TECHNICAL BRIEF

Net gains in malaria prevention: In Ethiopia, new approaches to LLIN distribution achieve near universal coverage in high-risk areas

Background

In Ethiopia, 60 percent of the population lives in lower-elevation, malaria endemic areas and are at risk of infection from September to December and again from March to May. Due to the unstable and seasonal pattern of malaria transmission, the protective immunity of the population is generally low, and all age groups are at risk of infection and disease.

The National Malaria Strategic Plan (2017 – 2020) aims to achieve near-zero malaria deaths by 2020; reduce malaria cases by 40 percent by 2020; and eliminate malaria at national level by 2030.

Ethiopia has already made significant gains towards achieving those goals. According to the World Health Organization (WHO), Ethiopia achieved a 50 percent decline in incidence and a 60 percent reduction in mortality between 2010 and 2015. For the first time in 2017, Ethiopia no longer appeared in WHO's list of top 15 countries accounting for 80 percent of global malaria cases.

Ethiopia made these gains, in part, by distributing some 80 million long-lasting insecticide-treated nets (LLINs) between 2006 and 2016, aiming to provide universal coverage of one free LLIN for every two people in high-risk areas.

Challenges

The Federal Ministry of Health's (FMoH) 2017 Malaria Indicator Survey found that only 64 percent of households in malaria-endemic zones owned at least one LLIN. Additionally, a qualitative evaluation by USAID | DELIVER PROJECT in 2016 showed poor distribution planning and implementation which led to: (i) shortages of LLINs in some woredas[1] and overstock in others; (ii) delays in distribution from woredas to health posts in kebeles (neighborhoods/wards); (iii) absence of close monitoring and support; (iv) lack of proper distribution data capture; and (v) absence of continuous reporting during distribution campaign of LLINs.

[1] Woredas: Woredas (equivalent to Districts) are the third-level administrative divisions of Ethiopia. They are further subdivided into a number of kebeles (wards) or neighborhood associations, which are the smallest unit of local government in Ethiopia.

In anticipation of the 2017 campaign, the FMoH's National Malaria Control Program (NMCP) mandated a series of consultative meetings with regional health bureaus and woredas that identified challenges from previous campaigns, such as:

- Poor coordination between Pharmaceuticals Fund and Supply Agency (PFSA) and NMCP, resulting in lengthy distribution periods and dissemination of nets without distribution registration notepads
- Lack of resources for orienting and motivating supervisors and health extension workers (HEWs) that led to low supervision and HEW commitment, poor communication between them, and inadequate supervision of distribution to households
- Inadequate engagement of communities and health development armies (HDAs)
- Inadequate temporary storage infrastructure and processes
- Poor adherence to distribution guidelines
- Lack of documentation, reporting, and accountability
- Failure to remove plastic bags during distribution
- Incorrect use of registration notepads
- Low rates of utilization by households

Intervention

In preparation for the 2017 LLIN distribution campaign, the U.S. President's Malaria Initiative (PMI) funded UNICEF to procure 5.3 million LLINs and later deliver them to woredas in the malaria-endemic regions of Amhara, Benishangul Gumuz, Gambella, Oromia, and Tigray. Through USAID, PMI tasked the USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project to support the last-mile distribution of 4.2 million of the LLINs to all of the regions except Tigray where the regional government managed distribution.

Ethiopia's GHSC-PSM LLIN distribution by the numbers

4.2 million LLINs

4 task forces at different levels of the supply chain

110 woredas

2,054 health posts

10,000 staff mobilized at all levels of Ethiopia's government

Numerous trucks, motorcycles, camels, donkeys, and people on foot

1.7 million households served

7.56 million people protected from malaria

As an initial step, a newly formed national taskforce comprised of GHSC-PSM, NMCP, PMI, and UNICEF agreed on a number of key principles aimed at ensuring effective logistics management at each stage of the supply chain, including:

- Collaborate closely with all stakeholders, including managers and technical health workers at the NMCP, regional health bureaus (RHBs), zonal health departments (ZHDs), and woreda health offices (WoHOs).
- Engage with stakeholders from the outset and build consensus with RHBs on a new distribution modality and implementation plan.

- Form taskforces at the national, regional, woreda, and kebele levels for better coordination, oversight, and facilitation of distribution.

To support community mobilization and advocacy for distribution to communities, the NMCP agreed to mobilize internal resources and work with RHBs. GHSC-PSM, PMI, and NMCP finalized a detailed distribution implementation plan drafted by GHSC-PSM. In addition, the national taskforce articulated clear roles and responsibilities to carry out the LLIN distribution campaign, including:

- The NMCP provided overall leadership and technical guidance.
- National, regional, woreda, and kebele taskforces coordinated and monitored the campaign at each level. (See Table 1, below.)
- UNICEF managed distribution to woredas.
- GHSC-PSM managed distribution from woredas to kebeles.

Table 1: The four taskforces that managed Ethiopia's LLIN distribution campaign

Task Force Members	Task Force Roles and Responsibilities
National – NMCP – PMI – GHSC-PSM – UNICEF	– Supervise and support distribution in collaboration with RHBs and WoHOs at HPs – Develop generic terms of reference (TOR) for regional taskforces – Build consensus with RHBs and other stakeholders on the new LLINs distribution modalities and timeline – Develop and share tools for distribution planning and implementation with RHBs and WoHOs – Support regional distribution and utilization advocacy and social mobilization – Conduct post-campaign assessment and share results – Conduct LLIN utilization surveys
Regional – Regional Malaria Control Program – Regional pharmaceutical supply unit – GHSC-PSM	– Develop a regional action plan based on the generic TOR – Implement and monitor the regional action plan – Develop a generic TOR for woredas – Build consensus with targeted woredas on the new LLIN distribution modalities – Track performance of woredas and provide technical and operational guidance/support on planning and implementation – Ensure, in collaboration with ZHDs, that woredas have proper temporary storage space for LLINs – Support WoHOs to create awareness about distribution procedures, record keeping, documentation and reporting requirements for health staff (Supervisors from WoHOs and health centers (HCs); HEWs) – Support woredas to deliver LLINs to kebeles – Supervise and monitor distribution from kebeles to households and resolve bottlenecks – Work with NMCP to conduct post-campaign assessment – Support LLIN utilization survey

Task Force Members	Task Force Roles and Responsibilities
Zonal/Woreda – Zonal/Woreda Malaria Control Program – Zonal/Woreda pharmaceutical supply unit – GHSC-PSM	– Develop a detailed action plan for the taskforce based on the TOR – Implement and monitor the woreda action plan – Identify health posts (HPs) for LLIN distribution – Share approved LLIN distribution plan to HPs/kebeles – Support HPs/kebeles to arrange storage temporary spaces – Assign LLIN distribution supervisors from health centers and woredas – Organize woreda-level orientation workshops (distribution modality, documentation and reporting) for supervisors (district and HC levels and HEWs) – Deliver LLINs to HPs/kebeles – Support HEWs to distribute LLINs to households – Support HEWs to document LLIN distribution data and prepare campaign reports – Evaluate the campaign performance and document best practices and lessons learned
HP/Kebele – Kebele chair person – Kebele manager – Supervisor from HC/woreda – HEW(s) – Community leader – Kebele militia	– Develop kebele-level action plans in collaboration with WoHOs and HC supervisors including: o Advocacy and social mobilization on distribution and utilization o Securing temporary storage o Receiving LLINs and registration notepads o Monitoring inventory o Registration of households o Distribution to households based on the guideline from NMCP o Documentation and reporting of quantities received and distributed, stock on hand, and number of households covered – Monitor LLIN utilization in collaboration with kebele administration and HDAs)

Through these taskforces, some 10,000 individuals – including HEWs, woreda and kebele leaders, and police commanders – received an orientation on the updated National Malaria Strategic Plan for 2017-2020 and their roles in the 2017 campaign, including distribution modality, transportation, storage, community mobilization, documentation, and reporting.

HEWs, kebele administrators and influential community leaders then conducted community mobilization and advocacy activities to inform their communities about the importance of LLIN use, the timing of the campaign, and when to pick their LLINs. Using registration notepads, HEWs registered each of the households in their catchment areas or kebeles, including the name and family size of each household.

GHSC-PSM developed a distribution plan – including mapping and determining the number of vehicles needed. GHSC-PSM used rented trucks, camels, donkeys, motor bikes and human labor (through HDAs) to distribute 4.2 million LLINs to 2,054 health posts.

Supervisors from health centers, woreda health offices, and GHSC-PSM campaign coordinators visited distribution sites and met with HEWs and kebele administrators to resolve anticipated challenges before starting distribution of LLINs to households. In kebeles, HDAs played a pivotal role in mobilizing their members to turn out in high numbers to collect their LLINs.

During the campaign, supervisors from woredas and health centers and GHSC-PSM coordinators worked with HEWs and supported them with record-keeping, and report preparation, and other operational activities. Supervisors conducted visits to the health posts using standard checklists to assess the process of the campaign and its progress on daily basis and took corrective actions when challenges affecting the campaign occurred.

Donkeys, camels, motor bikes, and people delivered LLINs to areas inaccessible by truck

By the end of the campaign, 110 woredas distributed LLINs to 2,054 health posts, who in turn distributed 4.2 million LLINs to households. Through this massive effort, GHSC-PSM supported the Ethiopian government's endeavor to achieve universal coverage.

GHSC-PSM continuously documented and shared weekly updates on the status of distribution throughout the campaign period; FMOH, PMI and other relevant partners received this weekly update and used the information to develop and implement corrective actions to address emergent challenges.

Challenges faced during the campaign

Despite careful planning, post-campaign surveys and analysis identified several factors that depressed turnout and distribution in some kebeles, including:

- Some woredas still lacked temporary storage space
- Inaccessibility by road to some health posts and kebeles
- Limited network connectivity in some HPs and kebeles
- Discrepancies of population numbers between distribution plans and actual population due to newly created woredas and other factors
- Excess LLINs delivered to many kebeles compared to actual population
- Absence of disposal guidelines and directives on LLIN packaging material (plastic bags) and old LLINs lingering at health posts
- Harvest times and community meetings overlapping with the campaign
- Lack of commitment to follow up and support by some supervisors and woreda staff
- Scattering of dwellings in low-density areas

Recommendations for future LLIN campaigns

Despite these challenges, the campaign was recognized as a great success in helping Ethiopia achieve near universal coverage for LLINs. The Ethiopian government's in-kind contribution through human and other local resources was a key factor for success.

Post-campaign surveys and analysis provided recommendations in Ethiopia that can also easily be adapted for other countries and contexts:

Plan and prepare

- Begin to prepare and provide orientation to all participants well in advance of the actual distribution
- The LLIN supply source (PFSA) should provide prior notification so woredas can prepare temporary storage space
- Woreda health offices should provide clear directions to supervisors regarding incentives to manage expectations about compensation

Orientation and mobilization of some 10,000 government employees and community groups contributed to a successful campaign.

Ensure data accuracy

- Woreda health offices – working with health posts and kebele administrators – validate the number of households/populations before allocating LLINs
- The FMoH and RHBs use updated list of woredas and population number for LLINs distribution planning to resolve problems related to newly created woredas and other changes in demography
- Revise the LLIN distribution implementation guideline to incorporate the actual time (2 weeks) required to finalize the distribution to health posts.

Engage with communities and recipients

- Strengthen and maximize community engagement, especially in areas inaccessible by road, to ensure delivery
- Use health posts that are well known to the public and easily accessible where people will turn up in large numbers to collect their LLINs
- Adopt the culture of sharing best practices among woredas to facilitate experience sharing
- NMCP and RHBs conduct ongoing LLINs utilization surveys to measure household ownership and use of LLINs

Provide ongoing and adaptable management, monitoring, and support

- Conduct robust monitoring and evaluation (M&E) – including record-keeping, reporting, and frequent supportive supervision site visits – at all levels of the campaign to quickly identify and resolve challenges.
- Prioritize continuous supervisory follow up and support, particularly at the woreda level, to ensure the commitment of supervisors and HEWs, provide direction, and help keep to timelines.
- Retain and strengthen mechanisms for flexibility and adaptation. These mechanisms help address unforeseen challenges and mobilize resources to redistribute LLINs between health posts and woredas and respond to requests to organize more orientation events and manage more distribution sites.
- GHSC-PSM and other implementing partners continue to provide comprehensive support, focusing on strengthening the government system.

Through community mobilization, the Health Development Armies played a key role in distributing LLINs to households.

Review, analyze, and share lessons learned

- Regional health bureaus organize regional campaign exit review meetings to:
  - Review campaign performance
  - Determine what to do with excess LLINs at health posts
  - Agree on how to finalize distribution in kebeles lagging behind the timeline
- NMCP and RHBs conduct a post-campaign assessment to evaluate the campaign and document lessons learned and best practices.