

Year 5 Semiannual Report

VECTORWORKS PROJECT

October 1, 2018 – March 31, 2019



USAID
FROM THE AMERICAN PEOPLE



President's Malaria Initiative

VECTORWORKS

Scaling Up Vector Control for Malaria Prevention



VECTORWORKS PROJECT

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VECTORWORKS by the Numbers

Selected achievements 2014-2019

VectorWorks
has worked in

15 countries

Angola, Benin, DRC, Ghana, Guinea, Kenya, Liberia, Malawi, Mozambique, Myanmar, Nigeria, Senegal, Tanzania, Uganda, Zimbabwe



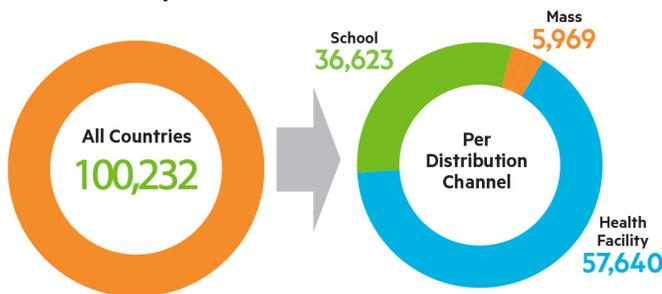
16

peer reviewed
journal articles

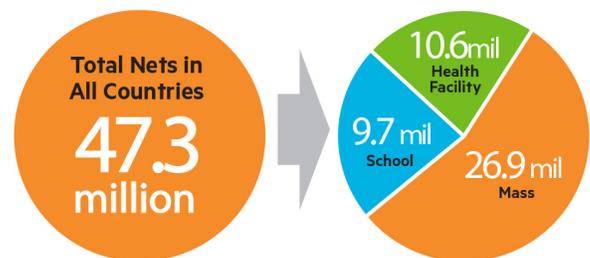


produced and disseminated by
VectorWorks

People trained in ITN distribution



Number of ITNs distributed with VectorWorks support



11

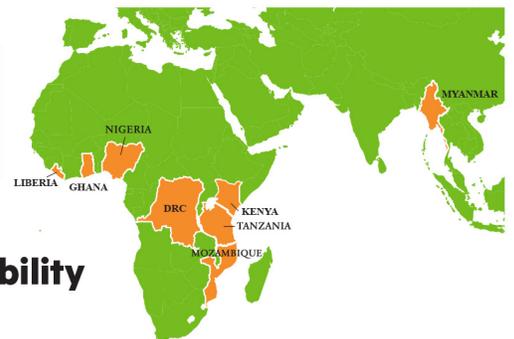
studies conducted

for improving insecticide-treated net (ITN) access and use



8 countries since 2014

VectorWorks has conducted ITN **durability monitoring**



VectorWorks supported Anglophone and Francophone trainings of NMCP managers and ITN focal points in November, bringing together **62 people** from **19 countries** in Nairobi with trainers from the Alliance for Malaria Prevention (AMP) and VectorWorks.

VectorWorks has created **28 TOOLS** to improve ITN access and use



Country Highlights



In Tanzania the % of pregnant women who received a net from ANC increased from **74%** to **80%** in the last year.

In Ghana, VectorWorks trained **2,382 district and circuit officers** and **54,388 teachers** on social and behavior change since Year 3.



Contents

- Abbreviations ii
- Executive Summary 1
- Core 4
- Cost Share Update 37
- Core Deliverables Table 41
- Environmental Monitoring and Mitigation Report (EMMR)..... 46
- Angola 49
- Benin..... 53
- DRC 55
- Ghana..... 57
- Guinea..... 77
- Kenya 79
- Liberia 82
- Mozambique..... 88
- Myanmar..... 91
- Nigeria..... 95
- Tanzania 98
- Core Performance Monitoring Plan..... 114
- Ghana Performance Monitoring Plan 142
- Tanzania Performance Monitoring Plan 164

Abbreviations

ABCDR	Attrition, Bioefficacy, Chemistry, Degradation, and Insecticide Resistance
AMP	Alliance for Malaria Prevention
ANC	Antenatal care
ASTMH	American Society of Tropical Medicine and Hygiene
BEMIS	Basic Education Management Information System
CAMRE	Center for Applied Malaria Research and Evaluation
CCP	Center for Communication Programs
CHIMT	County Health Integrated Monitoring Teams
CHMT	Council Health Management Teams
CMS	Central Medical Stores
CMWG	Case Management Working Group
CRSPC	Country/Regional Support Partner Committee
DFID	Department for International Development
DHIMS	District Health Information Management System
DHMT	District health management teams
DHS	Demographic and Health Survey
DRC	Democratic Republic of Congo
EMIS	Electronic management information system
EMMR	Environmental Monitoring and Mitigation Report
EPI	Expanded Programme on Immunization
FAB	Forestry and Biodiversity
FARA	Fixed Amount Reimbursement Agreement
FDA	Food and Drug Administration
FHD	Family Health Division
FHU	Family Health Unit
GES	Ghana Education Service
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
GHS	Ghana Health Service
GMP	Global Malaria Programme
GoG	Government of Ghana
GoT	Government of Tanzania
GTS	Global Technical Strategy
HFA	Health For All
HWG	Harmonization Working Group
IHI	Ifakara Health Institute
INS	Instituto Nacional de Saúde
IRB	Institutional Review Board
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito nets
IVD	Immunization and Vaccine Development
JHSPH	Johns Hopkins University School of Public Health
KSPH	Kinshasa School of Public Health
LLIN	Long-Lasting Insecticide-Treated Net
LMU	Logistics Management Unit
LOP	Life of project
LQAS	Lot Quality Assessment
LSCW	Leadership in Strategic Communication Workshop
LSTM	Liverpool School of Tropical Medicine

M&E	Monitoring and evaluation
MaVCOC	Malaria Vector Control Oversight Committee
MCH	Maternal and Child Health
MCSP	Maternal and Child Survival Project
MERG	Monitoring and Evaluation Reference Group
MiPWG	Malaria in Pregnancy Working Group
MIS	Malaria Indicator Survey
MoEVT	Ministry of Education and Vocational Training
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MoHSW	Ministry of Health and Social Welfare
MOP	Malaria Operational Plan
MPAC	Malaria Policy Advisory Committee
MSD	Medical Stores Department
MSWG	Multi-sectorial Working Group
NIMR	National Institute for Medical Research
NMCP	National Malaria Control Program
NMEP	National Malaria Elimination Program
NMIMR	Noguchi Memorial Institute for Medical Research
NMT	National Monitoring Team
PAMCA	Pan African Mosquito Control Association
PBO	piperonyl butoxide
PCV	Peace Corps Volunteers
PHE	Population, Health, and Environment
PMD	Point Mass Distribution
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
PSMP	Private Sector Malaria Prevention
PTA	Parent-Teacher Association
RBM	Roll Back Malaria
RCH	Reproductive and child health
RHMT	Regional Health Management Teams
SBC	Social and behavior change
SBCC	Social behavior change communication
SCOPE	Strategic Communication Planning and Evaluation
SHEP	School Health Education Program
SNP	School Net Program
SOP	Standard operating procedure
STTA	Short-term technical assistance
SWAT	Standing With Africa to Terminate
TAMPS	Tanzania All Media Product Consumption Survey
TMEMS	Tanzania Monitoring and Evaluation Management Services
UAR	Use and Access ratio
VCTEG	Vector Control Technical Expert Group
VCTWG	Vector Control Technical Working Group
VCWG	Vector Control Working Group
WHO	World Health Organization
ZAMEP	Zanzibar Malaria Elimination Programme
ZILS	Zanzibar Integrated Logistics System

EXECUTIVE SUMMARY

Background

VectorWorks is a five-year global malaria prevention project funded by the U.S. President's Malaria Initiative (PMI) through the U.S. Agency for International Development (USAID). 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, 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 long-lasting ITNs and/or alternative vector management interventions.

Objective 2: Monitoring and evaluation. Design, conduct, and analyze results from monitoring, evaluation, and operational research activities 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.

Executive Summary

VectorWorks is moving smoothly towards successful completion of our key objectives. Operating in 10 PMI focus countries in Year Five, we have strong demand from USAID missions for our technical assistance, especially for Durability Monitoring (eight countries). We are on track to complete the project at our ceiling of 60 million USD, and have consolidated the evidence on costs and operational considerations for mass and continuous ITN distribution, strengthened capacity for mass distribution, and provided critical thought leadership on pragmatic solutions to reach and maintain universal ITN access and use.

Policy

VectorWorks continues filling in the evidence base for continuous ITN distribution through schools, health facilities, and community channels. All of the pilot continuous distribution evaluations are now published, and our work on the cost-effectiveness of different combinations of mass and continuous distribution strategies was presented at the Vector Control Working Group (VCWG) and will be in press shortly. Our research on using population ITN access as the key indicator for universal coverage has informed World Health Organization (WHO) policy on universal access to malaria interventions. PMI's Technical Guidance and procurement policies are grounded in our research on quantification, continuous distribution, preferences for net attributes, and net care. We continue to work closely with WHO and The Global Fund to Fight AIDS, Tuberculosis and Malaria on ways to improve ITN access at the policy and M&E levels.

Monitoring & Evaluation

VectorWorks completed data collection for durability monitoring activities in Mozambique, Myanmar, Nigeria, Ghana, and Kenya in the first half of Year Five, and will complete fieldwork in the Democratic Republic of Congo (DRC), Liberia, and Zanzibar before June. Our meeting at the 2018 American Society of Tropical Medicine and Hygiene (ASTMH) for durability monitoring investigators and our subsequent webinar

were well attended, and the durability monitoring email listserv now has 241 subscribers. We continue to provide distance technical assistance to durability monitoring teams in Mali, Senegal, and Zambia, ensuring adherence to the standard protocol and questionnaires. Results from the completed monitoring activities show that median lifespan ranges from 2.4 to 5.3 years, with the most important determinant factor remaining the specific environment and context of the location, rather than inherent product differences. As data continue to roll in from the current crop of monitoring activities, VectorWorks will compile and update recommendations for PMI with regards to vector control decisions and procurement policies. VectorWorks has coordinated with PMI VectorLink to handover documentation and transfer institutional review boards (IRBs) in Ghana, Liberia, and Kenya so that these activities continue.

VectorWorks has analyzed the Zanzibar data collected on human behavior and vector biting behavior to assess the relative importance of residual indoor exposure and residual outdoor exposure for malaria transmission. The data will also inform prioritizing subsequent action – whether this is to continue to improve consistent ITN use, or to ramp up focus on peri-domestic bite prevention. As publications are finalized we will disseminate the findings both within Tanzania and globally.

Implementation

Thus far this year the project has delivered or assisted the delivery of a total of over 7.8 million ITNs to date in Ghana and Tanzania. VectorWorks provided technical assistance to the Ghana National Malaria Control Program (NMCP) to complete the ITN point mass distribution in Ashanti and Greater Accra, which delivered 5,282,650 ITNs. VectorWorks also completed training of circuit supervisors and head teachers in social and behavior change (SBC), a process begun in Year 3, in the remaining districts in Greater Accra, Ashanti, Upper East and Upper West. A total of 439 district and circuit officers and 8,289 teachers were trained, for a cumulative total of 2,382 officers and 54,388 teachers from 23,894 schools in 216 districts.

In Tanzania, VectorWorks completed the sixth round of school net distribution in Year Five, delivering 1,326,403 ITNs, for a total of 2,757,969 ITNs for the entire 2018 SNP6. The project supported resupply of over 1,307,410 million ITNs to health facilities in 14 regions and 190,720 ITNs in Zanzibar through March 2019. VectorWorks also supported SBC to encourage proper ITN use, and is completing durability monitoring in Zanzibar in the next few months.

VectorWorks supported Anglophone and Francophone trainings of NMCP managers and ITN focal points in November, bringing together 62 people from 19 countries in Nairobi with trainers from the Alliance for Malaria Prevention (AMP) and VectorWorks. The training updated countries on guidelines and recommendations for mass and continuous distributions, with both standard ITN and piperonyl butoxide (PBO) nets, and it was an opportunity for substantive sharing experiences between countries.

Dissemination

VectorWorks also continues to ensure PMI-funded results are brought to international attention through VCWG/AMP meetings, and through participation in global level policy discussions at WHO and Global Fund meetings and presentations. We have a strong and continuing presence in work stream leadership, and in-country participation in the AMP and VCWG meetings.

VectorWorks published four new peer-reviewed papers in Year Five: “Assessing whether universal coverage with ITNs has been achieved: is the right indicator being used?” in *Malaria Journal* in October 2018, “For the poor, sleep is leisure’: understanding perceptions, barriers, and motivators to mosquito net care and repair in southern Tanzania”, also in October 2018; “Age and gender trends in ITN use in sub-Saharan Africa: a multi-country analysis” in November; and “Measuring and characterizing night time human behavior as it relates to residual malaria transmission in sub-Saharan Africa: a review of the published literature” in January 2019. Three papers on ITN use in Ghana, Zanzibar peri-domestic behaviors, and seasonal patterns of ITN use across

sub-Saharan Africa are in peer-review as of this writing. For a full list and hyperlinks of published articles, go to [Section 2.4 of the Performance Monitoring Plan \(PMP\)](#).

VectorWorks presented 12 posters, organized one symposium on residual transmission, and was scheduled to present on ITN access in a WHO symposium (canceled by WHO last minute) at ASTMH meeting in October 2018 in New Orleans. In addition, VectorWorks team members made three presentations at the AMP and VCWG meeting in January 2019.

Challenges

As in Year 4, delays in obligations from USAID forced VectorWorks management to issue Stop Work orders for several country programs in Year 5. While the project was able to maintain staff and reporting duties, and in select cases, prioritize key activities, activities were significantly delayed in Ghana (Oct 1 – Mar 1), Liberia (Oct 1 – Mar 1), Mozambique (Oct 1 – Feb 7), and DRC (Oct 1 – Nov 5). The partial government shutdown in December and January also impacted project activities, delaying USAID review of deliverables and causing cancellation of a planned project event at the VCWG in Geneva. Ghana’s health facility supervision, mass campaign support, school SBC activities, and supervision visits were restricted or pushed back. Liberia’s supervision visits for health facilities distribution were postponed until the funding situation became more certain. A significant amount of staff time was spent planning and prioritizing budgets and activities in response to the delays in funding. This impeded progress on Core and other deliverables, including the ITN SBC toolkit, NetCALC Lite, and ITN Use and Access ratio (UAR) website.

Late arrival of ITNs at port in Tanzania and slow clearing of the ITNs through port and customs delayed the project’s ITN delivery timelines for schools and for health facilities.

We have not, to date, been able to address the activity area mentioned in Objective One, “facilitate the adoption of proven alternative vector management interventions, including those targeting specific sites or populations” as part of our core agenda. This is due to a lack of WHO-approved alternative vector control tools during the project time-period.

Opportunities

The culmination of the project in the remaining six months of implementation will focus on finalizing outstanding deliverables and consolidating lessons learned from three key areas. We have disseminated our findings on continuous distribution implementation through a variety of channels and materials, targeting our dissemination to donors and country decision-makers who can use the information for improving malaria vector control in their countries. Second, our research on ITN durability is being consolidated to inform global procurement practices, as well as to inform local procurement strategies, in places where ITNs last longer or shorter than the three year average. Finally, the body of knowledge on ITN use and its influencing factors is nearly complete. Disseminating the programmatic implications of this research – tailored for individual country programs – through the UAR website in collaboration with Breakthrough ACTION will be a key activity in the remainder of the project. Likewise, the knowledge gained on granular ITN use from the residual transmission research in Zanzibar and elsewhere will provide a framework to identify important (and less important) behavioral gaps crucial for malaria control and elimination. This information in turn will help to prioritize additional vector control tools in various settings.

Key VectorWorks-produced resources will continue to serve PMI and the global community after the project ends, including those housed on www.durabilitymonitoring.org, continuousdistribution.org, itnuse.org, as well as on pmi.gov. Consolidating our findings into published manuscripts as well as WHO policy guidance is crucial for widespread uptake of the evidence-base generated from the project.

CORE

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

[Completed in Year One: PC.1.A.1, VCWG meeting organized.]

[Completed in Year Two: PC.1.A.2, VCWG meeting organized.]

[Completed in Year Three: PC.1.A.3, VCWG meeting organized.]

[Completed in Year Four: PC.1.A.4, VCWG meeting organized.]

PC.1.B Roll Back Malaria Board Participation

[Completed in Year One: PC.1.B.1 and PC.1.B.2, RBM board meeting trip reports.]

[Completed in Year Two: PC.1.B.3 and PC.1.B.4, Transition oversight and November 2015 RBM board meeting.]

[Canceled in Year Two: PC.1.B.5, May 2016 RBM board meeting.]

PC.1.C Vector Control Working Group Annual Meeting Support

Brief activity description: The Roll Back Malaria (RBM) VCWG held their annual meeting this year in Geneva on January 30–February 2, 2019. VectorWorks actively participated in the meeting, presenting lessons learned from our pilots and chairing the Long-Lasting Insecticide-Treated Net (LLIN) Priorities Work Stream.

Status: VectorWorks representatives from Johns Hopkins Center for Communication Programs (CCP) Baltimore, Ghana, and Tanzania—as well as representatives from PSI, Tropical Health, and Tulane School of Public Health—attended the 2019 annual RBM VCWG meeting. At the LLIN Priorities Work Stream meeting, VectorWorks presented findings and lessons learned from the Tanzania School Net Program (SNP); facilitated panels and discussions on the experiences of national malaria control programs in ITN distributions in urban areas; and decision making for deploying next generation nets. VectorWorks also led a discussion on the 2019 work plan priority activities. The LLIN Priorities Work Stream 2019 work plan will be submitted in Quarter Three.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: PC.1.C.1 and PC.1.C.2, Presentations and trip report; PC.1.C.3, Priority issues for work streams; PC.1.C.4, VCWG meeting report.]				
[Completed in Year Two: PC.1.C.3 and PC.1.C.4, Presentations and trip report; PC.1.C.5, Work stream priority issues.]				
[Completed in Year Three: PC.1.C.6, Presentations and trip report; PC.1.C.7, LLIN Priorities Work Stream work plan.]				
[Completed in Year Four: PC.1.C.8, New Challenges New Tools Work Stream work plan; PC.1.C.9, Presentations and trip report 2018; PC.1.C.10, LLIN Priorities Work Stream work plan for 2018; PC.1.C.11, New Challenges New Tool Work Stream work plan for 2018.]				

PC.1.C.12. Presentations and trip report 2019	PMI	Quarter 2	Email and VCWG electronic mailing list	Acknowledged by PMI: February 19, 2019
PC.1.C.13. LLIN Priorities Work Stream work plan for 2019	VCWG members, WHO GMP, USAID malaria implementing partners	Quarter 2	Email and VCWG electronic mailing list	Delayed to Quarter 3

PC.1.D Alliance for Malaria Prevention Participation

Brief activity description: VectorWorks participated in AMP annual partners’ meeting, January 28–29, 2019. This meeting is an important venue to facilitate information sharing on malaria research and lessons learned from mass and continuous ITNs distributions between field implementers, national malaria control programs, and global policy makers.

Status: VectorWorks core funding supported VectorWorks staff to attend and present at the AMP annual partners’ meeting. VectorWorks actively participated in the meeting, specifically with presentations focused on reaching and maintaining universal access to ITNs and threats to ITN use. VectorWorks participates in the weekly AMP coordination calls and updates relevant countries on mass, continuous distribution, and the AMP *Mass Distribution Toolkit* chapter updates and trainings.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: PC.1.D.1, Presentations; PC.1.D.2, Trip report.] [Completed in Year Two: PC.1.D.3–5, Toolkit updates, AMP presentations, and trip report.] [Completed in Year Three: PC.1.D.6–7, Presentations, trip report for AMP annual partners’ meeting.] [Completed in Year Four: PC.1.D.8–9, Presentations, joint trip report; PC.1.D.10 Core Group meeting trip report.]				
PC.1.D.11. Presentations	PMI and AMP	Quarter 2	Email and AMP electronic mailing list	Acknowledged by PMI: February 19, 2019
PC.1.D.12. Joint trip report for AMP annual partners’ meeting	PMI	Quarter 2	Email to PMI	Acknowledged by PMI: February 19, 2019
PC.1.D.13. Joint trip report for AMP Core Group meeting	PMI	Quarter 4	Email to PMI	On schedule

PC.2 Input into Global Policy

[Completed in Year Two: PC.2.A.1 Building the Evidence Base for Geographic Targeting of Vector Control Interventions.]

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

[Completed in Year Two: PC.2.B.2–3, Coordination meetings with Global Malaria Programme (GMP), Global Fund, subregional networks (SRNs), and Harmonization Working Group (HWG).]

[Completed in Year Three: PC.2.B.4–5, Coordination meetings with GMP, Country/Regional Support Partner Committee (CRSPC), Global Fund; PC.2.B.6, Support to Global Fund concept notes.]

[Canceled in Year Four: PC.2.B.1, Articulating the Process of Moving from Campaign to Continuous Distribution.]

[Completed in Year Three: PC.2.C Policy Statement on Repurposing ITNs.]

PC.2.D Maintaining Communication with Global Policy Stakeholders

Brief activity description: VectorWorks will collaborate closely with key stakeholders in global malaria policy to ensure that activities are complementary and findings are effectively disseminated at the country level. The GMP is the primary institutional partner for ensuring policy uptake of project results, but VectorWorks will also stay in close communication with representatives of the Global Fund and the RBM CRSPC, which are responsible for assisting countries in accessing and maintaining access to funds from the Global Fund. Dr. Ato Selby, of VectorWorks, will continue to participate in this role; he was a member of the HWG, prior to the formation of the CRSPC. However, the CRSPC held fewer meetings than expected.

Status: Dr. Selby attended CRSPC meetings in October 2018 and provided inputs on ITN distribution with several countries. Dr. Hannah Koenker met with the Global Fund staff, just before the VCWG meeting in January 2019, to discuss ITN quantification; continuous distribution modalities; capping during mass campaigns; and ITN use priorities, based on available evidence. The project could not attend the Malaria Policy Advisory Committee (MPAC) meetings because of conflicts. The WHO Technical Expert Group on Malaria Vector Control (VCTEG) meetings were not organized because of a staff shortage at GMP and competing priorities.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: PC.2.D.1 CRSPC, SRN.] [Canceled in Year Four (Modification 1): PC.2.D.2 MPAC meetings.]				
PC.2.D.3. Trip reports from CRSPC/SRN/Global Fund/WHO meetings	PMI	Quarters 1–4	Email	On track, two trips completed

PC.3 Promoting Key Indicators

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

[Completed in Year One: PC.3.A.1, Training materials for MIS; PC.3.A.2, Updated HWG guidance.]
 [Completed in Year Two: PC.3.A.3, Presentation to MERG.]
 [Canceled in Year Three: PC.3.A.4, Tools for M&E program staff on the RBM and VectorWorks website.]
 [Canceled in Year Three: PC.3.A.5, Publishable paper on the new calculation of ITN access.]
 [Completed in Year Four: PC.3.A.6 Publishable paper making the case for the population access indicator as the key universal coverage indicator for ITNs; PC.3.A.6, Activity to support WHO access analysis.]

PC.3.B Source of Nets Analysis Plan

Brief activity description: In Year Four, when the Demographic and Health Survey (DHS), Malaria Indicator Survey (MIS), and Multiple Indicator Cluster Surveys are released, VectorWorks will make periodic updates to the report on the source of nets. This report includes examples of how to use the DHS and MIS data to answer questions about the performance of a country’s ITN distribution strategy.

Status: The report was submitted in Year Three for PMI review, but it was not approved. It used DHS and MIS data to explore the reach of key distribution channels across PMI countries. It was also presented at the Monitoring and Evaluation Reference Group (MERG) meetings in Dakar and Tanzania and then was revised to include additional countries. As new data were released, VectorWorks made periodic updates to the report on the source of nets. The final version of the report was submitted and approved in March 19, 2019, to fulfill PC.3.B.2 and PC.3.B.3. The report will be disseminated to key stakeholders, as planned.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: PC.3.B.1, Source of nets analysis plan.]				
PC.3.B.2. Source of Net Report for PMI countries	PMI officers, NMCPs	Quarter 1	PMI, NMCPs	Approved By PMI: March 19, 2019
PC.3.B.3. Updates to the source of nets report as new data are available in Year Four	PMI officers, NMCPs	Quarter 1	PMI, NMCPs	Approved By PMI: March 19, 2019

PC.3.C MERG Meeting Attendance

Brief activity description: VectorWorks had active participants at the annual MERG meeting. Drs. Koenker and Olapeju participated in the 28th MERG meeting in October 2017, in Senegal. Dr. Olapeju presented on the source of nets report and Dr. Koenker presented on the draft manuscript on population ITN access as the “best” indicator of universal coverage. At the 29th MERG meeting in September 2018, held in Dar es Salaam, Dr. Olapeju and Ms. Monroe presented on the source of nets update and proposed indicators for measuring human vector interaction.

Status: The next annual meeting will take place in Accra, Ghana, from June 4–7, 2019. Drs. Olapeju and Ato Selby are slated to represent VectorWorks during this meeting. In addition, the VectorWorks Ghana field team is collaborating with the Ghana NMCP to tentatively present on the success of the mobile application (NetApp) used to register households and distribute ITNs during the mass campaign. An alternative presentation would be the NMCP experience with health facility monitoring, including challenges, opportunities, and lessons learned.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Four: PC.3.C.1, Trip report.]				
PC.3.C.2. Trip report including copy of presentation(s) if on agenda	Agreement Officer's Representative (AOR)	Quarters 1 and 3	PMI AOR	In process

PC.4 ITN Misuse for Fishing and Local Solutions

PC.4.1 Literature Review

[Completed in Year Two.]

PC.4.2 GIS Population Estimate

[Completed in Year Two.]

PC.4.3 Pesticide Toxicity Report

[Completed in Year Two.]

PC.4.4 Small-Mesh Fishing Gear Report

[Completed in Year Two.]

PC.4.5 Set of Survey Instruments

[Completed in Year Four.]

PC.4.6 Summary Process Manual

[Canceled in Year Four, Mod Three.]

PC.4.7 Rapid Assessment in Malawi

[Completed in Year Four.]

PC.4.8 Final Decision Tree

Brief activity description: This decision tree is a graphic depiction of the process outlined in the *Complete ITN Misuse Toolkit* (described in PC.4.9), with decision points highlighted and likely options (at a general level) proposed. The decision tree is an example of how the process could unfold; it should provide useful guidance for planners.

Status: The Final Decision Tree is included in the *Complete ITN Misuse Toolkit* (PC.4.9). It advises users how to respond to potential ITN misuse for fishing. Using the *VectorWorks' Observation Tool and Focus Group Discussion Guide*, the Decision Tree guides users from first hearing about the potential ITN misuse problem, to quantifying it to the extent possible, and then determining who is involved and the location of the problem. It encourages the user to use the additional tools in the toolkit to identify the drivers of the misuse and provides top-level recommendations to identify opportunities for intervention. The Decision Tree, as part of the *Complete ITN Misuse Toolkit*, was approved on November 9, 2018.

PC.4.9 Complete ITN Misuse Toolkit

Brief activity description: VectorWorks will compile a *Complete ITN Misuse Toolkit* to share the process used and the knowledge gained from the Malawi rapid assessment, highlighting the benefits of this activity for other countries.

Status: The complete ITN misuse toolkit titled, [*Identifying and Mitigating the Misuse of Insecticide-Treated Nets for Fishing Toolkit*](#), takes the user from identification of the potential problem of misuse; through conducting an initial site assessment; conducting the rapid qualitative and observational data collection; analysis of the data; and, finally, provides illustrative results and programmatic implications, based on VectorWorks' rapid assessments in both Malawi and Tanzania. This toolkit is intended first for the U.S. Agency for International Development (USAID) Missions that have heard of or identified an ITN misuse for fishing problem; the USAID Missions can then work with their implementing partners to go through this process. The *Complete ITN Misuse Toolkit* was approved on November 9, 2018.

PC.4.10 Malawi Planning Visit

[Completed in Year Two.]

PC.4.11 Global Initiative Planning and Organization

PC.4.11.A. Identify an Institutional Home for the Global Level Mosquito Net Fishing Initiative

[Completed in Year Four.]

PC.4.11.B. Stakeholder Convening for Mosquito Net Fishing

[Canceled in Year Four, Mod Three.]

PC.4.12 Cross-Border Enforcement Case Studies

[Completed in Year Four.]

PC.4.13 Identify Partnership/Inclusion of Population, Health, and Environment (PHE) Projects into ITN Misuse

Brief activity description: VectorWorks proposes formalizing its relationship with the greater Population, Health, and Environment (PHE) umbrella of activities and working to include malaria and mosquito net fishing in the discussions.

Status: Despite the lack in frequency of the planned quarterly PHE Policy and Practice meetings and the lack of traction to discuss the ITN misuse issue with them, VectorWorks sought out additional multi-sectoral partners with whom to discuss potential partnerships. The Forestry and Biodiversity (FAB) team at USAID invited VectorWorks on several occasions to discuss the results of the rapid assessments of ITN misuse in Malawi and Tanzania and to discuss how changes in FAB-related USAID projects—including those with fisheries elements—may add elements of ITN misuse mitigation. Results from these rapid assessments, as well as the Complete ITN Misuse Toolkit, and the Consensus Statement on the Repurposing of ITNs, guided these discussions. VectorWorks provided topline results, potential mitigation measures, and included recommendations for moving forward; this included the need for multi-sectoral coordination and more research. The memo was approved in February.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: PC.4.1, Literature review; PC.4.2, GIS population estimate; PC.4.3, Pesticide toxicity report; PC.4.4, Small-mesh fishing gear report.] [Completed in Year Three: PC.4.10, Malawi planning visit.] [Completed in Year Four: PC.4.5, Set of survey instruments; PC.4.7, Pilot tests of qualitative instruments for Malawi with report; PC.4.12 Cross-border enforcement case studies.] [Canceled in Year Four: PC.4.6, Summary process manual; PC.4.11.B International meeting workshop report.]				
PC.4.8 Final Decision Tree	PMI resident advisors	Quarter 1	PMI	Approved by PMI: November 5, 2018
PC.4.9 Complete Net Misuse Toolkit	PMI	Quarter 1	PMI	Approved by PMI: November 5, 2018
PC.4.13. Report summarizing opportunities for broader partnership with implementing partners from other sectors	PMI and other relevant stakeholders: NMCPs, FAB, Food for Peace, United Nations/Food and Agriculture Organization	Quarter 4	PMI	Approved by PMI: February 22, 2019

PC.5 Malaria in Pregnancy

PC.5.1 US–Malaria in Pregnancy Trip Report

[Canceled in Year One.]

PC.5.2 Trip Report and Presentation

[Completed in Year One.]

PC.5.3 Advocacy Strategy

[Completed in Year Two.]

PC.5.4 Malaria in Pregnancy Trip Report

[Completed in Year Two.]

PC.5.5 Follow-Up Malaria in Pregnancy Advocacy Case Studies

[Canceled in Year Two.]

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

[Canceled in Year Three.]

PC.5.7 Translate Malaria in Pregnancy Advocacy Toolkit into French

[Completed in Year Three.]

PC.6 Identifying Alternative Distribution Strategies in Urban Areas

[Completed in Year Four.]

PC.7 Maps for PBO Net Pilot Areas

[Completed in Year Two.]

PC.8 Quantification and Capping

Brief activity description: Analysis conducted as part of the ITN access paper indicated that demographics play a key role in determining how well different capping strategies may work during mass campaigns. Countries with a larger percentage of one- and two-person households require lower quantification factors (below 1.8)—the result is more ITNs are needed.

Status: VectorWorks expanded this analysis to calculate quantification factors for individual countries, based on a universal coverage allocation algorithm of giving one ITN for every two people in a household, rounding up. Total nets needed for mass campaigns using population/1.8, population/country-specific-quantification-factor, and under different capping strategies (cap of 4, 5, 6) were then calculated. Results were presented for discussion at a PMI brown bag on March 11, 2019. Countries with smaller than average household size (Ghana and Kenya) had lower quantification factors (1.7), while countries with larger than average household size (Senegal and Mali) had higher quantification factors (1.9). Calculating quantification factors by region within a country and totaling the ITNs required produced the same number of nets needed for a given campaign as when the total national population was divided by the national-level country-specific quantification factor. Overall, the differences in using 1.8 and country-specific factors were not programmatically significant, particularly when considering that the quality of population estimates, microplanning, and household registration would produce greater variation in total ITNs needed.

Deliverable	Audience	Timing	Dissemination Plan	Status
PC.8 Presentation/Memo/paper on capping and quantification	PMI, Global Fund, WHO	Quarter 1	For discussion with PMI; AMP/VCWG meeting	Approved by PMI: March 18, 2019

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

ME.1 ITN Durability Monitoring

Brief activity description: VectorWorks leads ongoing durability monitoring activities in DRC, Nigeria, Mozambique, Myanmar, and Tanzania (Zanzibar), Ghana, Liberia, and Kenya. VectorWorks collaborates with the NMCP and research partners in each country to strengthen capacity for future durability monitoring. We also provide distance support to other implementing partners conducting this activity.

Status: By mid-Year Five, we completed monitoring in Nigeria, Mozambique, and Myanmar; were planning final data collection in DRC and Zanzibar; and had completed baseline and 12-month data collection in Kenya, baseline in Ghana, and baseline in Liberia. The website www.durabilitymonitoring.org contains a full toolkit for implementing monitoring. Additional status updates are listed below.

ME.1.1 Guidelines for Data Collection

[Completed in Year Two – templates for protocol, questionnaires, consent forms, data collection tools, training manual and materials, Status, FAQ.]

ME.1.2 Standardized Tools for Data Analysis and Reporting

[Completed in Year Two: ME.1.2, Standardized tools for data analysis and reporting – analysis plan, data cleaning and prep do files, report and chart templates, and interpretation guidance.]

[Completed in Year Three: ME.1.2.D and ME.1.2.E, Publication guidance and key indicator submission.]

ME.1.3 Data Management, Submission, and Pooled PMI Durability Data

[Completed in Year Three: ME.1.3.A, Data sets submitted to PMI; ME.1.3.B, Data submission guidelines (minimal standards for key variables, recommendations for data structure for submission to PMI; ME.1.3.D, Eight-country pooled data cleaning.)

[Completed in Year Four: ME.1.3.E, OpenMalaria Modeling on the PMI Pooled Durability Data Set; ME.1.3.F, OpenMalaria Decay Modeling.]

[Completed in Year Five: ME.1.3.C, Dedicated website for data, tools, instructions and resources.]

ME.1.4 Resistance to Damage Score Validation

[Canceled in Year Two.]

ME.1.5 Risk Index for Environmental and Behavioral Determinants for ITN Durability

Using available data, VectorWorks further refined a risk index that will predict the likelihood of increased ITN damage, based on environmental, socioeconomic, household, and attitudinal factors. From preliminary data analysis, it is likely that a set of factors measured at baseline will be able to predict the median ITN life span reasonably well, so that different regions could be classified into higher or lower risk for net damage. VectorWorks further refined the risk index after collecting 24-month data and presented it as a poster to the ASMTM in October 2018. VectorWorks also needs to validate it against PMI durability data not collected by VectorWorks, which we expect to do late in Year Five.

ME.1.6 Thresholds for Action

[Completed in Year Four.]

ME.1.7 Durability Monitoring Webinar

[Completed in Year Two.]

ME.1.8 ASTMH and MIM Durability Monitoring Investigators' Meetings

[Completed in Year Four.]

ME.1.9 Durability Monitoring Capacity-Strengthening Case Study

In Quarter One, VectorWorks drafted a case study about capacity strengthening in Mozambique for durability monitoring. We revised it to include examples from additional countries and submitted it in Quarter One of Year Five. It was approved on November 5, 2018.

ME.1.10 Durability Monitoring Webinars Year Four

VectorWorks hosted a webinar on December 7, 2017, to introduce the *Interpreting Durability Monitoring Data for Programmatic Action* guidelines, described in ME.1.6. A similar webinar was held on November 7, following ASTMH. The final webinar will be held in Quarter Four of Year Five to present the final results from the eight monitoring activities VectorWorks is leading.

ME.1.11 Testing Insecticidal Content of Stored Attrition, Bioefficacy, Chemistry, Degradation, and Insecticide Resistance ITNs

In Bagamoyo, Tanzania, VectorWorks identified several bales of stored ITNs (three different brands) that had been in ideal storage conditions for more than four years for the Attrition, Bioefficacy, Chemistry, Degradation, and Insecticide Resistance (ABC DR) project. Maximum daily temperature recordings were available for the warehouse for the entire period. We engaged Ifakara Health Institute (IHI) to test subsamples of each brand (cone bioassay) and to generate data on bioefficacy after long-term storage. The testing was conducted in Quarter Four of Year Four and we submitted the report on November 26, 2018. Additional samples from these nets were sent to the Centers for Disease Control and Prevention (CDC) for chemical testing in late September; we updated the report with the chemical testing results and shared this on January 15, 2019. Following discussions with IHI and PMI, IHI offered to subsidize the costs of doing a wash test on the net samples. The results were completed in late March, and the Olyset and DawaPlus 2.0 nets were still effective after 20 washes with permethrin and deltamethrin (respectively), using cone and tunnel testing as recommended by WHO. The final report is expected to be updated to include these results in May.

ME.1.12 ASTMH Durability Monitoring Meeting 2018

VectorWorks hosted a meeting for durability monitoring investigators at the 2018 ASTMH meeting in New Orleans. This meeting was a forum for discussion and to emphasize and promote the importance of using standardized procedures and tools to ensure quality, comparable data. Participants discussed the interpretation of interim and final results, and policy implications from VectorWorks-funded studies. We introduced the durability monitoring dashboard concept; and reinforced understanding of key durability monitoring indicators.

ME.1.13 Durability Monitoring Snapshot and Insights

VectorWorks prepared country snapshots—single PowerPoint slides—for each of our active durability monitoring countries, for use by PMI in internal communications. We also advised on preparing simplified tables/graphics for use in Malaria Operational Plans (MOPs), to communicate concise key durability information. Snapshots were approved in December and we will continue to update them as additional results become available. The VectorWorks “Insights” series will focus on durability monitoring results in the last quarter of the project.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: ME.1.1, Guidelines for data collection; ME.1.2, Standardized tools for data analysis and reporting.]				

<p>[Canceled in Year Two: ME.1.4, Resistance to damage score validation.] [Canceled in Year Three: ME.1.3.C, public data repository (data will not be made public).] [Completed in Year Three: ME.1.2.D and ME.1.2.E, Publication guidance and key indicator submission, ME.1.3.A, Data sets submitted to PMI; ME.1.3.B, Data submission guidelines; ME.1.3.D, Eight-country pooled data cleaning, ME.1.7 Webinar on use of Durability Monitoring Toolkit.] [Completed in Year Four: ME.1.3.E–F Model pooled eight-country PMI data; ME.1.6, Thresholds for action document; ME.1.8, ASTMH durability monitoring principal investigators’ meeting.]</p>				
ME.1.5. Develop an index for environmental and behavioral risk	PMI, durability monitoring principal investigators, NMCPs, CDC, other durability monitoring stakeholders	Quarter 2	Email with PowerPoint summary	In process
ME.1.9. Durability monitoring capacity-strengthening case study	PMI	Quarter 1	VectorWorks website, electronic mailing lists	Approved by PMI: November 5, 2018
ME.1.10. Webinars promoting use of standardized processes and tools and data interpretation	PMI, durability monitoring principal investigators, NMCP officers	Quarters 1 and 3	Email to PMI, NMCP, implementing partner, principal investigators	One webinar completed November 7, 2018; one planned for Quarter 4
ME.1.11. Insecticidal content and bioassay testing for ABCDR stored nets	PMI, AMP, VCWG	Quarter 1	Email	Updates to submitted report in process
ME.1.12 ASTMH 2018 Durability investigators meeting	PMI, durability monitoring principal investigators, NMCPs, CDC, other durability monitoring stakeholders	Quarter 1	Meeting notes	Completed October 31, 2018
ME.1.13 Snapshot slides with results from all durability monitoring activities	PMI	Ongoing, as final results are available	Email to PMI, PMI brown bag	Approved December 7, 2018; snapshots will be updated as additional results become available

ME.2 Alternative Vector Control Tools

[Completed in Year One: ME.2.A Landscape Report on Alternative Vector Control Tools.]

ME.2.B Quarterly Updates on Alternative 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. To develop the newsletter, we use a systematic search in key databases to identify literature from the last three months on alternative tools and paradigms identified in the *Landscape of New Vector Control Products*. We present the summary of findings in a user-friendly newsletter format that enables readers to quickly scan for key new developments and studies, in detail, in the referenced literature. Through the VectorWorks and PMI websites, we share each quarterly update with the general VCWG mailing list and PMI field staff and headquarters staff.

Status: The quarterly update is ongoing; every three months we review, summarize, format, and disseminate new articles. VectorWorks released [the first report](#) of Year Five in November 2018, covering July to September 2018. In February 2019, we released [the second report](#) that included the articles from October to December 2018. One final update this year will cover January to March; it will come out in May 2019. The updates include suggestions from the user survey from Year Three: a WHO Pesticide Evaluation Scheme box highlights any products and links to relevant new policies and guidance issued by WHO.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: ME.2.B.1, Two newsletters.] [Completed in Year Two: ME.2.B.2, Four newsletters.] [Completed in Year Three: ME.2.B.3, Four newsletters; ME.2.B.4, User survey.] [Completed in Year Four: ME.2.B.5, Four newsletters.]				
ME.2.B.6. Quarterly newsletter summarizing recent literature on alternative vector control tools (electronic format)	Innovative Vector Control Consortium, VCWG, PMI technical and resident advisors, implementing partners	Nov. 20; Feb. 19; May 14	VCWG electronic mailing list, potentially also to PMI field and core electronic mailing lists; link on PMI website; post to VectorWorks and RBM websites	Report 1 sent: November 13, 2018 Report 2 sent: February 19, 2019

ME.3 Issues in Costing ITN Distribution

ME.3.A Continuous Distribution Costing Analysis

Brief activity description: Building on the work in Ghana, VectorWorks conducted a cost analyses of school-based, health facility-based, and community-based distribution programs—either as a stand-alone strategy (for example, school-based distribution in Tanzania and health facility-based distribution in Mali) or in combination with other strategies (for example, in Ghana and Zanzibar). These costs were analyzed for cost effectiveness and were compared to mass distributions.

Status: VectorWorks received PMI approval for the Tanzania health facility distribution report and the comparison of costs between the SNP round 3 and the SNP5 report. We also submitted the summary manuscript for continuous distribution costs and the manuscript comparing continuous distribution and mass

distribution costs; we received policy clearance for both. We will submit them to the *Malaria Journal* in the near future. We expect to submit the final manuscript comparing continuous distribution costs to transmission modeling during the next reporting period.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: ME.3.A.2, Tanzania SNP costing report; ME.3.A.5, Zanzibar costing report.] [Canceled in Year Two: ME.3.A.1, Madagascar costing report.] [Completed in Year Three: ME.3.A.4, Mali costing report.] [Completed in Year Four: ME.3.A.3, Ghana health facility costing report.]				
ME.3.A.6. Mainland Tanzania health facility costing report	VectorWorks project team, PMI AOR	Quarter 1	Limited internal report for MOP planning and to prepare a summary report or article	Approved by PMI: February 20, 2019
ME.3.A.7. Summary manuscript for continuous distribution costs based on deliverables 1–6	HWG consultants, PMI leadership, PMI resident advisors	Quarter 1	Manuscript	Approved by PMI: April 1, 2019
ME.3.A.8. Manuscript of meta-analysis comparing continuous distribution and mass campaign costs	Donors and implementers	Quarter 1	Manuscript	Approved by PMI: April 1, 2019
ME.3.A.9. Manuscript connecting continuous distribution costs to transmission modeling	Donors and implementers	Quarter 3	Manuscript	In process
ME.3.A.10. Tanzania: Costing SNP5 and comparison to SNP2: measuring the gains of learning by doing	VectorWorks project team, PMI AOR	Quarter 1	Internal report to prepare a summary report or article	Approved by PMI: February 20, 2019

ME.3.B Experimental Auctions

[Completed in Year Two: ME.3.B.1, Trip report.]

[Completed in Year Three: ME.3.B.2, Study report; ME.3.B.3, Paper #1.]

[Canceled in Year Four: ME.3.B.4 Discrete choice experiment paper #2.]

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

[Completed in Year One: ME.4.1, Trip report.]

[Completed in Year Two: ME.4.2, Trip report.]

ME.5 Continuous Distribution Evidence Base

ME.5.A NetCALC 3.0

[Completed in Year Two.]

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

Brief activity description: VectorWorks is publishing intervention descriptions and results from the Madagascar, Ghana, and South Sudan continuous distribution pilots.

Status: VectorWorks submitted the Ghana Eastern Region paper to the *Malaria Journal* in October 2017. We received comments and addressed them in March 2018; the journal published the paper the same month. A webinar that included the results ran on October 3, 2018. The evidence review for the VCTEG was initially planned for late Year Four or early Year Five, after completing the costing papers. They did not meet in 2018 and VCTEG is listed as 'having completed its work' on the WHO website, and the GMP Guidelines Development Group was formed to take the place of the stand-alone TEGs. However, Dr. Yukich shared a draft of the meta-analysis costing paper with WHO in October 2018, and both NetWorks and VectorWorks publications and research findings have been integral to GMP's guidance development process over the past few years.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: ME.5.B.3, Nasarawa continuous distribution report.] [Completed in Year Three: ME.5.B.1, Madagascar community-based distribution pilot; ME.5.B.4, South Sudan community-based pilot.] [Completed in Year Four: ME.5.B.2, Publishable-quality manuscript on school-based distribution in the Eastern Region of Ghana.]				
ME.5.B.5, Webinar summarizing results of published studies.	PMI, Global Fund, WHO, NMCPs, implementing partners	Quarter 1	Live and recorded webinar	Completed on October 3, 2018
ME.5.B.6. Evidence review at WHO review group	VCTEG	Quarter 2	VCTEG minutes	In process

ME.6 Publication Fees for NetWorks Articles

[Completed in Year One: ME.6.2, Hang up; ME.6.3, Ghana outdoor sleeping; ME.6.4, Nigeria durability; ME.6.5, Uganda care repair.]

[Completed in Year Two: ME.6.1, Campaign strategies paper.]

[Completed in Year Four: ME.6.6, Nigeria Cross River Schools published paper.]

[Canceled in Year Four: ME.6.7, Hole Index Methods paper.]

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

ME.7.2 Subnational Analysis of Use-to-Access Ratio

Brief activity description: As data becomes available, VectorWorks is continually updating the ITN use-to-access ratio report. This report on ITN access, use, and use-to-access indicators shows stratification by region, residence, socioeconomic status, and seasonality (where applicable). The report also includes interpolated maps of ITN use-to-access ratio across PMI countries and sub-Saharan Africa.

Status: The report was last updated in October 2018 with data from the Senegal DHS 2017 and Tanzania MIS 2017. The thematic maps showing subnational use-to-access ratio across sub-Saharan Africa and other regions were updated in January 2019. The report and maps now include 46 countries. The next update is scheduled for just prior to World Malaria Day.

ME.7.7 Interactive ITN Access and Use Report

Brief activity description: Together, VectorWorks and Breakthrough ACTION are working to develop an online interactive version of the ITN Access and Use Report that further disseminates the key use and access data, country-specific background information, and SBC recommendations into a digestible user-friendly format.

Status: VectorWorks and Breakthrough ACTION completed a comprehensive creative brief that outlines the specific technological needs of the site, as well as the creative design. Using this creative brief, the team moved forward with Infogram as a plugin for WordPress. To keep maintenance of the site to a minimum, the site will be built within the suite of Breakthrough ACTION sites. At the end of Quarter Two, the VectorWorks project was compiling an initial draft of the main page and a country profile to share and to receive feedback before building the remaining pages of the site.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: ME.7.1, Year One's <i>ITN Access and Use Report</i> .] [Completed in Year Two: ME.7.3, Year Two's <i>ITN Access and Use Report</i> ; ME.7.4, Annex with maps.] [Completed in Year Three: ME.7.5, Year Three's <i>ITN Access and Use Report</i> , with maps.]				
ME.7.2. Publishable-quality paper analyzing use-to-access ratio by season	Malaria technical community	Quarter 1	VCWG, <i>American Journal of Tropical Medicine and Hygiene</i>	Cleared by PMI: March 31, 2018
ME.7.6. Updated PMI report on access indicator showing stratification by	PMI resident advisors, AMP, VCWG,	Ongoing updates to be made as new data sets are	AOR to circulate to wider PMI team and resident advisors; in-	In process

region, season, and risk group, with updated maps	Working Group	released; Quarter 2 before MOP season	country presentations during technical advisor visits	
ME.7.7. Interactive ITN Access and Use report	Implementing partner, PMI, NMCP, AMP	Quarter 3	Website, PMI, AMP, VCWG listservs	In process

ME.8 Operations Research [LOE]

ME.8.A Expert Committee Meeting [LOE]

[Completed in Year One: ME.8.A.1, Research agenda.]

[Completed in Year Two: ME.8.A.2, Updated research agenda.]

[Completed in Year Three: ME.8.A.3, Updated research agenda.]

[Completed in Year Four: ME.8.A.4, Updated research agenda.]

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

[Completed in Year One: ME.8.B.1, Rapid ITN coverage (rejected); ME.8.B.2, Parasitemia and net integrity (tableted); ME.8.B.5, Semi-field testing (rejected).]

[Completed in Year Two: ME.8.B.3, Outdoor transmission concept note (approved).]

[Canceled in Year Two: ME.8.B.4, Durability wall lining concept note.]

ME.9 Net Preference Literature Review

[ME.9.1 Completed in Year Two: Net preferences literature review for VCTEG.]

[ME.9.2 Completed in Year: Paper published.]

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

[Completed in Year Two.]

ME.11 Characterizing Risk of Outdoor Malaria Transmission

ME.11.1 Literature Review on Outdoor Transmission

[Completed in Year Four.]

ME.11.2 Indicators for Measuring Human-Vector Interaction

Brief activity description: Effective targeting of vector control interventions requires an understanding of when and where people are exposed to malaria vectors. The importance of studying the distribution of both vectors and people was put forward more than half a century ago, yet indoor and outdoor biting rates are still often interpreted directly without considering where people are during those times. While this issue has been well documented, clear guidance is not yet available for programs on what human behavioral data should be collected, how and when to collect it, or how to integrate it with entomological data. This gap was identified through the literature review on outdoor transmission carried out under ME.11.1.

Status: In the first two quarters of project Year Five, VectorWorks drafted a manuscript, solicited and compiled co-author feedback, incorporated feedback from the PMI technical review, and submitted the manuscript for PMI policy review. In the remainder of Year Five, VectorWorks will address feedback from PMI policy review, incorporate final inputs from co-authors, and submit the manuscript for publication in a peer-reviewed journal.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Four: ME.11.1, Publishable-quality review of literature on outdoor malaria transmission.]				
ME.11.2. Publishable-quality paper on indicators for measuring human-vector interaction	PMI, VCWG	Quarter 4	Peer-reviewed publication	On track

ME.12 Revisions to the Malaria SBCC Indicator Guide

[Completed in Year Four.]

ME.13 IRS and ITN Technical Assistance

ME.13.1 ITN Use in the Context of IRS Report

[Completed in Year Two.]

ME.14 Residual Transmission Meeting

[Completed in Year Four.]

ME.15 Counterfeit Nets

Brief activity description: Anecdotal evidence suggests that, in a number of countries, counterfeit ITNs and nets with misleading labeling (e.g., untreated nets suggesting that they are ITNs) have appeared in markets. However, little is known about the severity and magnitude of this problem, or whether it requires greater attention from VectorWorks; PMI; or the malaria community, in general. This activity provides qualitative and semi-quantitative data for this question from three countries: Nigeria, Tanzania, and Ghana. VectorWorks conducted fieldwork in Nigeria and Tanzania in Year Three. Study activities slated for Year Four include data collection in Ghana, compilation of results, and development of a summary report for all three countries.

Status: A summary report, drafted for all three countries, was submitted to PMI and is pending approval. The report highlighted the magnitude of counterfeiting as a problem in each country; the types of counterfeiting violations, in categories; and the perspectives of key stakeholders, such as net wholesalers and retailers.

Deliverable	Audience	Timing	Dissemination Plan	Status
ME.15.1. Summary report from three countries; recommendations for next steps	PMI, VCWG	Quarter 1	Email	Sent revised document to PMI: March 25,

				2019
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ME.16 Secondary Analysis of Net Use in Key Countries

[Completed in Year Four: ME.16.1, Ghana ITN Use memo; ME.16.2 Nigeria ITN Use memo.]

ME.17 Who Buys Nets: A Multi-Country Analysis

Brief activity description: To better understand the current role and extent of ITN purchases, VectorWorks conducted a multi-country analysis of who buys nets—by socioeconomic status, urban or rural status, level of education, and other identified key demographics. VectorWorks will include 16 countries in the updated source of net report and these countries will be included in the paper.

Status: VectorWorks presented a poster for this activity at the ASTMH Annual Meeting in Quarter One of Year Four. The data analysis and manuscript writing was completed in 2018. Key findings from the report were that among all nets, the percentage of purchased nets ranged from 0.8% to 32.7%; most of these purchased nets were ITNs. Urban, wealthier households, as well as those with educated heads, were more likely to own purchased nets. The use of these nets was, however, lower in wealthier households. In addition, net use was higher in households owning insufficient nets for their family size, and when the nets were less than 24 months old.

The manuscript was submitted to PMI for policy clearance; it will then be submitted to the *Malaria Journal*.

Deliverables	Audience	Timing	Dissemination Plan	Status
1. Publishable-quality paper on who buys nets; a multi-country analysis	PMI, Global Fund, DFID, and NMCPs	Quarter 3	Share by email	Submitted to PMI for policy clearance: April 4, 2019

ME.18 Age and Gender Patterns of ITN use

[Completed in Year Four: Age and Gender patterns of ITN Use.]

ME.19 NetCALC Lite

Brief activity description: VectorWorks is investigating the usability issues with the current version of the NetCALC tool and training package, and designing a more user-friendly Microsoft Excel-based tool. This entails gathering inputs from users of NetCALC, re-imagining the tool to make it more user-friendly, hiring an expert in Excel with skills in front-end design, doing usability testing and data visualization, and launching the “new” NetCALC Lite.

Status: VectorWorks has been working with a consultant to develop a more user-friendly ITN quantification tool, and consulting with proposed users along the way. In addition to using NetCalc as the basis for the new tool, the team has also integrated elements of the continuous distribution decision flowchart. We tested different iterations of the tool with VectorWorks staff and, based on their comments, modified the tool. The consultant, with VectorWorks program staff, is making final adjustments to the macros, as well as technical and design elements. The consultant will send the final version of the tool to the VectorWorks team in April 2019. After we receive it, VectorWorks will make any additional modifications needed before

dissemination. VectorWorks will conduct outreach to PMI, AMP, VCWG, RBM CRSPC, and the Global Fund for dissemination support.

Deliverable	Audience	Timing	Dissemination Plan	Status
ME.19. NetCALC Lite	NMCPs, HWG and HWG consultants, VCWG, PMI	Quarter 1	VectorWorks channels (e.g., email, website), Continuous Distribution Toolkit, NMCPs, CRSPC, AMP training, VCWG, PMI	Postponed to Quarter 3

ME.20 Net Motion Sensor Study

Brief activity description: ITNs are effective tools for malaria prevention and, therefore, improving the quantitative measure of ITN use will be critical to advancing malaria control efforts and determining (1) when SBC messages could be adapted to optimize ITN use. Motion sensors may provide a way to monitor net use if the motions detected can be correctly interpreted. In Year Five, VectorWorks will complete a report on laboratory testing carried out to validate the ability of a net motion sensor to accurately describe human behavior as it relates to ITN use.

Status: In the first half of Year Five, VectorWorks worked with the Liverpool School of Tropical Medicine (LSTM) to complete a report on laboratory testing of net motion sensors. VectorWorks reviewed and provided feedback on the report, facilitated coordination between CCP, LSTM, and PMI; facilitated an in-person discussion at the ASTMH meeting in October 2018; and compiled data files. While the report was completed in Quarter One, final submission of the report to PMI was postponed due to delays in receiving the data files from LSTM. The final report and data files will be submitted to PMI for approval in Quarter Three.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Canceled in Year Four, Mod 3: ME.20.2 Phase Two research protocol.]				
ME.20.1. Report on Phase One methods and results	PMI	Quarter 1	Email to PMI	Delayed to Quarter 3

ME.21 Digital Health Technologies for ITN Distribution

Brief description: Using Digital Health Technologies during LLIN distribution (routine and continuous) has become more common in recent years. Both implementing partners and ministries of health have developed or deployed different technologies to help facilitate each stage of the campaign process (planning, logistics, communication, and distribution), support continuous distribution channels, and more securely pay staff through mobile money platforms. Existing repositories, such as the [Digital Health Atlas](#), do not document whether platforms or tools are specifically used for ITN distribution.

Status: VectorWorks has collated the technologies used in LLIN distribution to ensure there is a comprehensive list of technologies. The project identified six unique eHealth platforms, which cover 10

countries in sub-Saharan Africa and Pakistan—many of them are PMI-supported countries. The technologies being collated support the monitoring of campaign activities; data collection; supervision; and, also, logistics and transportation. The overall data collection was completed in March. Information was collected from stakeholders and NMCPs, in collaboration with AMP and the Emerging Issues Working Group. The project is now writing up each case study. Each case study will provide the same information: background, implementation, results, lessons learned, and contact information. This deliverable will be completed by June and disseminated as part of VectorWorks closeout strategy.

Deliverable	Audience	Timing	Dissemination Plan	Status
ME.21.1. Matrix of (1) digital health platforms used for ITN distribution, (2) mobile money (eCash) applications used to pay campaign staff	NMCPs, implementing partners	Quarter 1	Email to PMI and relevant parties involved in the collation of the activities	Delayed to Quarter 3
ME.21.1.2. Dissemination of the digital health technology compendium	NMCPs, implementing partners	Quarter 1	<ol style="list-style-type: none"> 1. Presentation at AMP/RBM meeting 2. Push through other vector control channels 	Delayed to Quarter 3

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 Year Two; included in IM.8, Continuous Distribution Toolkit.]

IM.2 Community Distribution Guide

[Completed in Year Two.]

IM.3 Usability Testing for Online Continuous Distribution Toolkit

[Completed in Year Two.]

IM.4 Integrating Care SBCC into Implementation

[Completed in Year Two.]

IM.5 Designing Accountability Mechanisms for ITN Distribution

[Completed in Year Three.]

IM.6 Update School Distribution Guide

[Canceled in Year Two; included in IM.8, Continuous Distribution Toolkit.]

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

[Completed in Year Three.]

IM.8 Online Continuous Distribution Toolkit

[Completed in Year Two: IM.8.1, Continuous Distribution Toolkit outline.]

[Completed in Year Three: IM.8.2, Continuous Distribution Toolkit.]

IM.8.3 Decision Tree for ITN Distribution

Brief activity description: VectorWorks will draft a decision tree that will take users through a series of questions, ultimately resulting in a suggested output of viable mass and continuous distribution options.

Status: VectorWorks drafted the decision tree and obtained feedback from the Global Fund and PMI. The tree was presented at the continuous distribution Webinar and was used during the AMP trainings in Year Five, where additional feedback was provided. The feedback did not result in major changes to the flowchart; only minor edits were made to clarify the antenatal care/Expanded Programme on Immunization (ANC/EPI) answers and comment bubble. The decision tree has been integrated into NetCALC Lite and available on the cdtoolkit.org website, with other complementary tools. The decision tree was approved on December 13, 2018.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: IM.8.1, Continuous Distribution Toolkit outline.] [Completed in Year Three: IM.8.2, Continuous Distribution Toolkit.]				
3. Continuous Distribution Toolkit decision tree	Implementing partners, PMI, NMCP	Quarter 3	Toolkit, email, newsletter, social media, webinars, electronic mailing lists	Approved by PMI: December 13, 2018

IM.9 Private-Sector Approaches and Considerations

[Completed in Year Three: IM.9.1 Private Sector Model design – Landscape Market desk analysis; IM.9.2 Landscape Market Analysis - Report on interviews with ITN manufacturers; IM.9.3 Operational Issues for Introduction of Next-Generation Nets; IM.9.4 Manufacturer Follow-Up.]

IM.10 ITN Distribution Technical Assistance Emergency Fund

[Completed in Year Two.]

IM.11 Determining Minimum Data Requirements

[Completed in Year Four.]

IM.12 AMP Mass Distribution Toolkit, 3rd Revision

[Completed in Year Four.]

IM.13 Training for Improved ITN Distribution

IM.13.A AMP Consultants Training

[Canceled in Year Four: IM.13.A, Translated training materials in English, French, and Portuguese.]
[Completed in Year Four: IM.13.B, AMP Consultant training report.]

IM.13.B Regional NMCP and Partner Trainings

Brief activity description: VectorWorks supported two regional trainings—one in English and one in French—for countries that have mass campaigns planned for 2019 and 2020. The trainings focused on the critical steps in a mass campaign, such as macroplanning, microplanning, M&E, logistics, SBC, leadership and management, as well as continuous distribution.

Status: VectorWorks implemented the English training from November 5–8, 2018; and the French training from November 13–16, 2018. Each training included 10 different countries with representatives from national malaria control programs and implementing partners in the areas of coordination, logistics, and communication. The trainings used presentations and a country scenario to simulate a mass ITN distribution campaign planning and foster cross-country sharing of best practices. PMI approved a detailed training report and training materials on February 20, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Training curriculum	PMI, NMCP	Quarter 1	Email	Approved by PMI: February 20, 2019
2. Finalized training materials in English and French	PMI, NMCP	Quarter 3	Email	Approved by PMI: February 20, 2019
3. Anglophone training report, Francophone training report	PMI, NMCP, implementing partners	Quarter 4	PMI, NMCP, updated resources added to the AMP Mass Distribution Toolkit and Continuous Distribution Toolkit	Approved by PMI: February 20, 2019

IM.14 Planning Ahead for Mosaic or Rotation Distribution of Next-Generation Nets

[Canceled in Year Four: IM.14 – report on operational considerations for various mosaic distribution strategies being modeled for next generation nets.]

IM.15 Support to Roll Back Malaria SBCC Working Group

IM.15.1 Co-Chair Key Task Forces

[Completed in Year Four.]

IM.15.2 Disseminate Key Resources

Brief activity description: PMI asked VectorWorks to revise, rebrand, and disseminate the M&E tools developed under NetWorks and VectorWorks. We will make minor updates and repackaging for the guide, specifically for developing M&E plans, reporting checklist, and research agenda documents. We will also support dissemination of the M&E tools and other resources to NMCP program managers, SBCC focal persons, and M&E focal persons.

Status: The documents were revised and submitted to PMI on October 3, 2018. PMI approved them on December 2018 and they were disseminated through the VectorWorks listserv. They are posted on the RBM SBCC Working Group website and were sent to the RBM SBCC Working Group listserv on April 4, 2019.

IM.15.3 SBC Toolkit for ITNs

Brief activity description: All PMI countries use messages on net use, but it is hard for implementers to find authoritative, practical guidance, and examples. VectorWorks is developing a toolkit to provide implementers with a comprehensive one-stop-shop on ITNs, synthesizing state-of-the-art knowledge, including from NetWorks and VectorWorks.

Status: The toolkit was submitted to PMI in December 2018 and resubmitted with edits in February 2019. Layout was completed in March and the final product was approved on April 2. A webinar featuring the toolkit will take place in late April. Breakthrough ACTION will co-promote it.

IM.15.4 Consensus Statement on ITN Repurposing

Brief activity description: In the past few years, many questions have been raised about the repurposing and/or misuse of ITNs, after a household decides the ITNs are no longer viable. VectorWorks drafted a consensus statement on this issue, based on discussions with a consortium of ITN partners, including the AMP's Emerging Issues Working Group, VCWG, and RBM's SBCC Working Group.

Status: PMI incorporated the consensus note recommendations from VectorWorks into its technical guidance document in 2018. It was disseminated to the AMP and VCWG and RBM Working Group in November 2018.

IM.15.5 Participation at 2019 RBM Partnership to End Malaria SBCC Working Group

Brief activity description: VectorWorks has travel funding for up to three participants for the 2019 working group meeting. Participants will focus on bolstering the understanding of ITN access and use, disseminating/working with the ITN SBC Toolkit—including its ITN Use Decision Framework—and contributing to the ITN components of the MIS module deliverable.

Status: The SBCC Working Group meeting is planned for September 9-13 in Maputo, Mozambique.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Four: IM.15.1, Facilitate Vector Control and M&E Task Forces.]				

IM.15.2. Disseminate key resources	Vector Control and M&E Task Force members; AMP and VCWG, as appropriate	Quarter 1	Email to task force members, AMP, VCWG	Approved by PMI: December 13, 2018
IM.15.3. SBC Toolkit	PMI resident advisors, NMCPs, implementing partners	Quarter 1	Webinar; presentation to AMP and VCWG; email to NMCP program managers, M&E, and ITN focal persons; implementing partners, and PMI resident advisors; presentation at SBCC Working Group. Posted to pmi.gov .	Approved by PMI: April 3, 2019
IM.15.4. Consensus statement on ITN repurposing	PMI resident advisors, NMCPs, implementing partners	Quarter 1	Webinar; presentation to AMP and VCWG; email to NMCP program managers, M&E, and ITN focal persons; implementing partners; and PMI resident advisors; presentation at SBCC Working Group. Posted to pmi.gov .	Approved by PMI: October 14, 2018
IM.15.5 Participation at 2019 RBM SBCC Working Group	Working group members	Q4	Trip report to PMI	Meeting scheduled for Sept 9-13 2019

Project Management

PM.1 Start-Up

[Completed in Year One.]

PM.2 Knowledge Management and External Communications

PM.2.A Website Enhancements and Maintenance

Brief activity description: VectorWorks keeps the VectorWorks website (www.vector-works.org) up-to-date with new resources, blog posts, and country information, when available. VectorWorks NetCALC online training modules are still being managed by VectorWorks and the SBC modules have been transferred to Breakthrough ACTION. VectorWorks is still continuing to post and promote posts on Facebook to regularly add new followers and “likes” to Facebook and Twitter.

Status: VectorWorks adds new items to the website after PMI approves the blog posts and deliverables. VectorWorks also worked with the AMP to transfer continuousdistribution.org to the AMP servers, which ensures that the site will continue to be maintained after the VectorWorks project ends. VectorWorks will

continue to manage continuousdistribution.org, both content and web updates, through September 30, 2019.

Website Statistics: October 1, 2018–March 31, 2019

Site	Page Views ^a	Bounce Rate ^b	Average Session Duration
DurabilityMonitoring.org	2,038	56.12%	2:03
Vector-Works.org	7,811	59.66%	2:05
Continuousdistribution.org	2,339	19.28%	1:10

^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 when 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	Include website address in correspondence and project documents; maintain an electronic mailing list	Ongoing
2. Online training modules for NetCALC	PMI, implementing partners, NMCPs, malaria technical community	Yearly	Electronic mailing lists, social media	Ongoing

PM.2.B Knowledge Management Dissemination and Improved Communication

Brief activity description: The VectorWorks project employs digital media to support dissemination and promotional efforts through email announcements, regular blog posts, success stories, electronic mailing lists, communities of practice, newsletters, social media, and new tools.

Status: We post new content daily to the Facebook and Twitter accounts. The VectorWorks Twitter account (@vectormalaria) had 805 followers at the end of Quarter Two, and the VectorWorks Facebook page had 961 likes. Facebook and Twitter continue to keep VectorWorks visible. We add new followers daily and create innovative content to bring in new followers/likes. Currently, we have several blog posts and success stories being finalized and we published five in Year Five. For additional exposure, VectorWorks was featured in four CCP articles on ccp.jhu.edu. VectorWorks sent out two newsletters [December 2018](#) and [March 2019](#), with an average open rate of 45.6%.

Twitter Monthly Statistics, October 1, 2018–March 31, 2019, Total Followers = 805

Monthly	New Followers	Impressions	Profile Visits ¹
October	10	6,451	n/a
November	12	5,724	n/a

December	15	15,800	n/a
January	13	5,322	n/a
February	29	5,599	n/a
March	15	6,123	231

¹For some months, for an unknown reason, the Twitter analytics do not list the profile visits.

Deliverable	Audience	Timing	Dissemination Plan	Budget
[Completed in Year One: PM.2.B.1, Internal procedures manual; PM.2.B.2, Dissemination strategy; PM.2.4, Contact list.] [Completed in Year Two: PM.2.B.3–6, Newsletter, contact list, social media, and Photoshare update. Due to substantial overlap, PM.2.B.8 (blog posts) is now included within PM.2.B.7 (success stories).] [Completed in Year Four: PM.2.B.9 Success stories production schedule.]				
PM.2.B.3. Newsletter	RBM partners and working groups, other vector control actors	Ongoing, quarterly	Electronic mailing lists, social media	Two newsletters sent December 18, 2018 and March 19, 2019; two remaining newsletters
PM.2.B.5. VectorWorks Twitter and Facebook accounts	RBM partners and working groups, other vector control actors, PMI	Ongoing, monthly	Social media	Ongoing
PM.2.B.7. Blog posts and success stories	PMI, implementing partners	Ongoing	Social media, electronic mailing lists	In progress

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

Brief activity description: The ASTMH annual meeting is an opportunity for researchers and programmatic staff to share best practices and discuss challenges and successes with their peers. Malaria investigators from around the world attended the 2018 ASTMH Annual Meeting on October 28–November 1, in New Orleans. VectorWorks submitted abstracts for oral presentations and posters and organized a lunch to discuss field issues with durability monitoring investigators.

Status: VectorWorks participated in the ASTMH's annual meeting held in New Orleans during October 28–November 1. The team presented [twelve posters](#), showcasing a broad range of VectorWorks research and implementation activities.

VectorWorks' April Monroe and Florence Fouque (WHO Special Programme for Research and Training on Tropical Diseases) chaired a symposium titled, “Why is Malaria Transmission Persisting in Some Contexts Despite High Coverage of Vector Control Tools, Such as LLINs and IRS? Results From Recent Studies Across Three WHO Regions.” The session brought together a diverse panel of speakers and included presentations on research from Zanzibar, Papua New Guinea, and the Greater Mekong sub-region. The presentations highlighted key issues contributing to ongoing malaria transmission including residual malaria transmission, insecticide resistance, and implementation quality. They discussed vector metrics, such as biting and feeding behavior, transmission dynamics, and species composition; as well as human factors, such as nighttime activities, sleeping patterns, migration, use of prevention measures, and the human infection reservoir. The session also featured a presentation from the University of California, San Francisco on the latest toolbox of vector control technologies and interventions available now and in the pipeline. The CCP posted a blog about the symposium, which can be found [here](#).

The durability monitoring investigator’s lunch took place on October 31, 2018; more than 50 durability monitoring investigators, program staff, and PMI resident advisors participated in the event. Participants discussed how to interpret the data for programmatic use, field challenges, and data sharing and dissemination. VectorWorks followed the event with a webinar in November 2018 that discussed many of the same challenges and questions mentioned during the meeting.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year Two: PM.2.C.1, Trip report.] [Completed in Year Three: PM.2.C.2, Trip report.] [Completed in Year Four: PM.2.C.3, Trip report.]				
4. Trip report, including outcomes from durability monitoring investigators meeting and LLIN Priorities meeting	AOR	Quarter 1	Email	Acknowledged by PMI: November 16, 2018

PM.3 Gender Aspects of ITN Distribution and Use

[Completed in Year One: PM.3.A Gender analysis; PM.3.B Gender strategy.]

[Canceled in Year Two: PM.3.C Gender Analysis Toolkit for Country-Level ITN Distribution Programs.]

[Completed in Year Two: PM.3.D Gender Trainings for VectorWorks Field Staff.]

[Completed in Year Three: PM.3.E Gender Reporting for Year Three.]

PM.3.F Gender Reporting for Year Five

Brief activity description: In Year Four, the VectorWorks gender team developed and provided a checklist to VectorWorks staff and partners for incorporating gender into activities at the Year Four Partner’s Meeting in June 2017. The checklist included suggestions for gender considerations and integration for research and programmatic activities, as well as for workshops and events. As the planning and implementation progressed, the gender team met with project staff throughout the year to provide feedback on gender considerations for activities.

Status: During Year 5, VectorWorks continued to integrate gender considerations across key activities, research, meetings, and trainings. In Ghana, VectorWorks made an effort to encourage boys to participate in school SBCC programs to dissolve the perception that ITN use and care are only for women. In Liberia, VectorWorks tracked the numbers of males and females that participated in health facility activities to identify barriers and facilitators to involvement. All data collection continues to track sex of trainees and participants at workshops, and data collectors. Through Core, we published the paper on ITN use by age and gender in Malaria Journal, and are integrating these results for all countries as part of the ITN Use and Access website. All gender activities will be included in the end of project report.

PM.3.G Gender Report for End of Project

Brief activity description: VectorWorks will summarize the work done on gender and malaria over the life of the project and present it in the final project report.

Status: VectorWorks is in the process of compiling a comprehensive list of the gender work done throughout the five years of the project. The End of Project report writer will use this information to write up a compilation of all the activities, research, trainings, etc. done under VectorWorks that included a gender component.

Deliverable	Audience	Timing	Dissemination Plan	Status
PM.3.F. Gender report section in Year Four annual report	PMI	Quarters 1 and 3	Semiannual reports	Approved with Year 4 annual report
PM.3.G. Gender report for end of project	PMI	Quarter 4	Email to PMI	In process

PM.4 Project Communications, Coordination, and Reporting

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

Status: VectorWorks continues to meet every week to review pertinent administrative, technical, and operational aspects of the project. We submit financial reports quarterly, and we submit narrative progress reports twice a year. Oversight, planning, and management of collaborative activities in many of our country programs benefit from supervisory visits by either the project director, senior technical advisor, or program officer leads. We usually incorporate supervisory visits into technical assistance trips. During this reporting period, while not all were financed through core funding, VectorWorks staff made trips to Ghana, Tanzania, Geneva, and Mozambique. The senior management team meets weekly to discuss all issues around oversight, planning, and management of the project.

Deliverables	Audience	Timing	Dissemination Plan	Status
[Completed in Year One: PM.4.5, CCP worldwide meeting, PM 4.6, Finance orientation for subaward monitoring.] [Completed in Year Two: PM.4.10, Project supervision Ghana trip report.] [Completed in Year Three: PM.4.11, Financial training workshop for field officers on compliance and new				

Office of Management and Budget regulations.]				
1. Weekly internal conference call (annotated agendas)	VectorWorks team	Weekly	Share by email	On schedule
2. Weekly coordination call with PMI project director/deputy director (minutes)	AOR, project director, deputy director	Weekly	Share by email	On schedule
3. Annual project work plan planning meeting	Partners, PMI project team	Quarter 4	PMI project team	On schedule
4. Internal planning meeting	CCP VectorWorks team	Quarter 3	n/a	On schedule
7. Bimonthly PMI update meetings	PMI	Bimonthly	PowerPoint	On schedule
8. Narrative progress reports	PMI	Due from partners end of October and end of April; due to USAID on November 15 and May 15	Share by email	On schedule
9. Financial reports	PMI	Quarterly	Share by email	On schedule
10. Project supervision (trip report)	AOR, PMI Ghana, PMI Tanzania	Quarter 3	Email	On schedule

PM.5 Leadership and Strategic Health Communication Workshop

[Completed in Year Two.]

PM.6 Production Schedule for Success Stories

[Completed in Year Three; now included as standard part of PM.2.B]

PM.7 Writing Retreats

Brief activity description: VectorWorks continues to have key deliverables each year that require focused writing time—away from the daily flood of emails, meetings, phone calls, and urgent requests. Scheduling protected writing time has been an effective tactic to move forward on the many written manuscripts and analyses that we need to complete to move ITN policy forward.

Status: In Year Five, VectorWorks held one writing retreat on October 19, 2018. The team then agreed that writing retreats were not necessary at this time because many of the joint manuscripts and large writing tasks had been completed, and remaining manuscripts were largely being completed by Tropical Health and

Tulane University. Toward the end of the project, the team may decide to have retreats to finish remaining deliverables.

PM.8. Participation in the 2017 Roll Back Malaria SBCC Working Group Meeting [Completed in Year Three.]

PM.9 End of Project Activities

In the final year of the PMI-funded VectorWorks project, during a series of dissemination events, we will highlight the important contributions VectorWorks has made to vector control policy and implementation practices. These events will leverage the existing meetings and will aim to consolidate lessons learned into recommendations for policy and technical guidance, through PMI, Global Fund, and WHO processes. VectorWorks will present at in-person brown bags at PMI, webinars, meetings, conferences, and end of project events. We will also complete a comprehensive end of project report and digital communications.

PM.9.1 PMI brown bags and webinars (throughout)

VectorWorks plans to host four to five brown bags at PMI on topics related to ensuring ITN access (quantification and continuous distribution), gaps in protection (residual transmission, outdoor biting, and ITN non-use), and durability monitoring. We will present consolidated findings from our research for discussion with PMI technical teams and policy leadership. Shortly after the brown bags, VectorWorks will host webinars with similar topics to share the knowledge more widely with the PMI country teams, NMCP/Ministry of Health staff, implementing partners, and PMI staff who were unable to attend the brown bags in person.

Status: In this reporting period, VectorWorks presented one brown bag, Capping and Quantification, to PMI on March 14, 2019. This brownbag was scheduled for January but was delayed due to the partial government shutdown. VectorWorks is planning a brown bag on the final durability monitoring results before July 31, 2019, as well as the SBC implications from misuse and durability monitoring after all the durability monitoring results are complete. VectorWorks also completed the [Net Distribution Roundup webinar](#) on October 3, 2018, with more than 100 participants and the [ASTMH Durability Monitoring Meeting Recap webinar](#) on November 7, 2018, with 24 attendees. The project will also hold a webinar on April 24, 2019, on net use covering the SBC toolkit, decision tree, and the ITN Access Use website and continuous distribution before the end of the project.

PM.9.2 Country/Regional Support Partner Committee Meetings (October)

Budgeted under PC.2.D, the field operations director will participate in the October Country/Regional Support Partner Committee (CRSPC) meetings to disseminate key technical support to NMCPs as they discuss vector control strategies. He will share the continuous distribution toolkit, decision tree, and other key resources.

Status: The field operations director attended the East Africa regional CRSPC, which was held in Addis Ababa, Ethiopia, on October 8–12, 2018; and the West Africa regional CRSPC was held in Dakar, Senegal, on October 22–26, 2018. The trip reports for these meetings was submitted November 27, 2018, with PMI acknowledging receipt on November 30, 2018.

PM.9.3 ASTMH Symposia and Durability Monitoring side meeting (November)

Funded under PM.2.C, VectorWorks, as part of a residual transmission symposium, will present results from the Operations Research study on residual transmission in Zanzibar, and will discuss ITN access challenges and solutions as part of the WHO symposium on universal access. The ASTMH audience is expected to include WHO Global Malaria program staff, Global Fund Malaria Technical Advisors, NMCP Program Managers, PMI Resident Advisors, PMI staff, and researchers in entomology and malaria vector control. We will use this platform to demonstrate the key contributions VectorWorks has made to research in these two areas, and to recommend new areas of research for the future. Likewise, as part of ME.1.12, we will host a durability investigators side meeting where we will discuss the interpretation of interim and final results, policy implications from VectorWorks-funded studies, introduce the durability monitoring dashboard concept, and reinforce understanding of key durability monitoring indicators.

Status: VectorWorks organized a side meeting on October 31, 2018, for durability monitoring investigators at the ASTMH Symposia. At the meeting, Dr. Kilian presented an update on the most recent results across the eight VectorWorks-led monitoring activities. In total, 52 people attended: PMI, manufacturers, implementing partners, and research institutions. The trip report was submitted on November 9, 2018, and acknowledged by PMI on November 16.

PM.9.4 AMP/VCWG Reception (January)

At VCWG in 2019, VectorWorks will host an evening reception to share key findings with attendees around continuous distribution, quantification of ITNs, durability monitoring, and residual transmission; we will also celebrate the success of VectorWorks and implementing partners in the field of ITN distribution and policy.

Status: VectorWorks prepared and planned to host an evening reception to share key findings with attendees around continuous distribution, quantification of ITNs, durability monitoring, and residual transmission; and to celebrate the success of VectorWorks and implementing partners in the field of ITN distribution and policy. Unfortunately, because of the United States government shutdown—December 22, 2018–January 25, 2019—the project was instructed to cancel the reception. The project developed a postcard that was available and widely disseminated throughout the AMP/VCWG meetings. This deliverable was submitted to PMI on March 21, 2019.

PM 9.5 VectorWorks insight series (throughout)

Throughout the year, VectorWorks will produce and disseminate the “[VectorWorks Insight Series](#),” which are short analyses written in an informal style. The goal is to make key insights on priority vector control issues accessible to and quotable by the busiest individual.

Within the quarterly project newsletters, we will include a short section with a provocative question, such as “Why aren’t people using nets?” The email will contain one to two paragraphs or five bullets (maximum) with key insights from our work, including links to tools and evidence.

To better reach country-level decision makers, we will also create a slide deck version of the insight series. A two-hour “Insights meeting” will be added to key short-term technical assistance (STTA) trips, where feasible, so VectorWorks staff can present the insights to ITN technical working groups and other meetings.

Status: Insight 1 went to 674 people on January 15. Insight 2 was submitted to PMI on April 2, with a scheduled publishing date of April 22.

PM.9.6 End of Project Event (September)

In Quarter Four, VectorWorks will host an end of project lessons learned event in Crystal City. This event will take participants through key policy implications, research findings, legacy products, country successes, and more.

Status: The project, with PMI, determined the date and time for the end of project event, which will be September 24 from 9:00 a.m.–1:30 p.m. EST. The project is currently looking into available venues in Crystal City near PMI.

PM.9.7 End of Project Report

In Year Five, VectorWorks will work with a consultant to compile the end of project report. This report will highlight VectorWorks’ contributions to vector control research and policy over the project’s lifespan. Countries will have smaller or larger sections within the report, based on the level of field support buy-in.

Status: VectorWorks did a competitive bidding process to identify a consultant to manage the end of project report. The consultant was hired in early April; the work will begin in mid-April 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
9.1.A PMI Brown bags	PMI	Quarters 1–4	Email to PMI	In progress
9.1.B Webinars	PMI, implementing partners	Quarters 1–4	Social media, electronic mailing lists	Completed 2 webinars: October 3 and November 7, 2018
9.2 Country/Regional Support Partner Committee Meetings	NMCPs, CRSPC facilitators and participants	Q1	Meetings	Completed October 2018
9.3 ASTMH Dissemination	Malaria researchers, PMI resident advisors (RAs), WHO, Global Fund malaria advisors	Quarter 1	Symposia and durability monitoring meeting	Completed durability monitoring side meeting: October 31, 2018
9.4 VCWG Reception	VCWG attendees	Quarter 1	Reception	Event cancelled due to government shutdown. Submitted to PMI: March 21, 2019
9.5 VectorWorks Insight Series emails, slide deck, and presentations during STTA visits	VCWG, AMP, PMI RAs, international implementing partners, NMCPs, ITN	Quarter 4	Email, social media, electronic mailing lists,	Completed Insight Series Issue #1: January 15, 2019. Remaining Insights in progress.

	technical working groups, CCMs		in-country presentations during STTA trips	
9.6 End of Project Event	AOR	Quarter 4	Email to PMI	Planning in progress
9.7 End of Project Report	AOR, RBM partners and working groups, other vector control actors	Quarter 4	3 hard copies and 1 soft copy to AOR	In progress

PM.10 Closeout plans

Closeout plans will be developed for the last project year. Each country will develop their own closeout plan, which will include looking at programmatic audits, closing out any sub-awards, reporting on the cost sharing requirements, staffing closeout protocols, and a plan to close out the budgets. Closeout plans will be submitted for approval four–six months prior to final closeout. VectorWorks ends on September 30, 2019. The following table is a closeout schedule for each country, for the final months of the project.

Country/Chapter	Stop Field Activities	Close Out Sub-Contracts	Field Office Closes	Admin/Final Closeout
Core	TBD	PSI closes by March 2019; Tropical Health closes by July 2019; Tulane closes by June 2019; SwissTPH closes by Dec. 2018; MEDA is closed	n/a	Sept. 30 2019
Angola	June 2019	PSI closes by June 2019	n/a	Sept. 30 2019
Benin	June 2019	SwissTPH closes by June 2019	n/a	Sept. 30 2019
DRC	July 2019	Tropical Health closes by July 2019	n/a	Sept. 30 2019
Ghana	July 2019	n/a	Sept. 30, 2019	Sept. 30 2019
Guinea	May 2018	n/a	n/a	Aug. 30 2018
Liberia	June 30 2019	n/a	Aug. 31, 2019	Sept. 30 2019
Kenya	March 2019	n/a	n/a	June 30 2019
Malawi	Dec. 2017	n/a	n/a	Aug. 30 2018
Mozambique	July 2019	Tropical Health closes by July 2019	n/a	Sept. 30 2019
Myanmar	May 2019	PSI closes by June 2019	n/a	Sept. 30 2019
Nigeria	March 2019	n/a	n/a	June 30 2019
Senegal	May 2018	n/a	n/a	Aug. 30 2018
Tanzania	July 2019	PSI closes by June 2019	Sept. 30, 2019	Sept. 30 2019
Uganda	March 2018	July 2018	n/a	Aug. 30 2018
Zimbabwe	n/a	n/a	n/a	Dec. 30 2018

Cost Share Update

As of March 31, 2019, we calculated the cost share contributions for VectorWorks (see table). With the signature of the UK Department for International Development (DFID) grant for the Private Sector Malaria Prevention (PSMP) project in Ghana on July 27, 2015, we anticipate meeting 100% of VectorWorks cost share requirements with those funds—approximately 5 million British pounds sterling.

Category	Description	Doc Number	Type	Valuation Method	Value	Date Added
Funded Project Cost	Entire DFID grant 116667: Oct. 2014–June 2015, less items from prior periods	Entire grant Oct. 14–June 15 less prior period amts.	Other expenses	Actual cost	\$549,739.13	7/27/2015
Funded Project Cost	Entire DFID grant 116667: July 2015–Sept. 2015	Entire grant: July 15–Sept. 15	Other expenses	Actual cost	\$328,006.44	11/2/2015
Funded Project Cost	Severance expenses for DFID grant (116667), which were funded from discretionary	115158674	Salary	Actual cost	\$45,000.00	11/2/2015
Funded Project Cost	Trailing severance expenses for DFID grant (116667), which were funded from discretionary	115163231	Salary	Actual cost	\$367.76	11/2/2015
Funded Project Cost	Entire agreement 123843 DFID PSMP: July 2016–Sept. 2016 Inception period invoice—fixed amount per budget		Other expenses	Exchange rate of contractual cost	\$2,589.75	10/31/2016
Funded Project Cost	PSI contributed cost share (October 2014–September 2015)		Sub-award contribution	PSI letter	\$44,595.00	2/3/2017

Category	Description	Doc Number	Type	Valuation Method	Value	Date Added
Funded Project Cost	Entire Agreement 123843 DFID PSMP: Oct.–Dec. 2016 (Omitted Exchange Loss)		Other expenses	Actual cost	\$242,800.55	2/3/2017
Funded Project Cost	Tropical Health: Oct. 2014–Sept. 2016		Other expenses	Actual cost	\$134,757.75	6/2/2017
Funded Project Cost	Entire Agreement 123843 DFID PSMP: Jan.–March 2017 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$302,885.61	6/2/2017
Funded Project Cost	PSI contributed cost share: Oct. 2015–Sept. 2016		Other expenses	Actual cost	\$140,000.00	6/29/2017
Funded Project Cost	PSI contributed cost share (October 2016-September 2017)		Other expenses	Actual cost	\$237,396.00	11/10/2017
Funded Project Cost	Tropical Health: Oct. 2015–Sept. 2017		Other expenses	Actual cost	\$26,887.50	11/20/2017
Funded Project Cost	Entire agreement 123843 DFID PSMP: April–June 2017 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$316,582.56	2/1/2018

Category	Description	Doc Number	Type	Valuation Method	Value	Date Added
Funded Project Cost	Entire agreement 123843 DFID PSMP: July–Sept. 2017 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$368,173.90	2/1/2018
Funded Project Cost	Entire agreement 123843 DFID PSMP: Oct.–Dec. 2017 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$317,354.66	3/29/2018
Funded Project Cost	Entire agreement 123843 DFID PSMP: Jan.–March 2018 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$417,297.59	07/13/2018
Funded Project Cost	Entire agreement 123843 DFID PSMP: April–June 2018 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$391,416.42	07/13/2018
Funded Project Cost	Entire agreement 123843 DFID PSMP: July–Sept. 2018 (Omitted Fees & Exchange Loss)		Other expenses	Actual cost	\$352,802.55	10/10/2018
Funded Project Cost	Tropical Health: Oct. 2017–Sept. 2018		Other expenses	Actual cost	\$91,360.00	08/20/2018

Category	Description	Doc Number	Type	Valuation Method	Value	Date Added
Funded Project Cost	PSI contributed cost share: Oct. 2017–Sept. 2018		Other expenses	Actual cost	\$379,965.00	10/24/2018
Total					\$4,689,978.17	
Required cost share per VectorWorks obligations through Sept. 30, 2018.**					\$5,098,266.10	
Percentage of required cost share achieved as of Sept. 30, 2018.					91.99%***	
<p>*Note: Required cost share is 10% of obligated costs, therefore, it will change as the obligation is added.</p> <p>**Includes funds released through September 30, 2018.</p> <p>***Includes invoices for DFID through September 30, 2018.</p>						

Core Deliverables Table

This table includes active deliverables in Year Five. It does not include deliverables completed in Years One, Two, Three, or Four.

Code	Deliverable	Status	Year Started	Date Completed (Submitted)	Date Approved
PC.1.C.10	LLIN Priorities Work Stream work plan for 2018	Submitted	4	10/17/2018	12/6/2018
PC.1.C.11	New Challenges New Tools Work Stream work plan for 2018	In process	4	4/13/2018	6/12/2018
PC.1.C.12	Presentations and trip report 2019	Completed	5	2/14/2019	2/19/2019
PC.1.C.13	LLIN Priorities Work Stream work plan for 2019	In process	5		
PC.1.D.3	Revised AMP Toolkit	In process	1		
PC.1.D.11	Presentations	Completed	5	2/14/2019	2/19/2019
PC.1.D.12	Joint trip report for AMP annual partners' meeting	Completed	5	2/14/2019	2/19/2019
PC.1.D.13	Joint trip report for AMP Core Group meeting	Meeting in Sept. 2019	5		
PC.2.D.3	Trip reports from CRSPC and SRN meetings	Completed	4	11/27/2018	
PC.3.B.2	Report on PMI countries utilizing the analysis plan	Completed	3	12/21/2018	3/13/2019
PC.3.B.3	Updates to the source of nets report as new data are available in Year Four	Submitted	3	10/19/2018	3/19/2019
PC.3.C.2	MERG Trip report including copy of presentation(s) if on agenda	In process	5		
PC.4.8	Final decision tree	Completed	2	10/5/2018	11/5/18
PC.4.9	Complete net misuse toolkit	Completed	2	10/5/2018	11/5/2018
PC.4.10	Malawi Planning visit trip report	Completed	4	9/28/2016	9/29/2016
PC.4.11	International workshop Trip report on hosting and Steering Committee	Completed	4	2/26	2/26/18
PC.4.12	Workshop report including case studies, presentations, mitigation options,	Cancelled	4		9/12/18

Code	Deliverable	Status	Year Started	Date Completed (Submitted)	Date Approved
	prioritized list of knowledge gaps and research needs, participant list of stakeholders				
PC.4.13	Enforcement case study report comparing Tanzania, Malawi, Mozambique, and Burundi experiences	Completed	4	9/14/2018	9/24/18
PC.8	Presentation/Memo/paper on capping and quantification	Completed	5	3/14/2019	3/18/2019
ME.1.3.B	Data sets submitted to PMI	Will complete after all 36m	1		
ME.1.5	Develop an index for environmental and behavioral risk	Pending final durability monitoring data	3		
ME.1.9	Durability monitoring capacity-strengthening case study	In process	4		
ME.1.10	Webinars promoting use of standardized processes and tools and data interpretation	1st webinar completed	4		
ME.1.11	Insecticidal content and bioassay testing for ABCDR stored nets	Submitted	4	11/26/2018	
ME.1.12	ASTMH 2018 Durability investigators meeting	Completed	5		10/31/2018
ME.1.13	Snapshot slides with results from all durability monitoring activities	Submitted	5	11/19/2018	
ME.2.B.6	Quarterly newsletter alternative vector control tools	Quarters 1 and 2 sent	5		
ME.3.A.6	Mainland Tanzania Health Facility Costing	Completed	3	10/22/2018	2/20/19
ME.3.A.7	Summary manuscript for continuous distribution costs based on deliverables 1–6	Completed	3	12/14/2018	4/1/2019

Code	Deliverable	Status	Year Started	Date Completed (Submitted)	Date Approved
ME.3.A.8	Manuscript of meta-analysis comparing continuous distribution and mass campaign costs	Completed	3	2/8/2019	4/1/2019
ME.3.A.9	Manuscript connecting continuous distribution costs to transmission modeling	In process	3		
ME.3.A.10	Tanzania: Costing SNP5 and comparison to SNP2: measuring the gains of learning by doing	Completed		10/22/2018	2/20/19
ME.5.B.5	Webinar summarizing results of published studies	Completed	4		10/3/2018
ME.5.B.6	Evidence review at VCTEG	In process	4		
ME.7.2	Subnational manuscript on use:access ratio published	Completed	1	1/6/2019	3/31/2019
ME.7.6	Updated PMI report on access indicator showing stratification by region, season, and risk group, with updated maps	Ongoing	4		
ME.7.7	Interactive ITN Access and Use report	In process	5		
ME.11.2	Publishable-quality paper on indicators for measuring human-vector interaction	In process	5		
ME.15	Counterfeit Nets: Summary report from three countries; recommendations for next steps	Completed	3	3/25/2019	4/5/2019
ME.17	Publishable-quality paper on who buys nets, a multi-country analysis	Ongoing	3		
ME.19	NetCalc Lite	In process	4		
ME.20.1	Report on Phase 1 methods and results	In process	4		
ME.21	Digital Health Technologies for ITN Distribution	In process	4		
IM.8.3	Decision Tree for ITN Distribution	Completed	4	8/10/2018	12/13/2018

Code	Deliverable	Status	Year Started	Date Completed (Submitted)	Date Approved
IM.13.B.1	Regional AMP NMCP Partner Training curriculum	Completed	4	2/7/2019	2/20/2019
IM.13.B.2	Finalized training materials in English and French	Completed	4	2/7/2019	2/20/2019
IM.13.B.3	Anglophone training report, Francophone training report	Completed	4	2/12/2019	2/20/2019
IM.15.2	RBM SBCC M&E Tools rebranding	Completed	3	10/3/2018	12/13/2018
IM.15.3	SBC Toolkit for ITNs	Completed	4	4/2/19	4/3/2019
IM.15.4	Consensus statement on ITN repurposing	Completed	4	10/8/2018	10/14/2018
IM.15.5	Participation at 2019 RBM SBCC Working Group	Meeting not until September 2019			
PM.2.A.1	Website	Ongoing	1		
PM.2.B.3	Newsletter	Ongoing	2		
PM.2.B.5	VectorWorks Twitter and Facebook Account	Ongoing	2		
PM.2.B.7	Blog posts and Success stories	Ongoing	3		
PM.2.C.4	Trip report, including outcomes from durability monitoring investigators meeting	Completed	5	11/9/2018	11/16/18
PM.3.F	Gender Reporting for Year Four	Completed	4	Submitted with Year Four annual	12/11/2018
PM.3.G	Gender report section for end of project report	In process	5		
PM.4.1	Weekly internal conference call agendas	Ongoing	1		
PM.4.2	Weekly PMI/VectorWorks coordination call	Ongoing	1		
PM.4.7	Bimonthly PMI update meetings	Ongoing	1		
PM.4.8	Narrative progress reports	Ongoing	1		
PM.4.9	Financial reports	Ongoing	1		
PM.7	Writing retreats	Ongoing	3		
PM.9.A	PMI Brown bags	In process	5		
PM.9.B	Webinars	In process	5		

Code	Deliverable	Status	Year Started	Date Completed (Submitted)	Date Approved
PM.9.3	ASTMH Dissemination	Completed	5		11/16/2018
PM.9.4	VCWG Reception	Cancelled	5		
PM.9.5	VectorWorks Insight Series	In process	5		
PM.9.6	End of Project Event	In process	5		
PM.9.7	End of Project Report	In process	5		
PM.10	Close out plans	In process	5		

Environmental Monitoring and Mitigation Report (EMMR)

VECTORWORKS COOPERATIVE AGREEMENT (VMCA)

Environmental Monitoring and Mitigation Report (EMMR) EMMR part 3 of 3: Reporting form

List each Mitigation Measure from column 3 in the EMMR Mitigation Plan (EMMR Part 2 of 3)	Status of Mitigation Measures	List any outstanding issues relating to required conditions	Remarks
<p>1. APPLIES ONLY IN COUNTRIES WHERE VECTORWORKS DISTRIBUTES LLINS AND IS RESPONSIBLE FOR BCC MESSAGING: Appropriate BCC messaging is distributed with LLINS</p>	<p>GHANA: Education on correct method of washing mosquito net through schools and health facilities (per WHO guidelines): WHO guidelines which specify environmentally sound washing of ITNs were integrated into SBCC materials—posters, wall charts, and a teachers’ communication guide of which</p> <ul style="list-style-type: none"> • VectorWorks distributed 13,488 copies to 4,725 primary schools in the 4 regions targeted for school SBCC in Year 5. • At the primary school level, 8,777 Ghana Education Service district and circuit officers, as well as school health teams were trained to equip them with knowledge and skills to effectively incorporate education on malaria and its prevention into the schools’ activities. 	<ul style="list-style-type: none"> • Washing of ITNs in streams, rivers and ponds that serve as source of water in communities. • Using of ITNs to sieve cassava dough or cover fruits and food crops. 	<p>Posters and key facts on ITN use and care were printed and distributed for use in primary schools.</p>
	<p>GHANA: Coordination: In Year 5, the NMCP and partners (including VectorWorks) completed the 2018 mass ITN distribution in the final two regions, Ashanti</p>	<ul style="list-style-type: none"> • Disposing dirty water into rivers and ponds after washing ITNs • Using ITNs for fishing and covering of food 	<p>SBCC training slides for the Point Mass Distribution (PMD), developed with support from VectorWorks, highlighted the importance of appropriate</p>

	<p>and Greater Accra. Cumulatively, in all nine regions (all regions except Upper West Region), the target was to distribute up to 15 million ITNs to households. During distribution planning, VectorWorks stressed the need to include messages on proper ITN behaviors, consistent with WHO recommendations, on appropriate disposal of plastic ITN packaging material. The specific messages centered on:</p> <ul style="list-style-type: none"> -Negative effect of washing ITNs in natural water bodies on aquatic life and pollution. -The importance of washing nets in basins and not in water bodies and appropriate disposal of the water after washing. <p>These messages were incorporated in the SBCC toolkit for the mass campaign and used during training of regional, district, sub district SBCC focal persons and community mobilizers.</p>	<p>crops</p> <ul style="list-style-type: none"> • Inappropriate disposal of non-biodegradable plastic ITN packaging material 	<p>disposal of water after washing ITNs, which included strict caution against disposal into rivers and other freshwater bodies and the recommendation to dispose of the water in pit latrines or in deep holes in the ground. The training also highlighted the importance of appropriate disposal of plastic ITN packaging material by burying them at landfill sites and cautioned against the use of ITNs for fishing and garden fencing.</p>
2.	<p>TANZANIA:</p> <p>In Year Five, VectorWorks implemented a national wide radio campaign to promote consistent and proper net use among the general population while also creating awareness about the health facility ITN distribution program locally known as <i>Chandarua Kliniki</i>.</p> <p>Based on a Tanzania All Media Product Consumption Survey Results (TAMPS 2017/18), Clouds FM radio was reported to have highest national coverage and reach with a 31% market share of radio listeners. Clouds FM was contracted to run a three-month radio campaign that started in January and ended in March 2019.</p>		<p>VectorWorks does not have any SBC related activities for the reminder of project life.</p>

	<p>A total of 2,950 radio airings were placed on 3 radio flagship programs which attracts a large listenership. Through radio mentions, radio spots, and radio interviews messages were disseminated on the following areas proper ITN use all year around, care and repair when a net is torn, and not washing ITNs in rivers or other freshwater bodies. VectorWorks did not produce new radio spots rather utilized versions that were produced in year three, as the spots are still relevant to date.</p> <p>According to TAMPS report, there are 29,387,600 radio media users and 72% tuned to a radio station in the last seven days. This is equivalent to a 21,159,072 radio listener base. Clouds FM commands 31% of the radio listeners share hence the campaign over the period of three months had the potential to reach over 6,559,312 people 52% being females (3,410,842) and 48% males (3,148,470).</p>		
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ANGOLA

AN.IM.1 ITN Strategy Support

[Completed in Year Three.]

AN.IM.2 Technical Assistance for ITN Distribution

[VectorWorks recoded activity AN.IM.2 as activity AN.IM.3 in Year Three. PMI approved the modification on January 30, 2017.]

AN.IM.3 Technical Assistance for Mass ITN Campaign

[Completed in Year Three.]

AN.IM.4 Communications Strategy and SBCC Materials

[Completed in Year Three.]

AN.IM.5 Evaluation for Mass ITN Campaign

[Completed in Year Three: AN.IM.5.A Process Evaluation for Mass ITN Campaign.]

AN.IM.5.B Post-Mass ITN Distribution Campaign Survey and Workshops

Brief activity description: In Year Three, VectorWorks completed a process evaluation of the first round of the ITN mass distribution campaign. To further inform future phases of the mass ITN distribution campaign, as well as future mass ITN distribution campaigns, VectorWorks conducted two lessons learned workshops.

Status: VectorWorks worked with a local and an international consultant to conduct two lessons learned workshops with government and implementing partner staff involved in the planning and implementation of ITN distribution. The timeline for implementing the lessons learned workshops was adjusted to align with the distribution of ITNs in the two provinces. The first lessons learned workshop was conducted in August 2018 in Huambo; the second workshop was in Cuando Cubango in October 2018. VectorWorks findings were summarized in individual workshop reports, as well as in a final summary report and a PowerPoint presentation.

The overall findings highlighted the strengths of early coordination at the national level. As the campaigns progressed, a noticeable decrease in communication was noted at the national level, as well as between the national level and the provincial and district levels. The results emphasized that the NMCP needed to increase ownership of the campaign.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Workshop briefs (x2)	PMI, NMCP, implementing	Year 4, Quarter 4 and Year	Email PMI, NMCP, and implementing	Approved by PMI: December

	partners	5, Quarter 1	partners	7, 2018
2. Campaign lessons learned report	PMI, NMCP, implementing partners	Year 5, Quarter 1	Email PMI, NMCP, and implementing partners	Approved by PMI: February 28, 2019

AN.IM.6 ANC ITN Distribution Support

AN.IM.6.A Field Assessment and Implementation Guidelines of ANC/EPI ITN Distribution

Brief activity description: VectorWorks, with the NMCP, donors, and implementing partners, conducted a field assessment of ITN distribution through ANC and EPI services. VectorWorks, the NMCP, donors, and implementing partners used the field assessment findings to develop implementation guidelines for ANC and EPI ITN distribution.

Status: VectorWorks developed an agenda, terms of reference, and an assessment guide for the field assessment. We submitted these documents to PMI on February 27, 2018, and shared them with the NMCP for feedback; we submitted final versions of assessment guide documents used to PMI on July 25, 2018, and they were formally approved on October 17, 2018. An informal assessment was conducted in Lunda Sul in March 2018 and the in-depth assessment took place from June 25 to July 20, 2018.

The NMCP, Sexual and Reproductive Health Department, and EPI national-level staff, and PSI staff participated in all stages of the field assessment—from finalizing the questionnaire to drafting and finalizing the implementation guidelines. The field assessment included meetings with key stakeholders from malaria control, ANC, and EPI programs at the national level; and with municipal and health facility-level staff in Huambo, Malanje, and Lunda Sul provinces.

After multiple rounds of feedback on the draft implementation guidelines, starting in August 2018, VectorWorks emailed the final draft of the guidelines to PMI on November 21, 2018. VectorWorks resubmitted the guidelines to PMI on December 11, 2018, after receiving additional feedback.

Deliverable	Audience	Timing	Dissemination Plan	Status
1. Field assessment tools	PMI, NMCP, implementing partners	Year 4, Quarter 1	Email PMI, NMCP, implementing partners	Approved by PMI: October 17, 2018
2. PowerPoint presentation of preliminary findings and outline of draft implementation guideline	PMI, NMCP, implementing partners	Year 4, Quarter 3	In-person presentation and email to PMI, NMCP, implementing	Approved by PMI: October 17, 2018

			partners	
3. Field assessment report	PMI, NMCP, implementing partners	Year 4, Quarter 3	Email PMI, NMCP, implementing partners	Approved by PMI: October 17, 2018
4. Final draft of implementation guidelines for ANC and EPI ITN distribution	NMCP, PMI, implementing partners	Year 5, Quarter 1	In-person presentation and email to PMI, NMCP, implementing partners	Submitted to PMI: December 11, 2018

AN.IM.7 ITN Use and Care Evaluation

Rationale: Angola has a history of low access to ITNs. Previous surveys have shown that use of ITNs has historically been high. Now that the mass campaign has increased overall ITN access, VectorWorks will work with the NMCP and the Health For All (HFA) project to quantitatively and qualitatively explore whether ITN use remains high in this new context; as well as knowledge, attitudes, and practices related to ITN use and care.

Status: VectorWorks, with the HFA project—and with input from the NMCP, PMI, and other malaria technical partners—developed an ITN use and care evaluation protocol and tools. The PSI IRB approved the protocol in December 2018, the Angolan IRB in January 2019, and the Johns Hopkins University (JHU) IRB in March 2019. Originally, we planned to defer the JHU IRB process to PSI, but the JHU IRB determined they needed to review the protocol.

Implementation of both the quantitative and qualitative portions of the study will begin in April 2019 in Kuanza Sul and May 2019 in Cunene and Uige. Preliminary reports will be produced soon after the implementation of the field work in each province; a final report will be delivered in Quarter Three.

Deliverable	Audience	Timing	Dissemination	Status
IM.7.1. ITN Use and Care Evaluation Protocol and Tools	PMI, NMCP, implementing Partners	Quarter 1	Email to PMI	Submitted to PMI on March 11, 2018
IM.7.2. ITN Use and Care Preliminary Findings Report	PMI, NMCP, implementing Partners	Quarter 2	Email to PMI	Delayed to Quarter 3
IM.7.2. ITN Use and Care Evaluation Final Report	PMI, NMCP, implementing Partners	Quarter 3	Email to PMI, NMCP, and partners	On track

Program Management

AN.PM.1 Work Plan and Reporting

Before the start of each year, VectorWorks drafts an annual work plan with the U.S. Agency for International Development and PMI-Angola. VectorWorks understands that we may need to provide information, as needed, for the PMI annual reports, strategic planning, VIP visits, and congressional reports.

Deliverable	Audience	Timing	Dissemination Plan	Status
Year 5 work plan	PMI	Quarter 1	Email to PMI	Approved by PMI: October 12, 2018
Quarterly financial reports	PMI	Quarterly	Email to PMI	On-going
Semi-annual progress report	PMI	May 15, 2019	Email to PMI	Herein
End of project report	PMI	December 30, 2019	Email to PMI and 3 hard copies	On track

BENIN

BE.1 Assistance to Outdoor Sleeping and Net Use Study

[Completed in Year Three.]

BE.2 Integrated Vector Control Strategy

Brief activity description: VectorWorks conducted a desk review and provided a detailed assessment of vector control options in Benin. It includes but is not limited to ITN distribution through mass and continuous channels, indoor residual spraying (IRS), larviciding, environmental control options, and structural changes to homes.

Status: VectorWorks facilitated a workshop from March 28–29, 2018 with the NMCP to discuss findings and recommendations from the desk review focused on evidence-based, efficient, and cost-effective strategies for malaria prevention throughout Benin.

The second deliverable for activity’s scope, BE.2—a brief memo assessing options for malaria vector control in Benin—has expanded to include more detail and will be fulfilled by BE.3.3. As part of the malaria impact simulation modeling in activity BE.3, VectorWorks will also assess the vector control options in the numerous epidemiological zones/departments of Benin.

Deliverable	Audience	Timing	Dissemination Plan	Status
[Completed in Year 4: BE.2.2 Facilitation of 2-day workshop in Cotonou to present and discuss findings and recommendations.]				
Brief memo assessing options for malaria vector control in Benin’s varying epidemiological zones	NMCP, PMI	Quarter 4	Email	Year 5, Quarter 3 (Incorporated into BE.3.3)

BE.3 Malaria Impact Simulation Modeling

Brief activity description: In Year Four, VectorWorks conducted a desk review to understand the current vector control options for malaria in Benin. To further inform an integrated strategy to eliminate HIV/AIDS, tuberculosis, and malaria, VectorWorks is working with the ministry of health and the OpenMalaria project to simulate the impact of malaria-related interventions on the malaria profile of Benin.

Status: VectorWorks conducted weekly meetings with the PMI and the NMCP to discuss the model and its associated inputs. A draft outline of the report and its inputs were shared with PMI and the NMCP on March 5, 2019, for discussion. The model, in addition to looking at zero malaria cases by 2030, will also look at the intervention’s effect on malaria deaths.

VectorWorks, led by Swiss Tropical and Public Health Institute, worked with PMI and the Global Fund to identify an additional mechanism to finalize the modeling activity, with additional inputs from the Malaria Atlas Project. The NMCP transferred data at the end of Quarter Three to the Malaria Atlas Project to begin modeling, with additional refitting of the data to include mortality data.

VectorWorks will travel to Benin in Quarter Three of Year Five to conduct another workshop (dates to be determined) and discuss the current model with PMI, the NMCP, and other key stakeholders.

Deliverable	Audience	Timing	Dissemination Plan	Status
BE.3.1. Dissemination workshop brief	NMCP, PMI	Year 5, Quarter 2	LOE, travel	Delayed, to be submitted Year 5, Quarter 3
BE.3.2. Initial modeling analysis report	NMCP, PMI	Year 5, Quarter 3	LOE	In progress
BE.3.3. Final report	NMCP, PMI	Year 5, Quarter 3	LOE	In progress

BE.PM.1

Brief activity description: VectorWorks bases its activities on PMI-approved work plans and adheres to reporting guidelines within the work plans.

Status: PMI approved the VectorWorks Benin Year Five work plan on October 5, 2018; and approved a modified work plan on February 4, 2019, and the Year Four annual report on December 11, 2018. VectorWorks continues to deliver quarterly financial reports to PMI for Year Four.

Deliverable	Audience	Timing	Dissemination Plan	Status
Year Four Annual Report	PMI	Quarter 4	LOE	Approved by PMI: December 11, 2018
Annual work plan	PMI	Quarter 4	LOE	Approved by PMI: October 5, 2018; Modification 1 – February 4, 2019
Quarterly financial reports	PMI	Quarter 4	LOE	Ongoing
Semiannual progress reports	NMCP, PMI, implementing partners	Quarter 4	LOE	Herein
End of project report	PMI	Dec. 30, 2019	Email to PMI and 3 hard copies	On track

DRC

DRC.1 ITN Durability Monitoring

Brief activity description: VectorWorks supports ITN durability monitoring in the DRC. The project conducts monitoring at two sites: in the provinces of Sud-Ubangi and Mongala, which share a border. VectorWorks primary M&E partner, Tropical Health—and local partner, the Kinshasa School of Public Health (KSPH)—completed baseline data collection in October 2016. All campaign ITNs in these households were labeled with a unique identification number for follow-up and analysis.

To assess the physical and insecticidal status of cohort ITNs, the KSPH team will continue to conduct data collection annually until March 2019. At each follow-up, data collectors will also select a sample of 30 additional campaign ITNs from each monitoring site for a laboratory assessment of insecticidal effectiveness (bioassay). At all follow-up points, KSPH data collectors monitor environmental and behavioral risk factors for ITN durability. The ITN brands being monitored are the polyester DawaPlus 2.0 and the polyethylene DuraNet.

Status: VectorWorks has completed data collection using a 24-month follow-up. Data collectors completed fieldwork on May 30, 2018 and submitted a preliminary 24-month follow-up report to the PMI on August 24, 2018; on February 26, 2019, this report was approved with bioassay results. After 24 months of follow up, ITN median survival was estimated as 1.9 years in Sud-Ubangi and 1.4 years in Mongala. Dr. Paul Mansiangi of KSPH, with Dr. Albert Kilian of Tropical Health, facilitated the 36-month refresher training in Sud-Ubangi and Mongala provinces in early March 2019 and field work began immediately after the trainings and was completed March 30, 2019.

Following data collection, VectorWorks aims to submit the final durability monitoring report to PMI by July 31, 2019, including the bioassay results.

Deliverable	Audience	Timing	Dissemination Plan	Status
4. 24-month report	PMI, NMCP, implementation partners	Quarter 1	Email to PMI	Approved by PMI: February 26, 2019
5. 36-month report	PMI, NMCP, implementation partners	Quarter 3	Email to PMI	On schedule

DRC.2 School ITN Distribution Technical Assistance

[Completed in Year Three.]

DRC.3 School ITN Distribution Technical Assistance (Year Four)

[Completed in Year Four.]

Program Management

Brief activity description: VectorWorks submits an annual work plan to be approved by PMI, as well as quarterly financial and semi-annual progress reports. VectorWorks understands that the U.S. Agency for International Development may ask us to provide information, as needed, for the PMI annual report, strategic planning, VIP visits, congressional reports, and other purposes.

Status: On September 5, 2017, VectorWorks submitted the Year Four work plan to PMI DRC for review; it was approved on October 2, 2017. A work plan modification, to add activity DRC.3, was approved on January 22, 2018. All quarterly financial reports have been submitted. This is the Year Four semi-annual report.

Deliverable	Audience	Timing	Dissemination Plan	Status
Work plan	PMI	Quarter 1	Email to PMI	Approved by PMI: November 1, 2018
Quarterly financial reports	PMI	Quarters 1–4	Email to PMI	On schedule
Semi-annual progress reports	PMI	Quarters 2 and 4	Email to PMI	Herein

GHANA

Summary

In Year Four, VectorWorks played a key facilitation role in the 2018–2019 national point mass distribution (PMD) for ITNs. This role continued into Quarter One of Year Five, when VectorWorks helped coordinate the activities of key partners and provided technical and supervisory support for the PMD in the two remaining regions—Ashanti and Greater Accra. Of the 15,470,814 ITNs distributed in all nine regions of the campaign, 5,282,650 ITNs were distributed in the Ashanti and Greater Accra regions.

In Year Three, VectorWorks initiated a three-year plan to train all circuit supervisors and two teachers—head teacher and school health coordinator—from all basic schools on malaria prevention SBC in every region in Ghana. By the end of Year Four, trainings had been conducted in 175 districts. In the second quarter of Year Five, VectorWorks trained circuit supervisors and head teachers in the remaining 41 districts of Greater Accra, Ashanti (only Kumasi metro), and the Upper East and Upper West regions. A total of 8,728 persons—439 district and circuit officers and 8,289 teachers—were trained. Cumulatively, 2,382 district and circuit officers and 54,388 teachers from 23,894 schools were trained in 216 districts from Years Three to Five. Participants in the SBCC training were tasked to form school health teams in their respective schools, which will drive the development of school health action plans for each term and will oversee its full implementation. The school health action plans, which are required to have a program for malaria prevention SBCC, could include activities for different forums and be presented in a variety of ways at Parent-Teacher Association (PTA) meetings and school assembly sessions, during the recreational periods, and in the community.

As part of plans to transition its activities by September 2019, VectorWorks has actively engaged the NMCP and VectorLink in activity planning meetings and discussions, as well as actual implementation. For the upcoming school distribution in May 2019, VectorLink participated in the ITN subcommittee/school distribution taskforce meeting on January 16, 2019, to discuss—among other things—progress in finalizing enrollment data for the 2019 school distribution and the pipeline for ITNs for the 2019 school distribution. For ITN durability monitoring, VectorWorks, with a team from Noguchi Memorial Institute for Medical Research (NMIMR), completed baseline data collection in the Nanumba South and Zabzugu districts of the Northern region. As part of the transition, VectorWorks informed VectorLink of the need to submit documentation to the NMIMR IRB for the change of Principal Investigator from VectorWorks to VectorLink because VectorLink is expected to implement the study going forward. Additionally, VectorWorks shared all the PMI activity reports—from the inception of the project through Year Four in March 2019—to ensure VectorLink is up-to-date with all activities for a seamless transition when the VectorWorks project ends.

VectorWorks continued engaging with partners on broader malaria vector control and communication by participating in two Malaria Vector Control Oversight (MaVCOC) and two malaria subcommittee meetings during Quarters One and Two. While the malaria SBCC subcommittee meetings have mainly focused on planning for the 2019 World Malaria Day commemoration, discussions at MaVCOC meetings have centered on IRS operations by VectorLink and AngloGold Ashanti Malaria Control Ltd. (AGAMal), and ongoing national insecticide resistance monitoring activities, which show high pyrethroid resistance at most study sites. In

both committee meetings, VectorWorks provided updates on continuous distribution of ITNs, support for the PMD ITN campaign, and durability monitoring.

Policy Activities (PC)

GH.PC.1 Coordination

GH.PC.1.A ITN Subcommittee Meetings

Brief Activity Description: The NMCP chairs and funds the quarterly ITN subcommittee meetings. VectorWorks participates in the meetings, with other partners involved in ITN distribution, such as the School Health Education Programme (SHEP), Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM), the Anglican Development and Relief Agency, Nets for Life, and the Private Sector Malaria Prevention (PSMP) project. The ITN subcommittee meetings are a platform for partners to discuss the successes, challenges, and opportunities for different ITN distribution channels—such as mass campaigns and continuous distribution through health facilities and schools—and to make new policy recommendations for improved ITN use and care.

Status: VectorWorks has participated in two quarterly ITN subcommittee meetings. The meeting on January 16, 2019, focused on the 2019 school distribution; participants discussed campaign timelines, ITN procurement, and delivery schedule, as well as the logistics movement plan. VectorWorks and SHEP's update to the committee included a brief on the district teams' timelines and responsibilities during their meeting with the District Directors of Education at the August 2018 Conference of Directors of Education meeting in Tamale. VectorWorks also told the committee it had received electronic management information system (EMIS) data from SHEP and were compiling the data for quantification; and shared the agreed upon timelines for the school distribution:

- orientation of assistant/deputy directors and SHEP coordinators and malaria focal persons: April 29–May 10, 2019
- orientation of circuit supervisors and private school coordinators: May 6–10, 2019
- movement of nets from central warehouses level to district education stores: starting April 30, 2019
- movement of nets from district education stores to schools and distribution to pupils: May 13–24, 2019.

Note: In the pipeline for the 2019 school distribution, GHSC-PSM indicated 1.5 million ITNs have been ordered and are expected in-country by March 2019.

The second meeting was held on February 22, 2019, with participants from VectorWorks, GHSC-PSM, and SHEP. Discussions focused on health facility and school distribution. The NMCP gave an update on the pipeline for ITNs for health facility distribution, as follows: 2.4 million ITNs expected in-country for health facility distribution. Also during the February 22 meeting, VectorWorks and SHEP updated the committee on their work in compiling and reviewing school enrollment data for the 2019 school distribution. The data was shared with GHSC-PSM on January 31, 2019 to be used to procure the services of third party logistics vendors.

The NMCP provided preliminary information on plans by the Ministry of Health to procure 450,000 LLINs for students in senior high schools across the country. Details of these plans will be communicated in subsequent

meetings.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1. A Quarterly reports	PMI, Ghana Health Service (GHS), NMCP, ITN subcommittee members	Quarters 1–4	Share by email	Minutes shared during the meetings of February 22, 2019 and April 08, 2019.

GH.PC.1. B Malaria Vector Control Oversight Committee Meetings

Brief Activity Description: MaVCOC is a forum for all public and private institutions engaged in vector control activities to report on the status of their program implementation, share experiences; and, when necessary, seek technical advice and support from other implementing partners. MaVCOC also makes vector control policy recommendations to the NMCP, based on emerging needs. VectorWorks actively participates in these meetings and provides critical inputs into ITN distribution and ITN use and care strategies, including general vector control policies for the country.

Status: VectorWorks participated in two MaVCOC meetings during the first and second quarters of Year Three, on December 20, 2018, and March 20, 2019. During these meetings, VectorWorks updated the committee on their meetings with NMCP; Policy, Planning, Monitoring & Evaluation (PPME); and the USAID-funded IMPACT Malaria Project about improving data visualization by establishing centralized live dashboards in the District Health Information Management System (DHIMS). The NMCP and PPME agree with the idea of a centralized dashboard linked to the District Health Information System 2 (DHIS2) platform, but they need to collaborate with the IMPACT Malaria Project because they are working to achieve similar objectives in the five regions where they operate: Ashanti, Brong Ahafo, Eastern, Upper East, and Upper West. VectorWorks also briefed the committee on efforts made to ensure an efficient and effective school distribution in May 2019 by setting up a taskforce comprising NMCP, SHEP, VectorLink/PSI, and GHSC-PSM; this will also ensure continuous planning and information sharing.

AGAMal and VectorLink updated their IRS operation and routine surveillance activities—for example, residual efficacy monitoring of the insecticides deployed for IRS in their respective programs—insecticide susceptibility tests for insecticide selection, and mosquito collections. The two IRS implementing projects also shared information on the steps taken to harmonize some critical operational indicators, including the definition of structure, stands, and rooms. When the Sumishield for IRS was introduced in Ghana, both projects had to use test papers that they developed for resistance monitoring as they waited for the WHO accredited institution in Malaysia to develop these papers.

A detailed discussion took place on the Government of Ghana’s plans to roll-out larval source management across the country, in partnership with Zoomlion, a private waste management company. Although the government has awarded the contract for the project, the implementation parameters will be determined in consultation with the NMCP.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1.B Quarterly reports	PMI, GHS, NMCP, MaVCOC members	Quarters 1–4	Share by email	Minutes of December 20 shared on March 22, 2019. Minutes of meeting held on March 22, 2019, are outstanding.

GH.PC.1.C Alliance for Malaria Prevention and Vector Control Working Group Meeting in Geneva

Brief Activity Description: The annual RBM VCWG meeting, which is an important event, provides opportunities for various institutions, scientists, country program managers, and implementers to highlight their work in malaria prevention, share ideas and practices, and learn from each other. During the AMP and VCWG meetings, VectorWorks seeks opportunities to share lessons learned from their continuous distribution and accompanying SBCC activities and seeks to learn from the experiences of other countries working on similar malaria prevention initiatives.

Status: The VectorWorks chief of party and a technical officer from the NMCP, Christian Atta-Obeng, attended the AMP and VCWG meeting in Geneva, Switzerland, from January 28 and 29 and from January 30 to February 1, 2019, respectively. The theme for this year’s AMP meeting was “Reaching the WHO Global Technical Strategy (GTS) targets – Successes and Challenges.” The VectorWorks team participated in all sessions of the two-day AMP meeting, including, “Opportunities and challenges with domestic resource mobilization: Experiences from Ghana,” presented by the Ghana NMCP manager, Dr. Keziah Malm. A presentation by the Togo NMCP manager on alternative transport options to reach populations—using national armed forces trucks to transport ITNs—were interesting lessons for resource optimization. The team also participated in all plenary sessions at the VCWG meeting. These sessions featured policy updates from RBM partnership, WHO Global Malaria Program, and WHO evaluation process for vector control tools. The keynote presentation featured Market Access Initiatives: New Nets Project and NgenIRS, which have been bold initiatives—championed by Unitaid—to introduce more effective vector control tools into the market at subsidized rates. Their goal is to drive down product prices, over time, as community access increases. The team, subsequently, participated in various workstream sessions, including the “LLIN Priorities, Larval Source Management, IRM/IRS Priorities and New Tools, New Challenges.” Because some workstream sessions occurred in parallel, it was challenging to effectively participate in both. VCWG provided the platform for regional groupings to share updates on work they were doing, as well as other working groups—Monitoring and Evaluation Reference Group (MERG), Malaria in Pregnancy Working Group (MiPWG), Case Management Working Group (CMWG), Multi-sectorial Working Group (MSWG), and (Social and Behavior Change Communication Working Group (SBCCWG)—to share their priorities for the period.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1.C Trip report (includes all VectorWorks attendees)	PMI, GHS, Ghana Education Service (GES)	Quarter 2	Share by email	Approved by PMI: February 19, 2019

GH.PC.1.D Malaria SBCC Subcommittee Meeting Participation

Brief Activity Description: The NMCP malaria SBCC subcommittee has oversight responsibility for all malaria SBCC activities in Ghana, including activities focused on ITN distribution, use, and care. The malaria SBCC subcommittee meetings are an important platform for influencing SBCC policy, based on lessons learned and best practices. VectorWorks participates in the subcommittee meetings and contributes to the malaria SBCC policy, especially those related to ITN distribution.

Status: During the first half of the year, the malaria SBCC subcommittee met on two occasions: February 26, 2019, and March 12, 2019. Deliberations at both meetings centered on commemorating the 2019 World Malaria Day. The theme for this year’s commemoration is “Zero malaria starts with me.” The committee discussed activities planned for the commemoration and outlined the following: a media briefing and an outdoor commemoration of the event in a community in the Yilo Krobo district of the Eastern region. VectorWorks staff will participate in the World Malaria Day press briefing in Accra on April 23, 2019, and the launch event on April 25, 2019, at Somanya in the Eastern region.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1.D Quarterly reports	PMI, GHS, NMCP, SBCC subcommittee members	Quarters 1–4	Share by email	Minutes of meetings shared on February 26 and March 12, 2019

GH.PC.1.E West African Regional Network Meeting Participation

[Canceled in Year Three.]

GH.PC.1.F American Society of Tropical Medicine and Hygiene

[Canceled in Year Five.]

GH.PC.1.G Coordination with NMCP to Inform Ghana’s ITN Strategy

Brief Activity Description: To determine Ghana’s ITN strategy after 2018, VectorWorks continues to engage the NMCP using findings from the data analysis done in Year Four: Analysis of Ghana’s ITN Strategy 2010-2018: Implications for 2020 and Beyond. VectorWorks will look for opportunities to present these analyses in

a broader stakeholder forum to stimulate discussions toward an ITN strategy that positions Ghana to achieve universal coverage.

Status: Dr. Hannah Koenker, VectorWorks Project Director, developed a detailed presentation, including an analyses of Ghana’s ITN strategies since 2002 and distribution options for Ghana to consider moving forward. This presentation was shared with the NMCP and PMI for consideration in March 2019. Discussions are underway for an in-country presentation to a wider stakeholder audience.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1.G Final Report	PMI	Quarter 4	Email to PMI	Acknowledged by PMI: March 13, 2019

GH.PC.1.H Participation in Leadership in Strategic Communication Workshop

Brief Activity Description: The Leadership in Strategic Communication Workshop (LSCW)—a comprehensive two-week leadership workshop—aims to develop leadership skills in public health programs. Using communication theory and experiential learning as a lens, project staff follow the P-Process—a tool for planning strategic, evidence-based health communication programs—to systematically build health programs, enhance program design and interpersonal advocacy skills, improve diplomatic communication skills, and learn how to evaluate programs. The VectorWorks senior technical advisor, Prince Owusu, attended the two-week training in Abeokuta, Nigeria, from October 14–26, 2018. The LSCW gave Prince the opportunity to not only acquire leadership and communication competencies from the workshop curriculum, but he also shared lessons learned and best practices with the global participants.

Status: The senior technical advisor, Prince Owusu, participated in the LSCW from October 14–26, 2018. The goal of the workshop was to deepen participants’ understanding of strategic communication planning, implementation, and evaluation through self-reflection, keen listening, team work, and a positive view of change. Participants were taken through the P-Process and were taught how to use the model to design, implement, monitor, and evaluate communication strategies, materials, and programs. After participants were exposed to the P-Process elements, they were grouped into five Strategic Communication Planning and Evaluation (SCOPE) teams. The task for each SCOPE team (seven–eight members) was to identify a behavior change issue and use the P-Process and other theories/approaches—such as behavioral economics and human centered design—to plan, implement, and evaluate a behavior change campaign.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.PC.1.H Trip report	PMI	Quarter 1	Email to PMI	Acknowledged by PMI: February 8, 2018

Implementation and Capacity-Building Activities (IM)

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

GH.IM.1.A Formation and Orientation of National-Level LLIN Monitoring Team

[Completed in Year One.]

GH.IM.1.B Re-Orientation of Regional and District Health Management Teams for Monitoring of Health Facility-Based LLIN Distribution

[Completed in Year Three.]

GH.IM.1.C Supportive Supervision of Health Facility–Based Distribution

Brief Activity Description: Supportive supervision aims to educate all health facility staff involved in health facility–based ITN distribution on key distribution practices: stock management, documentation, and reporting of ITN distribution; and education of beneficiaries on ITN use and care, as well as the respective roles of health facility staff. Using data from the District Health Information Management System 2 (DHIMS2) dashboards, VectorWorks works with the NMCP to improve the capacity of district management teams to identify and support facilities that require attention. As part of routine monthly data validation by health facility leads, health facilities performing below average will be identified and paired with high-performing health facilities—within a short geographical reach from each other—for peer mentoring. To ensure all participating districts and health facilities receive maximum benefit, VectorWorks will work with the NMCP to develop guidelines for the peer-mentoring activity.

Status: The VectorWorks M&E team, with the M&E officers from NMCP, held meetings with the PPME team of the GHS on February 10–11, 2019, to discuss establishing a system that creates dashboards in DHIMS2 that display ITN distribution data to nurses, midwives, and health information officers at the district-, sub-district-, and health facility–levels. To generate this dashboard using DHIS2 data, NMCP has submitted an updated indicator on ITN distribution—number of pregnant women and children 18–36 months receiving ITNs—to be included with other malaria indicators for the DHIMS2 dashboard. This dashboard will be completed in May 2019.

The VectorWorks team will also meet with the PMI Impact Malaria Project team in April 2019 to discuss encouraging the districts to use the data they input into DHIMS2 to monitor LLIN distribution at the health facility level. The districts can use the data they generate at their level. This engagement has been necessary because, as part of PMI Impact Malaria Project objectives, the capacity of district teams on malaria data visualization and utilization in five regions—Ashanti, Brong Ahafo, Eastern, Upper East, and Upper West—will be augmented. Creating live dashboards in DHIMS will eliminate the cumbersome processes district health management teams (DHMTs) must do to create their own dashboards to visualize data for decision making.

VectorWorks in Quarter Three will work with the NMCP to develop guidelines for the peer-mentoring activity

that all districts and health facilities will use to coach low-performing health facilities. Training of DHMTs on the peer mentoring activity is scheduled for May 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.1.C Report on strengthening and sustaining high performance in health facility distribution activities	PMI, Regional Health Management Teams (RHMT), NMCP, Maternal and Child Health (MCH), Expanded Programme on Immunization (EPI)	Quarter 4	Share by email	On schedule

GH.IM.1.D Regional Review Meetings

[Completed in Year Three.]

GH.IM.1.E Promotion of Health Facility–Based SBCC for Malaria Prevention

[Integrated into GH.IM.1.C Supportive Supervision of Health Facility–Based Distribution.]

GH.IM.1.F Partnership with Health Training Institutions

Brief Activity Description: Pre-service health worker training institutions enable student health workers to learn important skills before they begin their professional careers. VectorWorks has engaged the Maternal and Child Survival Project (MCSP), and the Nurses and Midwives Council, to discuss including ITN distribution in the curriculum for training nurses and midwives. The nurses and midwives training curriculum, due for revision in 2019, will be implemented in 2020. VectorWorks will work with NMCP and partners to advocate for including the handbook for health facility ITN distribution in the nurses and midwives training curriculum.

Status: In October 2018, as an initial step toward training nurses and midwives on health facility ITN distribution and appropriate documentation, VectorWorks distributed training materials—through their partner project MCSP—to 85 nursing, midwifery, and colleges of health sciences in all 10 regions around the country. These materials will be used as part of the malaria training content on a pilot basis, pending curriculum review by the Nurses and Midwives Council later in the year. To initiate the curriculum review process, the Nurses and Midwives Council held its first meeting with key stakeholders in March 2019, during which the stakeholders were briefed on the review process. VectorWorks will follow up with NMCP and the council for the necessary engagement to incorporate ITN training materials into the new curriculum.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.1.F Report on ITN-related content on existing/updated curricula	PMI, GHS, NMCP	Quarter 4	Share by email	On schedule

GH.IM.2 Support for Mass ITN Distribution

Brief Activity Description: Beginning in Year Four, as a facilitator, VectorWorks supported the 2018 phased mass distribution, joining key players and implementing partners to contribute their expertise and resources toward deploying a successful nationwide campaign in nine out of the 10 regions. This role included ensuring that the campaign steering committee was functioning optimally and supporting effective planning and implementation of the campaign. In Year Five, VectorWorks maintained their facilitation role for planning and implementing the distribution in the remaining two regions—Ashanti and Greater Accra.

Status: VectorWorks continued providing technical support to the NMCP in coordinating the planning and the 2018 mass campaign implementation in Ashanti and Greater Accra; due to their large populations and large urban centers, they required specific strategies for registration, distribution, and social mobilization. The specific strategies included using multi-media—such as radio and community networking—through organized groups (i.e., market women, drivers’ unions, and schools) to disseminate information about household registration, and distribution dates and venues. The timing of registration and distribution was also tailored to suit the urban dwellers schedule. For example, in urban settings, with the working class being the majority, most households could be reached on the weekends. The resident advisors also visited households very early in the morning (6–7 a.m.) to register households before they left for work. Some distribution teams adopted mobile distribution within the community, allowing households to bring their coupons for redemption at designated stops, rather than the traditional stationary distribution points used in other regions. In the Greater Accra and the Ashanti regions, respectively, 2,261,986 and 3,020,664 ITNs were distributed.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.2 Report on best practices and lessons learned from the full-scale mass campaign (nine regions)	NMCP, PMI, CCP	Quarter 1 (this Year 4 deliverable was delayed because of the PMD implementation schedule)	Share by email	Acknowledged by PMI: March 13, 2019.

GH.IM.2.A Training of Sub-District Supervisors on Validation of Community Population data for LLIN Quantification

[Completed in Year Two.]

GH.IM.2.B Monitoring of Point Mass Distribution of LLINs

[Included as part of GH.IM.2.]

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

[Completed in Year Two.]

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

[Completed in Year Two.]

GH.IM.3 Community Mobilization and Behavior Change Communication

[Completed in Year Two.]

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

GH.IM.4.A Orientation of Key Stakeholders

Brief Activity Description: To improve the engagement of stakeholders and community members in school-based ITN distribution activities, VectorWorks will facilitate an orientation session/training for officers of the district education directorate, especially the assistant directors in charge of supervision and the SHEP coordinators involved in the school-based ITN distribution implementation. They will further orient circuit supervisors and private-school coordinators in their respective districts to support campaign planning and monitoring and supervision of the distribution.

Status: This activity is scheduled for Quarter Three, May 2019.

GH.IM.4.A Report on orientation of key stakeholders	PMI, GHS, NMCP, GES, SHEP, DHMTs	Quarter 3	Share by email	On schedule

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

[Completed in Year Three.]

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

Brief Activity Description: The VectorWorks project will facilitate the supervision and monitoring of the various training and orientation activities, as well as the actual ITN distribution in schools by the regional and district directors of education. Because the GES has a well-planned supervision and monitoring system through its District Inspectorate Division, VectorWorks will support circuit supervisors and district SHEP coordinators by providing fuel for monitoring the school-based activities. The VectorWorks project, NMCP, and national SHEP will also support the implementation, monitoring, and supervision of all school distribution activities at all levels.

Status: This activity is scheduled for Quarter Three, May 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
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GH.IM.4.C School-based ITN distribution monitoring report	PMI, GHS, NMCP, GES, SHEP, RHMTs, DHMTs	Quarter 3	Share by email	On schedule
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GH.IM.4.D Promotion of School-Based SBCC for Malaria Prevention: ITN Use and Care

Brief Activity Description: In Years Three and Four, VectorWorks trained head teachers and school-based health coordinators from schools in 175 districts in seven regions—Ashanti (except Kumasi metro), Brong Ahafo, Central, Eastern, Northern, Volta, and Western—as part of an integrated health education campaign, to promote ITN use in schools and within the communities where the schools operate. The same trainings were conducted for the 41 remaining districts in Ashanti—Kumasi metro, Greater Accra, Upper East and Upper West—in February/March 2019. The trained officers at the school are responsible for facilitating the formation of school health teams and clubs in their schools to promote household ITN use through many community and school SBCC activities—as outlined in the *Promoting Malaria Prevention Through Primary Schools – Communication Guide for Teachers*—which VectorWorks developed in Year Three. Each trained circuit supervisor and a district officer are responsible for training the head teachers and school-based health coordinators in schools within each circuit. The trained school teachers then orient colleague school teachers when they return and they also form the school health teams and clubs. The school health teams and clubs enhance awareness on malaria prevention in schools and in the surrounding communities. The school health teams and clubs also promote peer education on malaria and other health topics.

Status: Following the successful SBCC trainings of district, circuit, and school teachers in project Years Three and Four, VectorWorks and partners—SHEP and the NMCP—completed training the final 41 districts in Ashanti (Kumasi metro only), Greater Accra (all 16 districts), Upper East (all 13 districts), and Upper West (all 11 districts).

VectorWorks facilitated the training of 439 district officers from the GES (assistant director/district director, SHEP coordinator, cultural coordinator, private school coordinators) and GHS (malaria focal persons and health promotion officers), and GES circuit supervisors from all circuits in the focus regions from February 25 to March 1, 2019, at designated district centers. The content of the trainings was as follows:

- malaria: cause, transmission, symptoms, impact, prevention, and benefits of prevention
- key elements of the school SBCC program: audience, messages, and required materials.
- malaria education activities for school assembly sessions, classroom, PTA meetings, and community outreaches
- school health team formation and function
- school health activity planning.

These trained district-level officers then organize circuit-level trainings in each circuit for head teachers and school-based health coordinators in public and private basic schools within that circuit. A circuit supervisor and a district officer facilitated each circuit training. VectorWorks staff, regional SHEP coordinators, and regional cultural coordinators supervised the circuit trainings to ensure quality was achieved. The training focused on the circuit-level education on malaria prevention so they can then share that information with

teachers, pupils, and the community. The two participants were to brief colleague teachers; form school health teams/clubs; and produce a program of health education in schools, PTA meetings, and the community.

Trained district health and education officers; and education circuit supervisors trained 8,289 head teachers and school-based health coordinators from schools.

VectorWorks and SHEP monitored 468 schools in 7 regions (Ashanti, Brong Ahafo, Central, Eastern, Northern, Western, Volta) from March 17-30, 2019 to ascertain the extent of implementation of malaria prevention and ITN use and care education in schools, PTA meetings, and in the community. Of particular focus was the formation of school health teams in schools and development of action plans for health education. 38% schools visited had school health teams in place with 71% of school health teams functioning. Schools with functional health teams were meeting at least twice every term to plan health education programs (including malaria prevention and ITN use and care) and to review implementation progress. There were schools that had action plans and were implementing malaria prevention and ITN use and care education but did not have health teams in place. Such schools usually had all health activities coordinated by the school SHEP without the support and buy in of the school’s leadership and staff.

Schools with functional health teams and action plans demonstrated activities that included malaria, sanitation, personal and menstrual hygiene, hand washing among others. These activities have been integrated into school activities such as assembly sessions, worship, classroom lessons, sports and cultural week celebrations, PTA meetings, and community outreach. There is the need to ensure formation of school health teams in all schools to ensure effective implementation and sustainability of school health education.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.4.D Report on training of regional and district officers and school health teams	PMI, NMCP, GES/SHEP	Quarters 1–3	Share by email	On schedule
GH.IM.4.D Report on monitoring of activities of school health teams and clubs and teacher–student net use follow ups	PMI, NMCP, GES/SHEP	Quarters 1–3	Share by email	On schedule

GH.IM.4.E Promotion of Malaria Prevention in Schools and Communities—Collaboration with Peace Corps Ghana

Brief Activity Description: During Years Three and Four, VectorWorks has worked with the leadership of the Peace Corps Standing With Africa to Terminate (SWAT) malaria, and the Grassroot Soccer Initiative during the past two years to introduce all new Peace Corps Volunteers (PCVs) to information in the *Promoting Malaria Prevention Through Primary Schools – Communication Guide for Teachers* handbook. The hope is that PCVs will use the information from the VectorWorks-led sessions and from the handbook to promote ITN use and care in their communities.

Status: VectorWorks engaged the Peace Corps both at the national level, Peace Corps staff, and the SWAT team. At the national level, VectorWorks discussed ITN use and care as part of PCV training. These meetings were held on February 13, 2019, and March 15, 2019, at the Peace Corps offices in Accra and the VectorWorks office, respectively. Subsequently, VectorWorks participated in the orientation of PCVs on March 19, 2019, at Addo Nkwanta, Eastern region. VectorWorks’ presentation centered on malaria epidemiology in Ghana, country strategy, and key interventions deployed for malaria control; and the roles of the implementing partners. PCVs were also briefed on school SBCC activities, different forums for information dissemination using the school health action plan, and ways in which PCVs can engage at the school level.

VectorWorks has also contacted the SWAT team through its leader, Catriona Gates, to discuss incorporating ITN use and care activities into SWAT activities. To facilitate sustainable program implementation and collaboration between the two institutions in the future, the SWAT team leader was introduced to the head of SBCC and assistant at NMCP, Kwame Gakpey and Selina Danso, in a meeting at the NMCP offices on April 3, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.4.E Annual reporting of the number of communities engaged and the number of school children and community members reached	PMI, Peace Corps, CCP	Quarter 4	Share by email	On schedule

GH.IM.4.F Support for Quality ITN Quantification Data for School Distributions

Brief Activity Description: On November 14, 2018, PMI and VectorWorks Ghana had a call to discuss the scope of this activity and corresponding Year Four deliverables. The group decided that the focus for VectorWorks, from November forward, changed from quantification to specifically developing a standard operating procedure (SOP) for school distribution, in general. The following two deliverables were conceptualized to take the place of the original Year Four deliverables: (1) a document explicating the SOPs for school distribution and (2) a report on engagement with the GES deputy director general about processes and procedures for school distribution ITN quantification. In Year Five, VectorWorks will operationalize the school distribution SOP and complete a report on the utility of the document, specifically the best practices and lessons learned. The project will share the SOP with the NMCP, PMI, and other implementing partners to help promote the sustainability of school distribution.

Status: On March 12, 2019, VectorWorks shared the report on engagement with the GES deputy director general about processes and procedures for school distribution ITN quantification with PMI. The report highlighted a meeting with the deputy director general of the GES on May 23, 2018, with VectorWorks, the national SHEP coordinator, and under the leadership of the NMCP manager. Also present at the meeting were the Director for Basic Education Examinations, Director for Secondary Education, and the GES data manager. The deputy director general was briefed on the school ITN distribution exercise and opportunities for improving data collection systems for ITN quantification for school distribution. VectorWorks and partners—NMCP and SHEP—highlighted the challenge of using EMIS data that was a year behind schedule

for ITN quantification and distribution, as well as the challenge of manual data collection, which resulted in bloated enrollment figures. The deputy director general of the GES acknowledged the challenges identified with school enrollment data and the impact on ITN quantification for school distribution. He assured VectorWorks, NMCP, and partners of the GES’s plans to improve the enrollment data collection process to ensure quality data, although he did not offer details on how this will be done. However, he tasked the GES data manager, in everyone’s presence, to address the identified gaps, as discussed, with the urgency it deserves. The deputy director general also promised to share the 2017/2018 enrollment data by September 2018; this was delivered, as promised.

The SOPs for the school distribution document have been written and are undergoing internal review, including by members of the schools ITN task force; it is expected that it will be shared with PMI and partners in April 2019. A report on best practices and lessons learned from using the SOPs will be submitted in Quarter Four, after the school LLIN distribution exercise.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.4.F Report on best practices and lessons learned from the utilization of the school distribution SOP	PMI, RHMT, NMCP, MCH, EPI	Quarter 4	Share by email	On schedule

GH.IM.4.G School Distribution Evaluation Conceptualization

[Completed in Year Four.]

GH.IM.5 Technical Assistance to Ghana NMCP

GH.IM.5.1 Technical Assistance to Development of Global Fund to Fight AIDS, Tuberculosis, and Malaria Concept Note

[Completed in Year Three.]

GH.IM.6 Leveraging Technology: Scaling Up Trainings at the School and Health Facility Levels

GH.IM.6.A Digital Training Material for Health Facility Workers

Brief Activity Description: VectorWorks is supporting the conversion of existing training materials into simple formats that can be easily accessed and used by health workers; these include PDF versions of training guidelines available on relevant websites and leverage the already existing WhatsApp platforms for health workers and students. These readily available materials will empower staff to use these resources when and where they are needed beyond the life of the VectorWorks project. The electronic version manuals will be useful as a quick reference material for existing and new health workers who need information on ITN distribution, documentation, and SBCC processes.

Status: VectorWorks is currently transforming its health workers’ training guide into a VectorWorks-developed application that can be deployed on smart mobile devices to facilitate easy access to information by health workers. District malaria focal persons will introduce these mobile applications to the health workers who will support the installation and introductory briefs on their use in a workshop in Quarter Three. VectorWorks discussed this with the NMCP. The PDF versions of these materials will also be deployed through links on the NMCP page of the GHS website. Both the mobile application and PDF versions on the NMCP page are expected to be deployed by June 30, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.6.A Report on completion and deployment of e-learning tools for health facility ITN distribution and SBCC	PMI, RHMT, NMCP, MCH, EPI	Quarter 3	Share by email	On schedule

GH.IM.6.B Digital Training Material for School SBCC Programs

Brief Activity Description: To reach more schools in Ghana, and to support the formation of new school health teams and clubs beyond Year Five, VectorWorks is creating and deploying user friendly and easily accessible digital versions of the school SBCC training materials. These training tools will be primarily available on existing digital media platforms appropriate for e-learning, including those used by the GES. The key training tools include the *Malaria Prevention and Promoting Malaria Prevention Through Primary Schools – Communication Guide for Teachers*.

Status: VectorWorks is currently transforming its teacher’s guide into an application being developed by VectorWorks and that will be deployed on smart mobile devices to facilitate easy access to information by teachers. The circuit supervisors and district school health education program (D-SHEPs) will introduce these mobile applications to basic school teachers during the school distribution exercise. Subsequently, circuit supervisors, as part of routine supervision, will monitor how the school teachers use these materials for health education. The checklist for monitoring school SBCC implementation will be revised to include the use of these digital materials. VectorWorks also discussed with national SHEP about including these materials on the GES website.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.IM.6.B Report on completion and deployment of e-learning tools for school SBCC	PMI, RHMTs, NMCP, MCH, EPI	Quarter 3	Share by email	On schedule

Research, Monitoring, and Evaluation (ME)

GH.ME.1 Formative Research Study on Barriers and Facilitators to Net Use

Brief Activity Description: VectorWorks is working closely with the NMCP Social and Behavior Change Task Force to identify and design SBC solutions based on the findings from the qualitative research study. During a series of meetings and discussions, VectorWorks is working with the task force to outline a short-, medium-, and long-term implementation roadmap for the study recommendations. VectorWorks, however, is unable to support implementation in Year Five because of time and budgetary constraints. VectorWorks will also draft a publishable quality manuscript to ensure the study results are documented and available to the broader malaria community.

Status: During the first two quarters of project Year Five, VectorWorks engaged with the NMCP Social and Behavior Change Task Force and prepared a comprehensive presentation on net use in Ghana to be shared with stakeholders in the second half of Year Five. During this time, VectorWorks also completed an analysis of study data and drafted a manuscript for publication in a peer-reviewed journal. Following PMI approval and policy clearance, VectorWorks submitted the manuscript to the *Malaria Journal*, where it is under review. VectorWorks also shared the findings with the global malaria community through a poster presentation at the ASTMH meeting in October 2018 and as part of a presentation on net use at the AMP meeting in January 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
GH.ME.1 Publishable quality manuscript	PMI	Quarter 4	Share by email	PMI policy clearance received February 27, 2019

GH.ME.2 ITN Durability Monitoring

Brief Activity Description: In Year Four, VectorWorks began preparing for durability monitoring for mass campaign ITNs. This activity's overall purpose is to provide NMCP, RBM partners, and PMI with valuable information about the performance and estimated "useful life" of the ITNs distributed during the most recent round of mass campaigns and to build in-country capacity to undertake durability monitoring. In Year Five, VectorWorks will implement the baseline data collection. The 12-, 24-, and 36-month rounds of data collection will fall outside the life of the project and, therefore, the PMI VectorLink project will implement it. The Ghana NMCP and PMI selected two ITN brands from the 2018 mass campaign to monitor—Olyset and DawaPlus 2.0—in neighboring districts in the Northern region. Zabzugu and Nanumba South districts were selected as the two study sites.

Status: Dr. Albert Kilian led the baseline durability monitoring training November 27–30 in Tamale, Northern region. Immediately following the training, the data collection team, led by NMIMR, started field work. The data collection team successfully enrolled 300 households in the study and will follow these households and their 690 ITNs through 2021. The 12-, 24-, and 36-month rounds of data collection will fall outside the life of the project and, therefore, the PMI VectorLink project will implement it. VectorWorks submitted the baseline

durability monitoring report with the anonymized baseline data sets to PMI on March 20, 2019; PMI approved it on April 12, 2019. The project is closing the Johns Hopkins University IRB and transferring the local IRB to the new principal investigator affiliated with PSI and VectorLink. VectorWorks will transfer all relevant study documents and tools to VectorLink by the end of April 2019.

Deliverables	Audience	Timing	Dissemination Plan	Status
GH.ME.2 Durability monitoring baseline report	PMI	Quarter 2	Email to PMI	Approved by PMI: April 12, 2019

Telling Our Story/End-of-Project Events (EP)

GH.EP.1 Legacy Products and Lessons Learned Workshop

Brief Activity Description: Using the services of a professional photographer and videographer, VectorWorks is developing photo stories and a mini-documentary to highlight the work completed, achievements made, and lessons learned during the life of the project. These creative deliverables will highlight key project activities—such as the school SBCC, school distribution, health facility distribution, implementation research, and mass ITN distribution support—all scheduled to take place in Year Five. The key task of the videographer is to produce a four-minute documentary that highlights the key success stories from each key project component. VectorWorks will hold a one-day “lessons learned workshop” that will feature presentations highlighting the project outcomes, speeches, a photo exhibition, and recognition of key players in project success.

Status: In Quarter One (November 2018), VectorWorks hired *5Fifty*, a professional photography and videography company to document the project success stories in photographs and short videos. The crew were briefed on the deliverables and, so far, have created video and photograph coverages of success story activities during the point mass ITN distribution, health facility distribution, and durability monitoring. They also recorded key informant interviews with the NMCP manager, national SHEP coordinator, VectorWorks chief of party; and the senior technical advisor, program officers, and NMCP medical entomologist. The VectorWorks staff will review the first rough cut on April 26, 2019. *5Fifty* will cover school LLIN distribution and SBCC activities in May; after this, the photographs will be selected for the lessons learned event, which the videographer will also cover.

Deliverables	Audience	Timing	Dissemination Plan	Status
GH.EP.1 Data file with photos	PMI, NMCP	Quarter 4	Email to PMI	On schedule

GH.EP.1 Mini-documentary	PMI, NMCP, implementing partners	Quarter 4	Email to PMI	On schedule
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GH.EP.2 Handing over to NMCP/GHS

Brief Activity Description: VectorWorks has provided consistent project updates at MaVCOC and ITN subcommittee meetings. We have also worked with the NMCP, SHEP, and other partners—such as VectorLink and GHSC-PSM—in their activities since the start of the project. As part of the end-of-project activities, to ensure that gains made during the project are sustained, VectorWorks is fully documenting and will hand over all critical project material and tools to the NMCP and key implementing partners, as PMI recommended.

Status: In addition to the regular project activity updates provided at MaVCOC and ITN subcommittee meetings, VectorWorks has taken the following steps to facilitate a seamless transition of project activities to NMCP and partners:

- i. VectorWorks worked closely with all its key implementing partners—NMCP, SHEP, GHS, and GHSC-PSM—by planning, implementing, supervising, and evaluating all project activities. This has given these partners adequate resources to implement all routine project activities; namely, health facility distribution supportive supervision, school distribution, and SBCC activities and PMD.
- ii. VectorWorks has shared all PMI-approved implementation research activity reports with NMCP and has discussed follow-up activities. As a follow-on to the findings of the counterfeit net study, the NMCP scheduled a meeting with the Food and Drug Administration and the Ghana Standards Authority to discuss policy and regulatory actions to curb counterfeiting of LLINs and to reduce the importation of untreated bed nets into the country. To improve utilization, VectorWorks has also made recommendations to the NMCP based on findings from the qualitative study on the net use gap.
- iii. VectorWorks shared all approved reports and study protocols on durability monitoring with VectorLink for continuity of the study. VectorLink was also introduced to the local Investigator, Dr. Sam Dadzie, for effective coordination of the study and to facilitate the next round of data collection.
- iv. Electronic versions of all materials developed for training of health workers and education officers will be broadly disseminated via strategic platforms, including institutional websites.
- v. Copies of VectorWorks success story documentaries will be shared with NMCP as part of the handover process.

Project Management (PM)

GH.PM.1 Operations

GH.PM.1.A Headquarters Staff

Status: Technical, administrative, and high-level management support from VectorWorks headquarters in Baltimore focused on responding to field office project implementation and administrative needs. Danielle Piccinini and April Monroe provided administrative and technical backstopping. Margie Wild and Mellisa Conover provided financial administrative support and Dr. Matthew Lynch and Andrea Brown provided higher-level management support.

GH.PM.1.B Field Operations

Status: Dr. Ato Selby, VectorWorks Field Operations Director, based in Nairobi, provided technical assistance and field operations support, specifically on PMD and continuous distribution of ITNs program to the Ghana project.

During Quarters One and Two, to discuss project activities and updates, weekly conference calls were made between the VectorWorks Baltimore, Dr. Selby, and the Ghana teams.

GH.PM.1.C Field Staff

Status: Sylvester Segbaya was the chief of party for the project; he managed the field staff and operations. Prince Owusu, Senior Technical Advisor, led the implementation of field activities with the support of five program officers. For effective supervision and implementation of field activities, the program officers—located in Accra—are assigned to two regions each.

Richard Kpabitey, the M&E manager, provided guidance for all project M&E activities; he worked with the senior technical advisor to ensure the data collected during the half year of Year Five implementation period was entered into a database designed for the VectorWorks Ghana project and then exported into an Excel-based project activity monitoring sheet—disaggregated by regions, districts, age, and sex—and analyzed for prompt corrective action, where needed. For health facility-based ITN distribution, the M&E manager worked with the NMCP and the VectorWorks team to review and analyze data from the DHIMS2 platform for implementation review, as needed, and for targeted technical support to districts and health facilities. The M&E manager shares his time with the U.K. Department for International Development-funded PSMP project.

The finance and administration manager, Phyllis Amartey Agyemang, and the information technology manager, Roland Tagoe, provided support to both the VectorWorks and PSMP projects.

GH.PM.2 Technical Assistance and Travel

Summary of International Travel

Trip Purpose	Traveler	Number of Trips	Remarks
Leadership and Strategic Communication Workshop in Nigeria	Senior technical advisor	1	October 14–26, 2018

VCWG meeting (budgeted under code GH.PC.1.C)	MaVCOC representative, VectorWorks chief of party	2	January 28–February 1, 2019
Supervision and technical assistance	Project director	1	Not yet taken
Supervision and technical assistance	Field operations director	2	Not yet taken
Supervision and technical assistance	Program officer	1	Net yet taken
Chief of party To headquarters	Chief of party	2	Not yet taken
Senior technical advisor To headquarters	Senior technical advisor	2	Not yet taken
		11	

GUINEA

GN.1 Initial Stakeholder’s Meeting

[Completed in Year Two.]

GN.2 Detailed Continuous Distribution Assessment

[Completed in Year Three.]

GN.3 Support to Malaria Strategy Review

[Cancelled per PMI email March 28, 2018.]

GN.4 School-Based BCC Message Development Workshop

[Completed in Year Three.]

GN.5 Continuous Distribution Pilot (2017–2018)

Brief activity description: In 2016, the Guinea NMCP considered adding another continuous distribution channel as part of their new national ITN distribution strategy. After discussions with the PMI and the NMCP, VectorWorks identified Boffa as a potential district for implementing a school distribution pilot. VectorWorks was tasked with implementing and coordinating malaria partners in Guinea for this activity.

Status: In Year Four, VectorWorks completed implementing and evaluating this activity. VectorWorks scheduled two dissemination events to share the evaluation results and to discuss implementation challenges and successes. A national-level dissemination meeting was held in Conakry on Tuesday, October 23, 2018. The NMCP, Ministry of Health, district-level education and health officials, Catholic Relief Services, StopPalu, and cabinet d’études de recherché et de conseils (CERCO) stakeholders attended the dissemination event. On Thursday, October 25, a second event was held in Boffa to share the same results with the local stakeholders and implementers who were involved in the pilot. Both meetings included considerable discussion on pilot strengths and lessons learned for implementing school-based distribution at scale. These findings were included in the final report, in English, which PMI approved on December 14, 2018. The French version was completed and sent to PMI on February 20, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
5.1 Trip report from scoping visit	NMCP	Quarter 2	Share by email with PMI, NMCP	Acknowledged by PMI: November 28, 2017
5.2 Detailed timeline of implementation and evaluation	NMCP, PMI, implementing partners	Quarter 2	Share by email with PMI, NMCP	Approved by PMI: June 12, 2018
5.3 Final SBC communication materials for pilot	NMCP, PMI	Quarter 2	Share by email with PMI, NMCP	Approved by PMI: June 12, 2018

5.4 Final training materials, agendas, and participants list	NMCP, PMI	Quarter 2	Share by email with PMI, NMCP	Approved by PMI: June 12, 2018
5.5 Final evaluation report	NMCP, PMI, implementing partners	Quarter 3	Dissemination meeting with NMCP, PMI, key malaria stakeholders	Approved by PMI: December 14, 2018

GN.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks will provide PMI with an annual work plan (for approval by PMI Guinea), quarterly financial reports, and semi-annual progress reports. VectorWorks understands that PMI may ask for further information, as needed by U. S. Agency for International Development, for the PMI annual report, strategic planning, VIP visits, and congressional reports.

Status: VectorWorks does not have activities scheduled in Guinea for Year Five. No work plan was submitted for Year Five. Reports on ongoing activities are included in the semi-annual and annual project reports.

Deliverable	Audience	Timing	Dissemination Plan	Status
Annual work plan	PMI	Quarter 1	Share by email with PMI	N/A
Quarterly financial reports	PMI	Quarters 1–4	Share by email with PMI	N/A
Semi-annual progress reports	NMCP, PMI, implementing partners	Quarters 2 and 4	Share by email with PMI	Herein

KENYA

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

[Completed in Year Three.]

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

[Completed in Year Four.]

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

[Completed in Year Four.]

KY.4 Meeting to Consolidate Findings from Desk Reviews, Field Assessments, and Other Studies

[Cancelled per email with PMI on November 13, 2017.]

KY.5 Develop a Guidelines Document for ITN Distribution in Kenya

[Completed in Year Four.]

KY.6 Technical Assistance for Pilot Implementation of Selected Channel(s) for ITN Distribution

[Cancelled per email with PMI on November 13, 2017.]

KY.7 ITN Durability Monitoring

Brief activity description: VectorWorks oversees durability monitoring of ITNs that were distributed during the 2017 mass campaign in Kenya. Working with Tropical Health and Pan African Mosquito Control Association (PAMCA), VectorWorks follows DawaPlus 2.0 and DuraNet ITNs in Busia and Kwale counties. This consortium is studying the physical durability of campaigns nets and they are conducting bioassays to examine their insecticidal integrity. The PMI guidelines suggest that nets be followed prospectively for three years. VectorWorks is managing the baseline and the first round of follow-up before the remainder of this activity is transferred to a different funding mechanism.

The primary objectives of the ITN durability monitoring are to do the following:

- Monitor the physical and insecticidal durability of ITNs in two locations in Kenya during a three-year period and estimate the median ITN survival.
- Compare the results with findings from other locations across Africa with similar net brands.
- Strengthen the capacity of the NMCP and other partners in the design, implementation, analysis, and interpretation of ITN durability monitoring, based on PMI guidelines.
- Describe major environmental and behavioral aspects of net use, care, and repair, as well as their impact on the physical durability.

Status: VectorWorks led durability monitoring during the 12-month refresher training in Kwale County, Kenya from November 12–14, 2018. The PAMCA data collectors began fieldwork immediately after the training—first in Kwale county and then in Busia county. The field team located and interviewed 144 of the 151 households enrolled at baseline in Busia County and 135 of 137 households in Kwale County. Early estimates for medial physical survival are 2.1 years in Busia county and 1.6 years in Kwale County. However, after only 12 months of follow-up, these estimates should be interpreted cautiously. There were also issues with insecticidal integrity, with 47% of samples from one brand of ITN failing to meet the bioassay minimum efficiency threshold as defined by WHO. As of April 2019, these nets are currently being transported to the Centers for Disease Control and Prevention for further chemical analysis.

VectorWorks received PMI approval for the baseline report on December 10, 2018; we submitted the 12-month report on March 18, 2019 and are currently awaiting PMI approval. The project is bundling all relevant documents and study tools to share with VectorLink before the official transition of this activity to VectorLink. The study team intends to complete the handover and submit the IRB amendments from the local IRB by June 30, 2019, which will give VectorLink sufficient time to prepare for the next round of data collection in November 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
7.1 Final study protocol and tools approved by IRB	PMI, local research firm, NMCP, Ministry of Health (MOH)	Quarter 2	Share by email	Complete
7.2 Baseline report	PMI, local research firm, NMCP, MOH	Quarter 4	Share with PMI by email	Approved by PMI: December 10, 2018
7.3 12-month report	PMI, local research firm, NMCP, MOH	Year 5, Quarter 4	Share with PMI by email	Mission concurrence received: April 4, 2019

KY.8 ITN Durability Monitoring Data Analysis Workshop (Year Five)

[Cancelled per email with PMI on August 21, 2018.]

KY.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks provides PMI with an annual work plan, quarterly financial reports, and semi-annual progress reports for approval.

Status: VectorWorks has submitted all reports on time.

Deliverable	Audience	Timing		Dissemination Plan	Status
Annual work plan approved by PMI	PMI	Quarter 1		Share by	Approved by PMI: September 18,

Kenya				email	2018
Quarterly financial reports	PMI	Quarters 1–4		Share by email	On schedule
Semi-annual and annual progress reports	PMI	Quarters 2 and 4		Share by email	Herein

LIBERIA

Summary

In Liberia, the priority objectives for VectorWorks—guided by the PMI Liberia—are to provide technical support to the NMCP and its implementing partners to effectively implement and monitor the distribution of LLINs at antenatal care clinics and institutional delivery (ANC/ID) facilities, which are part of the national malaria strategy. The project also provided support to the mass LLIN distribution through technical and financial support on SBC activities, assessed the possibility of using additional channels to sustain LLIN coverage, and led the durability monitoring study of LLINs after the 2018 mass LLIN distributions.

Because of a Stop Work Order issued on October 1, 2018, most Year Five activities were put on hold until March 1, 2019. During the Stop Work Order the project staff attended meetings, including the Case Management Working Group; USAID Implementing Partners Meeting; Surveillance, Monitoring, Evaluation and Operational Research; lessons learned meeting from the 2018 LLIN mass campaign; USAID Environmental Compliance Training Workshop; Material and Message Development Meetings; and health promotion technical working group meetings.

L.IM.1 County- and Health Facility–Level Orientations

[Completed in Year Three.]

L.IM.2 Monitoring of ANC/ID LLIN Distribution

Brief description: To ensure the continuous and quality service delivery for ANC/ID LLIN distribution, county health personnel were oriented on the processes and protocol for the distribution; and they, in turn, conducted on-the-job training for health facility workers on ANC/ID LLIN distribution in Years Two and Three. Although personnel at the county level and the trained health personnel are expected to conduct processes properly after trainings, it is essential to continuously supervise LLIN distribution activities at all levels; this will ensure that LLINs are available at county depots and at health facilities. It will also ensure that LLINs are given to the correct beneficiaries, and proper reporting and documentation of LLINs distributed in health facilities is completed.

Status: VectorWorks and the NMCP developed a checklist for county- and health facility–level supervision visits. Based on feedback from the County Health Integrated Monitoring Teams (CHIMTs) and lessons learned during the supervision visits, we updated the checklist. Based on the outcomes of the national-level supervision visits to counties and health facilities in Year Four, VectorWorks and the National Monitoring Team (NMT) will prioritize the supervision of PMI scale-up counties, including Bomi, Montserrado, Grand Bassa, Margibi, Grand Kru, and Maryland in Year 5. One or a combination of partners—including the NMCP, Family Health Division (FHD), Maternal Child Survival Program-Expansion of Malaria Services (MCSP-EMS), and Fixed Amount Reimbursement Agreement (FARA), Ministry of Health Supply Chain Unit, and VectorWorks—will visit these counties starting in May 2019.

VectorWorks held an orientation and, with FARA and MCSP-EMS, scheduled the May orientation visits. Starting on or around June 2019, these visits will continue orienting the two groups on the tools and process for doing the ANC/ID monitoring and supervision; which will ensure a smooth transition to them from

VectorWorks on the monitoring of ANC/ID at health facilities. In the future, CHIMTs will supervise LLIN distribution in health facilities as part of the routine integrated monitoring of health services.

The following table summarizes the monitoring visits, including dates, counties visited, and number of health facilities visited to-date. Those shaded in blue below are upcoming dates as of the end of Year Five Quarter Two.

Dates of Monitoring Visit	Counties Visited	Number of Health Facilities Visited
November 14–23, 2016	Grand Cape Mount, Bomi, Gbarpolu, Bong, Grand Bassa	30
January 26 to February 8, 2017	Montserrado	5 hospitals
April 15–23, 2017	River Gee, Grand Gedeh, Maryland, Grand Kru	16
June 12–16, 2017	Nimba	13
July 31 to August 4, 2017	Margibi and Montserrado	5 hospitals
December 2017	Montserrado Bomi	2 health facilities and 1 hospital (St. Joseph Catholic Hospital and Duport Road Health Center) Liberia Government Hospital Bomi
March 4–10, 2018	River Cess, Sinoe	8
April 7–15, 2018	Grand Gedeh, River Gee, Maryland, Grand Kru	6
June 14-15, 2018	Montserrado	4 health facilities
May 1–8, 2019	Margibi and Grand Bassa	10 facilities
May 12–18, 2019	Grand Kru and Maryland	8 facilities
May 20–25, 2019	Bomi and Montserrado	10 facilities

Deliverable	Audience	Timing	Dissemination Plan	Status
Monitoring reports and updated summary table	NMCP, FHU, PMI, FARA, MCSP-EMS	Quarter 3	Share by email with NMCP and PMI	On track

L.IM.3 County Review Meetings on ANC/ID LLIN Distribution

[Completed in Year Four.]

L.IM.4 Post-Net-Process

[Completed in Year Two.]

L.IM.5 Revision of LLIN Continuous Distribution Documentation Job Aid

[Completed in Year Three.]

L.IM.6 Print Big Belly Cards and Postnatal Care Ledgers

[Completed in Year Three.]

L.IM.7 Capture Data on the ID Nets Distributed

[Completed in Year Three.]

L.IM.8 Orientation of Implementing Partners on ANC/ID Distribution

Brief activity description: The NMCP, Family Health Unit (FHU), and VectorWorks will conduct a one-day orientation for identified national-level implementing partners working with health facility personnel in the counties. They will learn about the processes and protocol for distributing LLINs at ANC/ID, how to use a checklist to conduct a comprehensive supportive supervision visit, and how to work with health workers to improve data capture and reporting. The orientation will include strategizing how to ensure that nets get from the county depots to the health facilities. After the orientation, and after the monitoring visits in May as VectorWorks closes out, implementing partners will work with the CHIMTs to plan supervision visits to health facilities and share quarterly reports on supervising LLIN distribution at ANC visits and ID in health facilities in their counties.

Status: VectorWorks held an orientation for implementing partners on November 27, 2018. Twenty people attended this meeting, including members from the Peace Corps, MCSP, PMI VectorLink, FARA, Plan International, PMI representatives, reproductive health supervisors, NMCP, FHD, as well as the M&E units. The agenda included an orientation to health-facility monitoring and tested tools, such as the checklist. The orientation also reviewed service data, logistics management, and education on intermittent preventive treatment, and information and SBCC messages on LLINs. All items were followed by discussions around lessons learned and ways to improve the monitoring of ANC/ID at health facilities.

Deliverable	Audience	Timing	Dissemination	Status
Final mapping of implementing partners working with health facilities in counties	NMCP, FHU, PMI	Quarter 1	Share by email	On-going
Orientation reports, attendance list	NMCP, FHU, PMI	Quarter 2	Share by email	Completed. Report approved on February 22, 2019.

L.IM.9 Forecasting of LLIN Stocks and Resupply

[Canceled.]

L.IM.10 SBCC for ANC/ID LLIN Distribution

[Completed in Year Three.]

L.DM LLIN Durability Monitoring

Brief activity description: VectorWorks will support the implementation of durability monitoring for mass campaign LLINs, based on standard PMI guidelines for durability monitoring. This activity will provide the NMCP and PMI with valuable information about the performance of LLINs distributed during the 2018 mass campaign, as well as strengthen in-country capacity to undertake durability monitoring. VectorWorks will conduct the following activities:

1. Monitor the physical and insecticidal durability of LLINs in Liberia during a three-year period and estimate the median LLIN survival.
2. Compare results with findings from other locations across Africa with similar net brands.
3. Strengthen the capacity of NMCP and other partners in the design, implementation, analysis, and interpretation of LLIN durability monitoring, based on PMI guidelines.
4. Describe major environmental and behavioral aspects of net use, care, and repair, and their impact on the physical durability.

Status: The study team, PMI, and the NMCP selected Lofa and Grand Gedeh counties as the study sites for durability monitoring in Year 4. VectorWorks received IRB approval from the University of Liberia and Johns Hopkins University in July 2018. Dr. Albert Kilian facilitated the durability monitoring baseline training from July 23–27, 2018. Participants from the NMCP, University of Liberia-Pire, PMI, and PMI VectorLink took part in the four-day training. Data collectors and supervisors successfully completed the data collection on August 15, 2018. From a target of 360 households (96%) or 347 households were successfully enrolled for follow-up at baseline. The actual number of households enrolled was slightly lower than the target because more LLINs were found in the households than expected. The physical durability of LLINs was good with 762/777 (98.1%) enrolled nets in good physical condition. However, only 25% of the LLINs met the World Health Organization cone bioassay optimal threshold; 17% failed completely after less than six months in the field. The durability monitoring baseline report was submitted to PMI and approved on March 18, 2019.

VectorWorks continues to collaborate with the NMCP—including entomological staff—by including them in protocol development, implementation, supervision and data management, and analysis and interpretation; with the future goal of carrying out LLIN durability monitoring locally.

VectorWorks will facilitate 12-month refresher training from April 10–12, 2019. The data collection team will begin in the field immediately following the training—first in Grand Gedeh county and then in Lofa county. At the end of the 12-month data collection, VectorWorks will coordinate the handover of the remaining activity to VectorLink—the PMI mechanism selected to continue LLIN durability monitoring in Liberia. Ibrahima Baber and Tuwuyor Bellah from VectorLink will participate in the refresher training and they will be in the field, with representatives from PMI and NMCP, to ensure a solid understanding of LLIN durability monitoring theory and practice before the handoff. VectorWorks will work with the University of Liberia-Pire and VectorLink to transition principal investigators with the local IRB and to ensure that all the key study documents and tools are available to VectorLink well before the 24-month refresher training and data collection in April 2020.

Deliverable	Audience	Timing	Status
Completed in Year 4: L.DM.1 JHU and local IRB approved protocol			

L.DM. 2 durability monitoring baseline report	NMCP, PMI	Quarter 1	Approved by PMI: March 18, 2019
L.DM. 3 durability monitoring 12-month report with bioassays	NMCP, PMI	Quarter 4	On schedule

L.MA.1 Support to Mass LLIN Distribution Activities—Before, During, and After Campaign

[Completed in Year Four. Previously named Technical Assistance for Mass LLIN Distribution Campaign.]

L.MA.2 Support for LLIN Distribution to Identified Institutions

[Completed in Year Four.]

L.MA.3 SBCC for LLIN Mass Campaign

[Completed in Year Four.]

Although the work plan activity was completed in Year Four, in March 2019 VectorWorks supported the NMCP in airing spot messages for World Malaria Day 2019. VectorWorks worked with four radio stations in Grand Cape Mount, and two radio stations in Monterrado, to air 150 radio spots. VectorWorks financially supported Health Promotion Officers to monitor the spots to ensure the radio stations air the correct spots. Three messages airing on the radio included a message on ANC/ID attendance, the importance of sleeping under a LLIN, and a testimony from a family that lost a child to malaria. The radio spots, timed around World Malaria Day, are part of a larger campaign focused on making people aware of the proper use of nets, the importance of attending ANC, and early care-seeking behaviors.

L.PC.4 VectorWorks Annual Partners’ Meeting 2017

[Completed in Year Three.]

L.PM

VectorWorks worked with PMI Liberia to develop an annual work plan and budget and quarterly financial reports. VectorWorks also responded to PMI’s requests for resources on LLIN distribution systems, such as school-based distribution and success stories for PMI’s annual report. There are no formal deliverables for this activity.

L.PM.2 Participate in the 2018 Leadership and Strategic Communication Workshop

[Completed in Year Four.]

L.PM.3 Transition and Close Out Plan

Transition plan

Brief activity description: VectorWorks continues to work with local partners, including the NMCP, FHD, MCSP-EMS, FARA, and VectorLink to transition VectorWorks roles and responsibilities. For the ANC/ID monitoring, VectorWorks conducted the orientation on monitoring ANC/ID (L.IM.8) and invited MCSP-EMS and FARA to join the NMT at all Year Five monitoring visits, which will be in May 2019. The Year Five monitoring visits will focus not only on supporting the counties but will also help the service providers learn more quickly how to use the monitoring tools.

For the Durability Monitoring Study (L.DM), VectorWorks will continue working with the NMCP and PMI VectorLink, as was done for the baseline fieldwork. PMI VectorLink focal points in Liberia will attend the 12-month training and observe fieldwork, implemented by VectorWorks, to become familiar with the activity and to ensure continuation of the standardized methods per protocol. PMI VectorLink is responsible for ensuring that their staff understands the principles and details of durability monitoring, which are described in the *Durability Monitoring Toolkit* at www.durabilitymonitoring.org.

Following the 12-month fieldwork, VectorWorks will submit the report, cleaned datasets, and syntax/do-files to PMI within 90 days. VectorWorks will submit copies of the baseline datasets and syntax, and the final Johns Hopkins School of Public Health and local IRB protocols and tools to PMI. Using a secure portal, VectorWorks will also supply the 12-month training materials and updated household lists with global positioning system way-points and Open Data Kit forms to PMI Liberia (and PMI HQ). PMI Liberia will then provide these to PMI VectorLink. Beyond the 12 months of fieldwork, our understanding is that PMI VectorLink will subcontract with the current local research partner, the University of Liberia-Pire.

Following is a timeline table for the handover to PMI VectorLink:

VectorWorks						VectorLink			
	Baseline fieldwork	Baseline report submitted/due	12- month fieldwork	12- month report due	Handover period	24- month fieldwork	24- month report due	36- month fieldwork	36- month report due
Liberia	July– August 2018	November 2018	April 2019	July 2019	IRB and contract paperwork	April 2020	July 2020	April 2021	July 2021

Closeout plan

Liberia will develop a closeout plan for this last project year. The plan will include reviewing programmatic audits, reporting on the cost sharing requirements, reviewing staffing closeout protocols, and developing a plan to close out the budget. Closeout plans will be submitted for approval six to eight months prior to final closeout. VectorWorks ends on September 30, 2019. The following table is a closeout schedule for Liberia for the final months of the project.

Country/ Chapter	Stop Field Activities	Closeout Sub-contracts	Field Office Closes	Admin/Final Closeout
Liberia	June 30, 2019	n/a	June 30, 2019	September 30, 2019

MOZAMBIQUE

MZ.1 Technical Assistance for ITN Strategy Update

[Completed in Year One.]

MZ.2 ITN Durability Monitoring (Tropical Health)

Brief activity description: With the Instituto Nacional de Saúde (INS), VectorWorks conducted data collection for durability monitoring of ITNs in three sites across Mozambique. VectorWorks selected the three monitoring sites—Inhambane, Nampula, and Tete—to maximize the potential differences in the environment and in the ITN use practices.

Status: In November 2015, VectorWorks completed the first phase of the durability monitoring in all three sites: six months after the ITN distribution in Tete province and one month after the ITN distributions in Inhambane and Nampula provinces. We conducted the second wave of durability monitoring one year after mass distribution: in Tete in June 2016 and in Inhambane and Nampula in August 2016; the third wave of durability monitoring in May 2017 (Tete) and August 2017 (Inhambane and Nampula); and the final round of data collection in May 2018 (Tete) and August 2018 (Inhambane and Nampula). Preparations for the 36-month report were delayed because of a stop work order issued from October 1, 2018, to February 7, 2019. The U.S. PMI approved the final 36-month durability monitoring report on March 6, 2019.

VectorWorks is currently developing the durability monitoring manuscript that summarizes the 36 months of data collection in Mozambique. The manuscript will be submitted in Quarter Three of Year Five.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 1: MZ.2.1 Durability monitoring protocol and research tools; MZ.2.2 Schedule of fieldwork Completed in Year 2: MZ.2.3 Schedule of fieldwork; MZ.2.4 Template for baseline report Completed in Year 3: MZ.2.5 Schedule of fieldwork; MZ.2.6 Baseline survey report; MZ.2.7 12-month survey report Completed in Year 4: MZ.2.8 24-month durability monitoring report; MZ.2.9 Trip report for 36-month data collection				
8. 36-month durability monitoring report	PMI, NMCP, INS	Quarter 1	Email	Approved by PMI: March 6, 2019
9. Durability monitoring manuscript	Donors and implementing partners	Quarter 3	Scholarly journal	In progress

MZ.3 Data Dissemination and Translation

[Completed in Year Two.]

MZ.4 Mass Campaign Technical Assistance

[Completed in Year Two.]

MZ.5 Mass and Continuous Distribution Capacity Building

[Completed in Year Two.]

MZ.6 Nampula Process Evaluation

[Completed in Year Three.]

MZ.7 School-Based ITN Distribution Pilot

MZ.7.A School-Based ITN Distribution Feasibility Assessment

[Completed in Year Three.]

MZ.7.B School-Based ITN Distribution Evaluation (Tropical Health)

Brief activity description: PMI, the Mozambique NMCP, and the implementing partners aim to complete the final round of school-based ITN distribution in Namarroi district of Zambezia province in April 2019. To measure the outcomes from the school-based ITN distribution, VectorWorks and INS conducted a baseline survey; they will conduct an endline survey in both the pilot district (Namarroi) and the control district (Mulevala).

Status: VectorWorks conducted the baseline survey in collaboration with the NMCP and the INS at the end of 2018. Currently, the endline survey is being planned with the INS, with implementation planned for May 2019. VectorWorks and PMI are currently discussing a dissemination activity for the results of the evaluation for school-based ITN distribution in both Maputo and Zambezia.

Deliverable	Audience	Timing	Dissemination Plan	Status
Completed in Year 4: MZ.7.B.1 Activity timeline; MZ.7.B.2 Study protocol; MZ.7.B.3 Training materials for data collection; MZ.7.B.4 Post-baseline implementation debrief PowerPoint presentation; MZ.7.B.5 Trip report—baseline; MA.7.B.6 Baseline assessment report				
7. Post-endline preliminary findings	PMI, NMCP, implementing partners	Quarter 4	Email to PMI, NMCP, INS, implementing partners	On track
8. Final evaluation report	PMI, NMCP	Quarter 4	Email to PMI, NMCP, INS, implementing partners	On track

MZ.7.C School-Based ITN Distribution Technical Assistance

[Completed in Year Four.]

MZ.PM.1 Year One Work Plan and Reporting

[Completed in Year One.]

MZ.PM.3 Year Two Work Plan and Reporting

[Completed in Year Two.]

MZ.PM.3 Year Three Work Plan and Reporting

[Completed in Year Three.]

MZ.PM.4 Work Plan and Reporting

Brief activity description: VectorWorks bases its activities on PMI-approved work plans and adheres to reporting guidelines within the work plans.

Status: PMI approved the VectorWorks Mozambique Year Five work plan on October 9, 2018, and the Year Four annual report on December 11, 2018. VectorWorks continues to deliver quarterly financial reports to PMI in Year Five.

Deliverable	Audience	Timing	Dissemination Plan	Status
Year 4 annual report	PMI	Quarter 1	Email to PMI	Approved by PMI: December 11, 2018
Year 5 annual work plan	PMI	Quarter 1	Email to PMI	Approved by PMI: October 9, 2018
Year 5 semi-annual progress report	PMI	Quarter 1	Email to PMI	Herein
End of project report	PMI	December 30, 2019	Email to PMI and 3 hard copies	On track
Quarterly financial reports	PMI	Quarters 1–4	Email to PMI	On-going

MYANMAR

MM.1 ITN Durability Monitoring

Brief activity description: VectorWorks oversees durability monitoring for two brands of ITNs at one site in Myanmar. This will provide the NMCP, RBM partners, and PMI with information about the performance and estimated “useful life” of ITNs that were distributed during the 2015 mass campaign. This also strengthens the in-country capacity to undertake future ITN durability monitoring. Based on campaign distribution timing, high malaria transmission potential, and logistic accessibility, the NMCP and PMI selected Tamu Township in Sagaing region as the site for durability monitoring. The Myanmar NMCP organized a mass distribution of ITNs in November and December 2015; the distributed ITNs were evenly split between two brands: DawaPlus 2.0 and PermaNet 2.0. The primary objectives of the ITN durability monitoring are as follows:

- Monitor the physical durability of the two brands of ITNs and estimate the median ITN survival during a three-year period.
- Using bioassays and chemical testing, monitor the insecticidal activity of the two ITN brands.
- Strengthen the capacity of the NMCP and in-country partners to independently conduct durability monitoring in the future.
- Assess major behavioral aspects of net care and repair, and their impact on physical durability.

Status: PSI Myanmar led the refresher training for the 36-month survey from December 3–5, 2019. After finishing the training, the field team successfully completed 36-month fieldwork in Tamu Township on December 19, 2018. VectorWorks completed the analysis from this round of data collection and are writing the final report. The project anticipates submitting the 36-month report to PMI in April 2019. VectorWorks will then hold a manuscript writing retreat between April 29–May 3 and May 6–10, 2019, to write the durability monitoring manuscript. The target publication for this manuscript is the *Malaria Journal*.

Deliverable	Audience	Timing	Dissemination Plan	Status
MM.1.10 36-month assessment fieldwork	PMI, NMCP, PSI Myanmar	Year 5, Quarter 1	Audience members took part in or witnessed fieldwork	Completed: December 19, 2018
MM.1.11 36-month assessment report	PMI, NMCP, PSI Myanmar	Year 5, Quarter 2	Email to PMI	Delayed to Year 5, Quarter 3
MM.1.12 Durability Monitoring Manuscript	Global malaria community	Year 5, Quarter 4	Publish in <i>Malaria Journal</i>	On schedule

MM.2 Data Analysis and Dissemination Workshop

[Completed in Year Three.]

MM.3 ASTMH Attendance 2016

[Cancelled in Year Three per Modification 1 which was approved on June 30, 2017.]

MM.4 ASTMH Attendance 2017

[Completed in Year Four.]

MM.5 Chemical Testing

Brief activity description: VectorWorks will collect ITNs from the main durability monitoring cohort during the 36-month assessment for bioassay. At the Department of Food and Drug Administration (FDA) laboratory in Nay Pyi Taw, we will test additional samples from these nets for chemical residue. The 36-month assessment report will include a summary of the findings and we will host a discussion of the findings at the dissemination workshop (MM.7).

Status: The FDA laboratory expects the chemical analysis of the 60 ITN samples from 36-month data collection to be completed by the end of April 2019. The results will be shared during the final dissemination events, which will be held in Nay Pyi Taw on May 5, 2019, and on May 17, 2019. Chemical testing from the 24-month round of data collection was shared during the 24-month dissemination workshop on November 8, 2018.

MM.6 Durability Monitoring Dissemination Workshop

Brief activity description: VectorWorks organized a dissemination workshop to share results from the December 2017 durability monitoring data collection. PSI Myanmar presented results to stakeholders—including PMI, NMCP, and the Ministry of Health and Sports—on physical integrity, bioassay results, and chemical tests. The workshop was organized similar to the 2017 workshop, which stakeholders considered a success.

Status: VectorWorks received the results from the 24-month chemical analysis report and finalized the 24-month interim field report. PSI Myanmar worked with key stakeholders, including the Ministry of Health and Sports and the NMCP to find a suitable date for the 24-month results dissemination workshop. Held on November 8, 2018, 59 participants—representing 18 different ministries and organizations—attended the workshop. The agenda and workshop report were shared with PMI on December 20, 2018; PMI approved it on February 27, 2019.

Deliverable	Audience	Timing	Plan	Status
MM.6.1 Dissemination Workshop Agenda and Report	PMI	Quarter 3	Email to PMI	Approved by PMI: February 27, 2019

MM.7 Durability Monitoring Dissemination Workshop (Year Five)

Brief activity description: VectorWorks will hold a dissemination workshop in May 2019 to share findings with PMI, NMCP, and other stakeholders following the final round of durability monitoring data collection and analysis. Findings will be available three months after all fieldwork is complete. The project will prepare presentations to share findings with the NMCP and Ministry of Health and Sports on the physical integrity, bioassay, and chemical residue tests from all four rounds of data collection: at baseline and after 12, 24, and 36 months. The workshop will be scheduled in consultation with all audiences to ensure key stakeholders are available.

Status: VectorWorks has confirmed two dissemination workshops to share results from the final round of ITN durability monitoring, which will be held in May 2019. The first workshop will be held in Nay Pyi Taw on May 5, 2019, and the second will be held in Yangon on May 17, 2019. Holding two dissemination events will allow VectorWorks to share results with a larger group of stakeholders

Deliverable	Audience	Timing	Dissemination Plan	Status
MM.7.1 Dissemination Workshop Agenda and Report	PMI, NMCP, malaria implementing partners	Quarter 3	Email to PMI	On schedule

MM.8 ASTMH Attendance

Brief activity description: Dr. Si Thu Thein and Dr. Phone Si Hein will attend the ASTMH in New Orleans, Louisiana, in 2018; they will participate in meetings that include others working on durability monitoring activities around the globe.

Status: Dr. Si Thu Thein and Dr. Phone Si Hein attended ASTMH 2018, held in New Orleans, Louisiana. Both attendees participated in the durability monitoring investigator's lunch meeting where they discussed implementation challenges and successes with other durability monitoring investigators from sub-Saharan African and Asia. The trip report for this travel was submitted on December 20, 2018; PMI approved it on February 27, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
MM.7.1 Dissemination Workshop Agenda and Report	PMI, NMCP, malaria implementing partners	Quarter 3	Email to PMI	Approved by PMI: February 27, 2019

MM.PM.3 Work Plan and Reporting

Brief activity description: VectorWorks provides PMI with an annual work plan, quarterly financial reports, and semi-annual progress reports for approval. VectorWorks understands that the U.S. Agency for International Development may request information, as needed, for the PMI annual report; such as strategic planning, VIP visits, and congressional reports.

Status: VectorWorks submitted its Year Five work plan to PMI for review on August 31, 2018; PMI approved it on September 18, 2019. All quarterly financial reports are up-to-date; VectorWorks provided them to PMI through Year Four, Quarter Two.

Deliverable	Audience	Timing	Dissemination Plan	Status
Work plan	PMI	Quarter 1	Email to PMI	Approved by PMI: September 18, 2018
Quarterly financial reports	PMI	Quarters 1–4	Email to PMI	On schedule
Semi-annual progress reports	PMI	Quarters 2 and 4	Email to PMI	Herein

NIGERIA

NG.1 ITN Durability Monitoring

Brief activity description: VectorWorks supports durability monitoring of DawaPlus 2.0 ITNs in three sites across Nigeria—Zamfara, Oyo, and Ebonyi states—in collaboration with its primary M&E partner, Tropical Health, and with the National Malaria Elimination Program (NMEP). Sites were selected to maximize the potential differences in the environment and ITN use practices and to build on previous durability studies. The primary objectives of ITN durability monitoring are to do the following:

- Monitor the physical durability of DawaPlus 2.0 ITNs and estimate the median ITN survival during a three-year period.
- Using bioassays, monitor the insecticidal activity of ITNs.
- Strengthen the capacity of the NMCP and in-country partners to independently conduct additional durability monitoring in the future.
- Assess major behavioral aspects of net care and repair and their impact on physical durability.

Status: Tropical Health facilitated the final durability monitoring refresher training in Nigeria during September 24–26, 2018. Data collectors completed the 36-month follow-up on October 19, 2018. This represented the final round of data collection for this study. The data collection team interviewed 386 of 394 households that were still active. The final study estimates for median survival rate were 5.3 years in Zamfara, 3.3 years in Ebonyi, and 3.2 years in Oyo state. VectorWorks submitted the final durability monitoring report for this activity to the PMI on January 30, 2019, and PMI approved the final report on March 20, 2019. The final report will be posted on PMI.gov and durabilitymonitoring.org. The study team is writing a manuscript to share the results from this study with the global malaria community.

Deliverable	Audience	Timing	Dissemination Plan	Status
NG.1.4 36-month report (24-month report in Oyo state)	PMI, NMCP, implementing partners	Year 5, Quarter 2	Email to PMI	Approved by PMI: March 20, 2019
NG.1.5 Durability Monitoring Manuscript	Global malaria community	Year 5, Quarter 4	Publish in <i>Malaria Journal</i>	On schedule

NG.2 Data Analysis and Dissemination Workshop

[Completed in Year Three.]

NG.3 Data Processing Workshop

[Completed in Year Three.]

NG.4 Data Analysis Workshop (Year Four)

[Completed in Year Four.]

NG.5 Dissemination Workshop (Year Five)

Brief activity description: VectorWorks completed ITN durability monitoring in October 2018. After data was collected and analyzed, VectorWorks organized a series of state- and national-level workshops to disseminate

results. Dr. Kilian and Mr. Emmanuel Obi of Tropical Health were present and interpreted results from the activity.

Status: VectorWorks organized and completed this activity during February 4–12, 2019. State-level workshops with stakeholders were successfully conducted in Zamfara (February 4), Oyo (February 6), and Ebonyi (February 7). Finally, Dr. Kilian and Mr. Obi facilitated the national-level dissemination meeting in Abuja on February 12, 2019. Numerous stakeholders from the NMEP, State Malaria Elimination Programs (SMEPs), PMI implementing partners, and local research firms participated in the dissemination events. National- and state-level staff were confident in their ability to conduct similar research in the future, and local data collectors received certificates thanking them for their work in the field. PMI approved the dissemination event agenda and trip report on February 20, 2019. VectorWorks is currently putting together the durability monitoring resource package and plans to submit it to PMI in May 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
NG.5.1 Dissemination workshop agenda and trip report	PMI, NMCP, implementing partners	Year 5, Quarter 2	Email to PMI	Approved by PMI: February 20, 2019
NG.5.2 durability monitoring resource package	NMEP, SMEP, PMI	Year 5, Quarter 2	Email or other adequate digital media	Delayed: To be submitted in Year 5, Quarter 3

NG.6 Additional Chemical Testing

Brief activity description: Bioassay results from 12-month durability monitoring data collection indicated suboptimal insecticide effectiveness. PMI requested that further chemical testing be done at 12 months to assess the insecticidal content of the nets collected for bioassay.

Status: Tropical Health facilitated chemical testing at the Walloon Agricultural Research Center in Gembloux, Belgium. The Walloon Agricultural Research Center received the samples on November 24, 2017, and completed the tests on February 26, 2018. VectorWorks included the results in the final durability monitoring report, which was submitted January 30, 2019. PMI approved it on March 20, 2019.

Deliverable	Audience	Timing	Dissemination Plan	Status
NG.6.1 Chemical testing reports	PMI, NMCP, implementing partners	Year 5, Quarter 1	Email to PMI	Approved by PMI: March 20, 2019

NG.7 Support to PMI Planning

Brief activity description: PMI asked Mr. Obi to travel and provide input during Year Three; this activity was developed in anticipation of similar requests during the remainder of the project.

Status: PMI has not yet requested Mr. Obi’s support. No trips for technical assistance are currently scheduled.

Deliverable	Audience	Timing	Dissemination Plan	Status
NG.7.1 Trip reports	PMI, NMCP,	Quarters 1–4	Email to PMI	On schedule

	implementing partners			
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NG.PM.1 Work Plan and Reporting

Brief activity description: VectorWorks provides an annual work plan for PMI Nigeria to approve, including quarterly financial and semi-annual progress reports. VectorWorks understands that the U.S. Agency for International Development may asked for information, as needed, for the PMI annual report, strategic planning, VIP visits, and congressional reports, among other activities.

Status: PMI approved the VectorWorks Year Five work plan on October 24, 2018. VectorWorks has submitted quarterly financial reports through Quarter Two. This document is the Year Five semi-annual report.

Deliverable	Audience	Timing	Dissemination Plan	Status
Work plan	PMI	Year 4, Quarter 1	Email to PMI	Approved by PMI: October 24, 2018
Quarterly financial reports	PMI	Quarterly	Email to PMI	On schedule
Semi-annual reports	PMI	Quarters 2 and 4	Email to PMI	Herein
Trip reports	PMI	Within two weeks of travel	Email to PMI	Approved by PMI: February 20, 2019

TANZANIA

Summary

In Tanzania, the priority objectives for VectorWorks—guided by the PMI—are to support the continuous and equitable access to ITNs, and to support PMI and the NMCP in developing vector control interventions for the specific challenges in the country. VectorWorks, in Tanzania, seeks to sustain high ITN coverage with appropriate, effective, and reliable continuous distribution. In Years Four and Five, VectorWorks prioritized transition implementation leadership to the relevant Government of Tanzania counterparts: NMCP and the President’s Office of Regional Administration and Local Government (PO-RALG).

A few key priorities for this reporting period include continuing routing distribution of ITNs through the ANC/EPI services and scale up implementation, support the NMCP in operationalizing the ITN distribution plan, school ITN distribution in 14 regions, providing technical assistance to NMCP, Zanzibar Malaria Elimination Programme (ZAMEP), and the Medical Stores Department (MSD) and Strengthen systems and platforms to enable ITNs quality data, capturing for both the health facility and the SNP to improve program management and decision making.

PC.1 Advocacy, Engagement and Macro-planning with All Stakeholders

[Completed in Year One]

PC.2 Technical Coordination Meetings for Malaria Vector Control

Brief activity description: The government of Tanzania—through the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC)—emphasizes partners supporting health programs across the country to work in close collaboration to maximize health outcomes. The VectorWorks project works with implementing partners in the malaria landscape to support the nationally set goals through the NMCP leadership. Established platforms, part of these forums, bring together malaria stakeholders in Tanzania and VectorWorks.

Status: During the reporting period (October 2018–March 2019), VectorWorks attended various meetings organized and lead by the NMCP; they discussed plans and progress made by the project by focusing on the scope for Year Five activities. VectorWorks attended the only long-lasting insecticide-treated nets task force meeting; project updates were made during the meeting. To implement the limited SBCC scope of work, VectorWorks also attended and presented ITNs use, care, and repair radio campaign activities to the NMCP’s Communication Technical Working Group. Project officials also attended a mass replacement macro planning meeting where they discussed the outlook of the targeted mass campaign envisioned for 2020. Using the *Alliance for Malaria Prevention Toolkit*, VectorWorks project’s chief of party presented the highlights from the guidance for mass campaign planning and implementation. VectorWorks also attended two meetings, organized by the President’s Office, where they discussed the coordination of malaria partners. In the remaining quarters, VectorWorks will continue to engage with key partners—NMCP, PO-RALG, and PMI—to ensure a coordinated implementation of planned activities.

Deliverables	Audience	Timing	Dissemination Plan	Status
Presentations given by VectorWorks at both	NMCP, PMI	Quarters	Share by email	On track

technical coordination meeting and senior management meeting with PO-RALG		1-4		
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PC.3 Development of Comprehensive ITN Strategy

[Completed in Year One]

PC.4 Finalize the ITN Strategy and Work Plan for Tanzania

[Completed in Year Three]

Monitoring and Evaluation (M&E)

ME.1.0 Internal Project Monitoring

[Completed in Year One]

ME.1.2 Internal Project Monitoring

[Completed in Year Three]

ME.1.4 Internal Project Monitoring

Brief activity description: VectorWorks developed a Performance Monitoring Plan. The M&E manager will continuously monitor activities, based on approved indicators, using the *Chandarua Kliniki* dashboard (launched by VectorWorks in Year Three) and the PO-RALG’s Basic Education Management Information System to track indicators for the *Chandarua Kliniki* and SNP distributions, respectively. Periodically, VectorWorks will upload relevant data into the U.S. Agency for International Development (USAID)/Tanzania Performance Reporting System.

Status: During the first six months of Year Five, VectorWorks’ monitoring manager and regional officers continued to monitor the implementation of project activities in the field. The monitoring manager uploaded Quarters One and Two ITNs distribution data to the USAID/Tanzania Performance Reporting System.

Deliverables	Audience	Timing	Dissemination Plan	Status
Updated project monitoring plan	PMI	Quarter 1	Share by email	Completed

ME.2 Documentation and Dissemination

[Completed in Year One]

ME.3.2 Process Monitoring of SNP4

[Completed in Year Three]

ME.4 Accountability Information System for ANC/EPI Distribution - Mainland

Brief activity description: In Year Three, VectorWorks launched accountability information systems for ANC/EPI distribution to monitor the performance of health facility–based ITNs distribution. The tool, the *Chandarua Kliniki* dashboard, generates district-level accountability reports and includes other features. The RHMTs and Council Health Management Teams (CHMTs) used the accountability information system report to identify health districts and health facilities, respectively, to visit for supportive supervision. In Year Five, VectorWorks planned to conduct review meetings with RHMTs and CHMTs to discuss issues from the accountability reports, which the *Chandarua Kliniki* dashboard generates.

Status: During taskforce meetings in Quarters One and Two of Year Five, VectorWorks presented to NMCP and other stakeholders the analysis reports from the *Chandarua Kliniki* dashboard. Regional managers, in collaboration the RHMTs and the CHMTs, conducted review meetings to discuss and prioritize findings from dashboard reports.

Deliverables	Audience	Timing	Dissemination Plan	Status
Supervision plan	PMI, NMCP, PO-RALG	Quarter 2	Share by email	On track
Online data report on health-facility supervision	PMI, NMC, PO-RALG	Quarter 2	Share through presentation	Completed. Presentations to be formally submitted to PMI.

ME.5 Support to research agenda for outdoor mosquito biting in Zanzibar

[Canceled]

ME.6 Monitoring Project Engagement Across Age and Gender

[Completed in Year Three]

ME.7 Care and Repair Qualitative Study

[Completed Year Three]

ME.8 Zanzibar Continuous Distribution Process Evaluation

[Completed Year Three]

ME. 9 Accountability Information System for Zanzibar

Brief activity description: In Year Four, VectorWorks successfully developed the *Chandarua Kliniki* dashboard for Zanzibar; it monitors the number of clients served and ITNs issued at health facilities. In Year Five, to identify performance trends of clients seen and ITNs issued at the health facilities, the project continues to collaborate with ZAMEP and Central Medical Stores (CMS) to monitor the dashboard. The ITNs-issued data

can be triangulated with the consumption data from the electronic Logistics Management Information System, which is currently being interfaced with District Health Information System 2 (DHIS2); the output will be displayed on the *Chandarua Kliniki* dashboard.

Status: In Quarter One, VectorWorks staff, with the district and central teams, conducted supportive supervision visits to all 179 health facilities in Zanzibar. In Quarter Two, using the *Chandarua Kliniki* dashboard accountability support reports, district teams from 11 districts identified 62 health facilities with issues. They conducted supportive supervision to all 62 health facilities. However, because of budget constraints, VectorWorks could not conduct an assessment of *Chandarua Kliniki* performance. VectorWorks will send in a formal request to cancel this deliverable.

Deliverables	Audience	Timing	Dissemination Plan	Status
<i>Chandarua Kliniki</i> Evaluation report	PMI, ZAMEP	Quarter 2	Share by email	Project will be sending PMI a formal request to cancel.

ME.10 Zanzibar ITN Durability Monitoring Study

Brief activity description: VectorWorks provides technical support to ZAMEP to conduct an ITN durability monitoring study in Zanzibar. The study took place in two sites—Wete district of Pemba and North B district of Unguja—following the distribution of Olyset and PermaNet 2.0 ITNs during the 2016 mass distribution campaign.

In this study, ZAMEP leads all the fieldwork and Tropical Health provides technical oversight and training. With funding from PMI, VectorWorks successfully conducted the 12-month and 24-month follow-up fieldwork to check the physical and insecticidal condition of the ITNs in Year Three and Year Four, respectively. The project plans to complete this three-year prospective study in Year Five.

Status: VectorWorks successfully completed the final round of data collection on April 12, 2019. Refresher trainings were held at both study sites prior to data collection, beginning on March 25, 2019, in Pemba and on April 1, 2019, in Unguja. The data collection team began community entry and fieldwork the day following the refresher training at both sites. Bioassays and tunnel tests are expected to be completed by May 5, 2019. The final report will be submitted to PMI during Quarter Three of Year Five.

Deliverables	Audience	Timing	Dissemination Plan	Status
Completed in Year Three: ME.10.1 Baseline durability monitoring report Completed in Year Four: ME.10.2 12 Month durability monitoring report				
3. 24 Month Durability Monitoring Follow Up Report	PMI, ZAMEP	Quarter 1, Year 5	Share by email	Approved by PMI: November 15, 2018

4. Final Durability Monitoring Report	PMI, ZAMEP	Quarter 3, Year 5	Share by email	On track
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ME.11 Monitoring ITN Distribution and Issuing at Health Facilities

Brief activity description: In Year Three, health facility-based distribution in seven regions provided useful feedback about how the program was running. Working with regional and district teams, VectorWorks Tanzania conducted monthly field monitoring visits in all seven regions, one data quality assessment visit in Mtwara and Mwanza, and a regional-level semiannual review meeting in Mtwara. These monitoring initiatives highlighted key issues that required attention, such as reporting errors, lack of restocking requests, and poor recording of data in different sources at health facilities. Through subsequent supportive visits to health facilities, data quality has been improving. The regional review meeting in Mtwara, field visits, and data quality assessments in Year Three have all recommended intensive monitoring using field visits and online tracking systems.

PO-RALG has established a central team of six people that manages a cluster of regions in all health areas. In Year Five, VectorWorks developed and shared with local government authorities ITN distribution and issuing analysis trends for information and action. VectorWorks' efforts in Year Five are to work with PO-RALG central and regional authorities to make sure districts teams review the ITNs accountability reports and acts accordingly. Specifically, in Years Four and Five, VectorWorks, in collaboration with NMCP, developed a supportive supervision plan for districts and an online monitoring tool for regional managers.

Status: In the first half of Year Five, VectorWorks conducted performance meetings at regional level (10) and district level (43) in 7 regions to review and discuss performance of *Chandarua Kliniki*. Agreed actions points include: RHMTs to issue letters to decision makers of non-performing districts, district pharmacists should review R&R from health facilities and identify facilities with stock outs for immediate follow-up. Monthly district malaria information focal persons monitor consumption trends and data quality and share an analysis report with DMOs. RHMT and D/CHMT meetings will include ITNs performance reports as part of the core agenda of monthly and quarterly meetings. A total of nine regions conducted supervision visits to health facilities level reaching 184 with red flags.

Deliverable	Audience	Timing	Dissemination Plan	Status
Annual supervision plan	NMCP, PMI	Q1	Share by email	Completed. Plan to be formally submitted to PMI.

ME.12 Zanzibar Residual Malaria Transmission Study

Brief activity description: In project Years Three and Four, VectorWorks worked with ZAMEP to carry out a residual malaria transmission study in Zanzibar. During Year Five, VectorWorks is finalizing data analysis, drafting three manuscripts for publication, and disseminating the study findings. VectorWorks will capitalize on the existing meetings and broader dissemination events—such as the Zanzibar Malaria Elimination Advisory Committee and the VectorWorks end-of-project event—to present findings to key stakeholders. With ZAMEP, VectorWorks will ensure that the findings are shared with the communities where the study was carried out. VectorWorks will disseminate results to the global malaria community through articles in

peer-reviewed journals and participation at the ASTMH meeting and the RBM Vector Control Working Group meeting.

Status: In the first two quarters of Year Five, VectorWorks completed the human behavior manuscript and incorporated feedback from the co-authors and PMI technical and policy review. Following policy clearance, VectorWorks submitted the manuscript for publication in the *Malaria Journal*, where it is currently being reviewed. During this time, VectorWorks completed drafts of the human-vector interaction manuscript and the entomology manuscript. During the remainder of Year Five, VectorWorks will finalize the manuscripts, submit them to PMI for approval, and submit them to a peer-reviewed journal for publication. During this time, VectorWorks disseminated results from the study through poster presentations and a symposium presentation at the ASTMH meeting in October 2018. Results were also shared as part of a VectorWorks presentation at the AMP meeting in January 2019. IHI and CCP will work with ZAMEP to disseminate study findings to key stakeholders in Zanzibar, including study communities, in the second half of Year Five.

Deliverable	Audience	Timing	Dissemination Plan	Status
Publishable-quality human behavior manuscript	Global malaria community, PMI, ZAMEP	Quarter 2	Share with PMI and ZAMEP by email; submit to a peer-reviewed journal	Received PMI clearance: February 27, 2019
Publishable-quality entomology manuscript	Global malaria community, PMI, ZAMEP	Quarter 3	Share with PMI and ZAMEP by email; submit to a peer-reviewed journal	On track
Publishable-quality human-vector interaction manuscript	Global malaria community, PMI, ZAMEP	Quarter 3	Share with PMI and ZAMEP by email; submit to a peer-reviewed journal	On track

ME.14 Technical Assistance to ZAMEP for Entomology Data Systems and Analysis

[Completed in Year Three]

ME.15 Coordination and Support for VectorWorks Tanzania Research Agenda

[Completed in Year Three]

ME.16 Assessment of ITN Access and Ownership Among People Living with HIV/AIDS

[Completed in Year Three]

ME.17 Assessment of ITN Ownership Under Continuous Distribution

Brief activity description: VectorWorks conducted a Lot Quality Assurance Sampling monitoring activity to assess ITN ownership and access. This was conducted at the same time as the Malaria Indicator Survey, and the results of the two surveys were compared.

Status: VectorWorks designed and tested a Lot Quality Assurance Sampling (LQAS) monitoring approach to assess ITN access in three regions. LQAS results were then compared with the Malaria Indicator Survey. LQAS is rapid and less costly than household surveys and may be suitable for ongoing monitoring, needed to inform annual quantification for school distribution in Tanzania. In lieu of an in-person presentation as stated in the work plan, VectorWorks submitted a detailed report to PMI, along with the study protocol and research tools submitted to the JHSPH and The National Institute for Medical Research (NIMR) ethical review boards.

Deliverables	Audience	Timing	Dissemination Plan	Status
Protocols	PMI, JHU, NIMR	Year 4, Q1	Share by email	Approved by PMI: February 22, 2019
Presentation of baseline findings	NIMR, NMCP, PMI, PO-RALG	Year 4, Q3	In-person presentation to NMCP, NIMR, PO-RALG and PMI; share presentation with NMCP and PMI by email	Approved by PMI: February 22, 2019

Implementation (IM)

IM.1 Initial Meeting with SNP 1 & 2 Implementers

[Completed Year One]

IM.2 NetCALC Modeling of LLIN Coverage Estimates for SNP3

[Completed Year One]

IM.3 Review and Printing of SOP, Data Collection, Reporting and Monitoring Forms

[Completed Year One]

IM.4 LLIN Quantification and Validation of Quantification Data

[Completed Year One]

IM.5 Micro-Planning Meetings

[Completed Year One]

IM.6 Trainings and Orientation

[Completed Year Two]

IM.7 Transportation and Storage of LLIN

[Completed Year Two]

IM.8 Supervision

[Completed Year One]

IM.9 Assessment of Potential Continuous Distribution Channels for SNP Regions

[Canceled]

IM.10 Qualitative Analysis Workshop

[Completed Year One]

IM.11 NetCALC Workshops for 7 PMI Regions

[Completed Year Three]

IM.12.7 Health Facility Distribution - Mainland

Brief activity description: VectorWorks continued with the routine distribution of ITNs through the ANC/EPI services. In the first quarter of Year Five, VectorWorks distributed ITN resupplies to health facilities in 14 out of 26 PMI target regions.

Status: VectorWorks project worked closely with LMU, MSD, and Council Health Management teams to facilitate ITN ordering through the eLIMS; this will ensure that health facilities order on time and have no stockouts of ITNs at the health facilities. In this reporting period—October 2018 to March 2019—the project distributed 1,307,410 ITNs as resupplies to public health facilities in 14 regions: Mwanza, Mara, Kagera, Kigoma, Simiyu, Geita, Ruvuma, Lindi, Mtwara Shinyanga, Katavi, Tabora, Morogoro, and Pwani. The Global Fund procured these ITNs, but PMI funded a contracted transporter to distribute them.

Deliverables	Audience	Timing	Dissemination Plan	Status
Report with proof of delivery	NMCP, PMI	Quarters 1–4	Share by email	Complete. Excel report to be submitted to PMI.

IM.12.8 Health Facility Distribution - Zanzibar

Brief activity description: VectorWorks continued with the routine distribution of ITNs through the ANC/EPI services and community channel. In Quarter One of Year Five, VectorWorks distributed ITNs to health facilities in Unguja and Pemba.

Status: VectorWorks worked closely with the LMU, CMS, and DHMTs to facilitate ITN ordering through the eLMIS. This will ensure that health facilities order on time and that orders are fulfilled on time; this will prevent stockouts of ITNs at the health facilities for both the RCH and community channels. In the October

2018 to March 2019 reporting period, the project distributed 190,720 ITNs as resupplies to health facilities in Unguja and Pemba.

Deliverables	Audience	Timing	Dissemination Plan	Status
Report with proof of delivery	NMCP, PMI	Quarters 1–4	Share by email	Complete. Excel report to be submitted to PMI.

IM.13 School-Based Distribution (SNP)

Brief activity description: VectorWorks continues to support the government of Tanzania by distributing ITNs through primary schools; this is one of the ITN continuous distribution channels that complement distribution of ITNs through the health facilities. In Year Five of project implementation, the project does not plan to procure and distribute ITNs but will finish the carried-over activities and documentation of SNP activities for the entire project duration.

Without an additional scope to distribute ITNs in Year Five, in Quarter One of Year Five, VectorWorks continued to distribute with Year Four carried-over ITN distribution activities. In six regions—Mwanza, Katavi, Kigoma, Tabora, Mara and Simiyu—1,326,403 ITNs were distributed to schools and issued to primary school pupils between October and December 2018. For the entire SNP 6, a total of 2,757,969 ITNs were distributed in 14 regions: Ruvuma, Lindi, Mtwara, Morogoro, Pwani, Geita, Kagera, Shinyanga, Mwanza, Katavi, Kigoma, Tabora, Mara, and Simiyu. A complete SNP 6 report was submitted to PMI and was approved as a deliverable.

Status: Consolidation of all SNP implementation reports, data, and other relevant information from SNP rounds three (2015) through six (2018) is ongoing. This activity documents SNP activities and provides a resource kit for relevant stakeholders: the Ministry of Health; Community Development, Gender, Elderly and Children (MoHCDGEC); NMCP; and PMI.

Deliverable	Audience	Timing	Dissemination Plan	Status
Final implementation reports, resource toolkit	MoHCDGEC/NMCP, PMI, PO-RALG	Quarter 3	Share by email and hard copies	SNP documentation and collection of resources is in progress

IM.14B Hold a Stakeholder Workshop to Discuss Findings of the Market Dynamics Assessment

[Completed in Year Three]

IM.15 Implementation Support and Technical Assistance for Zanzibar

Continuous Distribution

Brief activity description: VectorWorks directly provides ITN management technical support to ZAMEP to ensure that Zanzibar’s community ITN coverage is higher than 85%. This is done by ensuring smooth implementation and operation on the functions pipeline and inventory management, storage, distribution, data documentation, and accountability of the ITNs delivered to the targeted audience through both the health facility and community channels.

Status: In Year Four, VectorWorks successfully provided technical assistance to ZAMEP to enable them to shift from parallel storage, ordering, and distribution of ITNs to integrating into the existing mechanism. The integration included moving custody of the ITNs from the ZAMEP entity to the CMS, which is overall in-charge of all the health commodities in Zanzibar. In addition, ordering and distribution of ITNs is now integrated into the existing system of essential medicines, known as the Zanzibar Integrated Logistics System (ZILS). In the process of integration, VectorWorks collaborated with ZAMEP, CMS, and the LMU to successfully accomplish the change.

Deliverable	Audience	Timing	Dissemination Plan	Status
Continuous ITN distribution performance review meeting report	PMI, ZAMEP	Q1	Through email	On track
Lessons learned and recommendations report from health facility based coupon management process	PMI, ZAMEP	Q3	Through email	On track

IM.16 Conduct ITN Quantification

[Completed in Year Three]

IM.17 Establish Health Facility ITN Storage Space Requirement

[Completed in Year Three]

IM.18 Adopt Just-In-Time Delivery Approach for SNP ITNs

[Completed in Year Four]

IM.19 Private Market Shaping

Brief activity description: VectorWorks is working with the government of Tanzania through the NMCP to streamline the role of the private sector in making ITNs readily available for sale in the commercial sector.

Tanzania’s ITN plan (2018–2020) recognizes three main channels for continuous distribution of ITNs through the health facility: (1) distribution through the *Chandarua Kliniki* program; (2) distribution through primary schools, the school net program; and (3) distribution through the private sector, commercial sales.

Based on progress made in Year Three when the stakeholders’ workshop was conducted, VectorWorks is working with NMCP and other key stakeholders to address some of the barriers to market entry, as stakeholders identified in Year Three.

Status: VectorWorks provided a detailed account of the draft status in the Year Four annual report. This activity was not funded in Year Five; therefore, little work was done to further the foundational work completed in Years Three and Four.

IM.20 SBCC for Chandarua Kliniki, SNP, and General Net Use

Brief activity description: Through the continuous distribution of ITNs, mainly through health facilities nationwide and primary schools in 14 PMI targeted regions, ITNs were distributed widely to maintain universal coverage. Critical to malaria control efforts is communication that encourages the consistent and proper use of ITNs and the promotion of care and repair of these nets so they last longer and remain effective. In Year Five, VectorWorks had limited scope to implement a national campaign to promote *Chandarua Kliniki* and SNP, as well as general net use in the households.

Status: In the second quarter (January–March), VectorWorks implemented a radio campaign to promote *Chandarua Kliniki* and general net use, as well as care and repair. The campaign ran on Clouds FM, a radio station with the highest reach and coverage in Tanzania, according to the Tanzania All Media Consumptions Survey Report (2017/2018). The annual report will include a complete campaign report as we finalize the details of the current campaign with the radio station. With this scope, there were no community-level mobilization activities; therefore, all efforts were consolidated on the radio campaign as a major SBCC activity.

Deliverable	Audience	Timing	Dissemination Plan	Status
Report detailing number of events, spots and programs aired, people reached disaggregated by gender by all channels	MoHCDGEC/NMCP, PMI, PO-RALG	Quarter 3	Share by email and hard copies	Campaign report is being compiled

IM.21 Demand Planning

Brief activity description: VectorWorks routinely conducts annual quantification for health facility ITNs in all 26 regions of Tanzania using 2017 Health Management Information Systems data to forecast needs for 2018, 2019, and 2020. VectorWorks used a percentage increase of 9.2% through 2020.

Status: In Year Four, VectorWorks presented a detailed summary of the demand summary activity and recommended a quantification approach going forward. In Year Five, VectorWorks reviewed the quantifications and provided informational feedback to PMI, whenever requested. Will formally submit this

deliverable in Quarter Three of Year Five.

IM.22 Technical Assistance to Medical Stores Department (MSD) on Warehousing, Inventory Management and Distribution

Brief activity description: VectorWorks currently works with the private sector to distribute ITNs. PSI contracted a private transporter, Simba Logistics, to distribute ITNs to all 14 PMI targeted regions. The MSD does all the storage of ITNs across all the zones. The MSD continues to receive and store ITNs through their systems, process health facility ITN orders, and prepare sales invoices/proof of deliveries; which are submitted to a private transporter for ITN distribution/delivery.

Status: Because VectorWorks has provided technical assistance to the MSD, all MSD zones were able to pick up the stored ITNs from October 2018. An exception is Muleba for piperonyl butoxide nets; VectorWorks still works with the private sector to store those nets. However, approximately 40% of MSD zones—Mtwara, Muleba, Iringa, and Mwanza—still have limited storage capacity.

In December 2018, Mwanza zone picked up an additional region (Shinyanga) for distribution of ITNs to health facilities; to-date, the MSD zone has only completed one round of ITN distribution to the Shinyanga region.

The project organized an ITN quarterly review meeting, which took place in February 2019; a number of stakeholders, including all MSD zonal managers, participated. Zonal managers gave updates on the storage and distribution of ITNs; challenges were discussed, and solutions were proposed for the identified challenges. During the meeting, a great improvement in storage and distribution of ITNs was noted because VectorWorks provided performance assessments and technical assistance.

In April 2019, VectorWorks plans to conduct another ITN performance assessment that includes all MSD zones and CMS Zanzibar. Findings will highlight areas that need further improvement and sustainability of the system.

Deliverables	Audience	Timing	Dissemination Plan	Status
Performance assessment report	MSD, NMCP, PMI	Quarter 2–3	Share by email	Not yet started

IM.23 Integrate Health Facility and Community ITNs into the Existing Logistics Structure in Zanzibar

Brief activity description: VectorWorks directly supports and oversees the distribution of ITNs in Zanzibar through the RCH channel, which target women at their first ANC visit and children at their first measles vaccination, as well as the community channel that targets the community members who meet the specific agreed-to criteria: ITNs torn beyond repair, uncovered sleeping space, active case detection, and emergency situations.

Status: In Year Four, VectorWorks completed the integration of ITN continuous distribution, for both RCH and community channels, into the current ordering and reporting system of health commodities, known as ZILS. CMS manages ITN storage and distribution for both RCH and community-based channels in Zanzibar. VectorWorks continues to monitor the performance of the two channels and provides technical assistance to ZAMEP and CMS.

IM.24 Develop a Short Course on Implementation and Management of ITN

Brief update: Instead of conducting a formal training, which can be costly, VectorWorks planned to develop a short video training course on ITN management and documentation. The video/audio would be shared with the health community workers at the health facilities through different social media channels (i.e., WhatsApp, Facebook).

Status: The project will formally ask to cancel this activity, as Year Five funding does not allow creating these videos.

Project Management (PM)

PM.1.2 Project Management

Brief activity description: Project management entails multiple and overarching activities, which are meant to ensure that the project is well positioned to function and deliver quantity of ITNs as agreed-to and to set program objectives. The chief of party primarily manages this portfolio. It also entails recruiting project staff and reporting on the Year Five scope.

Status: The recruitment activity was mainly completed In Year Four; therefore, staff was not recruited during this reporting period. For reporting, the chief of party held several formal meetings with the project’s Agreement Officer’s Representative for updates on project progress. VectorWorks also submitted the required data once a quarter through the Tanzania Monitoring and Evaluation Management System, which is a USAID Tanzania mission database. The project responded to requests for information from PMI, as needs arose.

Deliverable	Audience	Timing	Dissemination Plan	Status
VectorWorks year 5 annual report	PMI	Quarter 4	Share by email	On track

PM.2.1 Project Reporting

Brief Update: VectorWorks will coordinate with PMI Tanzania to ensure close communication and adequate reporting through the USAID Tanzania mission database: the Tanzania Monitoring and Evaluation Management System. The VectorWorks chief of party will meet with PMI (in-person or conference call), for regular updates, as well as hold a quarterly joint program planning meeting with PMI. VectorWorks will provide technical reports to USAID Washington twice a year, which will be shared with the PMI Tanzania mission. The project will also provide quarterly financial reports to USAID Washington, which will be shared

with the PMI Tanzania mission. VectorWorks understands that they may be asked to provide information to USAID, as needed, for the PMI annual report, strategic planning, VIP visits, and congressional reports.

Status: VectorWorks Tanzania is on track with reporting.

Deliverables	Audience	Timing	Dissemination Plan	Status
1. VectorWorks Tanzania Year 4 annual report	PMI	Year 4, Quarter 1	Email to PMI	Complete
2. Years 5 work plan	PMI	Year 4, Quarter 1	Email to PMI	Complete
3. Quarterly financial reports	PMI	Quarters 1–4	Email to PMI	On track
4. VectorWorks Tanzania Year 5 semi-annual report	PMI	Year 4, Quarter 3	Email to PMI	Complete
5. Project close-out plan	PMI	Year 5, Quarter 1	Email to PMI	On track
6. End of project report	PMI	December 30, 2019	Email to PMI	On track

PM.3 ANC/EPI Assessment

[Completed Year One]

PM.4 International Travel

Brief activity description. For Year Five, VectorWorks expects country officials will travel to various destinations to attend and, when appropriate, present Tanzania’s experience in ITN continuous distribution at world-level forums. Also, project officials from headquarters will visit Tanzania with a specific scope of work to support the country teams. In every travel case, VectorWorks will notify PMI in advance—detailing the scope of work, travel dates, and debrief plans; and affirming if the travel is part of the approved budget and work plan.

Status: Two VectorWorks country officials attended the annual project work plan meeting in Baltimore; two officials traveled to Geneva to attend annual AMP and the Vector Control Technical Working Group (VCTWG) meetings, as well as the ASTMH meeting. Officials traveled to Tanzania to support the team, including the

project director and field operations director during the reporting period. In every inbound travel, the officials held a debrief session with PMI and shared the travel report. Because of travel permission inconveniences, VectorWorks was unable to support the NMCP manager and the head of vector control to attend the annual AMP and VCTWG meetings. However, two ZAMEP officials from Zanzibar attended the annual AMP and VCTWG meeting in Geneva; one official presented on the experience of ITN distribution through the community channel.

The exchange trip to Ghana to learn and share school-based experience was cancelled for logistical reasons. VectorWorks supported partner organizations—IHI, PSI, and Tropical Health—official’s travels in and out of Tanzania for various project-related activities, as detailed in the work plan.

Deliverable	Audience	Timing	Dissemination Plan	Status
Travel and Debrief Reports	PMI	Quarter 2	Email to PMI	Complete

PM.5 Documentation and Dissemination: Telling VectorWorks’ Story

Brief activity description: The past four years of the VectorWorks project in Tanzania saw significant growth in scope and coverage of the activities. Project innovations during the four years range from ITNs distribution processes improvement, systems development within national platforms, success stories, and materials that can be shared and can benefit other implementing partners or countries. In Year Five of the project, VectorWorks planned to film an instructional video clip for SNP that the government implementers can use to replace trainings.

Status: The filming of the instructional video clip was cancelled because of budgetary constraints; the local government authority officials have the necessary skills and knowledge to implement SNP without additional input. The project will be providing PMI a request to formally cancel for this deliverable.

Deliverable	Audience	Timing	Dissemination Plan	Status
Report on special events organized by VectorWorks and number of people reached with such events, aggregated by gender	NMCP, PMI, PO-RALG	Q3, Q4	Share by email	Project will be sending PMI a formal request to cancel

PM.6 Team Development for Managing RCH Distribution Expansion

Brief activity description: In Year Four, VectorWorks planned to oversee the RCH distribution in the country. To ensure health facilities submit their requests and requisitions forms on time across the entire country, district teams review orders and follow-up on any discrepancies. VectorWorks will hire a number of field-level officers who were stationed in various zones. In Year Four, VectorWorks hired one country office logistics advisor and two regional managers. The project also conducted a two-day program meeting where the project conducted a team building and orientation session with the new staff to ensure they have the

needed experience and learn from the existing regional officers. The project strategized to transfer development efforts to regional and districts teams in Year Five and after the project ends.

Status: In year five, VectorWorks had all its project team members oriented to their roles and responsibilities. During this reporting period, there were no team building activities hence this was done in Year Four.

Deliverable	Audience	Timing	Dissemination Plan	Status
ITNs Trends and Review Reports	PMI	Quarter 3	Email to PMI	Completed in Year 4 - in process to be submitted

CORE PERFORMANCE MONITORING PLAN

Core Results Framework

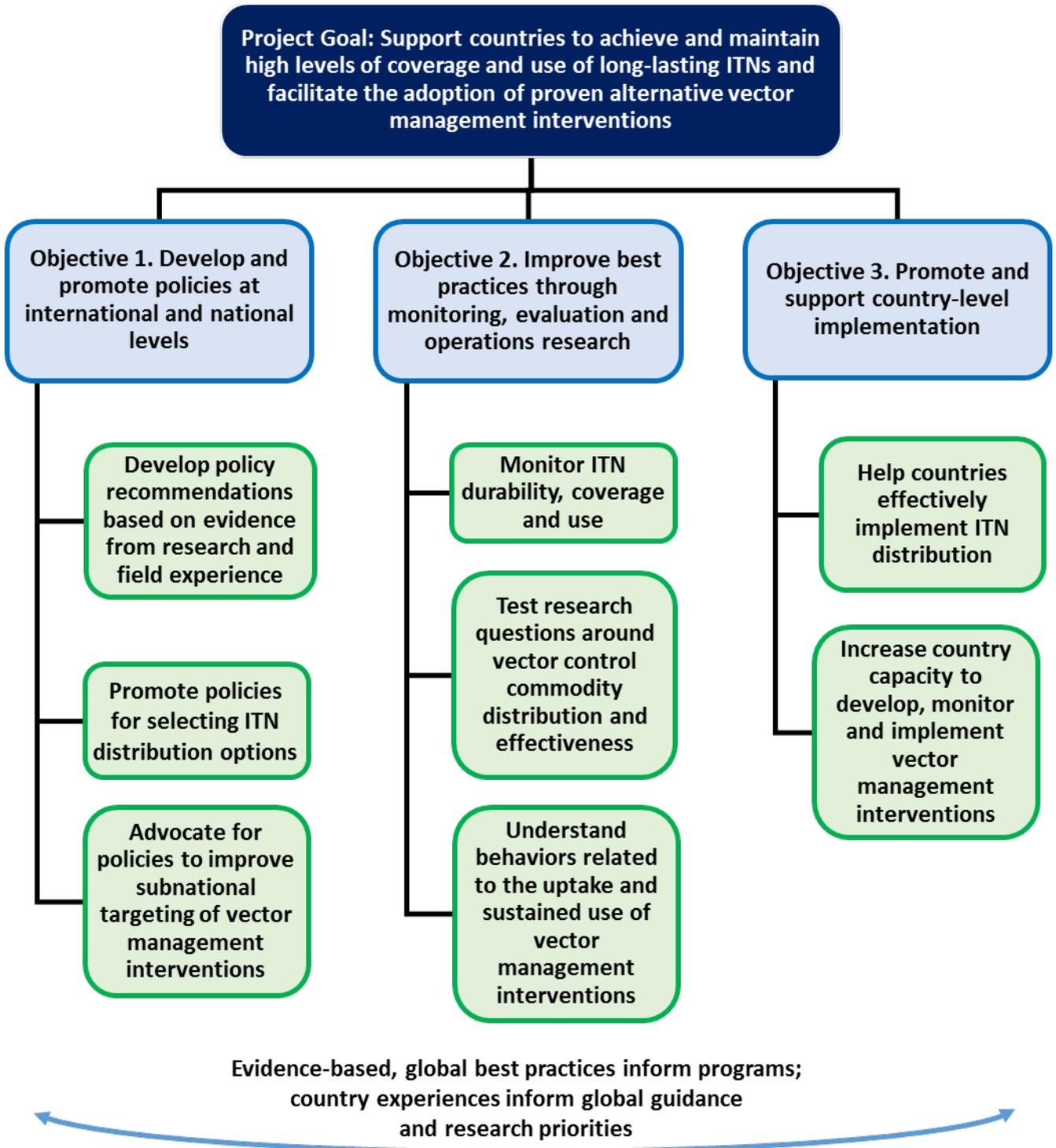
The VectorWorks results framework (see Figure 1) describes the pathways linking activities to the project goal of supporting countries to achieve and maintain high levels of coverage and use of ITNs and facilitate the adoption of proven alternative vector management interventions. In this framework, 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 WHO and RBM channels, informed by M&E 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



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 MPAC at WHO, PMI, or the 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.	<ul style="list-style-type: none"> 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: 1 Year 4: 0 Year 5: 0 LOP: TBD
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.	<ul style="list-style-type: none"> 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: 1 Year 4: 0 Year 5: 0 LOP: TBD
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 <i>Malaria Journal</i> .	<ul style="list-style-type: none"> 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: 0 Year 4: 1 Year 5: 0 LOP: TBD

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.	<ul style="list-style-type: none"> • 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: 7 Year 4: 3 Year 5: TBD LOP: TBD
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.	<ul style="list-style-type: none"> • 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: 21 Year 4: 18 Year 5: TBD LOP: TBD

^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) 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.	<ul style="list-style-type: none"> Source: Research tracking spreadsheet Frequency of reporting: Semiannually Reporting units: Core and field sites 	<p>OR</p> <p>Year 1: 1 Year 2: 1 Year 3: 1 Year 4: 0 Year 5: 0 LOP: 3</p> <p>Non-OR</p> <p>Year 1: 3 Year 2: 5 Year 3: 7 Year 4: 3 Year 5: 2 LOP: 20</p>	<p>OR</p> <p>Year 1: 0 Year 2: 1 Year 3: 2 Year 4: 2 Year 5: 2 LOP: TBD</p> <p>Non-OR</p> <p>Year 1: 0 Year 2: 6 Year 3: 7 Year 4: 10 Year 5: 11 LOP: TBD</p>
2.2.1 Percentage of PMI-funded durability monitoring surveys with core indicator reports available online (Canceled Yr 3)	<p>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.</p> <p>Denominator: Total number of PMI-funded durability monitoring surveys.</p>	<ul style="list-style-type: none"> Source: Durability monitoring website Frequency of reporting: Semiannually Reporting units: Core 	<p>Year 1: 90% Year 2: 90% Year 3: 90% Year 4: 90% Year 5: 90% LOP: 90%</p>	<p>Year 1: 0% Year 2: 0% Year 3: N/A Year 4: – N/A Year 5: – N/A LOP: – N/A</p>

2.2.2. Number of PMI-funded durability monitoring surveys with preliminary reports submitted within 90 days of data collection.	Each data collection time point (i.e., baseline, 12-month, 24-month, and/or 36-month) counts as an individual survey report. Preliminary reports should include results on survivorship, attrition and insecticidal activity. Approval can be granted outside the 90 day window.	<ul style="list-style-type: none"> • Source: Durability monitoring reports • Frequency of reporting: Semiannually • Reporting units: Core and Field 	Year 1: 0 Year 2: 4 Year 3: 5 Year 4: 5 Year 5: 8 LOP: 22	Year 1: 0 Year 2: 1 Year 3: 1 Year 4: 6 Year 5: 3 LOP: TBD
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.	<ul style="list-style-type: none"> • 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: 3 Year 4: 6 Year 5: 4 LOP: TBD
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.	<ul style="list-style-type: none"> • 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: 3 Year 4: 3 Year 5: 4 LOP: TBD

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.	<ul style="list-style-type: none"> 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: 7 Year 3: 4 Year 4: 1 Year 5: 14 LOP: TBD
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.	<ul style="list-style-type: none"> 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: 13 Year 3: 10 Year 4: 10 Year 5: 5 LOP: 44

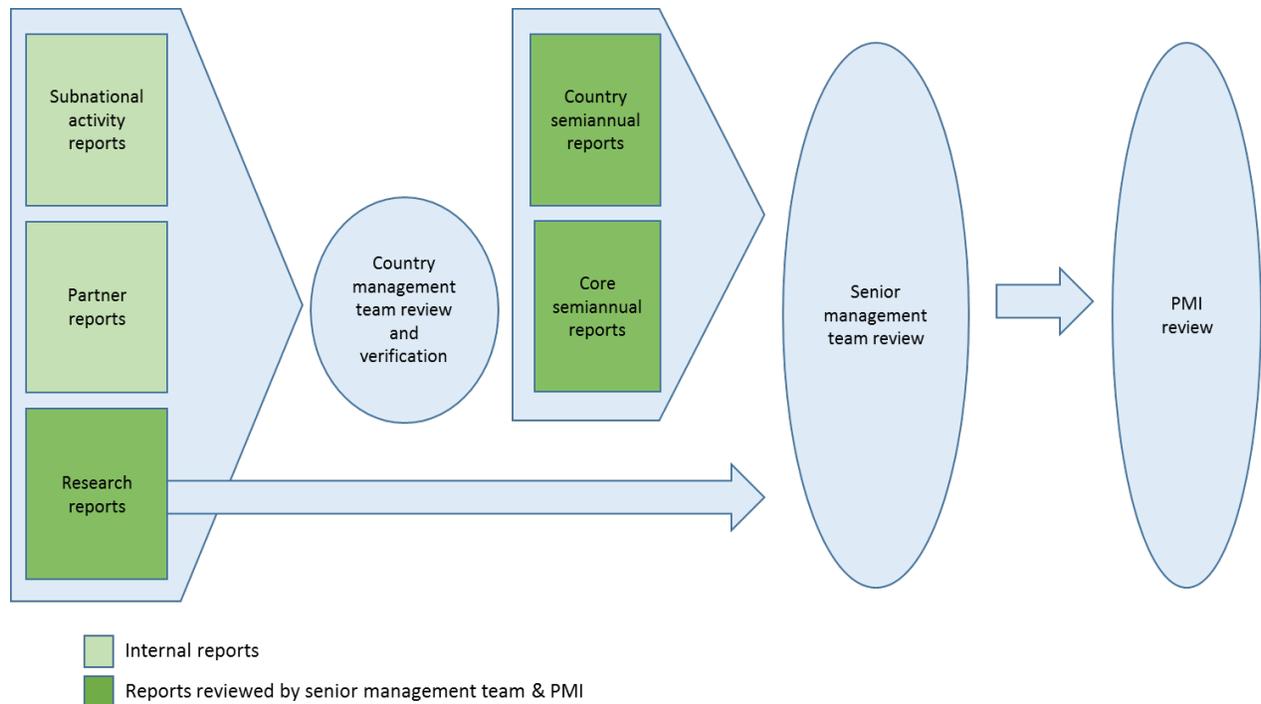
Research and Evaluation Plan

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 M&E 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	1
4	2	0
5	2	0
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 GMP 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 (Note: It was submitted in Year 2 but VCTEG delayed the review to Year 3).

Year Three actuals: Repurposing (Note: Reviewed by the VCTEG in Q2; VCTEG declined to review the issue further and has delegated it to AMP and SBCC Working Group).

Year 4 actuals: The November 2017 VCTEG agenda did not address any areas of our research. VectorWorks anticipates submitting the cost-effectiveness of continuous distribution strategies for the next VCTEG. The 2018

VCTEG meeting was not organized by WHO, however the costing meta-analysis paper was shared with WHO for integration into a separate malaria prevention costing review.

Year 5 actuals: VCTEG meetings were not organized due to short-staffing at GMP and competing priorities.

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

Year	Target	Actual
1	0	0
2	1	0
3	2	1
4	2	0
5	2	0
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: None. We anticipate a VCTEG meeting on the net preferences paper in early Year 3.

Year Three actuals: Net preferences (Note: The study on net preferences was reviewed by VCTEG in Q2; universal coverage recommendations will be updated to include a paragraph on the main findings).

Year Four actuals: None. WHO's Recommendations for Achieving Universal Coverage were updated in December 2017 and included a recommendation derived from our work on net preferences (the work cited in the Year 3 actuals).

Year 5 actuals: VCTEG meetings were not organized due to short-staffing at GMP and competing priorities.

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	0
4	1	1
5	1	0
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. MPAC discussed the prioritization of vector control tools we provided, but it was not endorsed. Therefore, it does not meet the definition.

Year Three actuals: None

Year Four actuals: VectorWorks presented on ITN access and quantification for ITNs at the WHO meeting on Universal Access in Q2, and the resulting report from that meeting was on the agenda for review at the MPAC meeting in Q3.

Year 5 actuals: The project was not able to attend MPAC meetings due to conflicts.

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	7
4	1	3
5	1	TBD
Life of project	5	–

Unit of measure: Number

Disaggregation: N/A

Source: HWG and PMI 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.

Year Three actuals: VectorWorks provided language for the continuous distribution section of Global Fund’s Guidance Note on Malaria (formerly the HWG Guidance Note). MOP guidance reflects previous inputs on school distribution, net care, and durability monitoring. VectorWorks also provided inputs on an update to WHO’s Recommendations for Achieving Universal Coverage, drafting language on considering ITN preferences, avoiding top-up campaigns, avoiding door-to-door visits solely to improve ITN use.

Year Four actuals: Repurposing definitions, indicator reference guide, and key results from the cost analysis presented by Josh Yukich were added to PMI technical guidance

Year Five actuals: The latest version of the PMI technical guidance was not yet posted to the website as of this writing.

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

Year	Target	Actual
1	0	
2 (FY16 MOPs posted Nov 2015)	2	18
3 (FY17 MOPs posted Nov 2016)	4	18
4 (FY18 MOPs posted Nov 2017)	4	21
5 (FY19 MOPs posted Nov 2018)	4	18
Life of project	14	75

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.

Nov 2017 – PMI added three countries and Mekong was split into 3 individual country MOPs.

Annual results by country:

	Year 1	Year 2 (FY16)	Year 3 (FY17)	Year 4 (FY18)	Year 5 (FY19)
1. Angola		Durability monitoring is in the national strategy; PMI will fund technical assistance for continuous distribution	Shifted from a rolling campaign to a nationwide campaign.	UAR, Mass campaign process assessment measures, Net care, Repurposing and disposal	Strengthen routine distribution

2. Benin		Durability (past data being reviewed)	School distribution, durability monitoring	UAR, durability monitoring, School distribution, Outdoor sleeping research	If new type of ITN for 2020 campaign, then durability monitoring will be done
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	durability monitoring School distribution SBC to discourage misuse	None
4. Ethiopia		Continuous distribution by health extension workers	continuous distribution with HEWs	durability monitoring	None
5. Ghana		Will continue continuous distribution	Net care SBC	continuous distribution, UAR, Indicator guide, School BCC	None
6. Mekong/Burma		Durability monitoring	Durability monitoring	durability monitoring, continuous distribution	continuous distribution
7. Guinea		Durability monitoring	Durability monitoring	durability monitoring, school distribution	Potential expansion of school distribution
8. Kenya		Continuous distribution	continuous distribution, durability monitoring	Community distribution, durability monitoring	Will include NCR survey questions
9. Liberia		None (continuing antenatal care clinic distribution, no	Durability monitoring	Exploration of school distribution, monitoring of ANC distribution,	School distribution [not funded]; use of access data

		durability monitoring)		durability monitoring	
10. Madagascar		Durability monitoring, expansion of continuous distribution	Durability monitoring expansion of community distribution	Community distribution, school distribution	Community distribution; durability monitoring
11. Malawi		Durability monitoring	Durability monitoring, net care SBC	UAR, misuse	None
12. Mali		None	Durability monitoring, net care SBC	durability monitoring	durability monitoring
13. Mozambique		Durability monitoring	School distribution	NetCALC, school distribution, durability monitoring,	School distribution
14. Niger		N/A	N/A	N/A	New PMI country durability monitoring
15. Nigeria		No MOP online as of November 13, 2015, but counted because Nigeria is funding durability monitoring	Durability monitoring, net care SBC, continuous distribution mentioned but not enough nets available	continuous distribution, SBC for continuous distribution	durability monitoring
16. Rwanda		"Targeted" community-based distribution, net durability, care and repair	Net durability	durability monitoring	-None-
17. Senegal		Durability monitoring, continuous distribution	net care SBC	-None-	Continuation of community, school and Health Facility continuous distribution channels
18. Sierra Leone		N/A	N/A	N/A	New PMI country School distribution durability monitoring

19. Tanzania		continuous distribution & net care	continuous distribution & durability monitoring	durability monitoring, continuous distribution, SBC for continuous distribution,	Use NetCALC to inform strategy
20. Uganda		continuous distribution (schools), net care, durability monitoring	Net durability, school distribution (traditional and “novel”), durability monitoring	UAR, continuous distribution, durability monitoring	School distribution
21. Zambia		continuous distribution, durability monitoring,	continuous distribution, durability monitoring	durability monitoring, continuous distribution	School and community distribution; durability monitoring
22. Zimbabwe		continuous distribution, durability	Durability monitoring, SBC for net durability	Rectangular nets SBC, community distribution, durability monitoring	Continue community-based distribution
23. Burkina Faso				-None-	durability monitoring
24. Cameroon				-None-	-None-
25. Cote D'Ivoire				durability monitoring (will be funded for the 2019 mass campaign)	-None- Will buy NGNs
26. Cambodia				durability monitoring	durability monitoring
27. Thailand				-None-	-None-

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	2
4	0	2
5	0	2
Life of project	3	–

Non-operations research:

Year	Target	Actual
1	3	0
2	5	6
3	7	7
4	3	10
5	2	11
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 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.

Activities deemed non-research by the IRB (they do not count as OR or non-OR): Accountability report, Continuous Distribution Toolkit usability testing, the Zimbabwe process evaluation, and the cost analysis (provided by Tulane University).

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 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).

Year Three actuals:

Operations research: Outdoor transmission in Tanzania; net care and repair in Tanzania

Non-operations research: Mozambique, Nigeria, Myanmar, DRC, and Zanzibar durability monitoring protocols; Malawi ITN misuse study; Mozambique school pilot evaluation

Activities deemed non-research by the IRB (they do not count as OR or non-OR): Counterfeit nets study; Senegal social marketing household survey in Dakar

Year 4 actuals:

Operations research: Outdoor transmission in Tanzania; Net motion sensor study

Non-operations research: Mozambique, Nigeria, Myanmar, DRC, Zanzibar, Kenya, Liberia, Ghana durability monitoring protocols; Guinea school pilot evaluation; Mozambique school pilot evaluation;

Activities deemed non-research by the IRB (they do not count as OR or non-OR): Ghana net use qualitative research; Counterfeit nets study; Tanzania LQAS for ITN coverage; Tanzania/Mozambique ITN use for fishing

Year 5 actuals:

Operations research: Outdoor transmission in Tanzania; Net motion sensor study

Non-operations research: Mozambique, Nigeria, Myanmar, DRC, Zanzibar, Kenya, Liberia, Ghana durability monitoring protocols; Guinea school pilot evaluation; Mozambique school pilot evaluation; Angola net coverage and use survey

Activities deemed non-research by the IRB (they do not count as OR non-OR): N/A

Indicator 2.2.1: Percentage of PMI-funded durability monitoring surveys with core indicator reports available online (Canceled in Year 3)

Year	Target	Actual
1	90%	0%
2	90%	0%
3	90%	0%
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.

Year Three actuals: None (Note: In discussions with PMI in early Year 3, PMI determined that it is not advisable to post the durability monitoring reports online for public use. For this reason, several reports were submitted and remained internal to PMI and to VectorWorks: baseline reports Mozambique, Nigeria, and Myanmar have been submitted to PMI and approved. Baseline reports for DRC and Zanzibar have also been submitted)

Indicator 2.2.2: Number of PMI-funded durability monitoring surveys with preliminary reports submitted within 90 days of data collection.

Year	Target	Actual
1	0	0
2	4	1
3	5	1
4	7	6
5	8	3
Life of project	22	--

*Indicator introduced in year 3.

Unit of measure: Number

Disaggregation: None

Source: Durability monitoring reports

Definition: Each data collection time point (i.e., baseline, 12-month, 24-month, and/or 36-month) counts as an individual survey report. Preliminary reports should include results on survivorship, attrition and insecticidal activity. Approval can be granted outside the 90-day window.

Frequency of reporting: Semiannually

Reporting format: Semiannual report

Reporting units: Core and Field

Notes:

This indicator replaced 2.2.1 in June 2017 (Year 3, Q3). In discussions with PMI in early Year 3, PMI determined that it is not advisable to post the durability monitoring reports online for public use.

Year One target was 0 because protocols were still in development.

Year Two actuals were back-calculated and first reported in Year 3: Burma/Myanmar baseline

Year Three actuals: Nigeria Oyo baseline.

Year Four actuals: DRC 12 and 24-month report, Nigeria 24-month report, Zanzibar 12 and 24-month report, and Mozambique 24-month

Year Five actuals: Ghana Baseline Report, Nigeria 36-month Report, and Zanzibar 36-month report

Gray boxes indicate completed reports.

Country	Baseline	12-month	24-month	36-month
Burma/ Myanmar	Fieldwork completed Aug 2016	Fieldwork completed Jan 2017	Fieldwork completed Dec 2017	Fieldwork completed Dec 2018

	Report submitted: Oct. 11, 2016 Report approved Feb. 27, 2017	Report submitted: May 30, 2017 Report approved June 20, 2017	Report submitted: April 26, 2018 Report approved: May, 15, 2018	Report submitted: April 12, 2019
DRC	Fieldwork completed Oct 2016 Report submitted March 21, 2017 Report approved: June 1, 2017	Fieldwork completed Sep 2017 Report submitted December 1, 2017 Report approved May 24, 2018	Fieldwork completed May 2018 Report submitted August 24, 2018 Report approved February 26, 2019	Fieldwork completed March 2019
Mozambique	Fieldwork completed Nov 2015 Report submitted: Oct. 18, 2016 Report approved Dec. 12, 2016	Fieldwork completed Aug 2016 Report submitted: June 5, 2017 Report approved July 5, 2017	Fieldwork Completed in August 2017 Report submitted January 5, 2018 Report approved March 6, 2018	Fieldwork completed August 2018 Report submitted January 2, 2019 Report approved February 27, 2019
Nigeria	Zamfara and Ebonyi fieldwork completed March 2016 Oyo fieldwork completed Dec 2016 Report submitted: March 3, 2017 Report approved March 15, 2017	Zamfara and Ebonyi fieldwork completed October 2016 Oyo fieldwork Completed October 2017 Report submitted May 5, 2017 Report approved August 30, 2017	Zamfara and Ebonyi completed October 2017 Oyo fieldwork completed October 2018 Report submitted January 17, 2018 Report approved March 6, 2018	Zamfara and Ebonyi fieldwork completed October 2018 No 36m Oyo fieldwork will take place Report submitted January 30, 2019 Report approved March 20, 2019

Zanzibar	Fieldwork completed Nov 2016 Report submitted March 20, 2017 Report approved May 7, 2017	Fieldwork completed Aug 2017 Report submitted November 6, 2017 Report approved March 5, 2018	Fieldwork completed July 2018 Report submitted October 24, 2018 Report approved November 15, 2018	Fieldwork completed April 12, 2019
Kenya	Fieldwork completed May 2018 Report submitted August 15, 2018 Report approved December 10, 2018	Fieldwork completed November 2018 Report submitted March 18, 2019 Report approved April 12, 2019		
Liberia	Fieldwork completed August 2018 Report submitted January 3, 2019 Report approved March 18, 2019	Fieldwork scheduled to be complete April 2019		
Ghana	Fieldwork completed December 2019 Report submitted March 20, 2019 Report approved April 12, 2019			

Indicator 2.3: Number of research reports produced and disseminated

Year	Target	Actual
1	2	2
2	5	5
3	7	3
4	10	8
5	10	4
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. (Note: several reports related to misuse were produced but remained internal to PMI and the project. These included: literature review summarizing evidence addressing LLIN misuse for fishing, GIS report on population estimates, potential harm from insecticide leaching report, and the potential harm from small-mesh nets report)

Year Three actuals: Access:Use Ratio report; Experimental auctions study report; Mali costing report

Year Four actuals: Malawi Net Misuse Rapid Assessment Report, Open Malaria Modelling on pooled PMI durability monitoring data sets; Access:Use Ratio report updated; Ghana report on ITN use; Ghana costing report; Senegal social marketing report. Nigeria 2015 MIS ITN use memo; Mozambique school evaluation baseline.

Year Five actuals: Source of nets report; counterfeit nets; SNP5 costing; Tanzania HF costing;

Indicator 2.4: Number of peer-reviewed journal articles published

Year	Target	Actual
1	5	4
2	4	2
3	4	3
4	4	3
5	6	4
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)

Year Three annual actuals:

- Beyl, Celine Zegers, et al. "[Evaluation of community-based continuous distribution of long-lasting insecticide-treated nets in Toamasina II District, Madagascar](#)." Malaria journal 16.1 (2017): 327.
- Gingrich, Chris D., et al. "[Demand and willingness-to-pay for bed nets in Tanzania: results from a choice experiment](#)." Malaria journal 16.1 (2017): 285.
- Kilian, Albert, et al. "[Evaluation of a continuous community-based ITN distribution pilot in Lainya County, South Sudan 2012–2013](#)." Malaria Journal 16.1 (2017): 363.

Year Four

- Beyl, Celine Zegers, et al. "[Impact of a 15-month multi-channel continuous distribution pilot on ITN ownership and access in Eastern Region, Ghana](#)." Malaria Journal 17.1 (2018): 124.
- Acosta, Angela ET. al. "[Design, implementation and evaluation of a school ITN distribution program in Cross River State, Nigeria](#)." Global Health Science and Practice. (2018) GHSP-D.
- Koenker, Hannah. "[More is More: Are We Delivering Enough LLINs?](#)" EClinicalMedicine, 1 (2018): 5-6

Year 5

- Koenker, Hannah, et al. "[Assessing whether universal coverage with insecticide-treated nets has been achieved: is the right indicator being used?](#)" Malaria journal 17.1 (2018): 355.
- Mboma, Z. M., Dillip, A., Kramer, K., Koenker, H., Greer, G., & Lorenz, L. M. (2018). '[For the poor, sleep is leisure': understanding perceptions, barriers and motivators to mosquito net care and repair in southern Tanzania.](#) Malaria Journal, 17(1), 375.
- Monroe, April, et al. "[Measuring and characterizing night time human behaviour as it relates to residual malaria transmission in sub-Saharan Africa: a review of the published literature.](#)" Malaria journal 18.1 (2019): 6.
- Olapeju, Bolanle, et al. "[Age and gender trends in insecticide-treated net use in sub-Saharan Africa: a multi-country analysis.](#)" Malaria journal 17.1 (2018): 423.

In draft, in press, or submitted & needs approval: continuous distribution costing meta-analysis; continuous distribution costing summary; Manuscript connecting continuous distribution costs to transmission modelling; Seasonal use access paper; Malawi drivers of misuse; three Zanzibar residual transmission manuscripts, Who buys nets, Indicators for measuring human-vector interaction; Nigeria durability monitoring, Mozambique durability monitoring, Myanmar durability monitoring, Zanzibar durability monitoring, DRC durability monitoring, Tanzania SNP evaluation, Durability Risk Index.

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	7
3	7	4
4	7	3
5	9	14
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: 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: Malaria in pregnancy advocacy strategy; validation report; community distribution guide; net care and repair strategy guide; durability monitoring data collection toolkit. Corrections made to this indicator in Year 3: addition of training materials on access:use indicator to macro and analysis plan & do-files for source of nets question.

Year Three actuals: gender training curriculum; online continuous distribution toolkit; accountability report; malaria SBCC indicator reference guide.

Year Four: Minimum data requirements for mass campaigns; urban distribution report; AMP toolkit

Year 5: Consensus statement on repurposing ITNs; ITN misuse toolkit; durability monitoring snapshots (eight sets); durability monitoring capacity-strengthening case study; decision tree for ITN distribution; rebranding M&E tools under SBCC WG (three tools); SBC for ITNs toolkit;

In draft: NetCALC lite; digital health technologies for ITN distributions

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

Year	Target	Actual
1	6	6
2	7	13
3	6	10
4	7	10
5	6	5
Life of project	32	16

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. If the mission made the decision to buy into the project, and the AOR provided forward-funding, then that country counts in that year.

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

Year Two actuals: Angola, DRC, Ghana, Kenya, Liberia, Mozambique, Nigeria, Tanzania, Senegal, Myanmar, Malawi, Uganda, and Zimbabwe

Year Three actuals: Angola, Ghana, Liberia, Mozambique, Nigeria, Tanzania, Zimbabwe, DRC, Kenya, and Guinea.

Year Four actuals: Benin, Burma, DRC, Ghana, Guinea, Kenya, Liberia, Mozambique, Nigeria, Tanzania,

Year Five actuals: Benin, Ghana, Liberia, Mozambique, and Tanzania.

GHANA PERFORMANCE MONITORING PLAN

PMP Purpose, Components and Critical Assumptions

A. Purpose

This PMP provides a framework for systematically collecting and using data to monitor the activities and achievements of the VectorWorks Project in Ghana. It describes the relationship between project activities and its overall goal to “Increase country capacity to develop, monitor and implement vector management interventions.” It also documents the key specific results that VectorWorks Ghana 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 Ghana project. In addition, it tracks two standard indicators from the global VectorWorks agreement in the Ghana 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 tracking sheets will document how targets were selected 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 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 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 will review this PMP and these assumptions internally and with USAID/PMI Ghana on a semi-annual basis to track trends and discuss opportunities for refining program activities and the PMP indicators.

Project Goal and Objectives

The VectorWorks (VW) project is a five-year (2014-2019) global malaria prevention 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 CCP under Cooperative Agreement # AID-OAA-A-14-00057. Other partners include Tropical Health LLC, Swiss Tropical and Public Health Institute, Population Services International, Mennonite Economic Development Associates and the Tulane University Center for Applied Malaria Research and Evaluation. Key partners in Ghana include PMI resident advisors, the GHS, the NMCP, the GES and its School Health Education Program (SHEP), 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

The PMP has been updated to reflect the targets for Year 5. In this fifth year of the project, activities will focus around sustaining capacity of stakeholders, monitoring health facility-based continuous distribution activities,

supporting the mass campaign, and promoting effective use and care of ITNs through school-based SBC activities. These activities will take place at the national, regional, and district levels.

The obligation for the 5th year is \$1,916,849. Key partners include Ghana Health Service, the NMCP and Ghana Education Service, and its School Health Education Program.

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 control interventions. In this framework, each activity contributes to the achievement of project objectives and in effect, the overall project goal.

Documentation of improvements along these pathways helps attribute improvements to specific activities leading to the project goal and objectives.

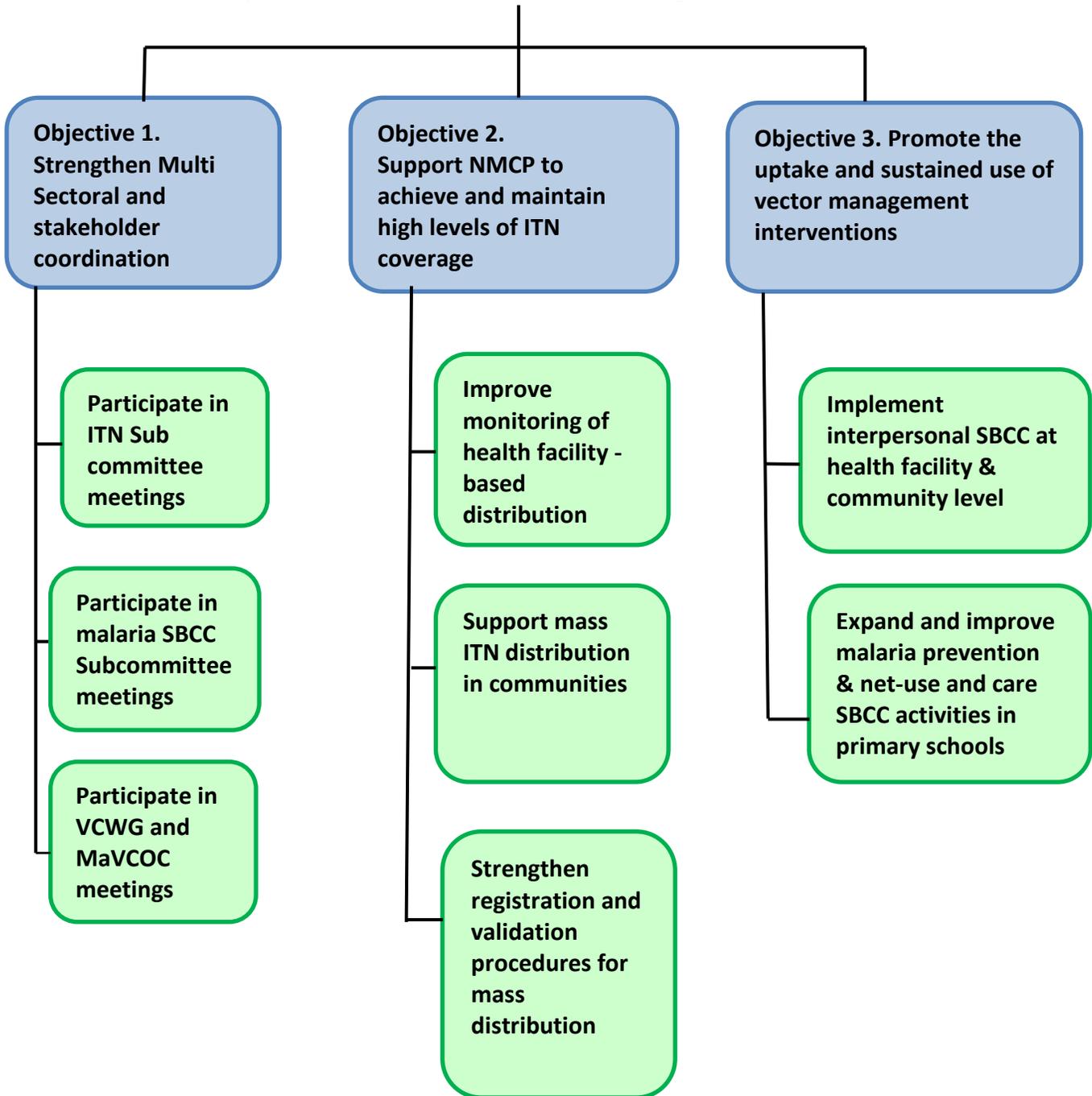
As stated above, the VectorWorks Ghana project will contribute to the project goal through three objectives:

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 turn, inform policy discussions and future modifications. Objective 3 will ensure wide dissemination and adoption of the NMCP's policies and guidance.

VectorWorks Ghana Results Framework: Project Year Five

Project Goal: Increase country capacity to develop, implement and monitor vector management interventions



A. Indicator Table for VectorWorks Ghana (Life of Project)

<i>Focus Area</i>	<i>ID No</i>	<i>Indicator</i>	<i>Data Source</i>	<i>Frequency</i>
Objective GH.1: Strengthen multi-sectoral and stakeholder coordination				
GH.1	1	Number of Malaria Alerts distributed	Project Activity Report	Semi-Annual
	2	Number of national LLIN coordination meetings in which VectorWorks participated	Project Activity Report	Semi-Annual
Objective GH.2: 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	Semi-Annual
	2	Number of antenatal and immunization clinics visited by a monitoring team	Project Activity Report	Semi-Annual
	3	Percent of pregnant women who receive a net during their first antenatal care visit	DHIMS/DHIMS2	Semi-Annual
	4	Percent of children who received a net during their last measles vaccine visit	DHIMS/DHIMS2	Semi-Annual
GH.2.2 Registration and Validating Mass LLIN Distribution data	1	Number of regional planning meetings held for mass LLIN distribution	Project Activity Reports	Semi-Annual
	2	Number of sub-districts supported to validate community population data	Project Activity Reports	Semi-Annual
	3	Percentage of communities where variances were detected	Project Activity Report	Semi-Annual
GH.2.3 Schools Distribution	1	Number of schools implementing continuous distribution	Project Activity Report	Semi-Annual
	2	Number of pupils receiving ITNs	Project Activity Report	Semi-Annual

GH.2.CC Cross-cutting	1	Number of people trained in ITN distribution	Training summary forms	Semi-Annual
	2	Number of ITNs distributed	Transport waybills	Semi-Annual
GH.3: Promote the uptake and sustained use of vector management interventions				
	1	Number of BCC activities to promote ITN use	Project Activity Reports	Semi-Annual
	2	Number of people exposed to malaria messages	Project Activity Reports	Semi-Annual

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	TBD	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: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks senior technical advisor

Notes: The Malaria Action Alert was discontinued after project Year One.

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

Year	Target	Actual
1	6	4
2	12	12
3	12	12
4	12	12
5	12	6
Life of Project	54	

*Final number to be included in Year 5 annual report

Unit of Measure: Number

Disaggregation: By committee type

Committee Type	Number of Meetings Held in Year 5
ITN Subcommittee meetings	2
MaVCOC meetings	2
Other ITN-related meetings	2
<i>Total</i>	<i>6</i>

Source: Project Activity Report

Definition: National LLIN coordination meetings include but are not limited to meetings with the LLIN sub-committee, the Malaria SBCC Subcommittee and the Malaria Vector Control Oversight Committee. These three committees are the main coordination mechanisms of interest to VectorWorks. Other potential coordination mechanisms include the USAID COPs meeting and the M&E/ COP (MECOP) meetings and others organized to plan and implement activities for special events such as World Malaria Day etc.

Frequency of reporting: Semi-Annually

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks 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
4	4	4
5	4	*
Life of Project	TBD	

* There were no meetings of the National Monitoring Team in Q1 and Q2. Activity is planned for Q3. Final number to be included in Year 5 annual report

Unit of Measure: Number

Disaggregation: None

Source: Project activity reports

Definition: This indicator tracks the number of times the national monitoring team meets to plan and undertake training of regional teams and to monitor continuous distribution activities. The national monitoring team's main role is to reorient 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: Semi-Annually

Reporting format: Semi-Annual and Annual Reports

Reporting units: VectorWorks chief of party

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	3,245
3	3,300	4,093
4	3,300	3,980
5	2,300	*
Life of Project	TBD	

* Collation of data from districts is on-going. To be updated in Year 5 annual report.

Unit of Measure: Number

Disaggregation: Regions and districts

Source: Monitoring forms

Definition: The number of ANC and EPI clinics visited by monitoring/supervision teams.

Frequency of reporting: Semi-Annually

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

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

Year	Target	Actual
1	60	50.65
2	80	58.37
3	80	69.90
4	80	87.80
5	90	75.28*
Life of Project	TBD	

* March data yet to be received from DHIMS. To be updated in the Year 5 annual report.

Unit of Measure: Percentage

Disaggregation: Regions, districts, and facility type (hospitals, health centres, CHPs)

Region	Coverage in Year 5
Ashanti	61.30
Brong Ahafo	83.89
Central	74.78
Eastern	98.17
Greater Accra	21.48
Northern	60.54
Upper East	70.41
Upper West	91.73
Volta	97.35

Western	93.12
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Source: DHIMS/DHIMS2

Definition:

- Numerator: Number of pregnant women who received a net during their first ANC visit
- Denominator: Number of pregnant women who had a 1st ANC visit for the current pregnancy in the reporting period

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks senior technical advisor

Notes: The March 2019 reports are yet to be finalized because DHIMS2 had not released data at the time of reporting. The large number of districts (216) and health facilities in the country made it not feasible to disaggregate data by district level or facility type. 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 measles vaccination visit

Year	Target	Actual
1	70	73.05
2	80	71.44
3	80	76.17
4	80	87.80
5	90	72.75*
Life of Project	TBD	

* March 2019 data yet to be received from DHIMS. To be updated in the Year 5 annual report.

Unit of Measure: Percentage

Disaggregation: Regions, districts, and facility type (hospitals, health centres, CHPs)

Region	Coverage in Year 5
Ashanti	56.64
Brong Ahafo	91.02
Central	69.38
Eastern	98.00

Greater Accra	14.51
Northern	56.74
Upper East	63.07
Upper West	93.57
Volta	97.31
Western	87.27

Source: DHIMS/DHIMS2

Definition:

- Numerator: Number of children who received a net during their 18-month measles vaccine visit
- Denominator: Number of children who received their 18-month measles vaccine visit

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks senior technical adviser

Notes: The March 2019 reports are yet to be finalized because DHIMS2 had not released data at the time of reporting. The large number of districts (216) and health facilities in the country made it not feasible to disaggregate data by district level or facility type. We therefore limited disaggregation of data to the regional level

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

Year	Target	Actual
1	12	12
2	12	14
3	N/A	N/A
4	10	10
5	N/A	N/A
Life of Project	34	36

Unit of Measure: Number

Disaggregation: None

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

Source: Activity reports

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks 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	N/A
4	N/A	N/A
5	N/A	N/A
Life of Project	555	761

Unit of Measure: Number

Disaggregation: Regions/districts

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

Source: Project activity reports

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Notes: Current process involves electronic validation and does not require training of sub-district officers for data validation.

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	N/A
4	20%	N/A
5	N/A	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: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Disaggregated Results: N/A

Notes: Current process involves electronic registration, validation and quantification of ITNs using the NetApp and does not require validating projected population data.

Indicator GH.2.3.1: Number of schools implementing continuous distribution

Year	Target	Actual
1	-	-
2	14,000	16,026
3	19,288	23,526
4	N/A	N/A
5	23,500	*
Life of Project	TBD	

*Activity is planned for Quarter 3. The number will be updated in the Year 5 annual report

Unit of Measure: Number

Disaggregation: Regions/districts; level (such as Lower Primary, Upper Primary).

Source: Training forms

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

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Notes: Continuous distribution in schools is planned for Quarter 3.

Indicator GH.2.3.2: Number of pupils receiving ITNs

Year	Target	Actual
1	--	3,200
2	910,000	936357
3	1,148,610	1,369,206

4	N/A	N/A
5	1,369,206	*
Life of Project	TBD	

*Activity is planned for Quarter 3. The number will be updated in the Year 5 annual report

Unit of Measure: Number

Disaggregation: Regions/districts, gender

Source: Training forms

Definition: The number of students receiving an ITN from a school distribution program.

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Notes: Continuous distribution in schools is planned for Quarter 3.

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

Year	Health-Facility-Based Distribution		School-Based Distribution		Mass Distribution		Total	
	Target	Actual	Target	Actual	Target	Actual	Target	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	13,410	9,747	22,649	N/A	N/A	11,246	36,059
4	10,000	10,991	N/A	N/A	4,703	4,213	14,703	15,204
5	4,404	***	3,747	**8,777	N/A	*470	8,151	9,247
Life of project	TBD		TBD		TBD		TBD	

*Number trained in Ashanti and Greater Accra regions in Year 5 (for Year 4 target)

***Collation of data is from districts is on-going. To be updated in Year 5 annual report.

** School distribution is planned for Quarter 3. The number will be updated in the Year 5 annual report.

Unit of Measure: Number

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

Region	Mass ITN Distribution Staff Trained in Year 5		School-Based Distribution Staff Trained in Year 5		Total
	Male	Female	Male	Female	
Ashanti	108	122	465	445	1,140
Brong Ahafo	N/A	N/A	N/A	N/A	N/A
Central	N/A	N/A	N/A	N/A	N/A
Eastern	N/A	N/A	N/A	N/A	N/A
Greater Accra	112	128	1,998	2,075	4,313
Northern	N/A	N/A	N/A	N/A	N/A
Upper East	N/A	N/A	1,062	1,130	2,192
Upper West	N/A	N/A	692	910	1,602
Volta	N/A	N/A	N/A	N/A	N/A
Western	N/A	N/A	N/A	N/A	N/A
<i>Total</i>	220	250	4,217	4,560	9,247

Source: Training forms

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

Frequency of reporting: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Disaggregation: By region for mass campaign

Notes: CC stands for cross-cutting indicators.

This is a global PMI and VectorWorks indicator. Support for ITN distribution, including trainings, is dependent on many institutions and factors beyond the project such as Global Fund for AIDS, Tuberculosis and Malaria (GFATM) and UK Department for International Development (DFID)

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

Year	Health-Facility-Based Distribution		School-Based Distribution		Mass Distribution		Total	
	Target	Actual	Target	Actual	Target	Actual	Target	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	1,312,113	1,148,610	1,369,206	N/A	N/A	2,676,037	2,536,957
4	1,200,000	1,416,295	N/A	N/A	14,299,688	10,188,164	15,499,688	11,604,459
5	1,400,000	**551,857	1,369,206	***	N/A	*5,282,650	2,769,206	*5,834,507
Life of project	TBD		TBD		TBD		TBD	

*Mass distribution numbers Ashanti and Greater Accra regions in Year 5 (for Year 4 target)

**March 2019 data yet to be received from DHIMS. To be updated in the Year 5 annual report.

*** School distribution is planned for Quarter 3. The number will be updated in the Year 5 annual report.

Unit of measure: Number

Disaggregation: By region, district, and channel (e.g., ANC or EPI, point mass distribution, school distribution)

Year 5 Disaggregation by Region and Channel

Region	Health-Facility-Based Distribution	School-Based Distribution	Mass Distribution	Total
Ashanti	84,724	N/A	3,020,664	3,105,388
Brong Ahafo	71,979	N/A	N/A	71,979
Central	53,130	N/A	N/A	53,130
Eastern	78,699	N/A	N/A	78,699
Greater Accra	25,111	N/A	2,261,986	2,287,097
Northern	64,177	N/A	N/A	64,177
Upper East	20,539	N/A	N/A	20,539
Upper West	20,811	N/A	N/A	20,811
Volta	58,922	N/A	N/A	58,922
Western	73,765	N/A	N/A	73,765

Source: Waybills, 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: Semi-Annually

Reporting format: Semi-Annual and Annual reports

Reporting units: VectorWorks program officers

Notes: CC stands for cross-cutting indicators.

March 2019 data yet to be received from DHIMS

This is a global PMI and VectorWorks indicator. Number of nets beyond Year Five will depend on donor and Government of Ghana (GoG) orders, so cannot be estimated at this point.

Objective GH.3: 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	1,785	1895
3	2,800	7,567
4	3,200	9,083
5	2,300	4,725
Life of Project	TBD	

Unit of Measure: Number

Disaggregation: Regions/District; Rural/urban; Channel (community mobilization, radio, etc.)

Region	Number of School SBCC Activities in Year 5
Ashanti	463
Greater Accra	2,442
Upper West	769
Upper East	1,051
Total	4,725

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: Semi-Annual

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Notes: Number of SBCC activities is a global PMI and VectorWorks indicator. In Year Five, SBCC activities were focused on interpersonal communications in schools. VectorWorks did not lead radio or community mobilization activities in Year Five.

Indicator GH.3.2: Number of people exposed to malaria messages

Year	Target	Actual
1	2,040,564	3,014,800
2	2,247,69	3,104,580
3	3,321,504	3,557,874
4	3,557,874	7,392,685
5	3,557,874	*5,834,507
Life of Project	TBD	

*Final number to be updated in the Year 5 annual report.

Unit of Measure: Number

Disaggregation: Region/district, channel

Region	Number of People Exposed to Malaria Messages (Health Facility/PMD) in Year 5
Ashanti	3,105,388
Brong Ahafo	71,979
Central	53,130
Eastern	78,699
Greater Accra	2,287,097
Northern	64,177
Upper East	20,539
Upper West	20,811
Volta	58,922
Western	73,765
Total	5,834,507

Source: SBCC 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, and so on.

Frequency of reporting: Semi-Annually

Reporting format: Semi-Annual & Annual Reports

Reporting units: VectorWorks program officers

Reporting and Data Use

To implement the VectorWorks Ghana project, five program officers will be responsible for working closely with the Ghana Health Service (National Malaria Control Program-NMCP) and Ministry of Education counterparts at regional, district and sub-district levels. The program officers submit monthly reports to the senior technical advisor, who, in consultation with the M&E manager checks the reports for completeness and accuracy, discuss, and provide feedback to the program officers. These reports are then be 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 M&E manager, the senior technical advisor, and the chief of party. VectorWorks submits PMP reports to PMI along with semi-annual and annual project reports.



Data will be presented using the types of disaggregation outlined above to allow for comparisons over time, between regions, districts, and facility types and sex. This analysis will be part of the semi-annual reporting process. A presentation/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. This combination of quantitative and qualitative reflections will be used to shape future years' activities and targets.

TANZANIA PERFORMANCE MONITORING PLAN

PMP Purpose, Components and Critical Assumptions

Purpose

This 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.

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.

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.

- ITN distribution will continue to be a major focus for the Tanzania NMCP and the United States Agency for International Development/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.

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 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 CCP under Cooperative Agreement # AID-OAA-A-14-00057. Other partners include Tropical Health LLC, Swiss Tropical and Public Health Institute, 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 SNP. In the first year of the project, SNP operated in the three Southern regions (Lindi, Mtwara and Ruvuma) and in the second year the project expanded to the four Lake Zone regions (Geita, Kagera, Mara, and Mwanza). Additionally, in Year 2 VectorWorks developed a strategy and for routine distribution of ITNs through ANC/EPI services and began phased-in implementation starting in the regions of Mtwara and Mwanza.

In Year three 2016/2017, VectorWorks supported the implementation of the fifth round of school-based ITN distribution, locally referred to as the SNP, in fourteen regions distributing over 3 million ITNs with collaborative efforts from central level ministries especially Presidents Office, Regional Administration and Local Governments (PO-RALG) and MoHCDGEC through the NMCP and local regional/district council officials. The vision of this fifth round of school-based ITN distribution was to implement a much lean and cost-effective SNP in order to ensure a sustainable model for future application is demonstrated.

VectorWorks expanded distributing ITNs to pregnant women attending ANC services and infants attending EPI services from initial two pilot regions (Mtwara and Mwanza) to more seven regions (Ruvuma, Simiyu, Mara, Kigoma, Geita, Kagera and Lindi). Since the beginning of year 3, a total of 1.1 million ITNs have been distributed to health facilities in the 9 regions and 681,740 has been issued to pregnant women.

In order to ensure RCH based ITNs distribution in sustained without stock out, VectorWorks has worked to build the capacity of the Central Medical Stores Department (MSD). While the process of building MSD capacity and transitioning LLINs storage and distribution to MSD has been slow, in year 3 VectorWorks has managed to transition 2 districts (Nyamagana and Sengerema) in Mwanza region to allow MSD to get the needed experience in LLINs distribution. MSD has also picked up storage of LLINs for Tabora and Kigoma region. VectorWorks will use lessons from Mwanza LLINs distribution and Tabora LLINs storage to further build MSD capacity and transition more regions.

In Year 3, VectorWorks designed and implemented activities that use existing local and central government systems and staff. VectorWorks also worked with government of Tanzania counterparts design both SNP and RCH distribution models that seek to develop a less costly, more replicable, and more sustainable model for ITN distribution through schools and clinics for future scale-up. For example, in year 3 VectorWorks revised SNP distribution model where using the centralized PO-RALG Basic Education Management Information System (BEMIS) system is doing no further student registration. VectorWorks and PO-RALG integrated supervision for LLINs distribution in the existing PO-RALG data team at the regional and district level. ITN distribution has also been integrated in the BEMIS system; this means there is no training of more than 1,500 ward level education coordinators in the 14 regions. These changes have made SNP integrated in the PO-RALG system and increased implementation efficiency and significantly cut down costs.

Other activities for VectorWorks in Year 3 included 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.

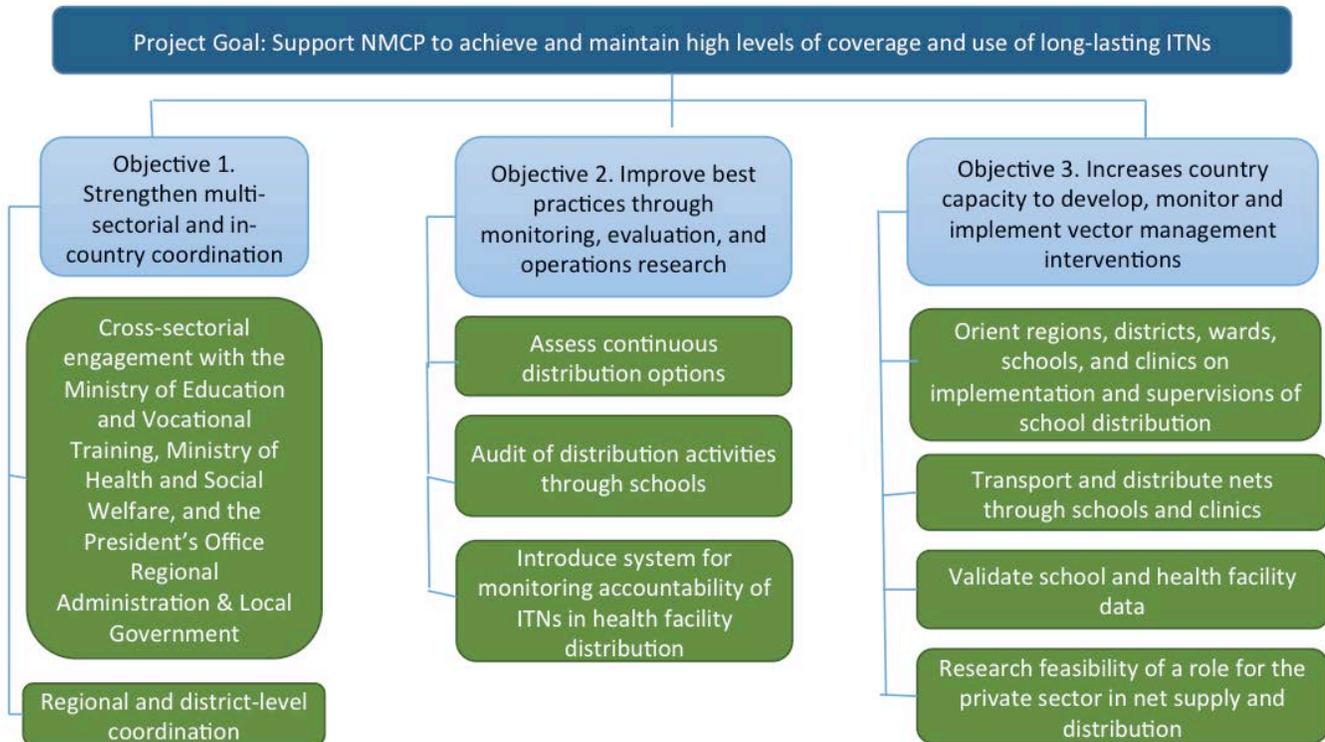
In the first half of Year Four, VectorWorks Tanzania continued to support the Government of Tanzania's (GoT) shift from mass campaigns of ITNs to continuous distribution. At the start of Year Four, VectorWorks Tanzania completed SNP5, distributing more than two million ITNs through primary schools. VectorWorks Tanzania has begun planning and coordinating at the national and sub-national level for SNP6. In addition to SNP, VectorWorks Tanzania supported distribution of ITNs through health facilities in mainland Tanzania and Zanzibar. VectorWorks Tanzania supported the initial smart push of over one and a half million ITNs to seventeen PMI and Global Fund-supported regions. VectorWorks has supported distribution of ITNs to all 26 regions, and Zanzibar is preparing to launch community and health facility-based distribution supported by VectorWorks.

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: VectorWorks Tanzania Results Framework



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	TARGET YR4	TARGET YR5
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)	129 (National 10 Regional 14 District: 105)	N/A

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3	TARGET YR4	TARGET YR5
2. Percent of schools flagged for validation that received a validation visit for SNP	<p>Numerator: The number of schools visited by validation teams. The validation teams will verify student quantifications against actual class lists in the schools.</p> <p>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.</p>	Validation report	Semi-annually	95%	50% *See reference sheet for explanation of change in target	0	0	0
3. Number of districts with a complete micro-plan for ITN distribution through SNP	A complete micro-plan will be defined in the SOPs/implementation guidelines.	Micro-plan meeting reports and actual micro-plans	Semi-annually	19	50	105	105	N/A
4. Number of districts with a complete micro-plans for ITN distribution through health facilities	A complete micro-plan will be defined in the SOPs/implementation guidelines.	Micro-plan meeting reports and actual micro-plans	Semi-annually	N/A	16	50	105	105

<i>INDICATOR</i>	<i>DEFINITION</i>	<i>SOURCE</i>	<i>FREQUENCY OF REPORTING</i>	<i>TARGETS YR 1</i>	<i>TARGETS YR 2</i>	<i>TARGETS YR 3</i>	<i>TARGET YR4</i>	<i>TARGET YR5</i>
5. Percent of SNP distribution points (schools participating in SNP) that received the correct number of nets during the reporting period	<p>Numerator: Number of SNP distribution points (schools participating in SNP) that received the correct number of nets as defined in the micro-plans.</p> <p>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.</p>	Truck drop-off data and transportation reports	Annually	100%	90%	90%	90%	0

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3	TARGET YR4	TARGET YR5
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 SOP 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	Health Facility: 0 School: 0	Health Facility: 0 School: 0

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3	TARGET YR4	TARGET YR5
7. Number of ITNs purchased with USG 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 SNP, the channel is schools. For the Tanzania health facility distribution, the channel is health facilities that provide ANC and/or Immunization and Vaccine Development (IVD) services.	Distribution reports	Quarterly and semi-annually	Schools: 500,000	<u>Health facilities:</u> 320,000 <u>Schools:</u> 1,310,000 <u>Grand Total:</u> 1,630,000	<u>Health facilities:</u> 1,330,709 <u>Schools:</u> 966,812 <u>Grand :</u> 2,297,521	<u>Health facilities:</u> 956,701 <u>Schools:</u> 2,770,086 Grand Total: 3,726,787	<u>Health facilities:</u> 558,080

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3	TARGET YR4	TARGET YR5
8. Number of ITNs purchased by other partners that were distributed with USG funds	This is a PMI indicator defined as the number of ITNs purchased by other partners that were by distributed with USG funds through mass, continuous or routine distribution channels. VectorWorks must have funded the transport of nets to storage sites or distribution points. For the Tanzania SNP, 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	N/A	N/A	<u>N/A</u>	<u>Health facilities:</u> 1,240,182 <u>Schools:</u> 0 Grand Total: 1,240,182	<u>Health facilities:</u> 4,306,230 <u>Schools:</u> 0 Grand Total: 4,306,230
9. 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%	25%	0

INDICATOR	DEFINITION	SOURCE	FREQUENCY OF REPORTING	TARGETS YR 1	TARGETS YR 2	TARGETS YR 3	TARGET YR4	TARGET YR5
10. Percent of health facilities with flagged variances visited by supervision teams	<p>Numerator: The number of health facilities with flagged variances that were visited by designated supervision teams during the reporting period.</p> <p>Denominator: The total number of health facilities with flagged variances during the reporting period. A flagged variance will be defined in the implementation guideline.</p>	Validation report	Quarterly	N/A	95%	95%	95%	95%
11. Proportion of targeted beneficiaries who received an ITN, by channel, location and sex	<p>Numerator: The number of targeted beneficiaries who received an ITN.</p> <p>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 SOP. 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.</p>	<p>Schools: Distribution reports</p> <p>Health facilities: Accountability report</p>	<p>Schools: Annually</p> <p>Health facilities: Quarterly</p>	Schools: 100%	<p>Schools: 99%</p> <p>Health facilities: ANC: 80% IVD: 80%</p>	<p>Schools: 99%</p> <p>Health facilities: ANC: 80% IVD: 80%</p>	<p>Schools: 99%</p> <p>Health facilities: ANC: 80% IVD: 80%</p>	<p>Schools: N/A</p> <p>Health facilities: ANC: 80% IVD: 80%</p>

<i>INDICATOR</i>	<i>DEFINITION</i>	<i>SOURCE</i>	<i>FREQUENCY OF REPORTING</i>	<i>TARGETS YR 1</i>	<i>TARGETS YR 2</i>	<i>TARGETS YR 3</i>	<i>TARGET YR4</i>	<i>TARGET YR5</i>
12. Percent of health facilities that did not experience a stock-out of ITNs, by region, during the reporting period	<p>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.</p> <p>Denominator: Total number of health facilities participating in the health facility ITN distribution during the reporting period.</p>	eLMIS and Accountability report, or ZILS Gateway	Quarterly	N/A	100%	100%	100%	100%

B. Performance Indicator Reference Sheets

Indicator #1: Number of SNP coordination, review and/or planning meetings held by VectorWorks with MoHSW, 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	Target: 3	Target: 3	Target: 19
	Actual: 25	Actual: 3	Actual: 3	Actual: 19
2	Target: 58	Target: 1	Target: 7	Target: 50
	Actual: 63	Actual: 2	Actual: 7	Actual: 54
3	Target 82	Target: 4	Target: 9	Target: 67
	Actual: TBD	Actual: TBD 2	Actual: 9	Actual: 67
4	Target: 129	Target: 10	Target: 10	Target: 105
	Actual: 119	Actual: 0	Actual: 14	Actual: 105
5	N/A	N/A	N/A	N/A
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.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: Malaria Advisor

Notes: SNP has evolved over time since its inception in 2013. In year four, VectorWorks engaged in dialogue with PO-RALG, MoHCDGEC/NMCP and identify one region to implement a “Self-Managed” SNP, VectorWorks envisions the region to take care of the entire distribution costs including but not limited to ITNs transportation costs to schools, supervision, printing of issuing booklets, reporting and documentation. In year four, VectorWorks will work with the region to profile such achievements and lessons learnt by highlighting the successes and challenges to other regions as a case and encourage regions to better plan even more cost-effective rounds of locally self-managed SNP and demonstrate the fact that SNP can be sustained by the local governments in the absence of external donor support.

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	50%	0
4	50%	0
5	N/A	N/A
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: In year 4, the project does not conduct council and school level data validation activity, due to the Tanzanian government's request to VectorWorks to rely on data government provides.

Indicator #3: Number of districts with a complete micro-plan for ITN distribution through SNP

Year	Target	Actual
1	19	19
2	50	54
3	105	105

4	105	105
5	N/A	N/A
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 SOPs/implementation guidelines.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: SNP Officer and PSI

Notes: 1 new district was added to Mtwara after year 1 of the project; therefore, SNP4 had 20 micro-plans from the Southern regions and 30 micro-plans from the Lake regions.

During SNP3 planning, the total number of districts in the 7 regions was 50 but during implementation phase 4 new districts were established (2 in Mtwara and 2 in Ruvuma) making it 54 districts in total.

For years 3 and 4, there were 105 districts.

Indicator #4: Number of districts with complete micro-plans for ITN distribution through health facilities

Year	Target	Actual
1	N/A	N/A
2	16	16
3	105	105
4	105	105
5	0	0
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 SOPs/implementation guidelines.

Frequency of reporting: Semi-annually

Reporting format: Semi-annual report

Reporting personnel: Logistics Manager and PSI

Notes: In year 3 VectorWorks expects to expand its operations to reach out to 9 regions with a total of 67 districts. In year 4 and 5 the project in collaboration with NMCP expects to distribute ITNs in 105 districts from 14 regions.

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%	100%
2	90%	100%
3	90%	100%
4	90%	100%
5	N/A	N/A
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: VectorWorks implemented 4 rounds of SNP distributing a total of 7,446,230 ITNS whereas, during SNP3 the project reached a total of 1919 schools with 494,407 ITNs in 3 regions; SNP4 a total of 5242 schools with 1,152,715 ITNs in 7 regions; SNP 5 a total of 9540 schools with 3,041,139 ITNs in 14 regions; and during SNP6 a total of 9563 schools received 2,757,966 ITNs in 14 regions.

Indicator #6: Number of people trained in ITN distribution by VectorWorks by sex, ITN distribution channel, and location

Year	Target	Actual
1	School:	School:

	Total: 528 Regional: 10 District: 122 WEC: 396	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
3	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	Health Facility: National: 0 Regional: 56 District: 396 Facility: 7,051 Total: 7,503 School: National: 0 Regional: 42 District: 418 Ward: 0 Total: 460 Grand Total: 7,963
4	N/A	N/A
5	N/A	N/A
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 SOP for each channel.

Frequency of reporting: Quarterly and semi-annual

Reporting format: Tanzania Monitoring and Evaluation Management Services (TMEMS) database (quarterly) and semi-annual report

Reporting personnel: M&E Manager and PSI

Notes: In year 4 and 5 VectorWorks did not train any group of implementers on ITN distribution since there will be no new regions of operation.

Indicator #7: Number of ITNs purchased with USG 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	Health facilities: 1,249,120 Schools: 921,607 Total: 2,170,727
4	Health facilities: 956,701 Schools: 2,770,086	Health facilities: 775,810 Schools: 1,372,616 Total: 2,147,426
5	Health facilities: 558,080 Schools: N/A	Health facilities: 176,440 Schools: 1,382,897 Total: 1,559,337
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 SNP, 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

Notes: Year Five work plan did not include SNP, however, in quarter 1 VectorWorks completed distribution of phase II of Year 4 SNP ITNs in 6 regions including Mwanza, Mara, Simiyu, Kigoma, Katavi and Tabora of which coordination meetings happened in Year 4.

Indicator #8: Number of ITNs purchased by other partners that were distributed by VectorWorks, by channel

Year	Target	Actual
1	N/A	N/A
2	N/A	N/A
3	N/A	N/A
4	Health facilities: 1,240,182 Schools 0	Health facilities: 1,155,640 Schools: 2,094,470 Total: 3,249,110
5	Health facilities: 558,080 Schools: N/A	Health facilities: 1,307,360 Schools: N/A
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 SNP, 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

Indicator #9: Percent of schools visited by a supervision team during ITN issuing

Year	Target	Actual
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1	90%	21% (see note)
2	25%	9.48%
3	25%	25%
4	25%	44.56%
5	N/A	N/A
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, 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 what can be considered formal supervision for school distribution during ITN issuing. Therefore, only the supervision visits to schools that were conducted by the national supervision teams is counted against this indicator. The target for SNP4 (project year 2) was adjusted to reflect this and indicates the expected coverage of supervision visits by national supervision teams for SNP4. The project implemented SNP5 in 14 regions in Years 3 and 4. It implemented SNP6 in 14 regions in Year 5 completing issuing during quarter 1 of Year 5.

Indicator #10: Percent of health facilities with flagged variances visited by supervision teams

Year	Target	Actual
1	N/A	N/A
2	95%	0%
3	95%	0%
4	95%	53%
5	95%	0%

Life of Project		
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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: Orientation on the use of accountability information system (*Chandarua Kliniki* dashboard) happened in September 2017. Regional Managers started to apply the tool on supervision in October 2017. Thus, in the first six month of FY2018 the project, through Regional Managers visited a total of 702 health facilities with red flag, which is 53% of 1325 total health facilities with red flags. Supervision visits intend to identify causes of the discrepancy and provide technical assistance to health facilities' personnel. In year 5 VectorWorks changed the approach where project staff focused on review meetings at regional and district level leaving health facility level supervision at the mandated respective districts.

Indicator #11: 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: 24.4%; IVD: 14.0%
3	Schools: 99% Health facilities: ANC: 80%; IVD: 80%	Schools: 98% Health facilities: ANC: 50.6%; IVD: 41.7%
4	Schools: 99% Health facilities: ANC: 80%; IVD: 80%	Schools: 9.9% Health facilities: ANC: 74.5%; IVD: 29%
5	Schools: N/A Health facilities: ANC: 80%; VD: 80%	N/A Health facilities: ANC: 88.7%; IVD: 82.3%
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 SOP. 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 schools, rounds 3, 4, and 5 attained 98% reach whereas in round 6 pupils were reached at 99.9%. Percentages reach of beneficiaries for health facility-based distribution channel within PMI regions (Geita, Kagera, Katavi, Kigoma, Lindi, Mara, Mtwara, Mwanza, Morogoro, Pwani, Ruvuma, Simiyu, Shinyanga and Tabora) has been increasing consistently as the program expands and distribution and reporting systems becoming more stable.

Indicator #12: 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	80%	Not determined
3	80%	Not Determined
4	80%	100%
5	80%	100%
Life of Project		

Unit of Measure: Percent

Disaggregation: Region and district

Source: eLMIS and accountability report or ZILS 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: In year 2 and 3 VectorWorks could not determine total number of health facilities that did not experience stock out, which was caused by some health facilities' failure to report ITN along with other logistic commodities. This was resolved in year 4 where, currently, all health facilities include ITNs stock status when submitting R&R forms.

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).

Per guidance of the GoT, VectorWorks will use the BEMIS to determine data related to SNP. VectorWorks will use the *Chandarua Kliniki* dashboard for monitoring related to health facility distribution.

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.

Evaluation Plan

VectorWorks conducted process evaluations, mostly recently during SNP4. Additionally, VectorWorks conducted a Commodity Management Audit for SNP4. VectorWorks also conducted a financial evaluation of the school net distribution program. This activity was funded under PMI-Washington with Core funds and led by VectorWorks partner, Tulane University. Tulane set up cost tracking systems and collected cost data for SNP3 and SNP5 as well as Zanzibar health facility and community channels. These analyses provide critical information on the costs of different types of continuous distribution channels. The economic analysis provides a more complete picture of the costs including volunteered or non-project time that has informed a comparative analysis that includes person-years-of-protection for different types of channels and establishes the case for or against a transition from mass campaigns to continuous distribution. The results of the VectorWorks Tanzania project M&E data have informed program design, National ITN strategies, Malaria Operational Plans, and Global Fund concept notes.

