

Messages on hanging of new types of insecticide-treated nets (ITNs)

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See also AMP guidance: *Planning and operational recommendations for multi-product ITN campaigns*: <https://allianceformalariaprevention.com/tools-guidance/multi-product-campaigns/>

Background

Mosquitoes are becoming resistant to the pyrethroid insecticides most used on ITNs, a situation that has the potential to reduce the ability of the ITNs distributed to protect people from malaria. Studies by the World Health Organization¹ (WHO) are showing increasingly widespread resistance to insecticides commonly used for vector control, including for ITNs, in most malaria-endemic countries².

New types of ITNs, which include pyrethroid PBO³ nets and ITNs containing a pyrethroid insecticide and other active ingredients (AIs), are now being manufactured and tested for their ability to counter insecticide resistance and ensure effective malaria prevention. The New Nets Project (NNP) focuses on pilot distribution of new types of ITNs in mass distribution campaigns to provide evidence of the effectiveness of these ITNs against documented resistance. Other countries outside the NNP pilot are also distributing new ITN types in multi-product campaigns with ITN types aligned with local resistance data. It is expected that a WHO recommendation for deployment of the new ITN types evaluated during the NNP will significantly increase the number of countries procuring these ITNs and planning and implementing multi-product campaigns.

Hanging new ITN types – the context

With the increased use of resistance data to better target ITN types, there has been debate about whether householders should be encouraged to hang the new ITN types immediately upon their receipt. Part of the concern is related to the increased investment for procurement of new ITN types and their inability to reduce malaria transmission if they are not immediately hung and used, leaving sleeping spaces protected with older ITNs, typically long-lasting insecticidal nets (LLINs).

Among the Alliance for Malaria Prevention (AMP) partners, it has been noted that the new ITN types being distributed during multi-product campaigns may not be hung and used immediately by households. This has been previously observed after campaign distributions regardless of the ITN type being distributed. In response to the delayed hanging and use of newly received ITNs, and in line with efforts to ensure that all sleeping spaces are covered with ITNs, a *Consensus Statement on Repurposing ITNs*⁴ was developed that states:

- Households should continue to maintain and use their ITNs for as long as possible and follow recommendations for effective care to prolong useful life. Any ITN is better than no ITN.
- Households are encouraged to continue using old ITNs until they are worn out (become inactive or no longer serviceable), then switch to new ITNs when they become available.

While the Consensus Statement does not specifically mention new ITN types, the recommendation

¹ WHO: <https://www.who.int/malaria/publications/atoz/9789241514057/en/>.

World Malaria Report 2020. <https://www.who.int/publications/i/item/9789240015791>.

² <https://www.irmapper.com>.

³ Piperonyl butoxide.

⁴ <https://endmalaria.org/news/consensus-statement-repurposing-itns-applications-bcc-messaging-and-actions-country-level>

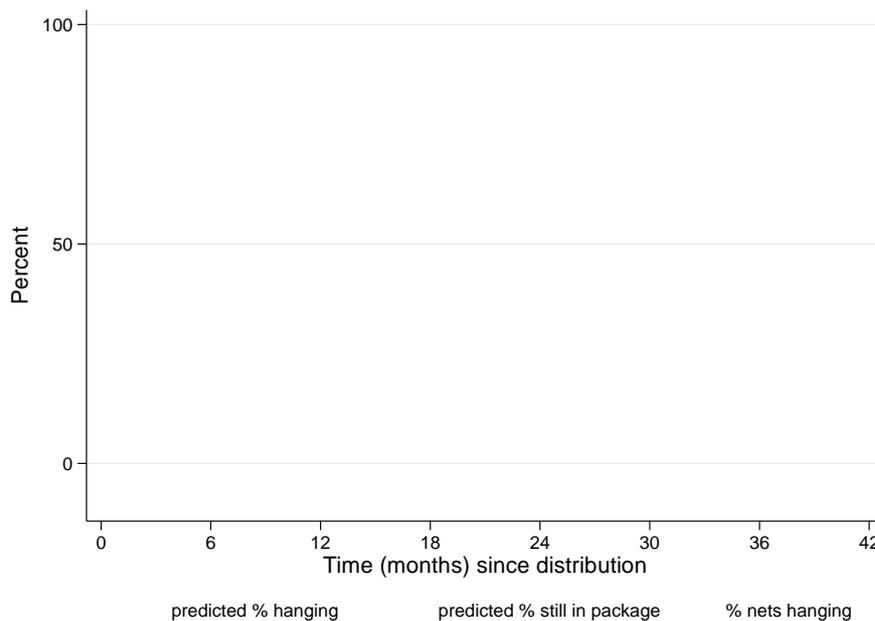
should be extended to cover all kinds of ITNs. Note, however, that the recommendation does not apply to areas targeted by the NNP or any other organization for research and data collection about the efficacy of new ITN types where it will be required to have enough of the new ITN type(s) hanging and used for data collection and evaluation purposes.

Messaging on hanging new ITNs

AMP guidance for social and behaviour change (SBC) planning regarding when newly received campaign ITNs should be hung puts the focus on encouraging householders to **hang and use all available ITNs, and to continue using older ITNs where these are still serviceable**. This is important given that many households will receive insufficient new ITNs during a campaign for all household members to be covered, usually as a result of capping.

As observed across numerous post-campaign surveys and ITN durability monitoring⁵ activities, the timing of household hang-up depends on both availability of other nets within the household, their perceived serviceability and priorities of the household. Householders are themselves responsible for decision-making around when to retire a net and when to hang newly acquired ITNs. While the proportion of newly received ITNs hung within the first six months after distribution varies considerably by location, the majority of campaign nets are hung by 6–12 months post-campaign (see Figure 1)⁶.

Figure 1: Data from six durability monitoring activities on proportions of campaign nets hanging (green) vs. stored in their package (tan) over time^{7,8,9,10}



⁵ <https://www.durabilitymonitoring.org/>

⁶ Abilio AP, Obi E, Koenker H, Babalola S, Saifodine A, Zulliger R et al. *Monitoring the durability of the long-lasting insecticidal nets MAGNet and Royal Sentry in three ecological zones of Mozambique*. Malar J. 2020, 1–17

⁷ Koenker et al, unpublished.

⁸ Lorenz LM, Bradley J, Yukich J, Masau DJ, Pigeon O, et al. *Comparative Functional Survival and Equivalent Annual Cost of Three Long Lasting Insecticidal Net (LLIN) Products in Tanzania. A Three-Year Prospective Cohort Study of LLIN Attrition, Physical Integrity and Insecticidal Activity*. Ssm Electron J. 2019.

⁹ Mansiangi P, Umesumbu S, Etewa I, Zandiberi J, Bafwa N, Glaufuss S, et al. *Comparing the durability of the long-lasting insecticidal nets DawaPlus® 2.0 and DuraNet® in northwest Democratic Republic of Congo*. Malar J. 2020, 1–17.

¹⁰ Obi E, Okoh F, Blaufuss S, Olapeju B, Akilah J, Okoko OO, et al. *Monitoring the physical and insecticidal durability of the long-lasting insecticidal net DawaPlus® 2.0 in three States in Nigeria*. Malar J. 2020, 1–19.

Guidance for national malaria programmes distributing new ITN types

To ensure that all individuals within a household have access to and sleep under an ITN, including where national malaria programmes are distributing new ITN types, AMP advises that strong communication continues to reinforce that all available ITNs that are serviceable should be used, including existing ITNs and newly received ITNs (regardless of ITN type). Messages should be planned, developed and disseminated in line with ensuring that household members use all ITNs that are serviceable in the household. National malaria programmes are not advised to communicate that only newly received ITNs (whether they are new ITN types or not) should be used for a number of reasons including:

1. Asking households not to use existing nets may contradict campaign messages that “every household member should sleep under an ITN every night throughout the year” and may lead to reduced access to ITNs for all household members where insufficient new ITNs are received through the campaign and where continuous distribution channels are limited.
2. Research has shown that even in a setting where pyrethroid resistance exists, standard LLINs and “old” nets will still provide a level of protection against mosquito bites and reduce malaria transmission within households.
3. Promoting immediate hanging of newly received ITNs, including new ITN types, may lead households to repurpose existing nets (standard LLINs or otherwise) that are still serviceable (whether from the previous campaign, from a continuous/routine distribution channel or purchased through the private sector) based on the information received through the SBC messaging.
4. Promoting the exclusive hanging of “new” ITN types may create the perception that older nets are not effective in protecting users from malaria, which may lead to a significant problem where ITN types for continuous distribution, particularly routine channels, are not yet aligned with those distributed during a campaign.

Messages to households

National malaria programmes should ensure that messages to households reinforce universal access to and use of ITNs, including that any existing ITNs at the household that are still serviceable continue to be used so that all household members are protected. In addition, messages should:

- Be based on existing data (where available) about ITN durability, particularly where vermin may be a problem if newly received ITNs are not securely stored
- Provide information about what to do with nets that are no longer serviceable (beneficial or neutral repurposing¹¹)
- Provide information on proper storage of new ITNs that are not going to be hung immediately because all sleeping spaces are already covered with existing ITNs
- Provide information on the proper use and care, as well as daily storage, of new ITNs once they are hung

The messages promoting continued use of existing ITNs, even when new ITNs and/or new ITN types are available, should be designed to:

- Ensure that all ITNs existing in the household are being used for their entire lifetime. This maximizes the investments in the ITNs distributed or accessed across different channels

¹¹ See the *Consensus Statement on Repurposing*. <https://endmalaria.org/news/consensus-statement-repurposing-itns-applications-bcc-messaging-and-actions-country-level>. Beneficial repurposing is defined as the use of inactive ITNs for purposes other than sleeping under, e.g. as curtains, patches for holes in other nets, window or door screening, etc. Neutral is defined as repurposing for household uses that do not prevent mosquito bites, e.g. fencing, protecting seedlings, screening poultry or animal enclosures, etc.

- (mass campaign, continuous distribution, particularly routine distribution in many countries, or private sector)
- Ensure that the maximum number of household members are protected with ITNs available in the household

When new ITN types are being distributed through a mass campaign, there are risks that the messaging on continued use of existing ITNs will be discounted or that rumours will arise related to:

- Households may become aware of the different/new ITN types being distributed (even if it is not specifically communicated to them), as well as insecticide resistance in the area. They may not understand the reason behind being asked to continue using the “old type” of net when the new ITNs are perceived to be “better”.
- If a new ITN type is being distributed through a mass campaign but another type of ITN is being distributed through other channels (e.g. routine distribution has not yet transitioned to the new type of ITN), communicating about the new ITN type could lead to a perception that the “old type” of ITN is substandard.
- Different types of ITNs being distributed throughout the country can lead to misconceptions about one type of ITN being “better” than others, thus leading to rumours and low uptake at household levels.

Communicating to communities and households about new ITN types

Most national malaria programmes implementing multi-product ITN campaigns have decided not to communicate in detail to communities about the different types of ITNs being distributed, but each national malaria programme will need to decide on what to communicate and at which levels based on their own analysis of risks associated with such communication.

The risk of rumours, mis or dis-information about different ITN types will be present whether the national malaria programme decides to openly communicate about the different ITN types or not. It is therefore highly recommended that a detailed rumour management plan¹² is developed that considers the risks associated with any multi-product campaign and establishes a robust response mechanism. As rumours can often occur after the mass distribution (i.e. people may not hang their new ITNs immediately and so may notice differences between their “old” net and their new ITN much later than the point the ITN is received as per Figure 1), it is important that national malaria programmes develop a strong post-distribution SBC and monitoring strategy during macroplanning and budgeting. As needed, national malaria programmes should work with partners to ensure that resources required for post-distribution SBC are secured.

Country case study: Burkina Faso^{13,14}

At the macroplanning stage, the national malaria programme in Burkina Faso made the decision to communicate about the different types of ITNs at all levels, including community and household, although the language used and level of detail communicated were different. At the central, provincial and district levels, the national malaria programme communicated that “new generation nets” were being distributed to address insecticide resistance issues and that the ITNs that each district would receive for the campaign were those that were most appropriate for addressing the documented types of resistance. At the

¹² See AMP guidance: *Risk assessment and mitigation planning for an ITN distribution campaign in the COVID-19 context.* <https://allianceformalariaprevention.com/tools-guidance/covid-19-pandemic/> and JHU: *Technical brief for Breakthrough Action field teams on developing a real-time rumour management system.* <https://ccp.jhu.edu/tools/creating-a-real-time-rumor-management-system-for-covid-19/>

¹³ See Case study : <https://allianceformalariaprevention.com/tools-guidance/covid-19-pandemic/>

¹⁴ The 2019 Burkina Faso campaign was part of the New Nets Project.

community and household level, the message was that ITNs being distributed were “adapted to the mosquito in your region”.

In Burkina Faso, the decisions about when and how to communicate about different ITN types were based on several considerations:

- Standard LLINs were delivered without packaging while new types of ITNs were delivered with packaging, so the difference between the nets was visible.
- The security context in the country and level of distrust among certain population groups presented a high risk for negative reactions if people discovered later that different ITN types were distributed and felt they did not get the “better” net.
- The issue of Insecticide resistance was already being communicated to communities by the MoH from the end of 2018 through the district level health administration. The MoH felt that the increase in knowledge might help households understand the noticeable effect of their ITNs on mosquitoes. Not having the right information on the reason for this effect was considered to be a potential source of rumours, mis- or disinformation.

To date, Burkina Faso reports no significant rumours about the new types of ITNs.

Country case study: Mozambique

In Mozambique, where a multi-product campaign was implemented in 2020, the national malaria programme decided not to communicate about the different types of nets being distributed beyond the provincial health teams.

This decision was based on:

- The need to reduce the risk of rumours, mis or disinformation being spread about differences between ITNs and their potentially lower quality, thus leading to low uptake and utilization.
- The risk that the use of multiple ITN types would be politicized given the different strong factions in positions of power throughout the country, including within provinces targeted for the campaign.

To date, the national malaria programme in Mozambique has not identified any rumours being spread about the different ITN types, nor have they received any questions to that effect from the community level.

Considerations for promoting immediate and exclusive hanging of new ITN types

While this is not a general AMP recommendation, in some cases, national malaria programmes may wish to promote immediate and exclusive hanging and use of new ITN types, for example in communities that are part of a study setting under the New Nets Project or evaluations funded by other financial sources.

It may be possible for SBC activities to **accelerate hanging** of new ITNs. Messaging to accelerate hanging might necessitate:

- Explaining to households (potentially without explaining about the new ITN type depending on decisions taken) why it is important to hang these specific ITNs immediately and take out of service any ITNs received in previous campaigns or through continuous/routine or other channels.
- Determining what messages should be developed for “serviceable nets” (e.g. ITNs received relatively recently through continuous distribution channels, particularly routine) to reduce early ITN repurposing.

Households may have existing ITNs (often standard LLINs) that they received in the previous campaign, through an antenatal care (ANC) visit or other continuous distribution channel, including ITNs that they purchased and that are considered to be still serviceable. In this case, consideration needs to be made about messages regarding what to do with existing ITNs that households may still be using:

- Where existing ITNs are older and may be close to being repurposed, consider:
 - Developing and disseminating repurposing messages as part of SBC activities and messages. The RBM *Consensus Statement on Repurposing ITNs*¹⁵ (the Consensus Statement) sets out various SBC considerations around repurposing, including differentiating between misuse, beneficial and neutral repurposing
 - Whether SBC messages will be about both neutral and beneficial repurposing. National malaria programmes may wish to only disseminate SBC messages about beneficial repurposing but accept neutral repurposing where it takes place
 - How to reinforce that existing nets should not be misused, such as repurposing ITNs for repairing fishing nets
- Where existing ITNs may be newer, such as ITNs received through ANC or another continuous distribution channel, including those recently purchased by the household, and are still protecting household members when used correctly, consider:
 - Whether developing and disseminating SBC messages about repurposing existing ITNs in households will lead to the repurposing of a large quantity of nets that are still serviceable and how to mitigate those risks
 - Whether households will have sufficient ITNs to cover all household members if existing serviceable ITNs are taken out of use

It is important to note that the *Consensus Statement* clearly states that old nets that are still serviceable should continue to be used by the household.

National malaria programmes should consider what is expected of households if they have insufficient new ITNs and/or new ITN types to cover all family members/sleeping spaces but also have “old” ITNs that are still serviceable. In addition, national malaria programmes promoting immediate hanging of new ITNs from campaign distribution while still distributing standard LLINs or another ITN type through other channels (routine/continuous) should avoid giving households mixed messages which can lead to rumours, mis or disinformation, a factor that should be considered in the message development.

¹⁵ <https://endmalaria.org/news/consensus-statement-repurposing-itns-applications-bcc-messaging-and-actions-country-level>.