcommittee, and co-investigators	Year 3, Quarter 1	Completed (as part of trip report)

Project Management

NG.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks provides an annual work plan to be approved by PMI Nigeria, as well as quarterly financial and semiannual progress reports. VectorWorks understands that information may be requested by the U.S. Agency for International Development for the purposes of the PMI annual report, strategic planning, VIP visits, congressional reports, and similar purposes.

Status (including next steps, challenges, and opportunities, if any): The Year Two work plan was approved in October 2015. The Year Three work plan has been submitted, and approval was received in October 2016. The trip report for Albert Kilian's durability monitoring plan visit was submitted in March 2016, and the trip report for the Year One training and data analysis workshop in October 2016.

Deliverable	Audience	Timing	Status
Work plan	PMI	Year 2	Submitted
Quarterly financial reports	PMI	Year 2	Submitted

Semiannual progress reports	PMI	Year 2	Submitted and herein
Trip reports	PMI	Year 2	Submitted

VectorWorks Senegal Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

AMP	Alliance for Malaria Prevention
LLIN	long-lasting insecticidal net
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative
SBCC	social and behavior change communication

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (LLINs) and to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

Senegal was selected as a PMI country in 2006. Malaria is endemic throughout Senegal, and 100% of the population is at risk. In 2008, the National Malaria Control Program (NMCP) began to work with PMI on large-scale distributions of LLINs to children under age five. Then, in 2010, mass LLIN distributions began targeting every sleeping space. In Senegal, universal coverage is defined as one treated net per sleeping space.[1] The mass LLIN distributions were done in three phases, starting with the most at-risk regions and finishing in the urban centers of Senegal. These mass distributions were completed in early 2013, distributing more than 6.8 million LLINs. PMI plans to provide approximately 1.2 million nets to support distribution through routine channels in Senegal in each year, except 2016. Routine channels have been de-emphasized in 2015 due to the implementation of a mass LLIN distribution, which distributed more than 8 million nets nationwide. Campaign nets were procured by the Global Fund, the Islamic Development Bank, the World Bank, and PMI.

Technical Assistance

SN.1 Mass Distribution Campaign Technical Assistance

Brief activity description: VectorWorks supports the NMCP of Senegal in the planning and implementation of a mass LLIN distribution campaign taking place in 2016. The campaign utilizes a coordinated national approach, which has not previously been done in Senegal. The technical assistance consultancies follow the Alliance for Malaria Prevention (AMP) model of support.

Status (including next steps, challenges, and opportunities, if any): VectorWorks provided technical assistance through two consultants: an international consultant, Mr. Yves Cyaka, who has vast experience in planning and implementing mass LLIN campaigns; and an in-country consultant, Mr. Moussa N'dour, who is experienced in coordinating implementation and management of mass campaigns in Senegal. Mr. Cyaka focused on supporting the NMCP in coordination efforts related to technical planning, tools, and implementation. Mr. N'dour, who is familiar with Senegal's context, provided technical assistance in the steps required for macro-level planning, as well as in facilitating microplanning in collaboration with in-country partners at the district level. In the first half of project Year Two, Mr. Cyaka traveled to Senegal to provide initial campaign planning support from January 24-February 6, 2016, and again during implementation of phase two of the campaign from March 21-April 8, 2016.

[1] U.S. President's Malaria Initiative. *FY 2016 Senegal Malaria Operational Plan.* Available from: http://www.pmi.gov/resource-library/mops/fy-2016.

At the time of reporting, distribution is still ongoing in the Saint-Louis and Matam Regions. In total, more than 8 million LLINs are in the process of being distributed across Senegal. Mr. Cyaka conducted a third two-week technical assistance mission from June 5-19, 2016. During this mission, he participated in national-level stakeholder meetings and supported preparation and implementation for the third and final phase of campaign distribution. Mr. N'dour supported all three phases of distribution during 2016. He will continue to support the NMCP as they conduct home visits to monitor and evaluate use of campaign LLINs, and will facilitate a wrap-up meeting with key stakeholders, PMI, and the NMCP at the end of November 2016.

Deliverable	**Audience**	**Timing**	**Status**
Support distribution, and coordination, monitoring, and evaluation of the campaign	PMI, NMCP, Intrahealth, AMP	Quarters 2,3,4	Completed
Macroplans and microplans	PMI, NMCP, Intrahealth, AMP	Quarter 2	Completed
Trip reports (3)	PMI, NMCP, Intrahealth, AMP	Quarters 2 and 3	Completed
Tools, guidelines, and templates: data collection tools, monitoring tools, end-process tools, training manual, monitors, reporting templates, updated timeline, and logistics templates	PMI, NMCP, Intrahealth, AMP	Quarters 2 and 3	Completed
Weekly updates	PMI, NMCP, Intrahealth, AMP	Quarters 2,3,4	Completed and shared with PMI
Documentation of SBCC around environmental protocols	PMI	Year 3, Quarter 2	To be completed in upcoming months
Final report	PMI, NMCP, Intrahealth, AMP	Year 3, Quarter 2	To be completed in upcoming months

Project Management

SN.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks provides an annual work plan to be approved by PMI Senegal, as well as quarterly financial and semiannual progress reports. VectorWorks understands that information may be requested by the U.S. Agency for International Development for the purposes of the PMI annual report, strategic planning, VIP visits, congressional reports, and similar purposes.

Status (including next steps, challenges, and opportunities, if any): The Year Two work plan was approved in December 2015, and the Year Three work plan was submitted and was approved on November 7, 2016. The Semiannual Report was submitted to PMI in May 2016.

Deliverable	Audience	Timing	Status
Work plan	PMI	Quarter 1	Submitted
Quarterly financial reports	PMI	Quarters 1-4	Submitted
Semiannual progress reports	PMI	Quarters 2 and 4	Submitted and herein
Trip reports (3)	PMI	Quarters 2,3,4	Submitted

VectorWorks Tanzania Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

ABCDR	Attrition, Bioefficacy, Chemistry, Degradation, and Insecticide Resistance
AIS	accountability information system
AMP	Alliance for Malaria Prevention
ANC	antenatal clinic
CCP	Johns Hopkins Center for Communication Programs
COP	chief of party
eLMIS	electronic Logistic Management Information System
DHIS2	District Health Information System 2
EPI	Expanded Programme on Immunization
IHI	Ifakara Health Institute
IRS	indoor residual spraying
ITN	insecticide-treated net
LLIN	long-lasting insecticidal net
MoEVT	Ministry of Education and Vocational Training
MOHSW	Ministry of Health and Social Welfare
MSD	Medical Stores Department
NATNETS	National Insecticide-Treated Nets Programme (Tanzania)
NMCP	national malaria control program
PMI	U.S. President's Malaria Initiative
PMP	project monitoring plan
PO-RALG	President's Office—Regional Administration and Local Government
PSI	Population Services International
SBCC	social and behavior change communication
SNP	School Net Program
TMEMS	Tanzania Monitoring and Evaluation Management System
USAID	U.S. Agency for International Development
VCWG	Vector Control Working Group
WHO	World Health Organization
WHOPES	WHO Pesticide Evaluation Scheme
ZAMEP	Zanzibar Malaria Elimination Program

Background

VectorWorks is a five-year USAID-funded global malaria prevention project. The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs) as well as to facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations. VectorWorks activities focus on three main areas: policy, implementation, and monitoring and evaluation.

In Tanzania, malaria continues to contribute considerably to morbidity and mortality, despite recent declines. The role of VectorWorks in Tanzania is to support continuous and equitable access to ITNs, and to support the U.S. President's Malaria Initiative (PMI) and the Tanzania National Malaria Control Program (NMCP) in developing vector control interventions that are appropriate to the specific challenges in Tanzania. Tanzania is currently conducting mass ITN distributions. The expected boost in ITN coverage from these planned mass distributions will need to be sustained over time by appropriate, effective, and reliable ITN continuous distribution systems.

In Year One (2014–2015), VectorWorks supported the implementation of the third annual round of the school-based ITN distribution, locally referred to as the School Net Program Round 3 (SNP3). SPN3 distributed more than 490,000 ITNs in the Lindi, Mtwara, and Ruvuma regions, where school-based ITN distribution is the main source of ITN access. The experience of SNP3 resulted in greater involvement by the national government, primarily through the President's Office—Regional Administration and Local Government (PO-RALG) structures. In addition, new methods of ITN quantification and validation were employed. Lessons learned from this experience are feeding into program improvements for SNP4 and future scale-up.

In Year Two, PMI requested that the VectorWorks project focus on activities in six main areas:

1. Develop a strategy for routine distribution of ITNs through antenatal care (ANC) and Expanded Programme on Immunization (EPI) services, and begin phased-in implementation starting in the regions of Mtwara and Mwanza. The strategy should make use of existing systems as much as possible and emphasize mechanisms for limiting stockouts and for ensuring accountability.
2. Support NMCP in developing a comprehensive ITN distribution strategy as outlined in Tanzania's *National Malaria Strategic Plan 2014–2020*. The strategy should include an assessment of which population groups are missed in distributions through schools and health facilities and the identification of alternative continuous distribution mechanisms to reach these groups.
3. Continue to distribute ITNs in schools through SNP in the three southern regions (Lindi, Mtwara, and Ruvuma) and expand SNP to the four Lake Zone regions (Geita, Kagera, Mara, and Mwanza) for a total of seven regions. VectorWorks will use the latest coverage data available to model the optimal number of ITNs to be distributed through this channel to maintain high coverage in the seven regions.
4. Provide technical assistance for reviewing the implementation of existing continuous distribution guidelines for Zanzibar and assess whether updates are needed to improve efficiency and effectiveness.

5. Take initial steps to assess the potential and appropriateness of retail sales of ITNs and the engagement of the private sector in continuous distribution of ITNs in Tanzania.
6. Support the review of evidence regarding outdoor transmission of malaria in Zanzibar and, in close consultation with PMI, contribute to studies to either respond to priority research gaps or pilot vector control strategies to reduce outdoor biting.

Policy and Advocacy (PC)

PC.2 Technical Coordination Meetings for Malaria Vector Control

Brief activity description: VectorWorks participates in key malaria vector control meeting platforms in Tanzania, such as the National Insecticide Treated Nets Programme (NATNETS) Steering Committee and the LLIN (long-lasting insecticidal net) Task Force meetings. These meetings are opportunities to keep stakeholders at the national level up to date on VectorWorks activities, share lessons and updates from the field implementation of ITN continuous distribution, support harmonization of activities, make decisions on some emerging issues, and coordinate with other implementing partners where appropriate.

Status (including next steps, challenges, and opportunities, if any): In Year Two, VectorWorks presented to the LLIN Task Force on January 25, 2016. The presentation recapped Year One successes and plans for Year Two. The VectorWorks project met several times with the Ifakara Health Institute (IHI) to discuss opportunities for research collaboration and to bring IHI on as a partner. Led by NMCP, VectorWorks also facilitated a high-level meeting in June 2016 with the PO-RALG senior management team, where malaria control efforts were presented and discussed and steps going forward were agreed. The VectorWorks team presented the project's plans and goals as well as discussed specific SNP4 issues such as issues with quantification data, for which the partners agreed to use a centrally provided government data as opposed to continuing the vertical data collection process from schools.

In Year Three, VectorWorks will continue to participate in key malaria vector control meetings such as the NATNETS Steering Committee meetings, Malaria Commodities Technical Working Group meetings, and LLIN Task Force meetings. As well, VectorWorks will seek audience with the PO-RALG senior management team biannually to update them on plans and implementation. VectorWorks will coordinate with other groups working in malaria prevention in Tanzania—such as IHI and the Malaria Safe partnership, a partnership between private-sector stakeholders to support the fight against malaria—as well as with other groups working on malaria in pregnancy and ITN continuous distribution. Additionally, VectorWorks will work with NMCP and the NETCELL Project, which manages NATNETS, to strengthen the functioning of the LLIN Task Force through formation of SNP and Health-Facility-Based Distribution work streams. VectorWorks will also conduct briefings and update meetings with the senior management teams at PO-RALG and the Ministry of Health and Social Welfare (MOHSW).

Deliverable	Audience	Timing	Dissemination Plan	Status
Presentations given by VectorWorks at technical coordination meetings during	PMI	Throughout Year 2	Share by email	Complete

Year 2				

PC.3 Development of Comprehensive ITN Strategy

Brief activity description: VectorWorks has supported the NMCP in developing a comprehensive ITN distribution strategy as outlined in the *National Malaria Strategic Plan 2014–2020*. This work included an assessment of which population groups are missed in distributions through schools and health facilities, and an assessment of how these gaps might potentially affect NMCP's goals.

Status (including next steps, challenges, and opportunities, if any): In June of Year Two, VectorWorks analyzed the results from SNP1 and SNP2 evaluation reports to ascertain how SNP was performing in covering households with ITNs. Results were presented and discussed at a NATNETs meeting with NMCP and partners. On the basis of these discussions, VectorWorks then developed a draft ITN plan to describe Tanzania's overall approach to ITN distribution going forward.

In Year Three, data from the SNP3 evaluation and the 2015 Demographic and Health Survey will become available, and this data will be used to update, confirm, refine, and finalize the ITN plan. This work will include identifying specific groups that are not reached by the continuous distribution strategy and proposing ways of targeting these groups for ITN distribution. The result of this work will be a final ITN plan for Tanzania that specifies how and under what circumstances each ITN distribution mechanism will be deployed. VectorWorks will also develop an advocacy document for the NMCP to use with the Ministry of Health to explain the Keep Up strategy, the evidence behind it, and justifying the way forward.

Specifically, in Year Three, VectorWorks, in collaboration with NMCP, will do the following:

- Finalize the draft National ITN Strategy, incorporating data from the SNP3 evaluation and the 2015 Demographic and Health Survey.
- Convene a multilevel stakeholders workshop to discuss the draft National ITN Strategy.
- Support NMCP in the finalization and approval process for the draft National ITN Strategy.
- Develop an advocacy document.

Deliverable	Audience	Timing	Dissemination Plan	Status
Analysis of ITN coverage gaps under implementation of continuous distribution through schools and health facilities	NMCP, PMI	Year 2, Quarter 4	Share by email	Completed

Implementation (IM)

IM.11 NetCALC Workshops for the Seven PMI Regions on Mainland Tanzania

Brief activity description: In preparation for SNP4, a NetCALC-based analysis was conducted, using available data, to forecast different scenarios for expected ITN coverage in the three regions targeted

through school-based ITN distribution. This evidence-based approach allowed for a more detailed planning process for SNP4. As regions completed their 2015 national mass ITN distributions and the seven PMI focus regions implemented continuous distribution through health facilities and/or schools (see IM.2 and IM.3), it was important to assess current gaps in universal ITN coverage in these regions. This assessment accounted for ITN mass and continuous distributions as well as for population growth in determining the number of ITNs needed to achieve or maintain coverage levels. VectorWorks then conducted NetCALC workshops with high-level decision makers from the seven PMI focus regions (Mwanza, Geita, Mara, Kagera, Ruvuma, Mtwara, and Lindi) and from districts within each region. The purpose of the workshops was to build awareness of the current ITN gaps (if any) and to demonstrate the important role of continuous ITN distribution for these regions.

Status (including next steps, challenges, and opportunities, if any):

The VectorWorks field operations director and the VectorWorks Tanzania team conducted one-day NetCALC workshops in March 2016 in four regions (Mwanza, Geita, Mtwara, and Lindi). The meetings were attended by the regional commissioners (in Geita and Mtwara), regional administrative secretaries, regional medical officers, regional malaria focal persons, regional education officers, and regional reproductive and child health coordinators. The districts were represented by their district executive directors, district medical officers, and district education officers. Participants particularly appreciated learning how distribution channels, ITN quantities, and ITN need could vary from year to year based on past distributions and coverage attained. This exercise also helped to show how the national level arrived at the types of channels for ITN distribution for 2016 in each region and the number of ITNs expected for distribution. The workshop output for each region is a NetCALC simulation showing coverage that can be achieved using the proposed continuous distribution channels.

The field operations director trained the VectorWorks Tanzania team and PO-RALG and NMCP officials to complete the final three regional NetCALC trainings in his absence. The resulting national training team learned about the rationale for ITN continuous distribution, the process for deciding on channels to use for ITN continuous distribution, the data needed to populate the NetCALC tool. The team also received a step-by-step orientation on how the NetCALC tool works and practiced using the tool with data from the Mtwara Region. By the end of this training, the team members facilitated NetCALC orientation sessions at the advocacy meetings (see IM.12) in the remaining three regions (Kagera, Ruvuma, and Mara). Country-based teams comprising PO-RALG and NMCP officials in Kagera, Ruvuma, and Mara conducted similar workshops.

Deliverable	Audience	Timing	Dissemination Plan	Status
Consolidated workshop report including the NetCALC outputs from the seven regional workshops	PMI, LLIN Task Force, NATNETS Steering Committee	Year 3, Quarter 1	Share by email	In process

IM.12 Health Facility Distribution

Brief activity description: The Tanzania National Voucher Scheme was a well-known program for distributing ITNs to pregnant women and children through ANC and EPI services. While it was reasonably effective at distributing ITNs to the target populations, it was suspended in early 2014 after fraudulent activity was detected. PMI Tanzania asked VectorWorks to help develop a new ANC-EPI distribution program that will directly distribute ITNs in health facilities to pregnant women and infants, without a voucher or a copayment. There has been a strong call from stakeholders to incorporate robust risk mitigation procedures and accountability mechanisms in this new continuous distribution program.

Status (including next steps, challenges, and opportunities, if any):

In Year Two, VectorWorks rolled out the new model of health-facility-based ANC-EPI ITN distribution in two regions of Tanzania: Mtwara and Mwanza. The program relies as much as possible on existing systems. The implementation experience from Year Two will be used to inform scale-up of health-facility-based ITN distribution to the seven other PMI-supported regions in Year Three and to inform ANC-EPI distribution activities by the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Due to delays in ITN procurement, the timeline to launch the health-facility-based ITN distribution was delayed until Quarter Three of Year Two. VectorWorks successfully launched implementation in Mtwara in late May 2016 and in Mwanza in July 2016. The VectorWorks Tanzania team developed detailed implementation guidelines for health-facility-based ITN distribution and, in consultation with stakeholders and PMI Tanzania, obtained technical input and vetting of the guidelines. These guidelines have been translated to Swahili, and VectorWorks, with the support of a consultant in-country, has developed training materials based on the guidelines. Both the guidelines and the training materials were used in the Mtwara and Mwanza trainings; these documents are under final review for submission.

Trainings on the processes for ITN distribution, documentation, reporting, and monitoring have been conducted in Mtwara and Mwanza.

VectorWorks also conducted advocacy meetings in the seven focus regions with national, regional, and district stakeholders participating. The goal of these meetings was to ensure that the planned activities were understood and acknowledged by all engaged stakeholders and to get buy-in at all stages of implementation. For Year Two, the advocacy meetings for health-facility-based ITN distribution were combined with SNP4 programming. Regional and district-level advocacy meetings were led by officials from the Ministry of Health, Community Development, Gender, Elderly and Children and PO-RALG. The meetings at the regional level were attended by regional and district-level top management teams and decision makers. Meetings were officiated by regional commissioners. More than 95% of invitees attended, and the few who were not able to attend in person sent representatives. VectorWorks Tanzania has worked with the Medical Stores Department (MSD) to distribute nets. MSD is a parastatal entity, and working with MSD for distribution would increase their capacity with an eye toward sustainability. Unfortunately, MSD was ultimately unable to take on distribution activities, so VectorWorks ended up working with Simba Logistics and Equipment Supplies, a private firm, to distribute the ITNs. VectorWorks Tanzania is still meeting with MSD about the possibility of them taking on a role in storing ITNs and distributing ITNs in some of the districts in Year Three.

The new model for health-facility-based ITN distribution places strong emphasis on accountability. VectorWorks has developed an accountability information system that will compare data on ITNs issued in each health facility against the ANC and EPI services rendered by that facility. This activity is described in greater detail in the section on ME.4. Because of delays in beginning the health-facility-based distribution, accountability reports will begin to be produced in Year Three.

In Year Three, VectorWorks Tanzania plans to scale up to seven additional regions (Lindi, Ruvuma, Geita, Kagera, Mara, Simiyu, and Kigoma), to reach a total of nine regions (including Mtwara and Mwanza) where the health-facility-based ITN distribution is taking place. Also in Year Three, VectorWorks will produce a plan for transitioning some transport and logistics responsibilities to MSD.

Deliverable	Audience	Timing	Dissemination Plan	Status
Detailed implementation guidelines for ANC and EPI distribution of ITNs	PMI, LLIN Task Force, regional administration, district administration	Year 3, Quarter 1	Share by email; hard copies to be provided to the regional and district administrations	In process
Training materials	PMI, trainers, trainees	Year 3, Quarter 1	Share with PMI by email; hard copies to be provided to trainers and trainees via in-person presentations	In process
Quarterly accountability reports (regional level)	PMI, LLIN Task Force, regional administration, district administration	Year 3, Quarter 2	Share by email; hard copies to be provided to the regional and district administrations	Delayed until Year 3
Plan for transitioning implementation to MSD	PMI, LLIN Task Force, MSD	Year 3, Quarter 4	Share by email	Delayed until Year 3

IM.13 School-Based Distribution

Brief activity description: In Year One, VectorWorks implemented the third round of school-based distribution in three regions through SNP3. In Year Two, SNP4 expanded from the three regions in the Southern Zone (Lindi, Mtwara, and Ruvuma) to add four regions in the Lake Zone (Geita, Kagera, Mara, and Mwanza), for a total of seven regions. For SNP4, VectorWorks continued to support engagement and collaboration with three key government structures: the MOHSW (through the NMCP) and PO-RALG's education sector and Department of Information Communications Technology.

Status (including next steps, challenges, and opportunities, if any):

Per NMCP's advice, VectorWorks Tanzania held advocacy meetings in the seven SNP4 regions (Mwanza, Geita, Mara, Kagera, Ruvuma, Mtwara, and Lindi) to discuss lessons learned from SNP3 and to plan for SNP4 instead of a national review and planning meeting. As the national meeting never occurred, PMI provided approval to cancel the meeting notes deliverable with Modification 3 on June 21, 2016. The meetings were attended by regional and district commissioners, medical officers, administrative secretaries, and education officers from both the district and regional levels. As the regional top management team and decision makers, participants were exposed to the overview of the VectorWorks project, macroplanning for both school-based and health-facility-based ITN distribution, operating mechanisms for the two interventions, the roles that regions and districts will be expected to play, issues around accountability while ITNs are being issued to beneficiaries, and lessons learned from SNP3 in the southern regions, including the need for data collection and data validation to ensure that the project reaches as many eligible beneficiaries as possible.

Materials used for data collection and issuing of ITNs to students were reviewed by VectorWorks and NMCP. A review meeting was held at the VectorWorks office to take into account lessons gathered from SNP3 exit meetings and comments made by implementers at different levels and to refine the materials and the standard operating procedures. The SNP4 materials were designed, printed, and distributed to the districts.

In preparation for SNP4, a quantification exercise was conducted at the central level to determine the number of ITNs needed to maintain 80% coverage. NetCALC, a modeling tool for ITN quantification, provided scenarios for eligibility by class and was used to calculate the number of ITNs needed to achieve and maintain acceptable levels of universal coverage. A total of more than 1.1 million ITNs were projected to be needed for SNP4 in the seven regions. A separate and exclusive report for this activity was produced and shared with PMI and later with NMCP.

One of the key decisions made through regional and district-level advocacy meetings was about data collection for SNP4. The group agreed to use school data as of March 31 for each respective year for the quantification and validation exercises, because at that time of the year, registration of students for primary schools is closed and registration data has been submitted to central levels of the education system. The group also discussed accountability, and participants requested that the program use a system that follows the government structure, to avoid miscommunication.

Microplanning and data collection of school enrollment were conducted after the training process was finalized at the national, regional, and district levels. VectorWorks validated data in the Lake Zone regions (Geita, Kagera, Mara, and Mwanza) with school visits. Field validation was not conducted in the Southern Zone regions (Lindi, Mtwara, and Ruvuma) because data analysis of three data sets (SNP3 quantification data, central government data, and ward education coordinator quantifications) found that they aligned with each other within 10% (plus or minus). These results demonstrated data consistency, so field validation was not conducted.

To ensure mobilization of communities targeted to receive the nets, VectorWorks worked with the Tanzania Capacity and Communication Project and Tanzania Communication and Development Center to organize a workshop that reviewed and designed social and behavior change communication (SBCC) materials for ITN distribution in both health facilities and schools. A thorough SBCC campaign-design

process was used to ensure that the materials developed follow a high-quality, evidence-based process. After the design workshop, the materials were pretested, refined, approved, and printed.

School-based ITN distribution began in mid-July 2016 in the seven regions and ended in early September. Supervision, led by NMCP, PO-RALG officials, and local government officials at all levels of implementation, was a continuous activity during distribution. Wrap-up meetings were postponed from Quarter Four in all seven regions and were rescheduled to coincide with the introduction of expanded health-facility-based distribution.

In Year Three, VectorWorks will continue to distribute ITNs to the existing seven SNP4 regions and in SNP5 will expand to two additional regions (Kigoma and Simiyu) for a total of nine regions.

Deliverable	Audience	Timing	Dissemination Plan	Status
Meeting notes from the national review and planning meeting	PMI, LLIN Task Force	N/A	Share by email	Cancelled
Revised standard operating procedures and/or tools for SNP4	PMI, LLIN Task Force, regional administration, district administration	Year 2, Quarter 3	Share by email; printed materials provided to regional and district administrations	Completed
Report on validation process with final ITN quantifications	PMI, LLIN Task Force	Year 3, Quarter 1	Share by email	Completed
SNP4 implementation report and supervision findings	PMI, LLIN Task Force	Year 3, Quarter 1	Share by email	In process

IM.14 Explore the Role of the Private Sector in Sustaining ITN Coverage in Tanzania

IM.14.A Conduct a Market Dynamics Landscape Assessment to Explore Retail Channels for ITNs in Tanzania

Brief activity description: Donor-funded universal coverage of ITNs is a model that is not necessarily sustainable in the long run. Moving toward a role for retail sales through the private sector, as a viable channel for continuous distribution, will benefit the sustainability of universal ITN coverage in Tanzania. There is currently a market for untreated nets in Tanzania, but few opportunities to buy treated nets, other than ITNs "leaked" from campaigns in neighboring countries. Therefore, mechanisms to build a private-sector role for ITNs are a step toward sustainability. Retail sales may be an option, but building a competitive market of manufacturers will be a challenge, especially in the context of a market saturated with mass distribution nets funded by the public sector and in competition with supplies of untreated nets. In Year Two, VectorWorks explored the issue of developing a holistic private-sector approach to ITN sales in Tanzania with NMCP, PMI, and other partners.

In 2014, DFID commissioned a market dynamics landscape assessment for the private-sector component of the national continuous distribution strategy. For this assessment, Dr. Albert Kilian of Tropical Health identified multiple market constraints based on the Making Markets Work for the Poor (M4P) framework and suggested broad interventions to support key market functions. VectorWorks built upon this analysis, deepening the market dynamics landscape assessment with further understanding of the capacities and incentives of the key market players.

Status (including next steps, challenges, and opportunities, if any): This activity (IM.14.A) is complementary and synergistic with the VectorWorks Core Activity IM.9 Private-Sector Approaches and Considerations. Under the IM.9 work plan and budget, PSI in Washington, D.C., supported the selection of a pilot country in which the NMCP had expressed interest in a private-sector continuous distribution channel (i.e., Tanzania). PSI met with manufacturers of ITNs approved by the World Health Organization (WHO) Pesticide Evaluation Scheme (WHOPES) at the annual meeting of the American Society of Tropical Medicine and Hygiene in Philadelphia in October 2015. This meeting was followed with a series of similar one-on-one meetings during the annual meeting of the Vector Control Working Group (VCWG) and the Alliance for Malaria Prevention (AMP) in Geneva in 2016. The findings of these consultations were as follows:

- All manufacturers interviewed expressed interest in participating in rebuilding the retail market for WHOPES-approved ITNs.
- International manufacturers expressed a need for Tanzanian consumer and market information, given that the potential market is still too small to justify and support market research.
- International manufacturers expressed a need for support in finding in-country distributors.
- In-country registration was cited as a barrier by a number of international manufacturers.
- In a context of mass campaigns, it is likely that total private-sector sales volume will not grow substantially over time.
- However, most manufacturers indicated that while high volumes would be better, sales of 50,000 to 100,000 units would still be considered commercially interesting, though too low to support the marketing investments required to build a strong brand in the private sector.

The international data gathered by PSI was complemented with a Tanzanian market dynamics landscape assessment (i.e., desk review and interviews with the remaining market players in Tanzania). This latter report is being finalized.

Deliverable	Audience	Timing	Dissemination Plan	Status
Market dynamics landscape report that includes a draft model for private-sector design	PMI	Year 3, Quarter 2	Share by email	In process

IM.14.B Hold a Stakeholder Workshop to Discuss Findings of the Market Dynamics Assessment

Brief activity description: During Year Two, VectorWorks conducted a market dynamics landscape assessment. The workshop to discuss these findings has been moved to Year Three to permit the findings

to be triangulated with the discrete choice experiment, for which the report was finalized in October. This will allow a better understanding of the ITN retail market and consumer behavior in Tanzania. VectorWorks will partner with NMCP to facilitate the joint development of an acceptable model for private-sector design. Documentation of the process and the proposed private-sector model will be a key output.

Potential workshop agenda items include the following:

- Sharing the findings of the market dynamics landscape assessment and the discrete choice experiment conducted by VectorWorks.
- Defining a vision for the desired shift in the market, with the long-term goal of sustainably maintaining ITN coverage.
- Developing a model for how private-sector involvement might work.

Status (including next steps, challenges, and opportunities, if any):

Deliverable	Audience	Timing	Dissemination Plan	Status
Presentations used at the stakeholder workshop	PMI	Year 3, Quarter 2	Share by email	Planned for Year 3
Meeting notes	PMI	Year 3, Quarter 2	Share by email	Planned for Year 3

IM.15 Technical Assistance for Zanzibar Continuous Distribution

Brief activity description: In 2013, NetWorks supported development of a continuous distribution strategy for Zanzibar, and implementation began in early 2014 with ongoing community and health-facility-based distribution. After more than a year of implementation of this continuous distribution strategy in Zanzibar, PMI shifted a process evaluation activity for this strategy from the Tanzania MEASURE Evaluation Associate Award to VectorWorks in January 2016. VectorWorks subsequently implemented a process evaluation (activity ME.8) in April 2016.

Status (including next steps, challenges, and opportunities, if any): VectorWorks provided technical assistance to the Zanzibar Malaria Elimination Program (ZAMEP) in June 2016 to review the preliminary findings from the process evaluation and make recommendations for revising the design and implementation of the continuous distribution strategy. VectorWorks updated the NetCALC analyses using the latest ITN data from the 2016 mass campaign and the population data from household registration. These analyses were used to fine-tune the strategy and/or the continuous distribution tools and implementation support during a one-day workshop with key ZAMEP staff. VectorWorks recommended that, due to the mass campaign, community distribution should be suspended until mid-2017, while ANC-EPI channels should continue.

VectorWorks met with ZAMEP in August 2016 to discuss an implementation arrangement based on the continuous distribution process evaluation findings. It was agreed that VectorWorks should include in its Year Three work plan (1) to provide continuous distribution revision activities and implementation support,

(2) to ensure ITNs are included in the Zanzibar Electronic Logistic Management Information System (eLMIS) platform, (3) to include in the plan adoption of mainland Tanzania's accountability information system, and (4) to provide support for ITN storage and distribution.

Deliverable	Audience	Timing	Dissemination Plan	Status
Workshop report with NetCALC outputs and recommendations and/or updates to continuous distribution strategy	PMI, ZAMEP	Year 3, Quarter 1	Share by email	In process

Monitoring and Evaluation (ME)

ME.1.2 Internal Project Monitoring

Brief activity description: In Year Two, VectorWorks continued to monitor the implementation of project activities, which is important to ensure that the project meets targets effectively. VectorWorks uploaded relevant data to the PMI Tanzania Monitoring and Evaluation Management System (TMEMS) database quarterly.

Status (including next steps, challenges, and opportunities, if any): VectorWorks Tanzania updated the Year One project monitoring plan (PMP) to include indicators relevant to the Year Two work plan activities. VectorWorks also laid the groundwork for monitoring ITN distribution in health facilities and schools. This included the accountability information system (see ME.4), which enabled VectorWorks to compare service provision with commodity data. In addition, VectorWorks selected indicators to enable performance-based contracting with transporters and warehouses for ITN distribution in both health facilities and schools. These indicators include, but are not limited to, issuing of orders by the due date, delivery by the due date, fill rate, percentage of ITNs lost or damaged, inventory accuracy, and percentage of ITNs stored inappropriately. VectorWorks submitted TMEMS reports on the selected key indicators every quarter in Year Two. VectorWorks Tanzania also engaged a student intern from the Johns Hopkins Bloomberg School of Public Health to support the field team in implementing the planned monitoring activities, such as SNP4 supervision visits and the SNP4 process evaluation.

VectorWorks expected to obtain a login access to the eLMIS and to use the data source forms to generate monthly transport performance reports. This has not happened, because accountability information system (AIS) tool development is still in progress. The eLMIS access and transport performance reports are now expected to happen in Year Three. PMI and NMCP will be responsible for submitting several primary data source forms, such as proofs of delivery, loss/claims reports, and sales invoices, during the course of implementation. VectorWorks will work with MSD to obtain quarterly stock reports and will conduct quarterly site visits and stock counts. Together, the quarterly stock reports and site visit reports will be used to assess warehouse performance. For information about the AIS, please see ME.4.

In Year Three, the VectorWorks monitoring manager and regional managers will continue to monitor the implementation of project activities. When possible, data collected will be disaggregated by age and sex.

The monitoring manager will help to monitor activities based on the approved indicators and to upload relevant data to the PMI TMEMS database quarterly. The PMP will be included in the semiannual and annual reports and will address progress toward targets.

Deliverable	Audience	Timing	Dissemination Plan	Status
Updated PMP	PMI	Year 2, Quarter 3	Share by email	Completed

ME.3.2 Process Monitoring of SNP4

Brief activity description: As part of the monitoring plan for the first three years of SNP (SNP1, SNP2, and SNP3), a procedural audit was conducted to verify how well school distribution procedures were followed. For SNP4, VectorWorks will continue to monitor these processes through two activities: a process evaluation and a commodity management assessment. The process evaluation will take the form of a programmatic evaluation of SNP4, whereas the commodities management assessment will focus on the movement of ITNs and the paper trail throughout the activity. These assessments will produce data on how the program can be improved and will allow for a more meticulous assessment of the commodity management. This focused attention to accounting for the flow of nets will be important for the first year of scale-up of SNP to four new regions, as well as for future scale-up.

Status (including next steps, challenges, and opportunities, if any): In Year Two, VectorWorks developed a protocol and tools for the process evaluation and commodity management assessment for school-based distribution in the seven regions of SNP4. Separate teams have been contracted to carry out the fieldwork for these assessments.

The data collection for the process evaluation is expected to be conducted in November 2016. VectorWorks has contracted with an in-country firm, the Tanzania Institute of Monitoring & Evaluation, to do the data collection. The commodity management assessment will be conducted in January 2017, when schools reopen. Alain Daudrumez, a consultant from AMP, will adapt the mass campaign commodity management assessment tools from Nigeria for school distribution in Tanzania. An in-country firm, Talemwa, will conduct the data collection.

Deliverable	Audience	Timing	Dissemination Plan	Status
SNP4 process evaluation report	PMI, NMCP, MoEVT, PO-RALG, LLIN Task Force	Year 3, Quarter 2	Share by email	Planned for Year 3
SNP4 commodity management assessment report	PMI, NMCP, MoEVT, PO-RALG, LLIN Task Force	Year 3, Quarter 2	Share by email	Planned for Year 3

ME.4 Accountability Information System for ANC-EPI Distribution

Brief activity description: During Year Two, VectorWorks contracted the University of Dar es Salaam to develop the AIS for health-facility-based ITN distribution. The purpose of the AIS is to transparently monitor and account for every ITN distributed through health facilities. This was done through triangulating service data from District Health Information System 2 (DHIS2) with product data from eLMIS. The main result of the AIS is the "chandarua dashboard," which is in the final stages of completion: waiting for the interface between eLMIS and DHIS2. The chandarua dashboard sits under the DHIS2 platform and triangulates between the number of clients seen (i.e., children getting measles vaccinations and pregnant women at first ANC visit) and the number of ITNs distributed in the health facility.

The dashboard also generates monthly and quarterly accountability reports. The district teams will use these reports to account for ITNs in their respective districts by looking at the expected and actual numbers of target beneficiaries with the actual numbers of ITNs being ordered, delivered, and distributed. Instances of variance from the expected numbers will be flagged for further investigation. A quarterly accountability report will be signed by the district and submitted to regional authorities for review. The regional authorities will then forward regional accountability reports to PO-RALG and NMCP.

Status (including next steps, challenges, and opportunities, if any): The AIS will be pretested using real data in Year Three. During Year Three, based on user feedback in these two regions, VectorWorks will make the necessary improvements before scaling up in other regions. The system will be pretested for user-friendliness and comprehension with select district personnel from both PO-RALG and the Ministry of Health, prior to finalization and rollout. Districts will be oriented on the purpose of the AIS and how to use the data for decision making. The data will be reviewed and discussed during meetings to inform districts of the status of the program, to monitor any potential diversion of ITNs.

In Year Three, VectorWorks will work to develop an AIS to monitor SNP distribution. This system will provide digital accountability for the ITNs distributed via SNP by enabling easier identification and investigation of schools with variances.

Deliverable	Audience	Timing	Dissemination Plan	Status
AIS specifications report	USAID | DELIVER Project (supply chain project), PMI, NMCP, LLIN Task Force	Year 3, Quarter 1	Share by email	Completed
Database integration work plan	USAID | DELIVER Project, PMI, NMCP, LLIN Task Force	Year 3, Quarter 1	Share by email	Completed

ME.5 Support to Research Agenda for Outdoor Mosquito Biting in Zanzibar

Brief activity description: WHO has estimated that between 2000 and 2015, the annual rate of new malaria cases dropped by 37% globally, and malaria death rates fell by 60%. Current vector control practices, notably LLINs and indoor residual spraying (IRS) have contributed to a significant proportion of this reduction, but the progress is now leveling off, as these interventions are reaching their fundamental protective limits. In many settings, low-level residual transmission persists, even in communities where LLIN and IRS coverage already exceeds 80%. Substantial data has been collected on residual transmission of malaria due to outdoor mosquito biting on Zanzibar, where there is persistent low transmission of malaria. ZAMEP, with support of partners, is leading the review of this data. VectorWorks will liaise with and support ZAMEP and other partners in this process.

Status (including next steps, challenges, and opportunities, if any): In Year Two, VectorWorks submitted a concept note for a study to measure and characterize residual malaria transmission on Zanzibar. The study was approved by the PMI Operations Research Committee in Quarter Four, which pushed back the fieldwork start dates to mid-November. VectorWorks, through IHI, engaged with ZAMEP to coordinate the research study and ongoing entomological monitoring on Zanzibar.

The planned meeting in Zanzibar for Year Two, and associated travel, was canceled.

In Year Three, pending IRB approvals, VectorWorks plans to carry out fieldwork in November/December and in March/April for the residual malaria transmission study on Zanzibar and provide technical assistance to ZAMEP to strengthen entomology data systems and analysis. The study objectives are:

1. Estimate proportions of ongoing residual malaria transmission that occur outside dwellings at different times of night, relative to proportions that occur indoors.
2. Quantify levels of pyrethroid insecticide resistance and estimate the extent to which the resistance contributes to the ongoing residual transmission.
3. Identify and characterize common human outdoor and indoor activities and behaviors associated with ongoing residual malaria transmission in the selected sites.
4. Conduct a mathematical evaluation of potential complementary vector control interventions, so as to identify those which could be used alongside IRS and LLINS to significantly reduce the ongoing residual transmission beyond malaria elimination thresholds.

Deliverable	Audience	Timing	Dissemination Plan	Status
Trip report on attendance at meeting in Zanzibar	PMI	N/A	Share by email	Canceled

ME.6 Monitoring Project Engagement Across Age and Gender

Brief activity description: Engaging with youth is increasingly important for sustainability of projects; youth represent an important population for PMI and USAID. In addition, gender and age considerations in ITN programs have been underexplored, apart from the targeting of ITNs to pregnant women and children

under five years of age due to biological vulnerability. In Year One, as part of its core component, VectorWorks conducted a gender analysis of ITN programs and developed a project-specific gender strategy. In Year Two, under the core component and as part of the project's gender strategy, VectorWorks staff participated in an internal training on gender issues and how country-level work can support the project's gender strategy. Also during Year Two, as part of the PMP, VectorWorks Tanzania explored how its programs are reaching gender groups and different ages. Data disaggregated by sex and age was collected from VectorWorks programs, and a descriptive analysis was conducted of the project's activities by gender and age. The analysis included ITN distribution through health-facility-based and school-based programs, as well as the trainings and workshops run by the VectorWorks project.

Status (including next steps, challenges, and opportunities, if any): VectorWorks conducted internal training on gender issues with Tanzania project staff in January 2016. VectorWorks Tanzania has reviewed data compilation forms for school-based ITN distribution. Student ages can be obtained only from student registries, and is recorded only once when a girl or boy joins school for the first time. Other sources of data collection do not capture the age of students. Therefore, the team decided to retain the same data collection categories used in SNP3, which collected only the student's sex and class. The age of students can be reasonably estimated based on their class. However, VectorWorks Tanzania has had discussions with PO-RALG's Department of Information Communications Technology on the need to include age segregation during school data reporting; PO-RALG has included age sets (groups) in the online school data collection tool that the government is developing. VectorWorks Tanzania is part of the team working to realize this tool.

For health-facility-based ITN distribution, VectorWorks will continue using Health Management Information System 6 and 7 as the primary source of ANC and EPI data, respectively. These forms collect the age of the pregnant women who receive ANC services and the age and sex of the children who receive EPI services.

Finally, VectorWorks has forms in place to capture the sex of training participants (see Table 1. Based on Table 1, 42.6% of trainees trained by VectorWorks Tanzania in Year Two were female.

Table 1. Data on People Trained by VectorWorks on ITN Distribution with U.S. Government Funds, Fiscal Year 2015-2016

Number of people trained by VectorWorks in Year 2					
Level	**Male**	**% Male**	**Female**	**% Female**	**Total**
National	11	50%	11	50%	**22**
Regional	32	64%	18	36%	**50**
District	192	55%	157	45%	**349**
Ward	1,399	57.6%	1,028	42.4%	**2,427**
Total	**1,634**	**57.4%**	**1,214**	**42.6%**	**2,848**

In Year Three, VectorWorks Tanzania will continue to monitor how its programs are reaching gender groups and different ages, particularly youth, as a starting point to examine how these populations may be integrated in project activities in the future. This monitoring will be accomplished by collecting sex- and age-disaggregated data from VectorWorks programs through the PMP and conducting descriptive

analyses of the project's activities by gender and age in the annual report. Analyses will include ITN distribution through the health-facility-based program and school-based program, as well as disaggregated data on the trainings and workshops run by the project. To establish potential areas for improvement, VectorWorks Tanzania will also conduct a secondary analysis of the 2015 Tanzania DHS to see if there are discrepancies based on gender in areas like ITN ownership and use. VectorWorks Tanzania will work to ensure that SBCC materials are gender aware and, where possible, gender transformative and promoting equality between genders (e.g., not depicting only women as caregivers).

Deliverable	Audience	Timing	Dissemination Plan	Status
Brief descriptive analysis of project activities, with text and table describing sex and age (this analysis to be included in the VectorWorks Tanzania Year 2 annual report in Year 3 of the project)	PMI	Year 3, Quarter 1	Included with this report	Included with this report

ME.7 Care and Repair Qualitative Study

Brief activity description: The Government of Tanzania has made considerable effort in achieving universal coverage of its populations with ITNs through the Tanzania National Voucher Scheme, the Under-Five Catch-Up Campaign and the Universal Coverage Campaign. With time and use, net degradation is inevitable. If households take good care of their nets and repair minor damage when it occurs, they can prolong ITN integrity and the life of an ITN. Understanding the factors which encourage or act as barriers to these "care and repair" behaviors is therefore important in maintaining high net coverage and optimizing cost effectiveness with fewer net replacements and distributions.

Due to delays in when funds were released through the MEASURE Evaluation Associate Award, this study was added to the VectorWorks Tanzania work plan through modification 1 on January 26, 2016, and contracting between The Johns Hopkins University, Tulane University, and IHI was finalized in March 2016.

Status (including next steps, challenges, and opportunities, if any): Researchers at IHI investigated net care and repair practices in households in southern Tanzania using a mix of qualitative research methods. The report highlighted potential motivators and existing barriers to net care and repair in Tanzanian user contexts. This study had approval from the PMI Operations Research Committee and was added on to the existing Attrition, Bioefficacy, Chemistry, Degradation, and Insecticide Resistance (ABCDR) study, so that findings on net hole locations could be interpreted with information on care practices.

The study objectives were these:

1. To explore the understanding of net care and repair behaviors in Tanzania.
2. To investigate actions associated with different net damage attributes (number, size, and location of holes).
3. To elucidate motivators and barriers to repairing nets.
4. To explore perceptions on how to overcome barriers to net care and repair.

VectorWorks held a conference call with the IHI researchers in Quarter One to discuss the focus group discussion guides, identify any missing topics, and clarify previous findings on net care and repair and how they might apply to the research in Tanzania. Fieldwork for this activity was completed in July 2016, and preliminary report of findings was submitted to PMI. Preliminary findings have also been presented at the Pan African Mosquito Control Association in Lagos, Nigeria, in September 2016.

Deliverable	Audience	Timing	Dissemination Plan	Status
Summary of preliminary findings	PMI, NMCP	Year 2, Quarter 4	Share by email	Completed
Presentation at one international conference	PMI, NMCP, conference attendees	Year 2, Quarter 4	Share by email	Presentations for NMCP and at Pan African Mosquito Control Association conference in Nigeria completed
Publishable-quality article	PMI, NMCP	Year 3, Quarter 4	Share by email	In draft

ME.8 Zanzibar Continuous Distribution Process Evaluation

Brief activity description: ZAMEP and partners have been implementing continuous distribution programs in Unguja and Pemba Islands as a Keep-Up-Strategy to maintain universal coverage of ITNs. This push/pull mechanism aims to maintain ITN coverage through continuous distribution of nets to eligible households. Due to delays in the release of funds through the MEASURE Evaluation Associate Award, this activity was added to the VectorWorks Tanzania work plan through modification 1 on January 26, 2016. It was initially expected that Tulane would conduct the activity, but timing constraints, particularly the need to conduct fieldwork prior to the distribution of ITNs in the universal coverage campaign, led to CCP leading and implementing the activity directly in April 2016.

Status (including next steps, challenges, and opportunities, if any): The VectorWorks project carried out a process evaluation of ZAMEP's continuous distribution system in April 2016 to better understand the system's implementation, challenges, and opportunities for improvement. The evaluation comprised 39 in-depth interviews and observations across each level of the continuous distribution system, including stakeholders on Unguja and Pemba islands at the shehia, health facility, district, and national levels. The evaluation revealed positive perceptions of the continuous distribution program across levels and locations and identified opportunities for improvement for key areas of the system.

Preliminary results were shared in June with ZAMEP during an in-person meeting described in IM.15. VectorWorks drafted a report on the process evaluation findings and recommendations, which was shared with PMI and ZAMEP in October, 2016. Results of the process evaluation will also be shared at the global level by ZAMEP through a poster presentation at the American Society of Tropical Medicine and Hygiene meeting in November 2016.

The evaluation revealed positive perception of the continuous distribution program across levels and location. Among higher performing locations, there was perceived to be effective coordination across levels, timely and accurate reporting, strong buy-in from shehia and health facility participants, and effective communication and community engagement efforts. Among lower performing locations, challenges included limited stockouts of LLINs and/or coupons and inadequate storage facilities of LLINs due to insufficient space, lack of security, and/or rodent infestation. Overall, participants were highly satisfied with the training ZAMEP provided on the continuous distribution system, but felt that additional training and supervision would be beneficial, particularly at the shehia level.

Deliverable	Audience	Timing	Dissemination Plan	Status
Process evaluation report detailing results	PMI, ZAMEP	Year 3, Quarter 1	Share by email	Submitted

Project Management (PM)

PM.1.2 Program Management (Country Office Staffing and Project Scale-Up)

Brief activity description: In Quarter One, Mr. Waziri Nyoni was hired as the chief of party (COP), and additional staff were hired for Dar es Salaam, Mwanza, and Mtwara. An office has been rented and furnished in Dar es Salaam. The Johns Hopkins Center for Communication Programs (CCP) has ensured strong financial operations and accountability support to the field office by deploying an expatriate country operations manager, Ms. Daa'iyah Lang, who made a preparatory trip in February 2016 and moved to Tanzania in April 2016. The COP communicates weekly with CCP Baltimore and the field operations director via conference call; every other week the call also includes the entire VectorWorks Tanzania team, including representatives from PSI. PSI completed the hiring of staff to support VectorWorks in Quarter Two. CCP has procured vehicles for the project.

Status (including next steps, challenges, and opportunities, if any): Based on the expansion in health-facility-based ITN distribution, VectorWorks will add four more regional managers and one zonal officer to support the new regions in Year 3. The number of regional managers and their locations will be based on the location of zonal warehouses and the size of the regions; some regional managers will manage two regions while others manage three regions. The regional managers will oversee effective field implementation of health-facility-based distribution activities and support SNP activities. In Year Three, VectorWorks will also hire a research and evaluation coordinator to assist the monitoring manager with the project's additional research needs, and a program officer to support training activities for school-based and health-facility-based distribution and support VectorWorks' technical support activities in Zanzibar. Essential support will be provided by VectorWorks' partner PSI Tanzania, drawing on their local and international expertise in logistics, supply chain management, and private-sector market dynamics. VectorWorks will procure the vehicles, office space, equipment, and materials needed for project scale-up. The COP will continue to communicate via weekly conference call with CCP Baltimore and the field operations director. The COP will also continue to liaise with the PMI Tanzania team through the structured quarterly joint program planning meetings and through routine communication to provide activity updates.

Deliverable	Audience	Timing	Dissemination Plan	Status
COP hired	PMI	Year 2, Quarter 1	Official start date shared with PMI by email	Completed

PM.2.2 Project Reporting

Brief activity description: VectorWorks coordinated with PMI Tanzania to ensure close communication and adequate reporting through USAID's Tanzania Mission database, TMEMS; regular updates with PMI; and a quarterly joint program planning meeting with PMI. VectorWorks provided technical reports to USAID Washington on a semiannual basis, along with quarterly financial reports, and these reports were shared with PMI Tanzania.

In addition to the above-mentioned required updates and semiannual reports, VectorWorks short-term technical assistance travelers met with PMI Tanzania staff for debriefing.

Status (including next steps, challenges, and opportunities, if any): VectorWorks continues to meet and communicate regularly with PMI Tanzania and USAID Washington.

Deliverable	Audience	Timing	Dissemination Plan	Status
Year 1 annual report	PMI	Year 2, Quarter 1	Share by email	Completed
Year 2 work plan	PMI	Year 2, Quarter 1	Share by email	Completed
Branding and marketing plan	PMI	Year 2, Quarter 1	Share by email	Completed (VectorWorks' overarching branding and marketing plan was submitted and considered appropriate)
Quarterly financial reports	PMI	Quarterly throughout Year 2	Share by email	Completed
Year 2 semiannual report	PMI	Year 2, Quarter 3	Share by email	Completed

PM.4 International Travel

Brief activity description: CCP Baltimore staff provide backstopping and management support through regular conference calls and email communication with the Tanzania COP. Short-term technical assistance is provided through international travel by CCP and PSI staff, as listed in the work plan. Staff from CCP and PSI have provided technical assistance throughout Year Two. All have submitted trip reports to PMI. The COP participated in the AMP and VCWG annual meeting in Geneva. The COP also traveled to Baltimore for the VectorWorks annual planning meeting.

Status (including next steps, challenges, and opportunities, if any): VectorWorks had wanted to support two staff members of the government of Tanzania to attend the AMP and VCWG meetings; unfortunately, both were unable to obtain permission from the government to attend.

VectorWorks will continue to notify PMI in advance of all international travel to remind PMI of the travel dates and scope, and to set up any necessary meetings.

PM.5 Documentation and Dissemination

Brief activity description: During the course of Year Two, VectorWorks documented implementation of field activities in the seven regions, including project activities, project accomplishments, and lessons learned. Documentation activities were supported by student interns, copy editors, graphic designers, printers, translators, and photographers. The VectorWorks Baltimore team held a blogging workshop in which they brainstormed and assigned topics for blog posts. A photographer, Riccardo Gangale was hired to document school-based and health-facility-based distribution on two separate trips. His photographs were shared with PMI and are available on the Photoshare website. Two success stories were drafted by VectorWorks, one detailing the launch of health-facility-based distribution, the other focusing on increased efficiency and accountability following Simba Logistics' involvement in SNP4.

Status (including next steps, challenges, and opportunities, if any):

Deliverable	Audience	Timing	Dissemination Plan	Status
High-resolution photographs of field implementation	PMI	Quarter 4	Share by email	Completed
Success stories from field implementation (at least one from health-facility-based distribution; at least one from school-based distribution)	PMI	Quarter 4	Share by email	Completed

Appendix A: VectorWorks Tanzania Year Two Performance Monitoring Plan

See attached performance monitoring plan.

VectorWorks Tanzania Project Monitoring Plan: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Table of Contents

Abbreviations

ANC	Antenatal clinic
CAMRE	Tulane University Centre for Applied Malaria Research
CCP	Johns Hopkins Centre for Communication Programs
CHMT	Council Health Management Team
DEO	District Education Officer
EPI	Expanded Program for immunization
ITN	Insecticide-treated net
ITN	Long-lasting insecticidal nets
MoEVT	Ministry of Education and Vocational Training
MOHSW	Ministry of Health and Social Welfare
NMCP	National Malaria Control Programme
PMI	President's Malaria Initiative
PMP	Project Monitoring Plan
PRO-RALG	Prime Minister's Office Regional and Local Government Administration
PIRS	Performance Indicator Reference Sheets
PSI	Population Services International
RHMT	Regional Health Management Team
SNP	School Net Programme
TBD	To be determined
TMEMS	Tanzania Monitoring and Evaluation Management Services
USAID	United States Agency for International Development

I. PMP Purpose, Components and Critical Assumptions

A. Purpose

This Project Monitoring Plan (PMP) provides a framework for systematically collecting and using data to monitor the activities and achievements of the VectorWorks Project in Tanzania. It describes the relationship between project activities and its overall goal to "support NMCP to achieve and maintain high levels of coverage and use of long-lasting ITNs". It also documents the key specific results that VectorWorks Tanzania intends to achieve and the progress it makes towards its targets.

B. Components

To accomplish these functions, the PMP consists of several components. The results framework describes the pathways linking activities to the project goal. Each activity contributes to the fulfilment of project objectives, which, in turn, contribute to the overall project goal. Documenting improvements along these pathways assists in the attribution of achievements in agreement with objectives to the project's activities.

Next, the document describes VectorWorks' activities in each result area and presents a minimum number of selected key indicators most relevant to each area. These indicators were chosen based on several criteria: a) objectivity, b) ability to reflect outcomes and outputs that are central to the project's work, c) feasibility and cost of data collection, d) data availability when needed and e) usefulness for management decision-making. Indicator reference sheets provide details on their definition, frequency, level of disaggregation, and reporting unit. Lastly, a reporting flow chart illustrates the flow of data and levels of reporting, aggregation and data quality assurance.

This PMP was designed to represent key indicators specific to the VectorWorks Tanzania project. In addition, it tracks two standard indicators from the global VectorWorks agreement in the Tanzania work plan where those indicators are relevant.

The indicators in this PMP are not intended to provide a comprehensive understanding of how an activity resulted in a change in the agreement objectives or why an activity was not as effective as expected. Rather, indicators provide an indication that a change occurred over time, with discussions in semi-annual narrative reports providing more thorough answers on how and why VectorWorks activities achieved their results.

The project will use routine data collection forms and activity tracking spreadsheets to collect data and track activities. These include training summary forms, media monitoring reports, distribution summary forms, activity summary forms and travel and research tracking spreadsheets. Indicator reference sheets will document how targets were selected and details on progress toward annual targets. These indicator reference sheets and supporting documents will make it possible to document each indicator's history and for project managers to review the quality of the data being reported and make recommendations.

C. Critical Assumptions

The PMP is based on several critical assumptions. Changes to these assumptions will have major implications on the overall direction of the project and the PMP.

- Insecticide-treated net (ITN) distribution will continue to be a major focus for the Tanzania National Malaria Control Program (NMCP) and the United States Agency for International Development/President's Malaria Initiative (PMI) Tanzania;

- The national mechanisms for malaria policy implementation through the NMCP will remain stable and largely unchanged;

VectorWorks will review this PMP and these assumptions internally and with USAID/PMI Tanzania on an annual basis to track trends and discuss opportunities for refining program activities and the PMP indicators.

II. Project Goal and Objectives

The VectorWorks (VW) Project is a five-year (2014-2019) global project funded by United States Agency for International Development's President's Malaria Initiative (USAID/PMI). The global project goal is to support countries to achieve and maintain high rates of coverage and use of vector management interventions. Specifically, the project is tasked with attaining this goal through activities clustered under three main objectives:

> **Objective 1: Policy** - Develop and promote policies at both the international and national levels to encourage sustained, high levels of coverage and use of insecticide treated nets (ITNs) and/or alternative vector management interventions.
>
> **Objective 2: Monitoring, Evaluation & Operations Research**- Design, conduct and analyze results from monitoring, evaluation, and operational research activities in order to improve current best practices of long-lasting ITNs and/or alternative vector management interventions.
>
> **Objective 3: Implementation** - Promote and support country-level implementation of malaria prevention activities to ensure sustained high level coverage and use of long-lasting ITNs and, as needed, targeted coverage and appropriate use of alternative vector management interventions.

The project is implemented by a consortium led by the Johns Hopkins Center for Communication Programs (CCP) under Cooperative Agreement # AID-OAA-A-14-00057. Other partners include Tropical Health LLP, Swiss Tropical and Public Health Institute, Population Services International (PSI), Mennonite Economic Development Associates and the Tulane University Center for Applied Malaria Research and Evaluation (CAMRE). The project will be conducted in partnership with NMCPs as well as PMI Resident Advisors and other malaria partners in each country.

In Tanzania, VectorWorks advances the three project objectives through several activities. VectorWorks supports the government in the implementation of the school-based ITN distribution pilot, locally referred to as the School Net Program (SNP). In the first year of the project, SNP operated in the three southern regions (Lindi, Mtwara and Ruvuma) and in the second year of the project expanded to the four Lake Zone regions (Geita, Kagera, Mara, and Mwanza). In the third year of the project, SNP will expand operations to two additional regions (Kigoma and Simiyu). This expanded round of SNP is expected to build on previous experiences, increase co-ownership of the program by the Ministry of Education and Vocational Training (MoEVT), President's Office - Regional Administration and Local Government Authorities (PO-RALG) and the NMCP. Vector Works – represented by CCP and PSI within Tanzania - will work with the government and its partners at all levels to coordinate, plan, implement and monitor the ITN distribution through schools.

Additionally, in Year 2 VectorWorks developed a strategy and for routine distribution of ITNs through antenatal clinics (ANC) and expanded programs for immunization (EPI) services, and began phased-in implementation starting in the regions of Mtwara and Mwanza. In Year 3 VectorWorks will expand ANC-based distribution to an additional seven regions (Lindi, Ruvuma, Geita, Kagera, Mara, Simiyu, and Kigoma).

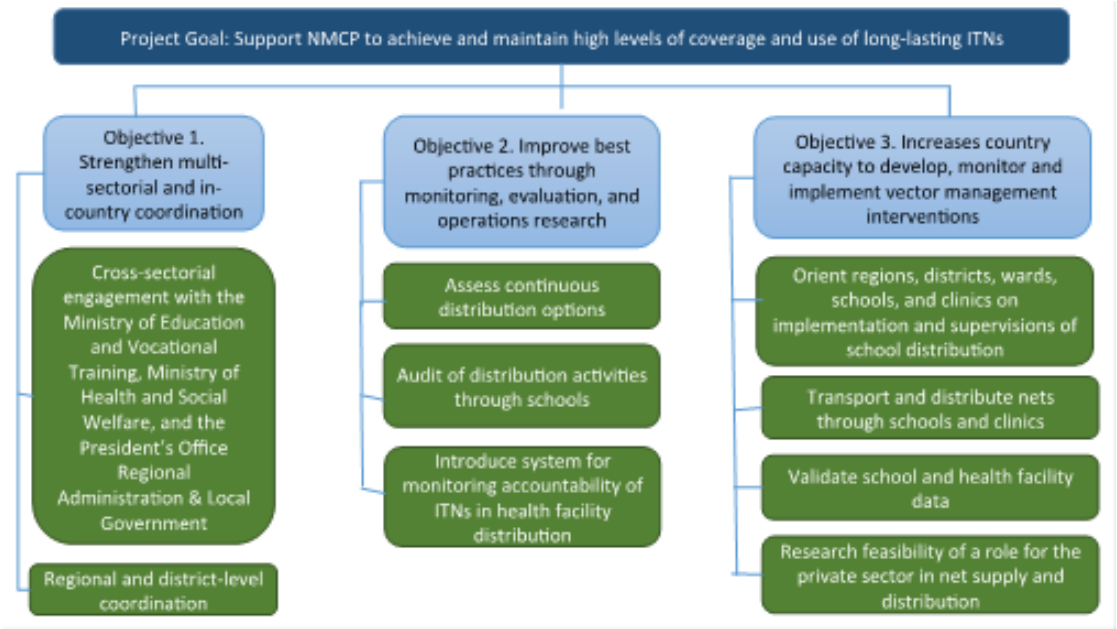
Other activities for VectorWorks in Year 3 include support to the NMCP in finishing a comprehensive ITN distribution strategy, coordination with stakeholders in ITN policy, and technical assistance for continuous distribution strategies in Zanzibar.

III. Results Framework

The VectorWorks Tanzania results framework describes the pathways that link specific project activities to the long-term goals described by the project objectives above. In this framework, each activity contributes to the fulfilment of project objectives, in turn, contributing to the overall project goal. Documenting improvements along these pathways assists in the attribution of activities toward reaching the project goal and objectives.

While the activities appear to occur in parallel, the three VectorWorks objectives function as an integrated and mutually supportive package. Under Objective 1, VectorWorks Tanzania will facilitate and promote improved multi-sectoral and stakeholder communication and coordination on policy, standards, and guidance in line with the National Malaria Strategic Plan 2014-2020. Field experience under Objective 3 will increase country capacity to develop, implement and monitor programs and the challenges and lessons learned through this will in turn, inform the policy discussions and future modifications to implementation. Research conducted under Objective 2 will inform Objectives 1 and 3 as it sheds insight on potential scale up, identifies best practices, and points towards modifications in program design for future years.

Figure 1: VectorWorks Tanzania Results Framework



IV. VectorWorks Tanzania Indicator Table and Performance Indicator Reference Sheets

A. Indicator Table for VectorWorks Tanzania

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
1. Number of SNP coordination, review and/or planning meetings held by VectorWorks with Ministry of Health and Social Welfare (MoHSW), Ministry of Education and Vocational Training (MoEVT), and/or the President's Office Regional Administration & Local Government (PO-RALG) - administrative, education and health arms.	This indicator intends to measure the level of government personnel involvement in planning and reviewing SNP. Levels are national, regional, district and ward. The specific arm represented by the PO-RALG attendees (administrative, education or health) will be noted.	Meeting reports	Semi-annually	25 (National 3 Regional 3 District 19)	55 (National 1 Regional 7 District 47)	80 (National 4 Regional 9 District 67)

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
2. Percent of schools flagged for validation that received a validation visit for SNP	**Numerator:** The number of schools visited by validation teams. The validation teams will verify student quantifications against actual class lists in the schools. **Denominator:** The total number of schools that will distribute nets in the current SNP round with variances in student quantification beyond the predefined validation cut-off.	Validation report	Semi-annually	95%	50% *See reference sheet for explanation of change in target	N/A
3. Number of districts with a complete micro-plan for ITN distribution through SNP	A complete micro-plan will be defined in the standard operating procedures/implementation guidelines.	Micro-plan meeting reports and actual micro-plans	Semi-annually	19	47 Southern: 19 Lake: 28	67
4. Number of districts with a complete micro-plans for ITN distribution through health facilities	A complete micro-plan will be defined in the standard operating procedures/implementation guidelines.	Micro-plan meeting reports and actual micro-plans	Semi-annually	N/A	16	50

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
5. Percent of SNP distribution points (schools participating in SNP) that received the correct number of nets during the reporting period	**Numerator:** Number of SNP distribution points (schools participating in SNP) that received the correct number of nets as defined in the micro-plans. **Denominator:** The total number of SNP distribution points (schools participating in SNP). For Tanzania SNP, this is the number of schools that will distribute ITNs in the current round under VectorWorks.	Truck drop-off data and transportation reports	Annually	100%	90%	90%

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
6. Number of people trained in ITN distribution by VectorWorks by sex, ITN distribution channel, and location	This is a global VectorWorks and PMI indicator. This is defined as the number of people trained with VectorWorks funds in ITN distribution. For VectorWorks Tanzania, the ITN distribution channels are schools and health facilities. Locations include national, regional, district, ward and facility. Training will be defined in the implementation guidelines or standard operating procedure for each channel.	Training reports	Quarterly and semi-annual	School: 528	**Health Facility:** National: 5 Regional: 14 District: 84 Facility: 936 Total: 1,039 **School:** National: 14 Regional: 28 District: 192 Ward: 1,069 Total: 1,303 **Grand Total: 2,342**	**Health Facility:** National: 0 Regional: 50 District: 200 Facility: 1,400 Total: 1,650 **School:** National: 18 Regional: 36 District: 268 Ward: 1,400 Total: 1,722 **Grand Total: 3,372**
7. Number of insecticide treated nets (ITNs) purchased with US government funds that were distributed by VectorWorks, by channel	This is a global VectorWorks and PMI indicator defined as the number of ITNs distributed through mass, continuous or routine distribution channels. VectorWorks must have funded the transport of nets to storage sites or distribution points. For the Tanzania School Net Program, the channel is schools. For the Tanzania health facility distribution, the channel is health facilities that provide ANC and/or IVD services.	Distribution reports	Quarterly and semi-annually	Schools: 500,000	**Health facilities**: 320,000 **Schools**: 1,310,000 **Total**: 1,630,000	**Health facilities**: 1,330,709 **Schools**: 966,812 **Total**: 2,297,521

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
8. Percent of schools visited by a supervision team during ITN issuing	**Numerator:** The number of schools participating in SNP visited by a designated SNP supervision team during the issuing period. **Denominator:** The total number of schools participating in SNP. For Tanzania SNP, this is the number of schools that will distribute ITNs in the current round under VectorWorks.	Supervision report	Annually	90%	25% *See reference sheet for explanation of change in target	25%
9. Percent of health facilities with flagged variances visited by supervision teams	**Numerator:** The number of health facilities with flagged variances that were visited by designated supervision teams during the reporting period. **Denominator:** The total number of health facilities with flagged variances during the reporting period. A flagged variance will be defined in the implementation guideline.	Validation report	Quarterly	N/A	95%	95%

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3
10. Proportion of targeted beneficiaries who received an ITN, by channel, location and sex	**Numerator:** The number of targeted beneficiaries who received an ITN. **Denominator:** The number of targeted beneficiaries registered for each channel. Channels are schools and health facilities. For school-based distribution the targeted beneficiaries are defined in the standard operating procedure. For health facility based distribution the targeted beneficiaries are pregnant women who attended the health facility for their first ANC visit and children who attended the health facility for the measles vaccine.	**Schools**: Distribution reports **Health facilities**: Accountability report	**Schools**: Annually **Health facilities**: Quarterly	Schools: 100%	**Schools**: 99% **Health facilities**: ANC: 80% IVD: 80%	**Schools**: 99% **Health facilities**: ANC: 80% IVD: 80%
11. Percent of health facilities that did not experience a stock-out of ITNs, by region, during the reporting period	**Numerator**: Number of health facilities that did not experience a stock-out of ITNs during the reporting period. A stock-out will be defined in the implementation guideline. **Denominator**: Total number of health facilities participating in the health facility ITN distribution during the reporting period.	eLMIS and Accountability report, or ILS Gateway	Quarterly	N/A	100%	100%

B. Performance Indicator Reference Sheets

Indicator #1: Number of SNP coordination, review and/or planning meetings held by VectorWorks with Ministry of Health and Social Welfare (MoHSW), Ministry of Education and Vocational Training (MoEVT), and/or the President's Office Regional Administration & Local Government (PO-RALG) - administrative, education and health arms.

Year	Targets & Actuals			
	Total	National	Regional	District
1	Target: 25 Actual: 25	Target: 3 Actual: 3	Target: 3 Actual: 3	Target: 19 Actual: 19
2	Target: 55 Actual: 63	Target: 1 Actual: 2	Target: 7 Actual: 7	Target: 47 Actual: 54
3	Target: 80	Target: 4	Target: 9	Target: 67
4				
5				
Life of Project				

Unit of Measure: Number

Disaggregation: Level of government (national, regional and district)

Source: Meeting reports

Definition: This indicator intends to measure the degree of cross-ministerial involvement in reviewing and planning the performance of SNP at all levels of government. Levels are national, regional, district and ward. During implementation of SNP4, new districts were established, making 54 districts in total.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: Malaria Advisor

Indicator #2: Percent of schools flagged for validation that received a validation visit for SNP

Year	Target	Actual
1	95%	94.6% Lindi: 93% Ruvuma: 95% Mtwara: 98%
2	50%	Southern regions 0% Lake Zone 95%
3	N/A	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Location (region, district)

Source: Validation reports

Definition:

> **Numerator:** The number of schools visited by validation teams. The validation teams will verify student quantifications against actual class lists in the schools.
>
> **Denominator:** The total number of schools that will distribute nets in the current SNP round with variances in student quantification beyond the predefined validation cut-off.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: SNP Officer

Notes: The Year 2 target was set at 50%. VectorWorks expected less discrepancies in the southern regions, which had been exposed to the process during SNP3. The total number of schools for SNP4 was 5054. Assuming 25% (1,264) were flagged for validation, about 600 schools could reasonably have been visited. However, am emphasis on quality data collection during trainings would reduce the number of schools with flags.

The SNP4 validation process considered data from PO-RALG, WECs' quantifications, and SNP3 issuing data (for the southern regions). Quantification analysis did not show significant discrepancies for the southern regions schools (less than 10%+/-) between data sets, but Lake Zone regions did not participate in SNP3, so they did not have issuing data for comparison. In consultation with the central government, it was decided that Lake Zone regions needed to receive validation visits at random selection of schools but visiting each district in the 4 regions. A 95% confidence level was the agreed ground of validation.

Indicator #3: Number of districts with a complete micro-plan for ITN distribution through SNP

Year	Target	Actual
1	19	19
2	47	54
3	67	
4		
5		
Life of Project		

Unit of Measure: Number

Disaggregation: District

Source: Micro-plan meeting reports and actual micro-plans

Definition: A complete micro-plan will be defined in the standard operating procedures/implementation guidelines.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: SNP Officer and PSI

Notes: Mtwara added 1 new district after Year 1 of the project; therefore, SNP4 had the target of 20 micro-plans from the southern regions and 30 micro-plans from the lake regions.

During implementation of SNP4, new districts were established making it 54 districts in total.

Indicator #4: Number of districts with a complete micro-plans for ITN distribution through health facilities

Year	Target	Actual
1	N/A	N/A
2	16	16
3	67	
4		
5		
Life of Project		

Unit of Measure: Number

Disaggregation: District

Source: Micro-plan meeting reports and actual micro-plans

Definition: A complete micro-plan will be defined in the standard operating procedures/implementation guidelines.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: Logistics Manager and PSI

Notes: In SNP5 VectorWorks expects to expand its operations to reach out to 9 regions with a total of 67 districts.

Indicator #5: Percent of SNP distribution points (schools participating in SNP) that received the correct number of nets during the reporting period

Year	Target	Actual
1	100%	73% (see note)
2	90%	100%
3	90%	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Location (zone, region, district)

Source: Truck drop-off data and transportation reports

Definition:

> **Numerator:** Number of SNP distribution points (schools participating in SNP) that received the correct number of nets as defined in the micro-plans.
>
> **Denominator:** The total number of SNP distribution points (schools participating in SNP). For Tanzania SNP, this is the number of schools that will distribute ITNs in the current round under VectorWorks.

Frequency of reporting: Annually

Reporting format: Annual report

Reporting personnel: PSI

Notes: According to the SNP3 transportation data provided by PSI, 1,401 of 1,919 schools (73%) received the correct number of ITNs per student registration data. In SNP4, transportation and distribution data reports by PSI and Simba Logistics show that all 5,242 schools received correct number of ITNs (1,152,715 ITNs in total) per school data from PO-RALG.

Indicator #6: Number of people trained in ITN distribution by VectorWorks by sex, ITN distribution channel, and location

Year	Target	Actual
1	**School**: Total: 528 Regional: 10 District: 122 WEC: 396	**School:** Total: 552 Regional: 12 (66% male; 33% female) District: 68 (46% male; 54% female) WEC: 472 (85% male; 15% female)
2	**Health Facility:** National: 5 Regional: 14 District: 84 Facility: 936 Total: 1,039 **School:** National: 14 Regional: 28 District: 192 Ward: 1,069 Total: 1,303 Grand Total 2,342	**Health Facility:** National: 6 Regional: 22 District: 136 Facility: 1,247 Total: 1,411 **School:** National: 14 Regional: 28 District: 213 Ward: 1,182 Total: 1,437 **Grand Total 2,848 (57% male, 43% female)**
3	**<u>Health Facility</u>:** National: 0 Regional: 50 District: 200 Facility: 1,400 Total: 1,650 **<u>School</u>:** National: 18 Regional: 36 District: 268 Ward: 1,400 Total: 1,722 **Grand Total: 3,372**	
4		
5		
Life of Project		

Unit of Measure: Number

Disaggregation: Sex, ITN distribution channel, and location

Source: Training reports

Definition: This is a global VectorWorks and PMI indicator. This is defined as the number of people trained with VectorWorks funds in ITN distribution. For VectorWorks Tanzania, the ITN distribution channels are

schools and health facilities. Locations include national, regional, district, ward and facility. Training will be defined in the implementation guidelines or standard operating procedure for each channel.

Frequency of reporting: Quarterly and semi-annual

Reporting format: TMEMS database (quarterly) and semi-annual report

Reporting personnel: M&E Manager and PSI

Notes: During VectorWorks Year 2, a total of 2,848 people were trained in ITNs distribution. Out of 2,848 trainees, 57% were male and 43% were female. The trainees came from national, regional, district and ward/facility levels; and includes both health facility and school based distributions channels.

Indicator #7: Number of insecticide treated nets (ITNs) purchased with US government funds that were distributed by VectorWorks, by channel

Year	Target	Actual
1	**Schools**: 500,000	**Schools**: Total: 494,407 Lindi: 135,820 Ruvuma: 169,849 Mtwara: 188,738
2	**Health facilities:** 320,000 **Schools:** 1,310,000 **Total: 1,630,000**	**Health facilities**: 237,760 **Schools**: 1,152,715 **Total: 1,390,472**
3	**Health facilities**: 1,330,709 **Schools**: 966,812 **Total: 2,297,521**	
4		
5		
Life of Project		

Unit of Measure: Number

Disaggregation: ITN distribution channel and region

Source: Distribution reports

Definition: This is a global VectorWorks and PMI indicator defined as the number of ITNs distributed through mass, continuous or routine distribution channels. VectorWorks must have funded the transport of nets to storage sites or distribution points. For the Tanzania School Net Program, the channel is schools. For the Tanzania health facility distribution, the channel is health facilities that provide ANC and/or IVD services.

Frequency of reporting: Quarterly and semi-annually

Reporting format: TMEMS database (quarterly) and semi-annual report

Reporting units: M&E Manager

Notes: Based on the final quantifications, 498,158 people were targeted for SNP3. VectorWorks served a total of 494,407 pupils (49% male, 51% female) with ITNs during SNP3 in August 2015, reaching 99.2% of the target. All 1,919 primary schools targeted for SNP3 were reached. The difference between the achievement and the target is due, in part, to absent pupils at issuing. Another reason for the difference was inaccuracies in re-quantification data; despite efforts to re-quantify, there were slight over or under delivery of ITNs to schools.

In Year 2 SNP4, VectorWorks provided total of 1,132,044 students from 7 regions (50% male, 50% female) with ITNs, reaching 88.0% of the target. VectorWorks distributed 237,760 through health facilities in Year 2, reaching 74.3% of the target. This difference can be attributed to health facility-based distribution occurring later in the year than expected.

Indicator #8: Percent of schools visited by a supervision team during ITN issuing

Year	Target	Actual
1	90%	21%
2	25%	9.48%
3	25%	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Region and district

Source: Supervision report

Definition:

> **Numerator:** The number of schools participating in SNP visited by a designated SNP supervision team during the issuing period.
>
> **Denominator:** The total number of schools participating in SNP. For Tanzania SNP, this is the number of schools that will distribute ITNs in the current round under VectorWorks.

Frequency of reporting: Annually

Reporting format: Annual report

Reporting personnel: SNP Officer

Notes: During the SNP3 planning phase in Year 1, WECs were expected to conduct supervision during issuing but this specific component was not included in the trainings of WECs. While they did collect data from schools during the issuing period using the issuing data collection tools designed for SNP3, they did not actually conduct formal supervision for school distribution during ITN issuing. Therefore, only the supervision visits to schools that were conducted by the national supervision teams are counted against this indicator in Year 1.

The target for SNP4 was adjusted to reflect this, and indicates the expected coverage of supervision visits by national supervision teams for SNP4. The supervision team was only able to visit to supervise 9.48% of schools, due to the supervision teams spending less time in the field because of their other professional commitments.

Indicator #9: Percent of health facilities with flagged variances visited by supervision teams

Year	Target	Actual
1	N/A	N/A
2	95%	N/A
3	95%	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Region and district

Source: Validation reports

Definition:

Numerator: The number of health facilities with flagged variances that were visited by designated supervision teams during the reporting period.

Denominator: The total number of health facilities with flagged variances during the reporting period. A flagged variance will be defined in the implementation guideline.

Frequency of reporting: Quarterly

Reporting format: Semi-annual report

Reporting personnel: M&E Manager

Notes: Districts have just started to report in the last quarter and therefore analysis has not been run to identify variance yet. The accountability information system is not yet finalized to automatically provide performance report.

Indicator #10: Proportion of targeted beneficiaries who received an ITN, by channel, location and sex

Indicator #10: Proportion of targeted beneficiaries who received an ITN, by channel, location and sex		
Year	**Target**	**Actual**
1	**Schools:** 100%	**Schools:** Total: 99.25% (49% male, 51% female) Lindi: 97.5% Ruvuma: 99.9% Mtwara: 99.9%
2	**Schools:** 99% **Health facilities:** ANC: 80%; IVD: 80%	**Schools:** 98% **Health facilities:** ANC: N/A IVD: N/A
3	**Schools:** 99% **Health facilities:** ANC: 80%; IVD: 80%	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Channel, location and sex

Source:

Schools: Distribution reports

Health facilities: Accountability report

Definition:

Numerator: The number of targeted beneficiaries who received an ITN.

Denominator: The number of targeted beneficiaries registered for each channel.

Channels are schools and health facilities. For school-based distribution the targeted beneficiaries are defined in the standard operating procedure. For health facility based distribution the targeted beneficiaries are pregnant women who attended the health facility for their first ANC visit and children who attended the health facility to receive the first measles vaccine.

Frequency of reporting:

Schools: Annually

Health facilities: Quarterly

Reporting format: Semi-annual report

Reporting personnel: M&E Manager, Logistics Manager, and SNP Officer

Notes: For SNP3, 98% were reached in previous rounds so VectorWorks used this as a target for SNP4. During SNP4, 98% of the beneficiaries received ITNs.

Actual numbers of people who received ITNs through health-facility based distribution have not been captured yet, because the districts have just started to report in the last quarter, and an analysis of variance has not yet been conducted. The accountability information system is not finalized to automatically provide performance report.

Indicator #11: Percent of health facilities that did not experience a stock-out of ITNs, by region, during the reporting period

Year	Target	Actual
1	N/A	N/A
2	100%	100%
3	100%	
4		
5		
Life of Project		

Unit of Measure: Percent

Disaggregation: Region and district

Source: eLMIS and accountability report or ILS Gateway

Definition:

Numerator: Number of health facilities that did not experience a stock-out of ITNs during the reporting period. A stock-out will be defined in the implementation guideline.

Denominator: Total number of health facilities participating in the health facility ITN distribution during the reporting period.

Frequency of reporting: Quarterly

Reporting format: Semi-annual report

Reporting personnel: M&E Manager, Logistics Manager, and PSI

Notes:

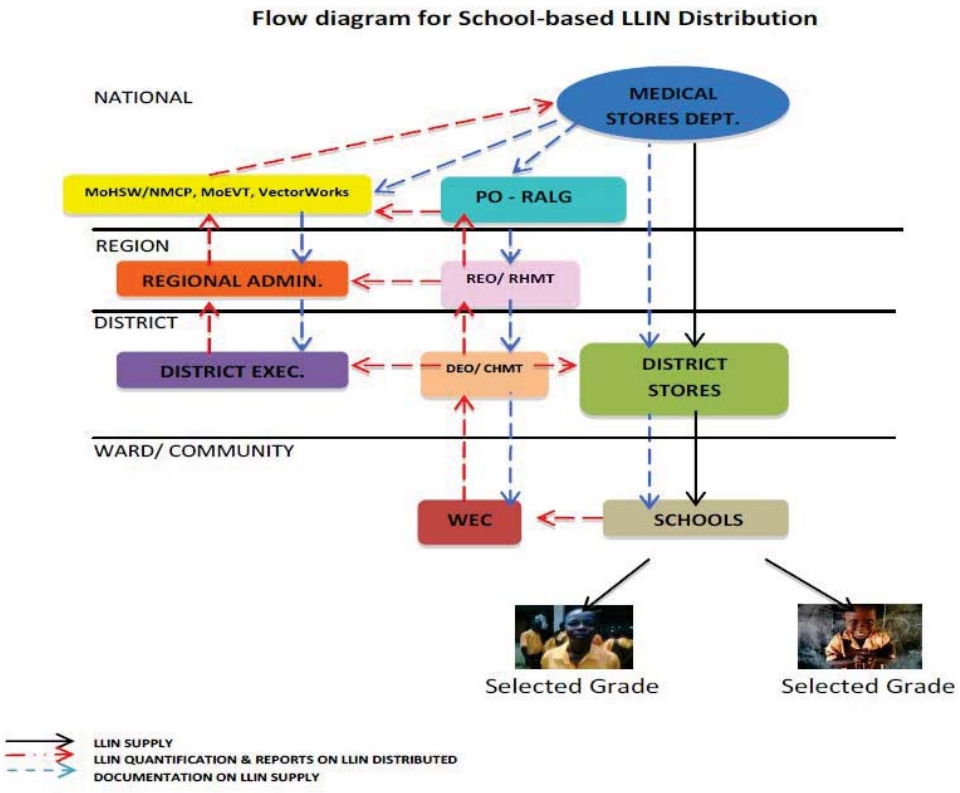
V. Reporting, Data Management and Use

VectorWorks Tanzania has several programmatic reporting requirements:

- Report on those indicators that are also global VectorWorks and PMI indicators to the TMEMS database quarterly.
- Submit semi-annual and annual reports to PMI within 45 days after the reporting period has ended.
- Submit deliverables as stated in annual work plans, which report on activities conducted, including quarterly accountability reports for health facility distribution and the procedural audit for school distribution (see below).

The diagram below indicates data management flows for SNP. Data on the number of students enrolled and the number of nets distributed will be sent by schools to the Ward Education Coordinators, who will then submit ward-level reports to the District Education Office (DEO) and Health Management Team (CHMT). The DEO and CHMT will forward district-level reports to the Regional Education Office (REO), Regional Health Management Team (RHMT) and the Regional Administrative Secretary. Regional reports will then be submitted to the PO-RALG.

VectorWorks will periodically review progress against targets to advise current implementation and annual work plans. Data will be presented using the types of disaggregation mentioned above to allow for comparisons over time, between regions, districts, facility types and sex. This analysis will be part of the semi-annual reporting process. A team review of the analysis will also be part of the annual work plan process. During annual work planning meetings, VectorWorks will review progress against targets and reflect on challenges faced, lessons learned and recommendations.



VI. Evaluation Plan

VectorWorks conducted a procedural audit of SNP3 and is conducting a similar audit of SNP4. This audit for SNP4 will consist of a process evaluation and a commodity management assessment, each carried out be a different firm. The purpose of the audit is to see the extent to which the program was conducted in accordance with guidelines and to measure the level of accountability achieved in the management of the supply chain and distribution of ITNs.

VectorWorks will also conduct a financial evaluation of the school net distribution program. This activity is funded under PMI-Washington with Core funds and led by VectorWorks partner, Tulane University. Tulane has set up cost tracking systems and collected cost data for SNP3 and SNP4. These analyses will provide critical information on the costs of different types of continuous distribution channels, to be used by the NMCP and for PMI. The economic analysis provides a more complete picture of the costs including volunteered or non-project time that will inform a comparative analysis that includes person-years-of-protection for different types of channels, and will help to establish the case for or against a transition from mass campaigns to continuous distribution.

The results of the VectorWorks Tanzania project monitoring and evaluation data will inform future program design, national ITN strategies, Malaria Operational Plans, and Global Fund concept notes.

VectorWorks Zimbabwe Annual Report: Year Two

Reporting period: October 1, 2015, to September 30, 2016

Cooperative Agreement AID-OAA-A-14-00057

Submitted to: U.S. Agency for International Development, President's Malaria Initiative

November 15, 2016

Contents

Abbreviations

ANC	antenatal clinic
EPI	Expanded Programme on Immunization
IRS	indoor residual spraying
ITN	insecticide-treated nets
MOE	ministry of education
MOHSW	Ministry of Health and Social Welfare
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative
ZAPIM	Zimbabwe Assistance Program in Malaria

Background

The VectorWorks project is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI). The purpose of the VectorWorks project is to support countries to achieve and maintain high levels of coverage and use of long-lasting insecticide-treated mosquito nets (ITNs) and to facilitate the adoption of proven alternative vector-management interventions, including those targeting specific sites or populations. The VectorWorks project activities focus on three main areas: policy, monitoring and evaluation, and implementation support.

In Year Two, the VectorWorks project built on Year One successes and experiences in Zimbabwe. The project continued to work with the National Malaria Control Program (NMCP) and implementing partners to improve and also sustain ITN coverage in the targeted districts with population at risk of malaria (60% of total population). The VectorWorks project also supported NMCP and implementing partners in the planning and use of other malaria prevention interventions.

Specifically, the VectorWorks project conducted the following activities in Year Two:

- Supported planning and implementation of ITN mass distribution
- Provided technical guidance for rationalizing the distribution of ITN and indoor residual spraying (IRS) interventions
- Supported the planning and analysis of channels needed for ITN continuous distribution following planned ITN mass distributions
- Supported the data collection activities for the Mazowe District pilot endline survey

The activities aimed to complement the activities planned by NMCP and implementing partners and to build on achievements from Year One. The activities conducted to date (or canceled) are described in detail below.

Summary of Activities

Due to the delay in the planning and implementation of the mass ITN distributions and changing priorities in Zimbabwe, many of the planned activities for Year Two were not conducted. Throughout the year, the VectorWorks project team was in regular contact with personnel from the NMCP and Zimbabwe PMI to discuss and review timelines of planned project activities in line with other in-country activity plans. Mass campaign technical assistance, assistance in planning IRS and ITN intervention zones, and CD planning technical assistance activities were canceled and program funds were reprogrammed to allow the VectorWorks project to support the Zimbabwe Assistance Program in Malaria (ZAPIM) project to conduct the endline survey for the continuous ITN distribution pilot. Additional funding was then reallocated to Year Three activities.

In Year Two, the VectorWorks project assisted the NMCP and the ZAPIM project to review survey tools, train data collectors and supervisors, and support the supervision of field data collection for the endline survey for the continuous ITN distribution pilot in Mazowe District. The data collection was completed in Year Two.

Implementation and Capacity Building

ZM.4 Support Planning and Implementation of Mass ITN Distribution

[Canceled in Year Two in Modification 2 (approved 9/28/2016)]

Activity description: The VectorWorks project planned to work closely with the NMCP and implementing partners at all levels to effectively plan and implement the ITN mass distributions at provincial scale (considering the availability of ITNs), where all districts at risk of malaria in a province would plan and implement ITN mass distribution activities at the same time. The phasing of provinces was to be informed by past distributions and the average age of existing ITNs, such that the provinces with on-average older ITNs (based on time of distribution) would be prioritized. The VectorWorks project planned to support the development of mass ITN distribution guidelines, timelines for implementation of activities, macroplans and microplans, and budgets. The project also planned to support the review of existing tools and documents for logistics tracking, monitoring and supervision, and reporting for mass ITN distribution implementation.

Status: In Year Two, upon receiving funds from Global Fund, the NMCP and in-country implementing partners conducted the planned mass ITN distributions without support from the VectorWorks project. This activity was therefore canceled and funds were reprogrammed.

ZM.5 Provide Technical Guidance for Rationalizing ITN Distribution and IRS Interventions

[Canceled in Year Two in Modification 2 (approved 9/28/2016).]

Activity description: The VectorWorks project planned to facilitate a one-day workshop to review the rationale and principles for implementing IRS and ITNs in different risk strata and environments. The goal was to generate consensus on how to make decisions about the intervention-rationalization approach from an evidence-based standpoint. Also in this meeting, the project would support the development of a specific decision matrix for Zimbabwe, to be applied once risk-mapping data became available later in the year(s).

Status: In Year Two, the NMCP discussed and drafted a brief IRS/ITN guideline document during their malaria quarterly review meeting and therefore did not require the assistance of the VectorWorks project as earlier agreed and approved. The planned workshop was therefore not conducted and a decision matrix was not developed. Guidance for rationalizing the distribution of ITN and IRS interventions may be considered in future work plans, based on the needs of the Zimbabwe Mission and the NMCP.

ZM.6 Support Planning and Analysis of Channels for ITN Continuous Distribution Following Planned Mass ITN Distributions

[Canceled in Year Two in Modification 2 (approved 9/28/2016)]

Activity description: The VectorWorks project plans to work with eight provinces and target districts within these provinces to assess ITN gaps, if any, after the planned mass ITN distributions in achieving ITN coverage targets, and also to determine the number of ITNs needed to achieve or maintain appreciable

coverage levels over time. Considering the timing of mass ITN distributions and available structures in each district, the project will support individual districts within provinces to develop an evidence-based plan to use antenatal clinic (ANC) and Expanded Programme on Immunization (EPI) channels and will also explore the phasing of additional viable options of school-based and community-based channels, where practical, to maintain appreciable ITN coverage.

Status: Considering that the mass ITN distribution was completed late in the year, this activity will be conducted in Year Three in a new activity, ZM.9.

ZM.7 Provide Technical Assistance for Mazowe District Continuous Distribution Pilot Endline Survey

[In responding to the changing needs of the Zimbabwe Mission, the VectorWorks project added ZM.7 in Modification 1 (approved 7/28/2016)]

Activity description: In 2015–2016, the NMCP and its partners implemented an ITN continuous distribution pilot in four districts (Makonde, Mount Darwin, Mazowe, and Hurungwe) in two provinces in Zimbabwe, where health-facility-based, school-based, and community-based channels were used to distribute ITNs. A baseline survey for the pilot was conducted in March–April 2015 in Mazowe District, six months after the mass ITN distributions and before the start of the ITN continuous distribution pilot. In August 2016, an endline survey was also conducted in Mazowe District. The endline survey assessed the contribution of the piloted channels to sustaining ITN coverage in the district.

Due to the VectorWorks project's involvement in the baseline survey and support to the pilot's implementation, and also its experience in conducting surveys in other countries, the Zimbabwe Mission requested the VectorWorks project to provide assistance to the ZAPIM project and NMCP to conduct the endline survey and to assist with data analysis and report writing.

Status: In Year Two, the VectorWorks project provided remote technical assistance to the ZAPIM project and NMCP in reviewing the survey protocol and training materials. In addition, the VectorWorks project provided in-country technical assistance for the training of supervisors and data collectors and also assisted in the monitoring of field data collection. In Year Three, the VectorWorks project will continue to provide technical assistance to the ZAPIM project and NMCP to analyze the survey data and finalize the report for the Mazowe District continuous ITN distribution pilot endline survey.

Deliverable	Audience	Timing	Dissemination Plan	Status
Trip report for technical assistance trip	PMI, NMCP, MOHSW, MOE, implementing partners	Quarter 4	Share via email	Completed

Project Management

ZM.PM.2 Work Plan and Reporting

Brief activity description: The Zimbabwe work plan was approved in December 2015 for Year Two. This report fulfills the agreed-upon plan to submit an annual report on the project's progress to date.

Status (including next steps, challenges, and opportunities, if any):

Deliverable	Audience	Timing	Dissemination Plan	Status
Annual work plan approved by PMI Zimbabwe	PMI	Quarter 1	Share via email	Completed
Quarterly financial reports	PMI	Quarters 1, 2, 3, 4	Share via email	On schedule
Semiannual and annual progress reports	PMI	Quarters 2, 4	Share via email	Semiannual report completed