

# Continuous LLIN Distribution

## Ghana's mixed model scores coverage points

G H A N A

# M A L A R I A

Ghana's National Malaria Control Program (NMCP) and its partners achieved universal coverage with long-lasting insecticidal nets (LLIN) through a nationwide door to door distribution and hang up campaign from 2010 to 2012. In 2013, to maintain universal LLIN coverage, Ghana pioneered a mixed model of LLIN continuous distribution mechanisms using antenatal care, child welfare clinics, schools, shops and workplace programs. Recent results from a pilot in the Eastern Region show that the model is successful in sustaining LLIN ownership and access. Inspired by these achievements and fortified with lessons learned, Ghana has scaled up continuous distribution nationwide.

## OVERVIEW

Malaria is endemic throughout Ghana, putting the country's entire population of 24.2 million at risk of malaria infection. Malaria accounts for 40% of outpatient cases for children under five years old (2010 Population and Housing Census). Ghana's 2010-2012 mass LLIN distribution campaign achieved universal coverage of LLINs. However, implementation of nationwide campaigns every three years is time- and labor-intensive, and does not provide opportunities to obtain new or replacement nets between campaigns. Maintaining high LLIN coverage and net use means employing a variety of approaches that ensure that all households remain protected as their families grow and their nets get old or worn out.



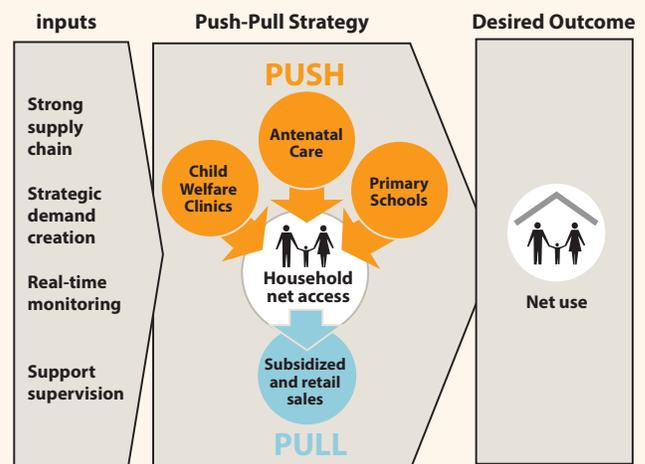
A Grade 6 pupil signs for his LLIN while his teacher looks on.

Credit: Anna McCartney-Melstad, Courtesy of NetWorks



Ghana's Continuous Distribution Framework (Figure 1) illustrates the approaches taken through different distribution channels for a common objective. Community mobilization and mass media were used to increase demand for LLINs and to start creating a social norm around LLIN acquisition, ownership and use. LLINs are distributed using continuous and intermittent supply chain systems, tracked with solid monitoring and evaluation methods, and managed and refined through supportive supervision.

FIGURE 1. Ghana's Continuous Distribution Framework



## HOW IT WORKS

Ghana is using both "push" and "pull" strategies, beginning with a pilot in Eastern Region, and using lessons learned to scale up nationwide. LLINs are "pushed" to target groups through Antenatal Clinics (ANC), Child Welfare Clinics (CWC), and primary schools. In addition, by making full price and subsidized nets available through an E-Coupon mechanism in the commercial sector and workplace programs, Ghanaians

Lessons in Brief No. 11



are given the opportunity to “pull” LLINs to supplement or replace household LLINs when the need arises. Concurrently, the “push” and “pull” strategies make LLINs available to Ghanaians in a consistent manner over time in between mass campaigns. Continuous distribution also allows countries to plan for steady investments in effort and funding instead of the peaks and valleys in outlays and costs of periodic campaigns.



Credit: Anna McCartney-Melstad, Courtesy of NetWorks

A District Hospital nurse shares the record keeping book for women reporting for ANC and shows how LLIN stock for ANC is tracked.

### Antenatal Care

Public and private health facilities use ANC visits to distribute LLINs. ANC nurses first educate pregnant women on malaria prevention and how to use LLINs to protect herself and unborn child from malaria. The nurse then gives a free LLIN to every pregnant woman coming for her first antenatal care visit. This information is recorded in the pregnant woman’s ANC booklet and in the health facility ANC register. Pregnant women receive a new net for each new pregnancy.

### Child Welfare Clinics

Each child receiving his/her second dose of measles vaccination series and vitamin A supplementation at 18 months also receives an LLIN at CWC. The health worker

educates the caregiver on how to use the LLIN to protect the child from malaria. LLIN distribution is recorded in each child’s health card, the CWC register and the Health Facility EPI Tally register.

### Schools

School enrollment rates in Ghana are high. This provides an excellent opportunity for schools to distribute large numbers of LLINs to households on an annual basis through its student body. Each new class of Primary 2 and Primary 6 pupils receive nets every school year. These nets are intended to add to the supply of nets within the household that have been obtained by other family members through previous mass distributions, ANC, CWC, E-Coupons or sales.

### Sales and E-Coupons

To complement net distribution points in the public sector, a private-sector E-Coupon program was piloted in select areas with the overall objectives of stimulating retail markets and offering consumers a choice of product. Marketing strategies created demand and targeted both retailers and consumers. E-Coupon issuing points were established close to participating retailers where consumers redeemed their coupon for a discounted net. E-Coupons worth 50% of the retail purchase price of a net were issued at participating private clinics, workplaces, pharmacies and other retailers. Schools issued E-Coupons at a fully subsidized rate. Workplace E-Coupons were also fully subsidized thanks to substantial employer contributions.

## CROSS-CUTTING FEATURES

### Logistics and Supply Chain

All LLINs come in to the Central Medical Store (CMS) of the Ministry of Health/Ghana Health Service (GHS) and Regional Medical Stores (RMS) obtain nets from the Central Medical Store for distribution to the ANC and CWC clinics in health facilities. Similarly, District Education Directorate Warehouses receive LLINs from the CMS where Health Education Circuit Supervisors coordinate the movement of LLINs to schools in their catchment area. Retail LLINs are supplied directly from existing wholesalers and distributors for both full price and subsidized sales.

### Social and Behavior Change Communication

Social and behavioral change activities focused on encouraging households to acquire LLINs through



the various continuous distribution channels and on promoting consistent use and care of nets. In ANC and CWC facilities, orientations for health workers on the new distribution system were combined with strengthening client knowledge of malaria prevention and benefits of net use. Additionally, schools conducted community outreach through parent-teacher associations, community meetings and dramas performed by students for fellow students, teachers, parents and members of the community. It is anticipated that training students on malaria and its prevention, and involving them in dramas will help create new social norms about net ownership and use. These activities were supported with materials such as talking points, flip charts, and script outlines for development of student dramas. In addition, community radio stations led live presenter discussions on benefits of net use and national radio announcements aimed to create demand for nets and awareness of where to find them.

## PROMISING RESULTS

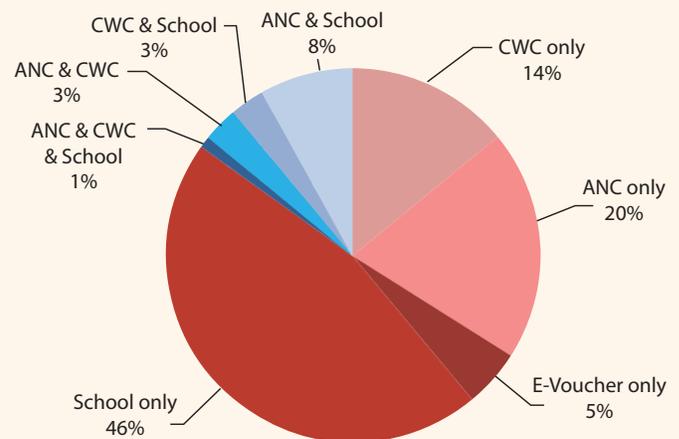
The mixed model continuous distribution approach was piloted in the Eastern Region (population 2,633,154) between 2012 and 2014 to identify issues and inform nationwide scale up. Distribution channels in the pilot included 450 health facilities, 2,682 schools, and 55 shops and businesses. These channels delivered 150,000 LLIN through schools, 98,000 LLIN at health facilities, and 3,342 LLIN with E-Coupons. An endline survey was conducted in 2013 to evaluate the pilot phase and inform nationwide implementation of continuous distribution. National scale-up began in 2013 for school and health facility distribution.



Primary school pupils perform a drama about malaria and net use for parents and the community.

Results from the Eastern Region evaluation showed that after two rounds of school distribution, 18 months of health facility implementation, and two months of E-Coupon availability in select pilot areas, the proportion of households with at least one LLIN was 88%, an increase from the 81% coverage calculated had there been no continuous distribution. The proportion of households that had 1 net for 2 people also increased significantly due to the CD distributions, from 33%–40%, as did the proportion of individuals that had access to a net within their home, from 57% to 67%. Of 898 households surveyed, 31% had received an LLIN from one of the continuous distribution channels during the pilot (Figure 2). Nearly half (46%) of households received nets through schools, 14% of households obtained a net from CWC only, 20% from ANC only, 5% from E-Coupons only. Moreover, the school, ANC, and CWC channels overlapped only very slightly, demonstrating that a wide variety of target households can be reached with minimal duplication of delivery systems.

**Figure 2. Source of nets among households that received nets through continuous distribution, n=278.**



Source: Endline survey for continuous distribution of LLINs in Eastern Region, Ghana, 2014

## LESSONS LEARNED

- The continuous distribution system is serving its purpose in enabling households to replace their older nets and helped keep ownership levels high. The evaluation documented that there was little overlap in source of nets, which meant the distribution channels complemented each other very well. Households that benefited most from the continuous distribution program were those that did not receive a net (or enough nets) in the 2010/2011 door-to-door campaign.

Credit: Anna McCartney-Melstad, Courtesy of NetWorks



- Circuit supervisors—who manage head teachers in their sub-district or circuit—were pivotal in training and supervision of teachers. Their existing relationships with transport networks, schools, school personnel and other important stakeholders within their ‘circuit’ was a key factor in the smooth implementation.
- For effective supply chain management, intensive supervision teams in each district visited health facilities within three months of net distribution roll out. Monitoring proper LLIN data capture ensures that LLINs are always available at the health facilities and that LLINs are issued to intended beneficiaries.
- Primary school pupils provide entry points to the household, carrying home net use messages along with a net. The involvement of household heads and leadership from teachers and community opinion leaders is crucial, reinforcing key messages about malaria and proper use of LLINs.
- Redemption rates for E-Coupons were relatively high, but affected by close timing with other large scale LLIN distributions. Subsidized sales programs should be carefully coordinated with other channels to ensure that timing and demand-generation activities are complementary, rather than competitive.
- Coordination and close collaboration among high level and local level stakeholders is crucial to the success of all channels. Regular stakeholder meetings and briefings, timely communication of challenges and successes, and the sense of ownership by the NMCP and School Health Education Program staff contributed to smooth implementation of all the CD channels.

This ‘Lessons in Brief’ was developed with support from the Continuous Distribution Systems Work Stream of Roll Back Malaria’s Vector Control Working Group, in collaboration with the Ghana National Malaria Control Program. Those interested in learning more about the information presented in this document should contact Konstantina Boutsika, RBM Working Group Secretariat ([konstantina.boutsika@unibas.ch](mailto:konstantina.boutsika@unibas.ch)) or Dr. Constance Bart-Plange, Program Manager, National Malaria Control Program ([constance.bartplange@ghsmail.org](mailto:constance.bartplange@ghsmail.org)).

