



Working With Existing Systems:

Community-based Distribution in Nigeria

M A L A R I A

N I G E R I A

Access to life-saving LLINs can be improved by delivering nets through continuous distribution channels. In Nasarawa state, Nigeria, a pilot of a new LLIN distribution channel has been integrated into existing Community Drug Distributor networks. This pilot provides key insight for the global malaria community and an opportunity to learn about the potential for community-based channels in LLIN distribution.

BACKGROUND

In Nigeria, mass campaigns to scale up access to long-lasting insecticidal nets (LLIN) began in 2009. Complementary modes of LLIN distribution will help achieve equity and sustain mass campaign coverage. In Nasarawa State, the State Ministry of Health, the Malaria Action Program for States (MAPS), and the NetWorks Project piloted community-based distribution of LLINs to examine its feasibility.

In 2009 and 2010, a mass LLIN distribution campaign in Nasarawa distributed 842,324 nets.¹ The post-campaign survey found that 62% of households received at least one LLIN—a substantial increase from the pre-campaign coverage of 14%. However, nearly 30% of households were not registered for the mass campaign.² In 2011, the state MOH began routine distribution of nets at antenatal care (ANC) visits, and in 2013, initiated a pilot of a community-based distribution system through the Community Drug Distributors (CDD) network as a complementary channel to increase access to LLINs. Like other continuous distribution systems, a key feature for the functionality of the CDD system is the leveraging of existing resources.



LEVERAGING EXISTING SYSTEMS

Community Drug Distributors

The Nasarawa CDD network, supported by the Carter Center, is a network of community-selected volunteers who evaluate the need for and distribute medicines for onchocerciasis, lymphatic filariasis and schistosomiasis in their communities. CDDs are trained and supervised by staff from local health facilities to assess the need for medications in their communities, request them from the facilities and treat their community members. Additional characteristics made it advantageous as a platform for community-based distribution of LLINs, as the CDD network:

- Already existed, even in communities missed by the mass distribution.
- Already served as an interface between the health facility and community.
- Had strong linkages with the Ward Development Committee.
- Had members interested in adding LLIN distribution to their tasks.

Ward Development Committees

The ward is the smallest political structure, consisting of a geographical area with a population of 10,000 to 30,000 people. Each has a Ward Development Committee that is responsible for identifying health and social needs of the ward, mobilizing resources, and liaising with government, civil society and other partners to implement health programs. The Ward Development Committees work closely with the CDDs in their communities, and therefore were also leveraged to support this pilot.

¹ National Malaria Control Program. Nigeria National LLIN Campaign Status Update (10 June 2012).

² NetWorks Project. Evaluation of LLIN Mass Distribution Campaign December 2010 Nasarawa State, Nigeria, Final Report (Sept. 2012). Available at: <http://www.k4health.org/toolkits/networks-country-resources/evaluation-llin-mass-distribution-campaign-2010-nasarawa-state>

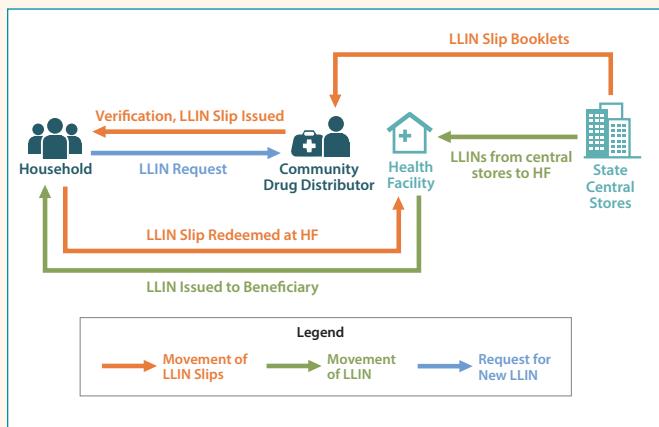


STRATEGY: HOW CDD DISTRIBUTION WORKS

LLIN allocation and beneficiary identification

The community-based distribution system relies on the pull (or demand) of nets by community members. When a household member requests a net, the CDD visits the household to conduct an LLIN needs assessment. The [assessment form](#) records the number of household members, sleeping spaces and existing viable LLINs, and then documents the household's LLIN gap. If the CDD concludes that the household is eligible for one or more new nets, the CDD will issue one or more LLIN slips—each slip is valid for the redemption of one LLIN at the designated health facility in the ward. The CDD keeps the assessment records and a counterfoil of the slip(s) issued.

Figure 1: Flow diagram of LLINs and slips in the community-based LLIN distribution strategy



Redemption of slips for LLINs at health facilities

Household members present their LLIN slip(s) to their closest health facility designated as an LLIN storage hub. A health worker issues one net per slip, files the redeemed slip, and enters the serial number and other data from the slip into the facility register.

Collection of data

For accountability purposes, health facilities regularly reconcile the net slips received against the storage register on a monthly basis. The Local Government Area (LGA) Roll Back Malaria focal point collates this data from all facilities in the LGA and submits them to the

state malaria program at the monthly LGA coordination meeting. State data is compiled by the state malaria program and shared with stakeholders.

LLIN Slip No: SERIALIZED	
REASON: <input type="checkbox"/> Damaged net <input type="checkbox"/> Expired net <input type="checkbox"/> No Net <input type="checkbox"/> New family	
 NASARAWA STATE GOVERNMENT CONTINUOUS DISTRIBUTION OF LLINs THROUGH CDDs	
LLIN SLIP	
LGA:	_____
Ward:	_____
Village/Community:	_____
HH Number:	_____
Name of HH Head & Sign:	_____
Collection Point-HF:	_____
Date Issued LLIN Slip	Date Collected LLIN
Name of CDD & Sign	Name of HF i/c & Sign
1 LLIN Slip = 1 Net	
  	

The LLIN slip is completed by CDDs and given to household members to redeem for one LLIN at a health facility.

Re-stocking of LLINs and slips

Health facilities were instructed to set a minimum stock threshold of 100 LLINs and to request more if the number falls below this threshold. LLINs are periodically moved from the state's central storage facility to the health facility stores and additional assessment forms and LLIN slips are provided to the CDD based on plans developed by the state malaria program and partners using facility consumption data. There are also mechanisms for emergency re-stocking triggered by outcomes of monitoring visits or requests made by health facilities and CDDs to the local Roll Back Malaria focal person. This replenishing of nets and supplies in small batches allows for accountability while maintaining a continuous flow of nets into the communities with waiting time for replenishment after stock-outs minimized to a few weeks.



LLIN distribution through ANC visits at health facilities

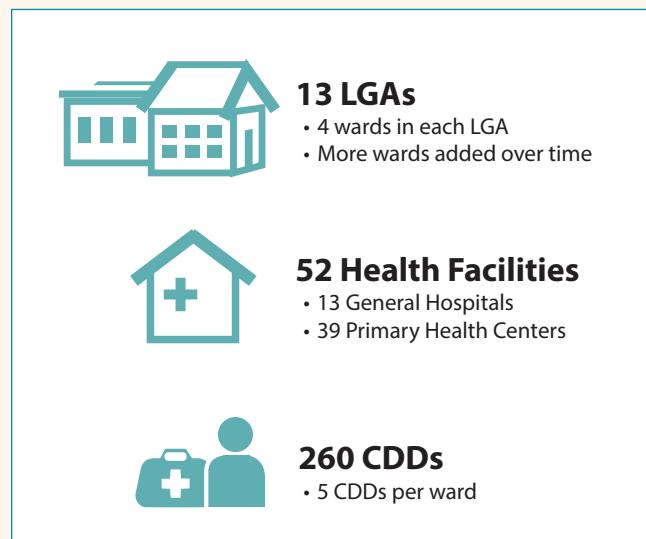
Although not directly linked, the ANC and CDD distribution channels complement each other. The CDD channel relies on the existing logistics system of LLIN distribution through ANC clinics. Because of their established LLIN storage capacity, health facilities participating in ANC-based distribution of LLINs are also used for the CDD. The same stock of nets is used for both ANC and CDD distribution at health facilities to avoid confusion about which pool of nets belong to which distribution channel, and to ensure that no eligible requests for LLINs are denied if LLINs are in stock. The health facility keeps count of the LLINs in their stores on standard inventory control cards. In each LGA, selected community volunteers and Roll Back Malaria focal persons promote both the ANC and CDD distribution.

QUANTIFICATION

Nasarawa State is composed of 13 LGAs and 147 wards, with a projected population of 2,042,719 in 2009. However, each ward varies in population size and the number of active CDDs. At the time of designing this pilot for the entire state, it was estimated that each CDD covered between 250-2,000 people during their routine drug-distribution activities. In the first year of implementation, lacking consumption data to base LLIN allocations to the wards, the design team used the [NetCALC](#) tool to estimate that a CDD covering 2,000 people would distribute approximately 200 LLIN in the first six months, and 130 LLIN in the second six months. However, actual distribution data from the first year would inform LLIN quantification in future years.³

As planning for this pilot progressed beyond the design stage, it was decided that a scaled approach would be used. The pilot began in four wards of each of the 13 LGAs, with an initial cadre of 260 CDDs and 52 health facilities (13 general hospitals and 39 primary health care centers) serving as local net storage and distribution hubs (Figure 2). During implementation, the number of wards reached by the pilot gradually increased.

Figure 2: Launch of pilot CDD distribution system in Nasarawa State (June 2013)



IMPLEMENTATION

Cascade training of staff

A system of cascade training was used to train the LGA staff, the CDDs and the health facility personnel involved in the distribution. A state-level training-of-trainers was held over one day with two representatives per LGA: the Roll Back Malaria focal persons and the Neglected Tropical Diseases focal person for each LGA. These 26 trainees in turn trained the five CDDs in each of the four selected wards of their LGA (260 CDDs) and the head officers of the 52 health facilities that would serve as the hubs for storage and issuing of nets.

The training gave an overview of the LLIN distribution process through CDDs and how to complete the data collection tools, such as the LLIN gap assessment form and the various registry forms. Trainees also reviewed what messages to share with visitors to health facilities to raise awareness about using LLINs and how to obtain one through the CDD system. The cascade training approach also created a mechanism for relaying important updates and feedback from the State Malaria Control Program through the LGA Roll Back Malaria focal persons to the health facility staff and CDDs.

³ NetWorks Project. Sustaining Gains: Continuous distribution strategy for LLIN through communities in Nasarawa State (April 2012). Available at: <http://www.k4health.org/toolkits/networks-country-resources/sustaining-gains-continuous-distribution-strategy-llin-through>





Credit: Emmanuel Obi, Courtesy of Networks

Four CDDs from Eggon ward filling out the three-part LLIN slip during a training session.

Communication

The pull mechanism of this strategy depends on the demand for nets by potential beneficiaries. Demand generation activities have been conducted primarily through interpersonal communication directly with community members by the CDDs, the Ward Development Committees, and community-based organizations and volunteers involved with MAPS activities in Nasarawa.

Distribution

The distribution began with 48,000 nets procured by USAID/President's Malaria Initiative. To kick off implementation, each CDD received 100 assessment forms and 100 LLIN slips. Health facilities were stocked with LLINs. Four months into implementation (October 2013), a second batch of 148,500 nets was procured and shipped to the state central warehouse. Each of these shipments of nets supplied both ANC and CDD distribution. In the initial months of implementation, CDDs were instructed to complete household assessment forms for the sake of quantification and record keeping. However, regardless of the net need quantification, CDDs were instructed to issue one LLIN slip per requesting household. This deviation from the original design was temporary, and four months into implementation this cap was lifted and reverted to the original design wherein CDDs were instructed to issue LLIN slips according to net need in the household. Finally, the CDDs were encouraged to pay a follow-up visit to the household to ensure hanging of the net and address issues of how to use and care for the net.

SUPERVISION

Early in the pilot, monitoring teams conducted two quarterly intensive monitoring and on-the-job training visits in each of the 52 participating wards and health

facilities in the 13 LGAs of the state. Monitoring teams used a [monitoring checklist](#) to conduct informal interviews with heads of health facilities and CDDs and observe the distribution process at all levels. The teams also physically verified the tools used for distribution—household net gap assessment forms, LLIN issuing slips, LLIN bin cards or inventory sheets, and health facility registers. Data from these forms are extracted to collate statewide process data for the pilot. When possible, the monitoring teams visited beneficiary households.

CHALLENGES IDENTIFIED DURING SUPERVISION

Monitoring teams identified a number of challenges. To the extent possible, these challenges were addressed during the supervision visits, for example, by correcting misinformation and reorienting CDDs and health facility staff to the correct procedures.

Challenges faced by potential beneficiaries:

- Community awareness in some wards needed to be boosted to build demand for nets.
- Long distances to certain health facilities serving as the LLIN storage hub can impede the redemption of slips by household members.
- Beneficiaries reported attempting to obtain a net, but not being successful due to a LLIN stock-out only a few months into the start of the pilot.

Challenges faced by CDDs:

- The definition of household was not straightforward to CDDs, especially in the case of polygamous communities. Identification of households was a relatively new task for CDDs, whose regular tasks of distribution of drugs for NTDs relied on quantification of patients, not households.

Challenges faced at the health facilities:

- The staff at the health facilities had trouble completing the documentation for distribution; for example, there were cases of discrepancies between the LLIN slips received at the facility and the actual number of LLINs given out. During the supervision visits, efforts were made to train or re-train the appropriate staff on documentation.
- Although the pilot informed health facilities to request new LLINs as soon as their stock fell below 100 LLINs (and this was later revised to 50 LLINs), the



health facility staff did not clearly understand the idea of a threshold for minimum LLIN stock levels and were not making timely re-stocking requests.

- Smaller primary health care clinics seem to be better suited for the CDD distribution than the larger general hospitals:
 - Beneficiaries found it difficult to navigate the larger facilities to redeem their slips.
 - The larger facilities focused more on ANC LLIN distribution than CDD LLIN distribution.
 - Data management of LLIN redemption and stock has been more challenging at the general hospitals because the large health facilities report data directly to the state MOH and not to LGA-level structures.

Challenges faced in logistics:

- After a stock-out of LLINs at both the LGA and state level, the second batch of 148,000 LLINs received at the state central warehouse was stalled in delivery to the LGAs because nets needed to be accompanied by a stock of household assessment forms and LLIN slips. The printing of these supplemental materials needs to be planned ahead of time.

RESULTS FROM THE CDD PILOT

A household survey was fielded in April 2014 to evaluate the LLIN ownership and access levels achieved through the pilot activities. After the 2009 mass campaign, ownership of at least one ITN was 63%, and ownership of any campaign net was slightly lower, at 58%, since some families had nets from other sources. By April 2014, net ownership had fallen to around 17% for just campaign nets, but was overall 37% for any ITN. Households that were aware of the CDD program were significantly more likely to have any ITN, and more likely to have enough ITN than households that were not aware of the program. However, overall rates of access and ownership were below universal coverage targets. New nets reached mainly the middle wealth quintiles, driven by the poorest quintile's low awareness of the program, and the upper quintile's tendency to not request LLIN slips even when they knew about the opportunity. In Nasarawa state, this pilot of continuous distribution through the CDD system achieved an increase in ITN ownership without oversupplying, and LLIN distribution channels were largely complementary, with very little overlap between ANC, CDD or other channels. These findings indicate that community-based distribution needs to be carefully implemented and timed appropriately to maximize the results desired.



Credit: Emmanuel Obi, Courtesy of NetWorks

A beneficiary of the CDD distribution stands in front of the LLIN she has received.

LESSONS IN BRIEF

During the first year of implementation, the team learned important lessons about community-based LLIN distribution. Most importantly, adherence to quality implementation requires consistent monitoring and real-time corrections. Lessons learned to date have informed distribution activities in Zamfara and Ebonyi states.

1. Pull system depends on community awareness.

Community awareness and LLIN demand is important for the success of the CDD distribution system. Initial low uptake of LLINs through the CDD channel may have been due, in part, to limited awareness. CDDs were encouraged to conduct community dialogues and to work with the Ward Development Committees to boost awareness.

2. Consistency in procedures among CDDs.

The monitoring visit revealed that CDDs held varying understandings of their roles. This led to inconsistency in implementation activities and malaria messaging. A printed **job aid** was created to assist CDDs with interpersonal communication about malaria and LLIN use. The job aid supports greater consistency in messaging and procedures throughout all wards of the pilot.

3. Support from community networks.

The role of the Ward Development Committees has been vital in coordinating between the health sector, local and LGA government, and the general population. These committees have also contributed to demand generation for the general population to request LLINs from their CDDs. In addition, the Ward Development Committees have helped build trust between CDDs, households, and the health facilities that serve as LLIN distribution hubs. They have also shown public support for the CDDs, which in turn increased community recognition of the CDDs.



4. **Reducing CDD attrition.** Attrition of CDDs from their voluntary duties was a concern that did not materialize during this pilot, in part because of mechanisms built in to reduce attrition. Two activities helped to keep attrition minimal: 1) Recognizing that CDDs are volunteers, the pilot selected CDDs who had some form of income, such as a small garden or a trade; and 2) As a result of the Ward Development Committees publicly supporting and promoting the work of the CDDs, the community expressed renewed recognition and appreciation of the volunteer work of the CDDs. Recognition was highly motivating to CDDs and also translated into in-kind support from community members directly to CDDs, such as food donations or help with farm work. The LLIN distribution program itself did not issue any incentives to the CDDs.
5. **Preventing stock-out of LLINs.** Advance printing of supplemental forms at or before the time of LLIN procurement is critical, so that the forms are in place at the time of LLIN arrival at the state central warehouse. With improved data and documentation from the health facilities on LLIN stocks and redemption rates, predictions of LLIN need are improved for timely procurement.
6. **Timing matters.** The pilot began approximately three years after the last mass LLIN campaign, and net ownership had dropped significantly in the area. As with other continuous distribution pilots⁴, the more time passes since the campaign, the longer it will take to get back up to universal coverage.
7. **Wards vary in size.** Although five CDDs were selected for each ward in this pilot, some wards are larger than others and require more than five CDDs to appropriately cover the population and the net demand.
8. **General hospitals versus primary health care clinics.** As described above, using general hospitals as LLIN distribution hubs has been a challenge, primarily because beneficiaries found it faster and less cumbersome to redeem their slips for nets at primary health centers, which are smaller than general hospitals. Additional advocacy and supportive supervision will improve the coordination between the CDD LLIN distribution and general hospitals. When scaling up, including more of the smaller primary health care facilities instead of general hospitals to participate in the CDD distribution may be advantageous. General hospitals may be more appealing to LLIN beneficiaries if navigation is made easier, for example by making clear which department or unit of the large facility handles the community-based distribution.

⁴ NetWorks Project. Lessons in Brief No. 9: Planning School Net Distribution in Mainland Tanzania (2013). Available at http://www.k4health.org/sites/default/files/tanzania_llin_9_new.pdf

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