

## 13 NetWorks Nigeria End of Project Report

### 13.1 Summary

NetWorks has worked in Nigeria since 2010 by supporting and providing technical assistance to PMI's host country government partners, the National Malaria Elimination Program (NMEP) and the State Malaria Elimination Programs (SMEPs), a to pilot CD strategies and test the effect of BCC interventions in selected states in Nigeria. The resulting CD strategies and BCC designs highlight the wealth and diversity of existing structures (health, education and community facilities and mechanisms) that can be leveraged to improve access to ITNs and also encourage beneficiaries to provide better care of their nets.

NetWorks staff in Nigeria provided technical assistance to its NMEP, SMEP and PMI partners, and also focused on completing and evaluating various pilot projects and interventions in the selected states. Below are the highlights of activities implemented during this period.

#### ***Technical assistance and coordination:***

- Helped NMEP and its implementing partners finalize standard operating procedures for CD of ITNs in Nigeria
- Facilitated trainings on ITN CD for NMEP personnel
- Supported NMEP to train State Support Teams on the national replacement mass campaign guidelines
- Provided technical support to the Federal Ministry of Health through NMEP and the Neglected Tropical Diseases Unit to train zonal consultants on malaria-lymphatic filariasis co-implementation pilot testing on the national guidelines in Nigeria

#### ***Design and implementation of ITN CD and NetCaRe pilots:***

- Supported the Malaria Action Programme for States (MAPS) to implement a community-based ITN CD effort in Nasarawa and Zamfara states
- Designed and implemented two phases of a BCC campaign to promote net care and repair in Nasarawa State
- Supported SMEP implementation of three rounds of school-based ITN distribution in Cross River State
- Provided technical assistance to SMEP and the Targeted States High Impact Project (TSHIP) to develop a state-specific strategy for CD of ITNs in Sokoto State

#### ***Evaluations of mass campaigns, CD pilots and BCC interventions:***

- Data collection, entry, analysis, and production of reports on household surveys to evaluate mass campaigns in Nasarawa, Cross River, and Sokoto States
- Data collection, entry, analysis, and production of reports on evaluation of the school-based ITN CD pilot in Cross River State, and community-based ITN CD pilot in Nasarawa State
- Data collection, entry, analysis, and production of reports on ITN durability survey in Cross River, Nasarawa and Zamfara states, including an assessment of net care and repair in Nasarawa State

#### ***National and state-level dissemination of results:***

- Evaluation results for school-based and community-based pilots were disseminated in

separate events in Cross River and Nasarawa states, respectively, for state personnel and decision makers. An assessment of the care and repair intervention was also shared in Nasarawa State

- Evaluation results for CD pilots, durability assessments, and BCC interventions were distributed in Abuja for federal and state personnel and decision makers and implementing partners

Further details of the activities listed are provided in the sections below.

## 13.2 Technical Assistance and Coordination (TA)

NetWorks provided technical assistance to NMEP, MAPS, and TSHIP on all aspects of achieving and sustaining universal coverage with ITNs in Nigeria, using local staff and external consultants where required. This contributed immensely to the knowledge base and to the CD concept in Nigeria.

### 13.2.1 Technical assistance and coordination support to NMEP and PMI/USAID implementation partners (NG.TA.1)

NetWorks continued to provide technical assistance to the NMEP and the Integrated Vector Control Working Group (IVM committee), especially in introducing malaria-lymphatic filariasis co-implementation guidelines and preparing State Support Teams for the planned mass replacement ITN campaigns in Nigeria. NetWorks also continued to ensure close coordination and collaboration with PMI implementing partners (MAPS, TSHIP and DELIVER) to implement and further identify viable channels for CD of ITNs. NetWorks also provided assistance to MAPS during its annual operational planning and review meeting by strengthening its ability to use various CD methods and to share lessons that had been learned from previous school- and community-based net distribution efforts in Nigeria.

NetWorks also provided technical assistance to TSHIP and Sokoto SMEPs to design a CD strategy that will combine public and private efforts in an effort to sustain net coverage after other recent mass-distribution campaigns.



### 13.2.2 Design and implementation of continuous distribution pilots

NetWorks began supporting innovative approaches to CD in Nigeria in 2010. In Nasarawa and Zamfara states, the CD strategy included distribution through ANCs and community-based channels. ANCs and school-based channels were used in Cross River. The MAPS project was responsible for community-based distribution in Nasarawa and Zamfara, whereas NetWorks directly managed school-based distribution activities in Cross River.

Community- and school-based distribution channels in these states are intended to complement ongoing net distributions in ANCs to ensure that the total number of nets distributed through these additional channels will result in greater individual access and coverage.

### **13.2.3 Continuous distribution by Community Drug Distributors in Nasarawa State (all 13 LGAs) (LG.P.1)**

In Nasarawa, a network of volunteer community agents already exists as a result of the system of Community-based Drug Distributors (CDDs) that existed to fight onchocerciasis and other neglected tropical diseases, which was started by the Carter Center. In 2013, NetWorks worked with the Nasarawa SMEP and MAPS to design a community-based net distribution effort using CDDs. The USAID | DELIVER project transported the first batch of 48,500 nets to storage sites in wards where the nets were to be distributed, and community-based CD commenced in March 2013 in four selected wards in each of 13 local government areas (LGAs). A second batch of 148,000 nets was delivered to the designated LGA storage sites in September 2013, after being delayed at the state warehouse for several weeks, while waiting for their accompanying forms to be delivered.

NetWorks funded and facilitated two SMEP and Roll Back Malaria (RBM) meetings (in October and November 2013) to address the issue of CDDs having access to households in large wards. These meetings included LGA malaria focal persons and representatives from the Neglected Tropical Diseases branch of the Ministry of Health. NetWorks also funded and supported a joint monitoring visit of community-based CD activities with SMEP and MAPS personnel.

The Nasarawa SMEP and MAPS carried out community-based net CD efforts in Nasarawa using CDDs. Several challenges were encountered:

- Some wards were very large, which meant that CDDs had to travel significant distances to carry out household assessments
- Frequent stock-outs of nets at storage sites (health facilities) and household assessment forms
- Limited household awareness of the CDD program
- Poor data collation at all levels

Community-based CD continued in the wards that had been selected early by the state, even after the endline evaluation that was conducted in April 2014. SMEP and MAPS have been deliberating expanding their CD efforts from four wards to eight wards. In total, 196,500 ITNs were delivered by MAPS and DELIVER to health facilities for the CDD pilot. Planning for a proposed expansion in coverage is occurring.

A [case study of the Nasarawa State community-based ITN CD effort](#) was finalized in late 2014. Results from the endline survey are described below in section 13.3.1.

### **13.2.4 School-based distribution in Cross River State (NG.P.2)**

The use of both schools and health facilities as channels for distributing nets is intended to help sustain the extensive net coverage that was achieved in the last state-wide mass net distribution campaign.

During years 2012 and 2013, NetWorks supported Cross River SMEP and its partners to design, prepare, and implement a school-based distribution program. The first distribution took place in 2012 in Obubra LGA, where 8,444 ITNs were distributed. The second round of distribution took

place in 2013 in both Obubra and Ogoja LGAs, where a total of about 20,545 ITNs were delivered to households through schools.

The third and final round of school-based ITN distribution took place in February 2014). ITNs were again distributed in Obubra and Ogoja LGAs. A total of 21,149 ITNs were distributed based on the registration data from targeted classes in LGA schools. Preparatory activities included micro planning meetings, training workshops for trainers, and training for heads of schools and teachers. These trainings were led by education personnel with technical support from health officials at both state and LGA levels. NetWorks designed and distributed approximately 23,000 job aids for teachers to all schools in Ogoja and Obubra LGAs. These materials were meant to aid classroom teachings and the transfer of knowledge from teacher to pupils and students.

Results from the evaluation are described below in section 14.3.2.

### **13.2.5 Community-based distribution in Zamfara (NG.P.3)**

Zamfara State has very few health facilities and safe storage sites, so NetWorks helped SMEP and MAPS design a community-based approach to net distribution by which nets would be stored in the houses of village and opinion leaders. A household's need for an ITN would be assessed by community volunteers, then validated and met where necessary by a community opinion leader.

The Zamfara distribution strategy was finalized and distributed to all state stakeholders in 2013. MAPS was designated to implement the distribution activities, and NetWorks' role was to help monitor field activities and to provide technical assistance to MAPS and SMEP where needed.

In 2014, NetWorks provided a portion of the refresher training for 35 SMEP, MAPS, and Zamfara State and LGA officials. Distribution commenced in May 2014 in all LGAs. NetWorks funded a statewide monitoring activity in July 2014. NetWorks staff also participated in state RBM monthly meetings when distribution activities were discussed. MAPS distributed 30,058 LLINs from June - Sept 2014, and 11,704 from Oct 2014 - Feb 2015.

### **13.2.6 Private sector assessment in Sokoto (NG.P.4)**

Mass distribution of ITNs was completed in December 2013 in Sokoto State and plans were in place to implement a CD strategy beginning in August 2014. Initial field assessments indicated that Sokoto has a vibrant ITN commercial sector, which can contribute to sustaining ITN coverage in the state.

In 2013, a brief assessment by NetWorks revealed that ITNs were available for sale in Sokoto in numerous retail outlets on the open market. Those nets came from campaigns elsewhere in Nigeria and Ghana, and included possible fake ITNs, and untreated nets-. A secondary analysis of available data showed that ITN coverage in Sokoto State would be higher if campaigns were not the only source of nets in the state, and that an influx of about 350,000 to 600,000 nets per year would have been needed for distribution in the state after the last campaign to maintain coverage. The annual ITN quantification is dependent on identifying the median survival of a net and the range reflects the assumptions of a three year net and a four year net. Based on this information, NetWorks proposed to assess the commercial ITN market and its possible contribution to sustaining ITN coverage in the state.

In 2015, NetWorks assessed the ITN commercial market in Sokoto State, in partnership with TSHIP, Sokoto SMEP and other implementing partners. This private sector assessment was included in a larger feasibility assessment of other continuous distribution channels to sustain ITN coverage in Sokoto State. Draft guidelines for implementing CD in the state, which considers both public and

private distribution of ITNs, was shared with PMI, Sokoto SMEP, TSHIP and other state-level implementing partners. A separate report on the commercial ITN market was also developed and shared with state-level collaborators and PMI. In July 2014, NetWorks disseminated the finalized strategy for sustaining ITN coverage in Sokoto State to all stakeholders.

Beyond the dissemination event, NetWorks worked closely with the Sokoto SMEP, TSHIP and other state-level partners in planning an effective CD system in Sokoto State.

### **13.3 Evaluations and Operational Research (ME)**

The evaluations that NetWorks undertook focused on understanding whether and to what extent the ITN CD strategies piloted in Nasarawa and Cross River states have been successful in sustaining ITN coverage, and the cost of these strategies per net delivered. Current evidence shows that having enough nets for all household members is the strongest determinant of net use. Because continuous distribution seeks to ensure that every member of a household has a net, NetWorks also measured net use in the context of net ownership and access. While a major focus was on household surveys conducted at the beginning and end of the pilot implementation periods, these were also complemented by other data collected over time.

NetWorks also conducted a longitudinal study in Nasarawa, Zamfara and Cross River states to assess the association between ecological zones and net durability, and the potential of net care and repair behaviors (and BCC) to extend the useful life of nets. Improving our understanding of how to extend the useful life of nets may increase the duration of ITN ownership and access (and thus use) within the household, and therefore reduce the costs of net procurement and distribution by reducing the number of replacement nets and the frequency of replacement.

#### **13.3.1 Nasarawa post-ITN campaign evaluation survey/community distribution endline evaluation (NG.ME.1)**

In year two, NetWorks completed an evaluation of ITN mass distribution efforts in Nasarawa State, which served as a baseline for the community-based ITN continuous distribution pilot. The evaluation was a state-representative household survey. Preliminary findings were presented to partners in December 2011. [The final report is accessible online.](#)

The design of a community-based ITN distribution system in Nasarawa State began in 2011. Community-based ITN distribution commenced later than planned (in May 2013) because the ITNs were not available. The endline survey was conducted in April 2014 and measured the effect of CD on overall ITN coverage in Nasarawa State after one year, and also analyzed the contribution to net coverage of prevailing ITN distribution channels (i.e., through ANCs, other community-based channels and through the commercial sector).

The endline survey evaluated ITN ownership and access achieved through various distribution activities. The baseline survey results showed that after the 2009 mass campaign, 63% of families owned at least one ITN, and 58% of families owned at least one ITN from the mass campaign. Results from the endline survey showed that by April 2014, ITN ownership had fallen to around 17% for campaign nets, but overall, 37% owned at least one ITN. Households that were aware of the community-based program were significantly more likely to have at least one ITN, and more likely to have enough ITNs than households that were not aware of the program. However, overall rates of access and ownership were below universal coverage targets. Families in middle-wealth quintiles received a new ITN, those in the poorest quintile demonstrated low awareness of the program, and people in the upper quintile tended not to request an ITN even when they knew about the opportunity to obtain one.



In principle, distribution of ITNs through the community-based system has a significant effect on ITN ownership without oversupply. In addition, ITN distribution channels are largely complementary, with very little overlap between ANCs, and community-based and other channels. In practice, these findings indicate that community-based distribution needs to be carefully implemented to maximize the results one desires.

The preliminary results were shared with PMI and stakeholders at both national and state levels at the end of project dissemination meetings. The final results will be written up in 2015.

### **13.3.2 Cross River post-ITN campaign evaluation survey/evaluation of school-based distribution (NG.ME.2)**

In 2013, NetWorks completed an evaluation of ITN mass distribution in Cross River State, which served as a baseline for the school-based CD operational research. The survey was a state-representative household survey. Preliminary findings were presented to state partners in September 2012.

School-based ITN distribution in Cross River State consisted of a stepped-wedge design in which distribution began in additional LGAs in a rolling pattern, and each wedge (additional LGA) was used as a domain in the endline survey with the intent of assessing the presence of a dose-response relationship. Net distribution began in Obubra LGA in 2011, then in both Obubra and Ogoja LGAs in 2012 and 2013. School-based ITN distribution did not occur in Ikom LGA during the pilot and served as a control LGA. ITNs were also being distributed in ANCs in all three LGAs during the three years of pilot implementation. The endline survey was conducted in March 2014, after the third round of school distributions in February 2014.

Results of the baseline survey showed that ownership levels of at least one ITN were very similar in all three LGAs 14 months after the mass ITN campaign. As suggested by the modeling simulated for the pilot, the endline survey showed that three and two rounds of ITN distribution showed a similar increase in ITN coverage in Obubra and Ogoja LGAs, whereas ITN coverage in the control LGA continued to decline beyond the baseline survey (77.4% in Obubra, 76.0% in Ogoja and 43% in Ikom LGA). The survey showed that school-based distribution was the most important source of ITNs for households, and that there was very limited overlap between the ITN distribution channels by schools and ANCs. Although there was overall good equity in ITN distribution, people in the poorest wealth quintile demonstrated slightly lower rates of net ownership via school-based distribution. This is most likely not from inequality in distribution of nets in schools, but either to lower school attendance by poor school children or less recall of the source of nets by members of that group. At baseline, the proportion of household respondents stating they had heard any message about nets and the use of nets was similar in all three LGAs. Household respondents in Obubra LGA reported slightly increased levels of having heard a message about net use after three rounds of school-based distribution. This was the same as it was at baseline in Ogoja LGA after two rounds of school-based distribution, but it decreased in the control LGA of Ikom. This suggests that BCC through schools had a role in maintaining public awareness of nets. Similarly, for all malaria-related messages, recall was best in Obubra, followed by Ogoja and then Ikom LGA.

In summary, results from the school-based evaluation show that adding ITN distribution through schools on to ITN distribution efforts by ANCs not only sustained ITN ownership, but also increased it. However, population access to ITN was still below target. Results also show that BCC efforts disseminated through schools made a significant contribution to net knowledge and intention to use, implying that multiple rounds of school distribution with BCC messages improves net use practices.

The preliminary results were presented to Cross River State education and health personnel during the end of project dissemination event in August 2014, and also at the national end-of-project meeting to key national level decision makers, donors and implementing partners. Final results are expected to be published in 2015.

### **13.3.3 Durability and care and repair (NG.OR.1)**

This study examines the durability of ITNs over time in various field conditions and how durability can be influenced by a BCC intervention that promotes care and repair behaviors. The assessment of ITN durability in the field is important because it can guide replacement behavior and practices, guide the development of better textiles for ITNs and influence the ITN procurement process.

This activity has two components: a baseline and two follow-up surveys, and a BCC intervention.

#### *13.3.3.1 Baseline and two follow-up surveys (NG.OR.1.a)*

The objective of these surveys was to assess the physical condition and attrition rates of the ITNs that had been distributed in 2011 through the mass campaigns in Zamfara, Nasarawa and Cross River states. The three states were expected to have different patterns of loss and decay. A sufficient number of ITNs have been collected annually over three years, together with household data on previously lost nets, to allow a detailed assessment of the loss due to wear and tear, fabric integrity of surviving ITN and trends over time.

Data on ITN durability was collected in the three states by NetWorks in 2012 and 2013.. Preliminary findings from the first (baseline) and second rounds (follow-up) of data collection were disseminated to state and national stakeholders in Nigeria and at the Vector Control Working Group meeting in Geneva, Switzerland, in 2013.

NetWorks conducted the third and final round of data collection in 2014 (March and April) in all three states. In Nasarawa, these surveys also serve a dual purpose of assessing how a BCC intervention could prolong the useful life of an ITN. In Nasarawa, the durability of ITNs in an intervention in Kokona LGA was compared with that of a control LGA (Toto) where no BCC interventions were conducted.

Results from the three rounds of the durability surveys showed that mechanical damage was the most important contributing factor to ITN durability, closely followed by rodent damage in all three states. Burns played a lesser role than originally expected. Nets were overall more likely to be in acceptable (serviceable) condition if they were folded or tied up when not in use. Having children in the house and being poor had a significant negative effect on net durability. Of marginal positive effect was the regular use and frequent washing of nets. However, for regular use and frequent washing, the cause and effect is most likely reversed: nets in better condition are more often used and cared for.

These results were disseminated to national-level decision makers, donors, and implementing partners during the end-of-project meeting in August 2014.

#### *13.3.3.2 Behavior change communication intervention (NG.OR.1.b)*

The care and repair SBCC intervention in Kokona LGA in Nasarawa State is advancing the understanding of how net users may prevent and repair damage to their nets. The campaign is part of an operations research activity to examine whether communication campaigns can motivate behaviors that can mitigate or repair damage to nets. Implications of this activity include improving our understanding about how net users perceive net longevity and damage, and which attitudes, beliefs and other factors affect a net user's ability to effectively practice net care and

repair. The pilot also provides us with practical information on how to create a supportive and motivating environment and community ownership of net care and repair.

Formative research for the intervention was conducted in February 2012. After a competitive bidding process, the Center for Communication Programs Nigeria (CCPN) was contracted in August 2012 to implement the SBCC intervention. Phase 1 of the intervention ran from October 2012 to March 2013. Activities consisted of a suite of interpersonal communication activities, five radio spots, and a community song contest. After approvals were obtained and contractual procedures were completed in October 2013, NetWorks launched Phase 2 campaign activities, which ran from December 2013 through March 2014 [A full report on the implementation of Phases 1 and 2 is available online.](#)

To implement Phase 2, NetWorks capitalized on lessons that had been learned from Phase 1 and the midline durability assessment results to refine and strengthen BCC activities. In Phase 2, the field team gained much more confidence and had a stronger understanding of the key messages and behaviors, which were new to them before Phase 1.

- To strategize for Phase 2, NetWorks used the results of the midline durability assessment and conducted focus groups to better understand radio listenership patterns in the area and to select the most effective of the five radio spots that were created in Phase 1.
- Following this, a strategy refinement workshop was held with key stakeholders. During the same workshop, fresh radio content was developed using well-liked analogies and characters from Phase 1 to get listeners to continue tuning into the campaign. Including radio airtime funds in CCPN's budget was also advantageous, empowering them to directly negotiate with the radio station.
- Six new settlements were successfully incorporated into the SBCC intervention in Phase 2. This was necessary after the durability study (the evaluation mechanism for this intervention) had to change study sites due to violence in six Kokona communities.
- NetWorks recruited most of the field workers from Phase 1 and held a refresher training with them.
- Interpersonal communication activities were focused on conducting three community dialogues in each of the 20 settlements. The community dialogues were deemed the most effective interpersonal communication activity that carried over from Phase 1. Dialogues included a drama show performed by the field workers themselves who incorporated local idioms and customs to increase the appeal of the drama and add some humor to the presentation.
- Field workers conducted house-to-house visits to follow up with net users on rolling up their nets when not in use and repairing holes.
- The success of the song contest at the end of Phase 1 was used as an entry point for Phase 2. It was a chance for communities to put net care and repair in their own words. It galvanized enthusiasm and participation on behalf of community members and field workers. The winning song was professionally recorded and played during the campaign. In addition, communities that participated in the contest were asked to perform their songs during community dialogues.
- The radio station NBS participated in a more active way during Phase 2. By producing the new radio spots, recording the Royal Father's testimonial and by recording of the Phase 1 song contest winning song, NBS has become entrenched in the campaign and able to comprehend the scope and messages. This has also produced content for their own use, which would improve exposure to the net care and repair campaign.
- Two 60-second radio spots were aired on NBS between January and March 2014.
- During the month of March, NBS also aired a series of 15-minute radio segments that



featured a message from the Royal Father, voices from community members in support of net care and repair, and the professional recording of the song contest winning song.

All field activities were completed by the scheduled end date, prior to the evaluation in April 2014, although contractual delays implied that CCPN started later than anticipated, therefore obtaining an overall intervention time of four months during Phase 2.

A [final report](#) detailing process data and lessons learned was prepared by CCPN. Intervention materials from Phase 2 have been added to the [care and repair toolkit](#). Results from the operational research study were published in early 2015 in *Malaria Journal*: [Impact of a behaviour change intervention on long-lasting insecticidal net care and repair behaviour and net condition in Nasarawa State, Nigeria](#).

### **13.4 Documentation, Dissemination, and Close-Out**

Most NetWorks activities focused on operational research that is meant to help guide future ITN distribution and durability efforts. In 2014 (the last year of the NetWorks project), the project staff completed the durability surveys and the pilots of community- and school-based net CD systems. All implementation processes were documented and the pilots were evaluated for their effect on net coverage and use. The processes, tools and results of the durability surveys and pilots were disseminated. In particular, the project shared results from the longitudinal three-zone durability study and evaluation of the net care and repair BCC intervention, school-based ITN distribution in Cross River State, and community-based ITN distribution in Nasarawa State. State and national level dissemination events were conducted in August 2014.

#### **13.4.1 Real-time dissemination**

NetWorks discussed the durability survey and pilot evaluation results and experiences as they were received at meetings with the IVM; monitoring and evaluation; and advocacy, Social Mobilization, and Communication committees and also at state-level RBM meetings. NetWorks disseminated its results to stakeholders and state government officials in Nasarawa and Cross River states, and to national-level policy makers. At the national level, NetWorks held a short, focused discussion with representatives of PMI, the Ministry of Health, NMEP, and other organizations in August 2014 to review and advocate for the key policies/recommendations from the research results.

To further disseminate lessons learned from the ITN continuous distribution pilots in Nigeria, NetWorks will submit manuscripts on the evaluation results to journals such as *Malaria Journal*, *PLoS One*, *PLoS Public Health*, and *BMC Public Health* for peer review and publication.

#### **13.4.2 Documentation: centralizing resources**

NetWorks has handed over data and resources to the states, federal government and implementing partners that will allow implementers to build upon the net CD and durability initiatives that the project was able to pioneer. To this end, the project has supported the completion of standard operating procedures, drafted case studies, and compiled results and resources from the pilots. All resources are published online at [www.networksmalaria.org](http://www.networksmalaria.org) and [www.k4health.org/toolkits](http://www.k4health.org/toolkits).

