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SIERRA LEONE CASE STUDY: INNOVATIONS
AND ADAPTATIONS FOR A SUCCESSFUL MASS
INSECTICIDE-TREATED NETS (ITN) CAMPAIGN
DISTRIBUTION IN AN URBAN CONTEXT IN 2020



amp | The Alliance for
Malaria Prevention
Expanding the ownership and use of mosquito nets

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*Photographs:
NMCP Sierra Leone, 2020*



CONTEXT

Globally, between the years 2000 and 2030 “the world’s urban population is expected to increase from 2.7 to 5.1 billion, accounting for 60 per cent of the total population”. WHO’s Strategic Advisory Group for malaria eradication (SAGme) has identified “rapid urban population growth as one of the key megatrends influencing the vision of a malaria-free world”. Well planned urbanization is expected to “help to reduce malaria transmission through the destruction of mosquito breeding sites, improved housing, increased living standards, and expanded access to healthcare. However, urbanization in

malaria-endemic countries often comes with risks, as large-scale rural to urban migration results in the expansion of unplanned settlements and increased socioeconomic inequity, especially in peri-urban areas and urban slums”¹.

Sierra Leone is divided into 16 districts, and further subdivided into chiefdoms and communities. The estimated population in 2020 was 8,282,553 (projected from the 2015 national census)², with 41 per cent living in urban areas according to the 2015 Population and Housing Census.

Figure 1: Map showing the sixteen districts in Sierra Leone



1. WHO (2021). Malaria Policy Advisory Group Meeting, 13-15 April 2021. Technical Consultation on the burden and response to malaria in urban areas. Accessed July 6, 2023 at <https://www.who.int/publications/i/item/9789240027350>
2. Sierra Leone November 2020 Integrated LLIN Report.

The majority of households in the Western Area region are in the highest wealth quintile (68 per cent), while the majority of households in the Southern region are in the lowest wealth quintile (31 per cent)³. Populations are concentrated in some districts, including Bo, Kenema and Makeni, and the largest urban population is the capital Freetown and surrounding area, which comprises nearly one-third of Sierra Leone's population⁴.

In the 2016 Sierra Leone Malaria Indicator Survey, microscopy results show that 40 per cent of children 6–59 months tested positive

for malaria, with prevalence almost two times higher for rural children (49 per cent) than urban children (25 per cent)⁵.

To fight malaria, universal access to ITNs through integrated mass distribution campaigns is a core strategy of the Sierra Leone National Malaria Elimination Strategic Plan 2021–2025. Campaigns have been conducted since 2006, with the next campaign planned to take place in 2023. ITNs are also distributed to pregnant women and children under five through routine health services (antenatal care and immunization).



Household registration exercise

3. Sierra Leone 2020 Integrated LLIN report.

4. Sierra Leone ITN campaign Plan of Action.

5. National Malaria Control Programme (NMCP) [Sierra Leone], Statistics Sierra Leone, University of Sierra Leone, Catholic Relief Services, and ICF. 2016. Sierra Leone Malaria Indicator Survey 2016. Freetown, Sierra Leone: NMCP, SSL, CRS, and ICF. Sierra Leone.

According to the ITN Use:Access Report for Sierra Leone, “the wealthiest quintile appears to use available nets to a lesser degree than poorer quintiles, and similarly, rural populations have higher rates of use and of use:access ratios than urban populations”⁶.

The National Malaria Elimination Strategic Plan (2021—2025) states that “urban area ITN distribution will be targeted at communities and populations at high risk within the urban areas. Quantification of ITNs will be based on projected population and the universal coverage policy”⁷.

As noted in Sierra Leone’s November 2020 Integrated long-lasting insecticide-treated net (LLIN) report, ITN distribution was conducted at

fixed, outreach and mobile distribution points (DP) following a door-to-door household registration and issuing of vouchers. Distribution was based in Peripheral Health Units (PHU) and conducted during five days in rural areas and seven days in urban areas. Each DP was “expected to receive between 150 and 200 people per day in rural and urban areas respectively”. Each fixed DP had a supervisor from the PHU who was expected to manage the fixed DP as well as outreach or mobile DPs in their catchment area. In urban areas, a single DP may have been subdivided (e.g. with several tables where vouchers could be exchanged for ITNs) to manage crowds in the first days of the ITN distribution⁸.

Waiting at a distribution point



6. <https://breakthroughactionandresearch.org/resources/itn-use-and-access-report/>

7. Sierra Leone National Malaria Elimination Strategic Plan 2021—2025.

8. Sierra Leone November 2020 Integrated LLIN Report.

KEY ENABLING FACTORS: URBAN CAMPAIGN ADAPTATIONS AND LESSONS LEARNED

To reinforce successful ITN distribution in densely populated urban and peri-urban areas, the Sierra Leone national malaria programme designed a set of modifications, as described in the 2020 Plan of Action for the Integrated LLIN Mass Distribution and Maternal and Child Health Campaign. For example:

- Campaign planning and communication were reinforced via a central ITN campaign Command Centre (CC) comprised of logistics, social and behaviour change (SBC), training, operations, finance and procurement with sub-committee chairs from each area providing technical and operational expertise. The CC provided ongoing leadership and support to district health management teams (DHMT) to overcome challenges and troubleshoot problems which arose during the planning and implementation of the ITN campaign⁹.
- Representatives from the Western Area Urban (WAU) DHMT were invited to early strategy and planning sessions during macroplanning to discuss previous ITN campaign experience, other health campaign experience and provide recommendations for the 2020 ITN campaign.
- Adjustments were made during macroplanning and budgeting including:
 - ✚ The estimated populations for Western Area Rural (WAR) and WAU - both considered urban areas - were adjusted upwards to account for expected changes between macroplanning and microplanning to avoid resource gaps for implementation.
 - ✚ The number of DHMT staff participating in the campaign was adjusted from 10 in the 14 districts considered rural to 30 for WAR and 50 for WAU to account for the different problems and concentrated population that needed to be managed.
 - ✚ The number of days for ITN distribution was adjusted in urban areas, including in the 14 “rural districts”, to include two additional days (seven versus five in rural areas).
 - ✚ Some costs, such as hall hire and catering, were aligned to “national” unit costs versus “district” unit costs to account for the higher prices in WAR and WAU.
 - ✚ Revisit cards were left in homes in cases where household members were not at home during the registration process. It was then the responsibility of the households to contact the registration team when they returned back home. Revisit cards were only used in urban settings.
- Microplanning was adapted to the actual context of WAR and WAU:
 - ✚ Following the national microplanning training of trainers (TOT), a stepdown training of the 80 WAU and WAR DHMTs was organized to ensure sufficient facilitators for the number of workshops required.
 - ✚ WAR and WAU were subdivided into zones and wards to ensure the planning aligned with operational needs (based on a lesson learned from 2017) to improve forecasting and planning and to reinforce the household registration (HHR) and ITN distribution activities.
 - ✚ Participants varied from rural districts and included zone and council representatives.
 - ✚ Logistics planning for micro-transport accounts for both distances and means of transport, but also for traffic circulation and high congestion routes and periods.

9. Sierra Leone national malaria programme (2023). Interview notes.

- ITN distribution was conducted in two phases:
 - ↳ In the first phase, ITN distribution was conducted in the 14 districts outside of WAU and WAR.
 - ↳ In the second phase, the expertise and availability of national monitors and regional supervisors, selected from among those who had performed the best in the first 14 districts were leveraged to support the ITN campaign in the two urban districts.
 - ↳ COVID-19 prevention measures were in place in both phases.
- Larger teams for monitoring were deployed and partners played an active role:
 - ↳ Teams in WAU and WAR included 10–12 monitors per team (compared to 4–5 in rural districts) who were working alongside DHMT and PHU supervisors to conduct the distribution in these urban areas and to quickly identify and resolve challenges.
 - ↳ Partners including the United Nations Children’s Fund (UNICEF), United States President’s Malaria Initiative (US-PMI), World Health Organization (WHO), and others associated with the Roll Back Malaria Partnership (RBM) in the country also contributed personnel to support ITN campaign supervision¹⁰.
- The national malaria programme and partners provided additional resources in densely populated urban and peri-urban areas to reinforce the mass ITN distribution campaign and to mitigate the risks of COVID-19. These included:
 - ↳ Improved security for campaign distribution activities, ITN logistics and DP personnel.
 - ↳ Increased number of motorbikes provided by US-PMI to navigate the hilly terrain and transport ITN bales to hard-to-reach populations, particularly in WAU.
- ↳ Increased number of DP personnel to conduct distribution across many DPs, thus allowing each DP to serve a relatively smaller number of households (HH) within fewer days to manage crowd control and reduce population exposure to COVID-19.
- ↳ Three types of DPs were set up, including DPs at fixed sites, outreach DPs (at temporary sites open for a day or two to serve populations more than three to five kilometres from a fixed DP) and mobile DPs (in a village or area for a half-day or a few hours serving registered households from a vehicle or table beside a vehicle before moving to the next area).
- Supervision and monitoring teams allowed for quick identification and management of challenges before they became larger issues. Technical and funding partners, including UNICEF, US-PMI and WHO, also provided vehicle support to strengthen supervision during implementation in WAU and WAR¹¹.
- Media activities were effective and far-reaching in enhancing the quality of ITN campaign activities. The national malaria programme organized radio discussions and radio phone-in programmes with local chiefs, authorities and councillors. The phone-in programmes also helped address and manage rumours, identify missed houses and settlements as well as underserved populations and mitigate against certain risks identified during campaign implementation¹².
- Local leaders were engaged early and throughout the campaign activities in WAR and WAU. These local leaders inspired confidence in community members and delivered messages reinforcing the redemption of ITN campaign vouchers at the DPs as well as use and care of ITNs. In identifying missed households, local leaders referred them to campaign personnel for registration.

¹⁰. Sierra Leone national malaria programme (2023). Interview notes.

¹¹. Sierra Leone ITN Campaign Lessons PowerPoint.

¹². Sierra Leone national malaria programme (2023). Interview notes.

KEY CHALLENGES

- Population figures from census projections are often inaccurate leading to shortages in the forecasting of ITN needs to cover households. Furthermore, even though the national malaria programme put in place a cap of a maximum of three ITNs that any one household could receive, average household size was smaller than predicted in urban and peri-urban settings, which led to a higher number of households overall within the estimated population and thus lower than full ITN coverage of all households in WAU and WAR.
- People migrating from other districts have been creating new and emerging settlements, leading to further changes to forecasted population figures and ITN needs.
- WAU is particularly mountainous and hilly, with very steep inclines, thus making physical access by HHR teams to communities and households and household representatives to fixed DPs very difficult.
- HHR agents faced challenges in reaching all households in urban and peri-urban areas, which include slum areas. Where households are very close together, the complexity of identifying and registering them increases. In some cases, and particularly in urban and peri-urban areas, households were missed during the registration, leaving them ineligible for ITNs.
- HHR agents faced challenges in convincing household members to accept the ITN allocation, particularly the limit on the maximum number of ITNs that any one household could receive. Related to this, some households in urban and peri-urban settings initiated “net tricks,” by splitting family members in the same household into smaller units and declaring that these represented separate households. Net tricks thus may have contributed to a higher-than-expected number of households of smaller average size as noted in the first bullet point above, which exceeded the planned number of ITNs¹³.



¹³. Sierra Leone national malaria programme (2023). Interview notes.

THE MAIN ACHIEVEMENT

The principal achievement in Sierra Leone's mass ITN campaign distribution in urban areas has been the measurable quality of the May—

June 2020 ITN distribution, overcoming the uncertainty and logistical complications caused by the emerging COVID-19 pandemic.



Exchanging vouchers for ITNs

LESSONS LEARNED AND RECOMMENDATIONS¹⁴ FOR SUCCESSFUL URBAN MASS ITN CAMPAIGNS

- Microplanning “translates the macroplanning and macro-budget into a detailed operational plan and budget that reflect the reality and context of each district in the country, including the urban areas within each district”¹⁵. Microplanning tools and training for urban and peri-urban slum areas should be “adjusted to incorporate specific planning for hard-to-reach areas, including emerging settlements”¹⁶ as well as overlapping households.
- Building on previous experience, the Sierra Leone national malaria programme understood that some households in urban and peri-urban areas were reticent or unable to visit DPs to redeem their ITN campaign HHR vouchers for ITNs. Therefore, as campaign results were analysed, the CC could allocate additional days for ITN campaign teams to conduct mop-up activities to provide ITNs to households which had not yet redeemed their coupons.



Hard-to-reach community in the WAR

¹⁴. AMP Sierra Leone 2020 Lessons learned summary.

¹⁵. November 2020 Integrated LLIN Report.

¹⁶. AMP Sierra Leone 2020 Lessons learned summary.

- Based on past learning that district administrative ward boundaries need to be “clearly demarcated by local councils to avoid conflict and enhance smooth and efficient campaign implementation of activities”, the Sierra Leone national malaria programme developed colour-coded vouchers by district so that households who received a voucher in one district could not redeem that voucher outside the intended district¹⁷.
- Hard-to-reach areas, including emerging settlements and overlapping households in urban and peri-urban slum areas, should be fully considered in planning and budgeting for social mobilization and household registration.
- External monitoring can provide information and help to identify errors in reported activities (e.g. net tricks) and relay updated instructions to supervisors to correct those errors. Monitors received phone credit so that they could report back to the CC and DHMTs each day prior to the district’s daily ITN campaign review meeting to review progress and troubleshoot problems.
- Alongside monitoring and supervision, the clustered lot quality assurance sampling (cLQAS) approach was used to assess the



quality of ITN campaign activities, allowing for use of data for decision-making on corrections during implementation of activities and for identification of areas requiring targeted mop-up.

- Daily briefing meetings at the DHMT with all campaign actors provided an opportunity for feedback from the field for proactive action in a formative manner to ensure a successful implementation.

¹⁷. Sierra Leone national malaria programme (2023). Interview notes.

CONCLUSION

Despite COVID-19, the national malaria programme of Sierra Leone successfully adapted urban mass ITN campaign planning and implementation during its 2020 ITN campaign. This included allocating sufficient human resources and training for microplanning, training,

household registration, monitoring and supervision, DPs, vehicles, security and communication. These approaches and lessons learned can serve as examples for other countries planning ITN distribution in urban and peri-urban areas.







AMP CONTACTS

To join the weekly AMP conference call each Wednesday at 10:00 AM Eastern time (16.00 PM CET) use the following Zoom meeting line:

<https://us06web.zoom.us/j/2367777867?pwd=allhZk9KQmcxMXNaWnRaN1JCUTQ3dz09>

You can find your local number to join the weekly call:

<https://zoom.us/u/acyOjkIj4>

To be added to the AMP mailing list visit:

<https://allianceformalariaprevention.com/weekly-conference-call/signup-for-our-mailing-list/>

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