amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

AMP Annual Partners' Meeting

Day 1 – 7 April 2025

Réunion annuelle des partenaires de l'APP

Jour 1 – 7 avril 2025

Rethinking the ITN status quo: Maximizing the impact on malaria

Repenser le cadre d'utilisation des MII: pour un impact renforcé contre le paludisme

© Muchiri Frames / Vestergaard

Meeting will begin shortly – la réunion va bientôt commencer

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Discussion
Questions & Answers

Discussion
Questions et réponses

Remote participants:
Kindly use the Zoom Q&A feature to submit comments and ask questions, specifying the name of the speaker to whom the question is directed.

Participants à distance :
Nous vous prions d'utiliser la fonction Q&A sur Zoom pour soumettre vos commentaires et poser vos questions, en précisant le nom de l'orateur à qui la question est adressée.

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email info@tiseh.com

Nigeria's experience with prioritization of campaign ITNs in urban areas: Process, outcomes and recommendations for future

National Malaria Elimination Program Nigeria

7th April 2025

Our Vision - a malaria-free Nigeria; Our goal – To reduce morbidity to less than 10% parasite prevalence and mortality attributable to malaria to less than 50 deaths per 100,000 live births by 2025.

Presentation Outline

- Introduction & Context for Proper Targeting of Nets
- Process for selection of wards
- Outputs
- Guidance Provided by the National Task Team
- Summary of key steps
- Lessons Learned and Challenges
- Recommendations

Our Vision - a malaria-free Nigeria; Our goal is to reduce morbidity to less than 10% parasite prevalence and mortality attributable to malaria to less than 50 deaths per 100,000 live births by 2025.

Introduction: Context for Proper Targeting of Nets – 1

- The National Malaria Elimination Programme (NMEP) is rethinking the strategies and interventions that will impact the malaria burden in line with sub-national tailoring (SNT).
- One critical area is the approach to malaria transmission in the urban area given its heterogeneity, complexity and socio-economic indices as well as in the light of uptake of previous interventions and how they may have affected disease prevalence.
- Until recently (with the introduction of the malaria vaccine) donors, partners and governments in the country have focused mainly on some traditional preventive interventions. Given limited funding from all sources and the desirability of employing other control measures, it became imperative to see how available funding (from every source) could be better managed and deployed. This is in line with ensuring that interventions meet the criteria of effectiveness, efficiency and equity.
- The question arose: could insecticide-treated net (ITN) distribution in urban areas be adjusted to specifically target those who truly need them?
- This has become a starting point for the implementation of an urban malaria strategy which will help maximize resources and achieve impact.

Introduction: Context for Proper Targeting of Nets – 2

- In 2023, a pilot project was initiated for the Kwara ITN campaign to develop a guide for re-prioritizing ITNs in urban areas, even though all the necessary nets had already been procured.
- Professor Ifeoma Ozodiegwu and her team from the University of Chicago supported the Kwara pilot with funding from the Bill and Melinda Gates Foundation (BMGF).
- They employed a classification algorithm to identify areas (three settlements in two wards) with low risk of malaria transmission in Ilorin. Community stakeholders validated the results.
- The next step involved simplifying the process and deploying the learning from the Kwara pilot to other states conducting ITN mass campaigns.
- The principle has been employed in the ITN campaigns in Gombe, Jigawa, and Ogun States in varying degrees.
- In 2025 seven States where ITN campaigns will be conducted were targeted. Tropical Health with support from Global Fund was also engaged by NMEP to help develop a decision flow chart to be used for national-level macro planning.

Process: Criteria for Identifying Areas where ITN Distribution will not be Prioritized – 1

With support from the University of Chicago (Prof Ifeoma's team):

- Publicly available data was collated and variables were extracted for the wards in the selected states
- A composite score was generated to enable ranking wards from low to high malaria risk. Ward ranks were based on the composite scores or the estimated malaria prevalence for outputs based on a machine learning model.
- For the Kano metropolis, malaria risk was modelled using a machine learning (ML) approach in line with the above scenarios
- Different reprioritization scenarios were provided (10%, 30%, 50% and 75% of the ward area was classified as urban). The 75% and 50% scenarios were prioritized.

Process: Criteria for Identifying Areas where ITN Distribution will not be Prioritized – 2

The variables that were ranked were:

- Enhanced Vegetation Index (EVI)
- Under 5 Test Positivity Rate (TPR)
- Settlement type
- Distance to water bodies
- Flood intensity

Process: Criteria for Identifying Areas where ITN Distribution will not be Prioritized – 3

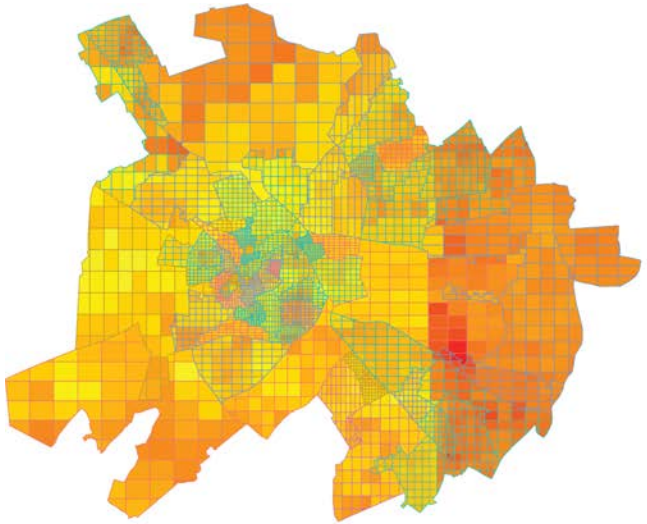
Furthermore, NMEP/SMEOR considered Under 5 Test Positivity Rate (TPR) and known/ assumed urban areas

Outputs

Our Vision - a malaria-free Nigeria; Our goal – To reduce morbidity to less than 10% parasite prevalence and mortality attributable to malaria to less than 50 deaths per 100,000 live births by 2025.

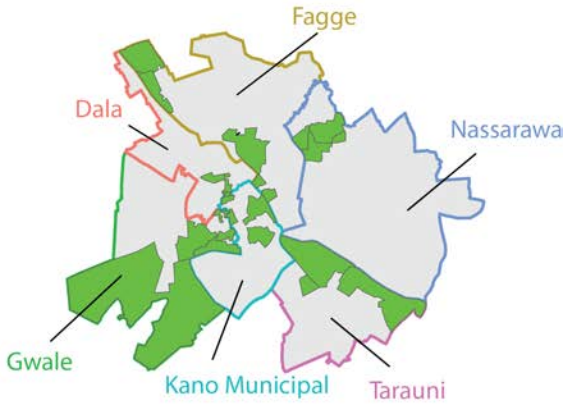
Kano metropolis

Settlement level variation in predicted malaria prevalence



Using data from our field study and remotely sensed data, we identified wards for reprioritization

Variables that went into the model
Vegetation indices
Building height
Moisture indices
Building morphology
Night-time lights



Our vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

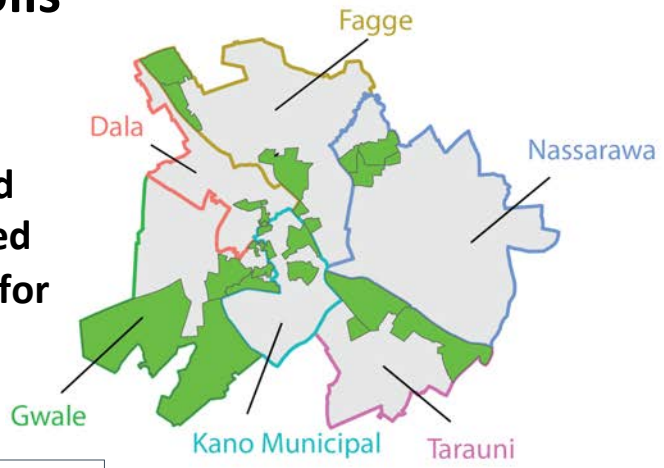
Kano metropolis

Using data from our field study and remotely sensed data, we identified wards for reprioritization

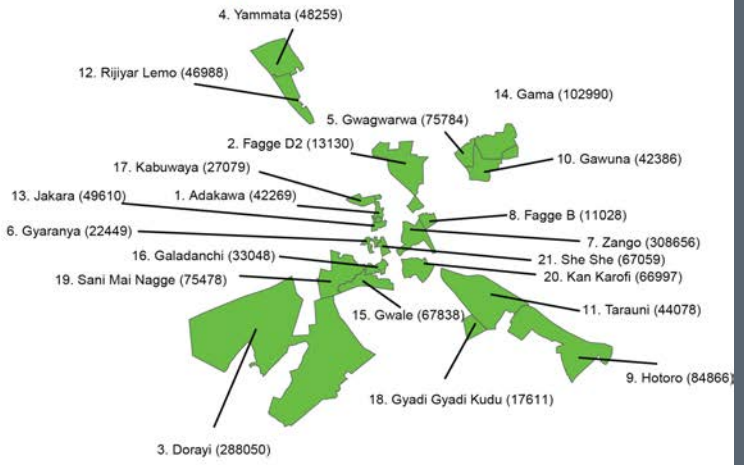
Variables that went into the model

Vegetation indices
Building height
Moisture indices
Building morphology
Night-time lights

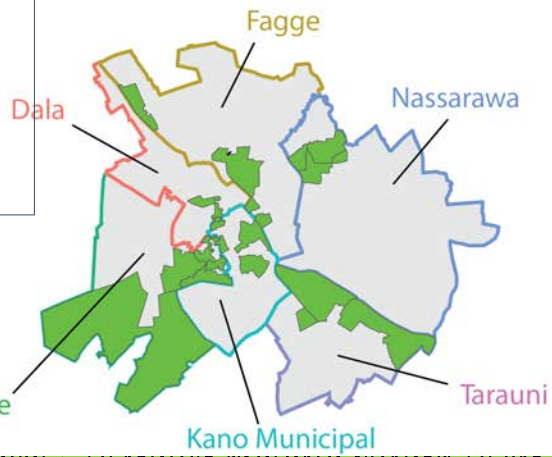
Reprioritization Scenario 3 - at least 50% of the ward is urban

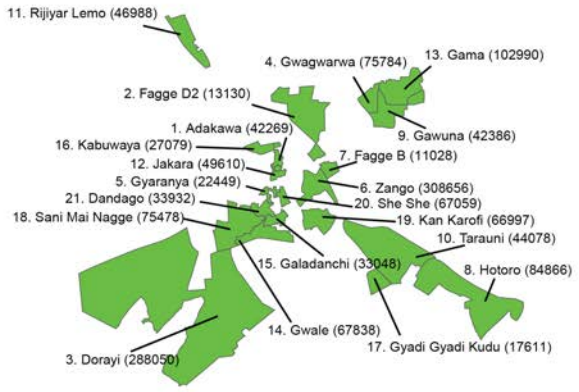


Reprioritized wards



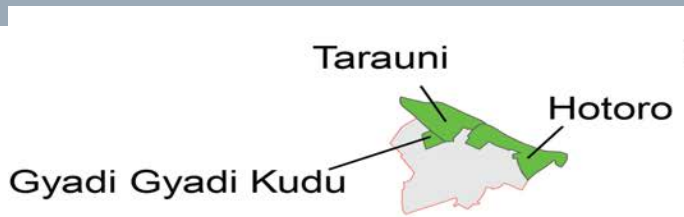
Reprioritization Scenario 4 - at least 75% of the ward is urban



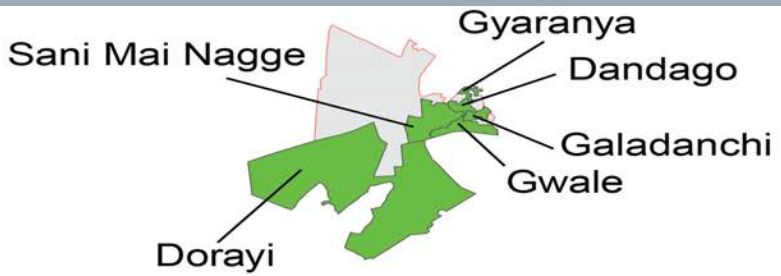


Label: ranks, ward name, ward population

Wards recommended for reprioritization by LGA in 75% urban scenario for Kano metropolis

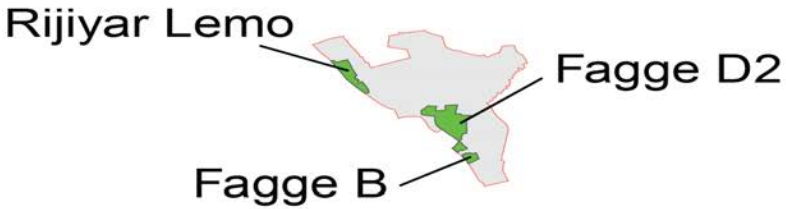


Tarauni LGA

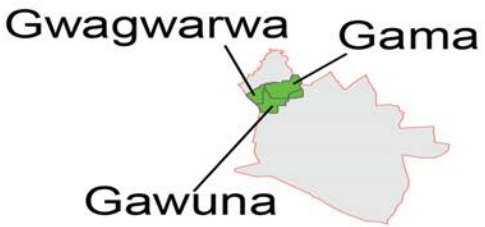


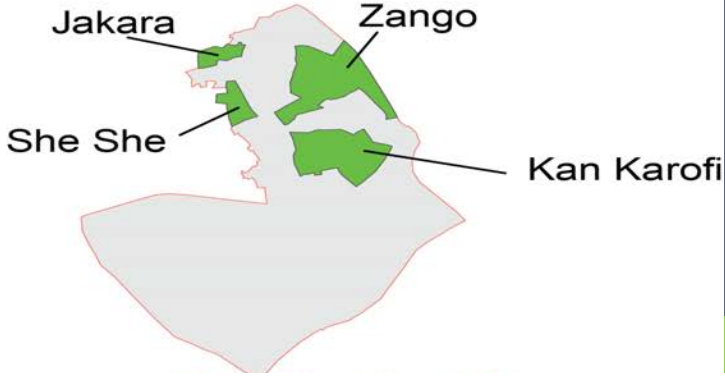
Gwale LGA

Dala LGA



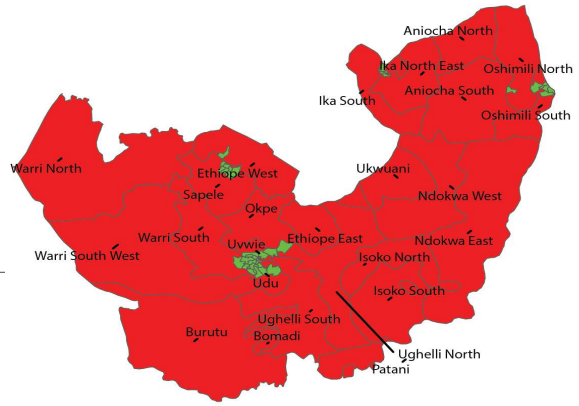
Fagge LGA

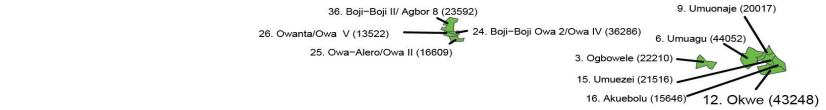


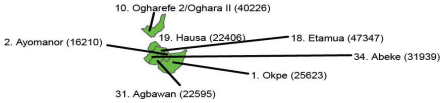


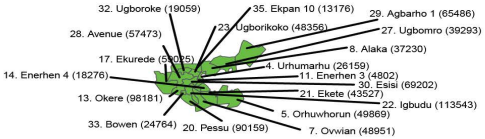
Delta state

Reprioritization Scenario 3 - at least 50% of the ward is urban







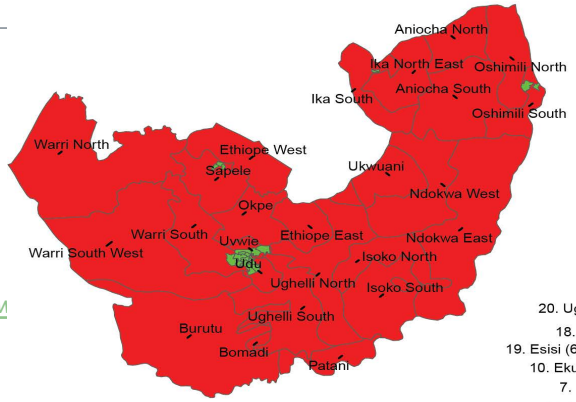


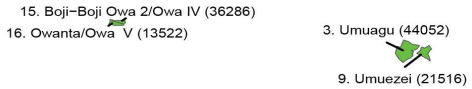
Labels

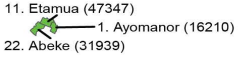
Left: LGA

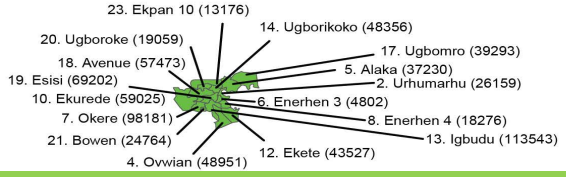
Right in green: rank
name, ward populat

Reprioritization Scenario 4 - at least 75% of the ward is urban







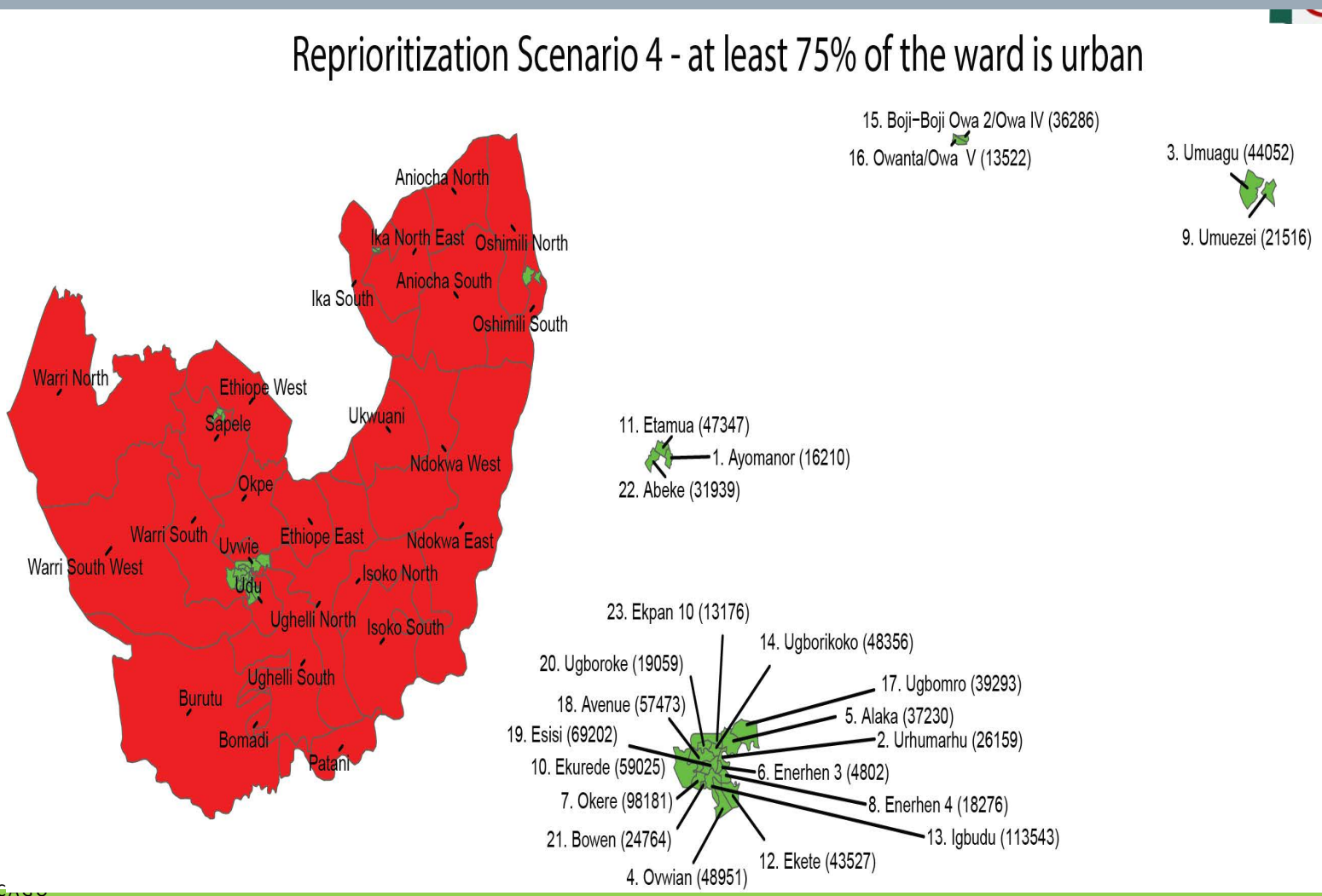


Here is the link to the list of reprioritized w

Our vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Delta state

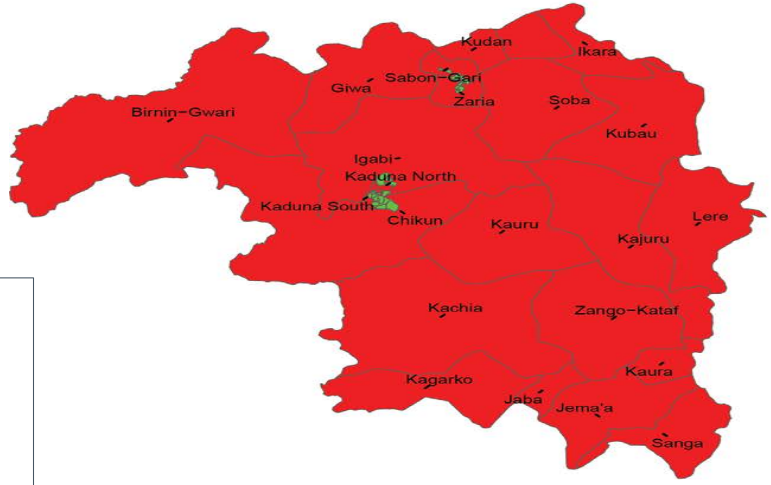
Wards recommended for reprioritization by LGA in 75% urban scenario in Delta

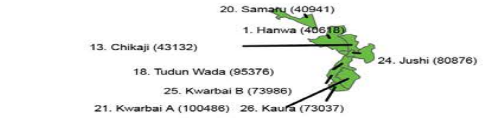


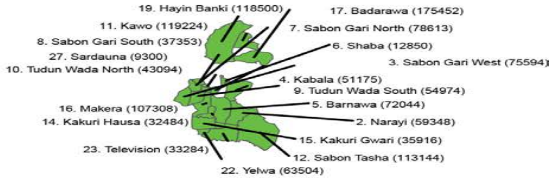
Our vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Kaduna state

Reprioritization Scenario 3 - at least 50% of the ward is urban





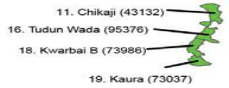


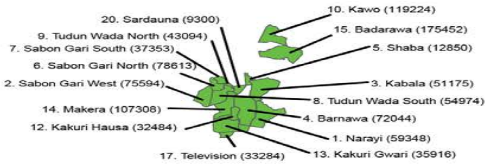
Labels

Left: LGA

Right in green: ranks, ward name, ward population

Reprioritization Scenario 4 - at least 75% of the ward is urban



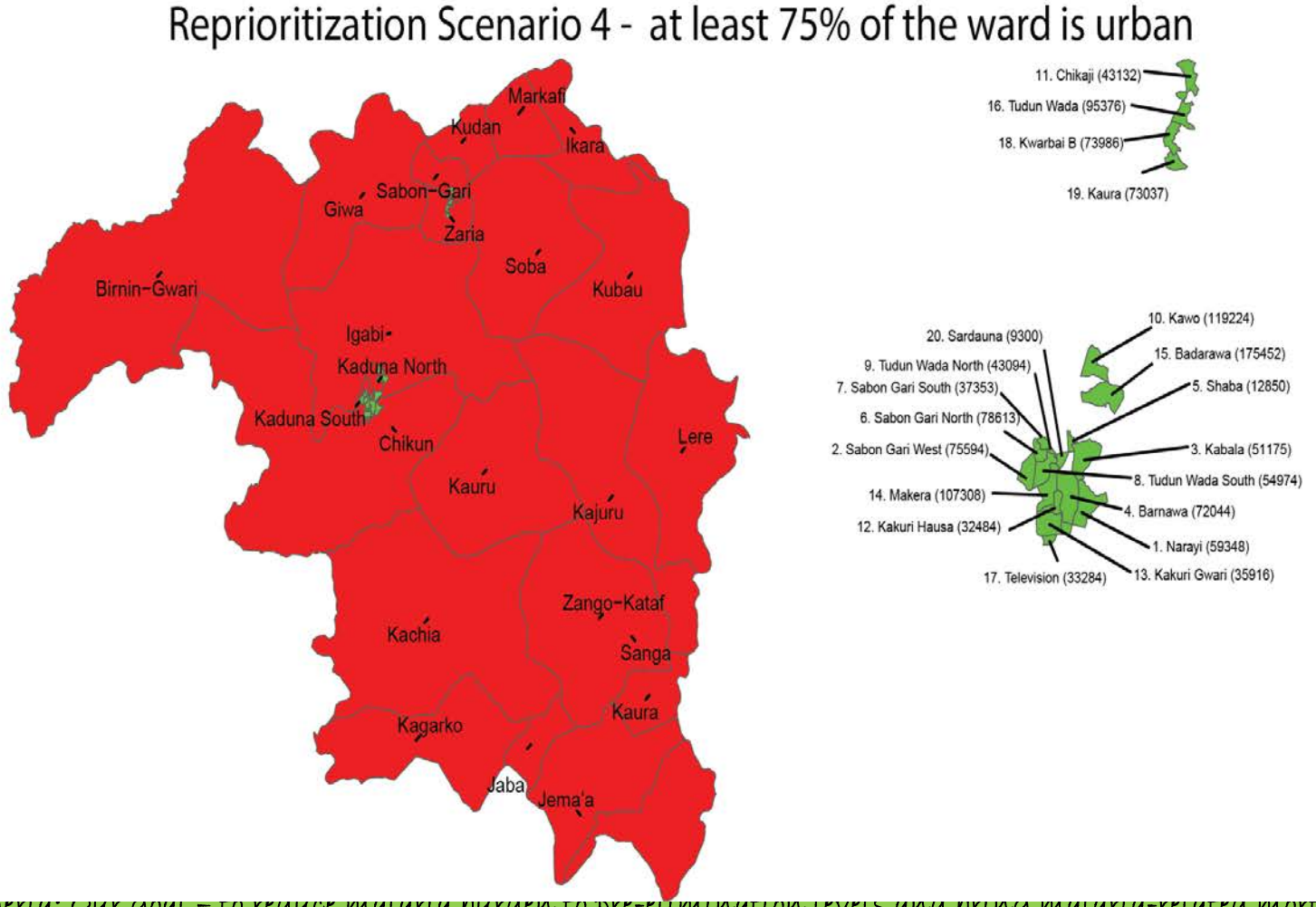


Here is the link to the list of reprioritized

Our Vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Kaduna state

Wards recommended for reprioritization by LGA in 75% urban scenario in Kaduna State



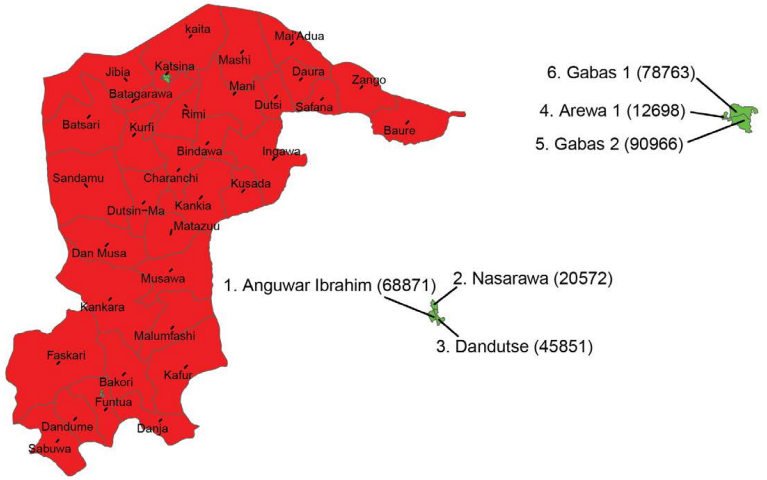
Katsina state

Labels

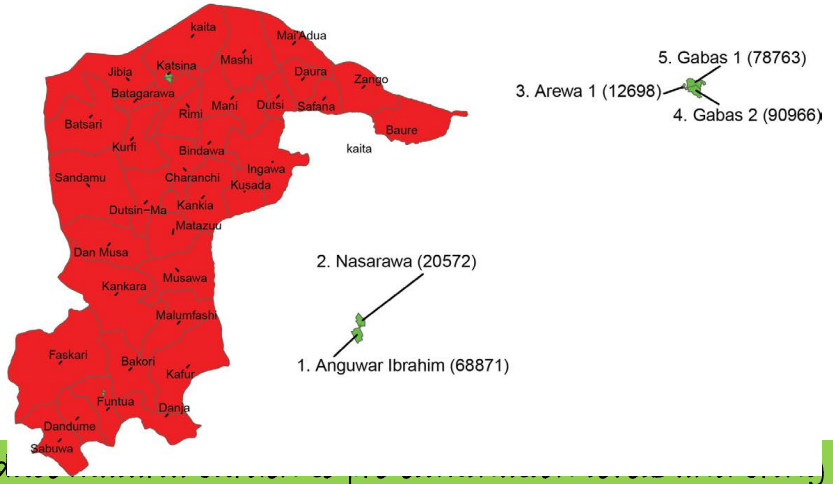
Left: LGA

Right in green: ranks, ward name, ward population

Reprioritization Scenario 3 - at least 50% of the ward is urban



Reprioritization Scenario 4 - at least 75% of the ward is urban

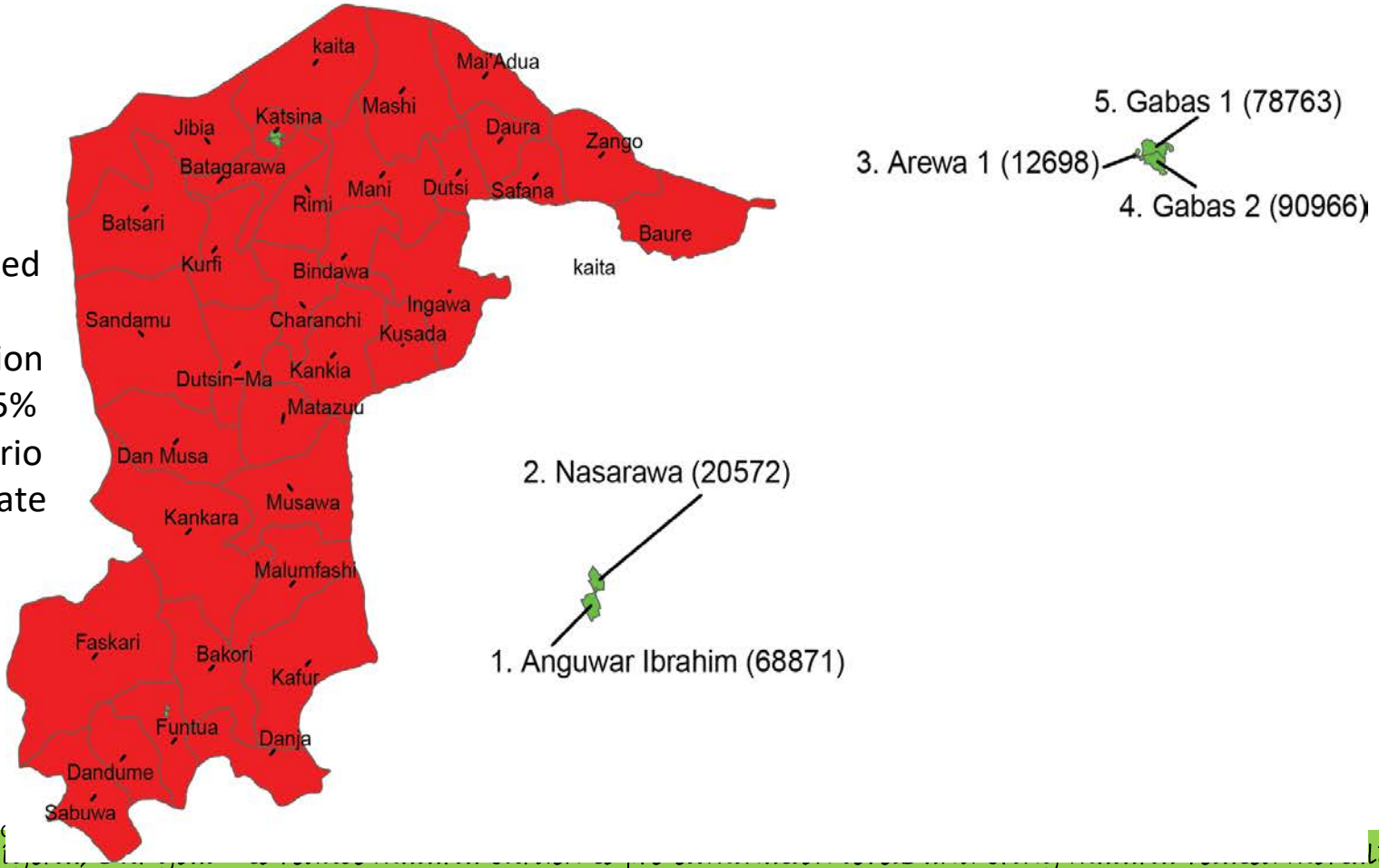


Here is the link to the list of reprioritized wards

Our Vision - a malaria free Nigeria; Our goal – to red malaria-related mortality

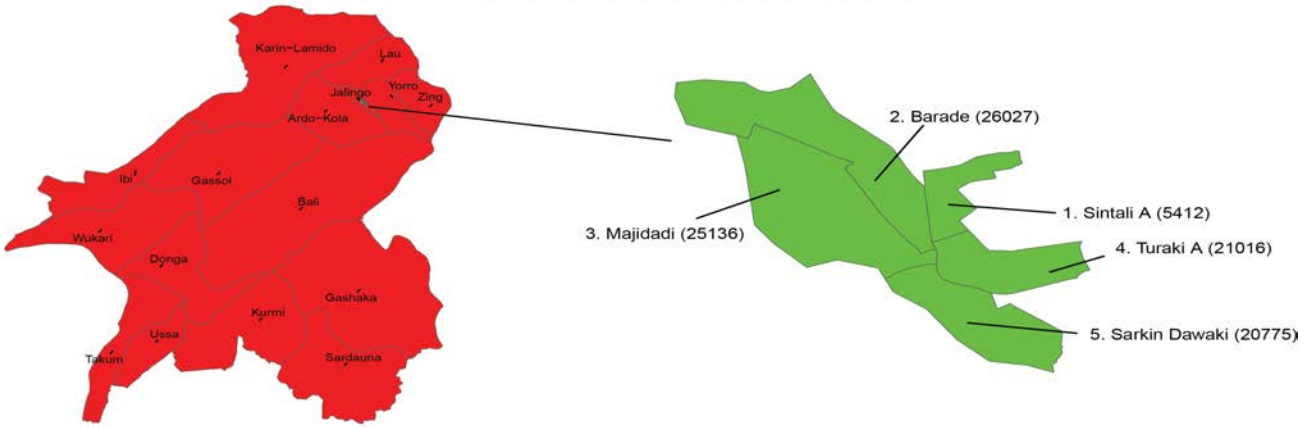
Katsina state

Wards recommended for reprioritization by LGA in 75% urban scenario in Katsina State



Taraba state

Reprioritization Scenario 3 - at least 50% of the ward is urban

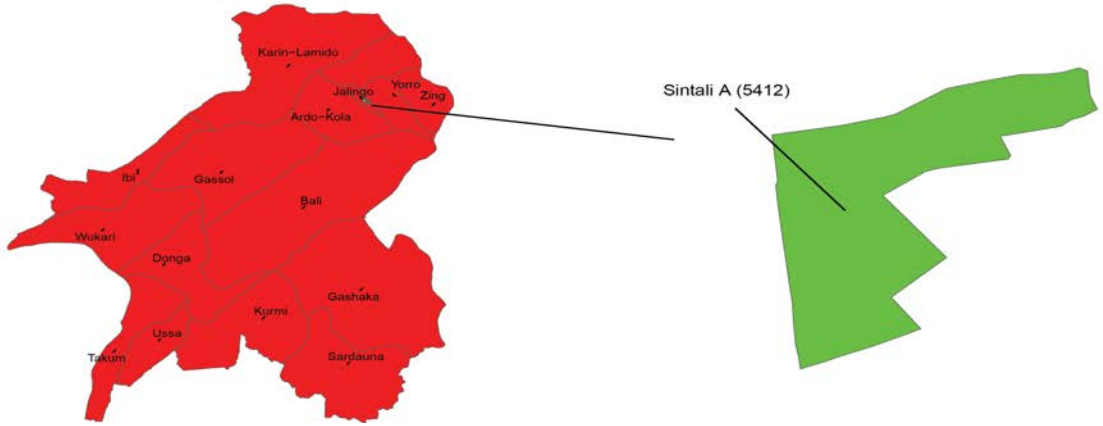


Labels

Left: LGA

Right in green: ranks, ward name, ward population

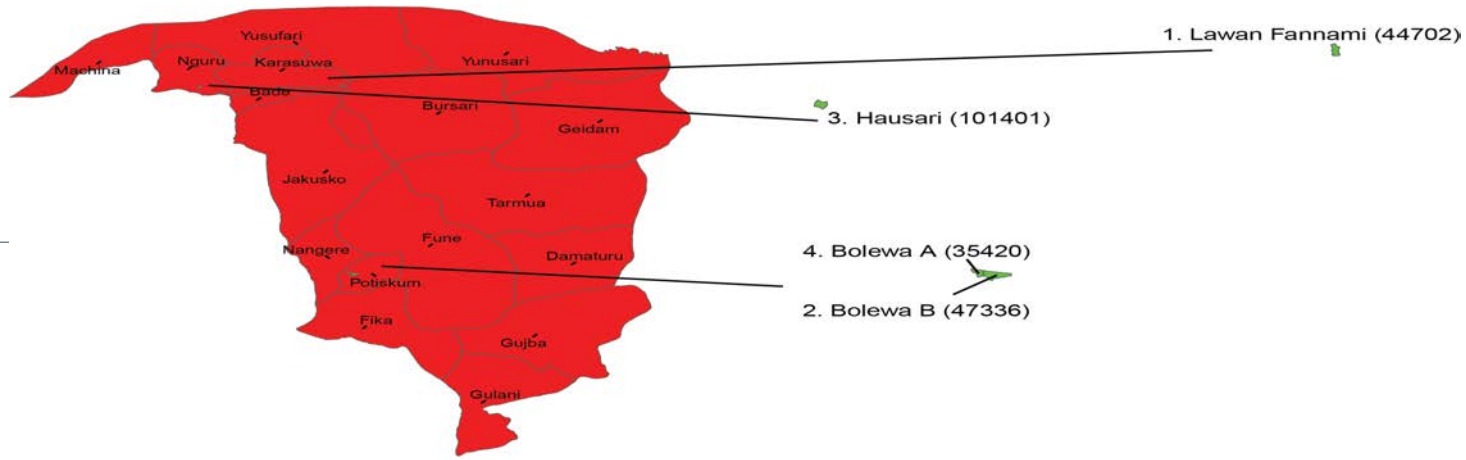
Reprioritization Scenario 4 - at least 75% of the ward is urban



Our vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Yobe state

Reprioritization Scenario 3 - at least 50% of the ward is urban

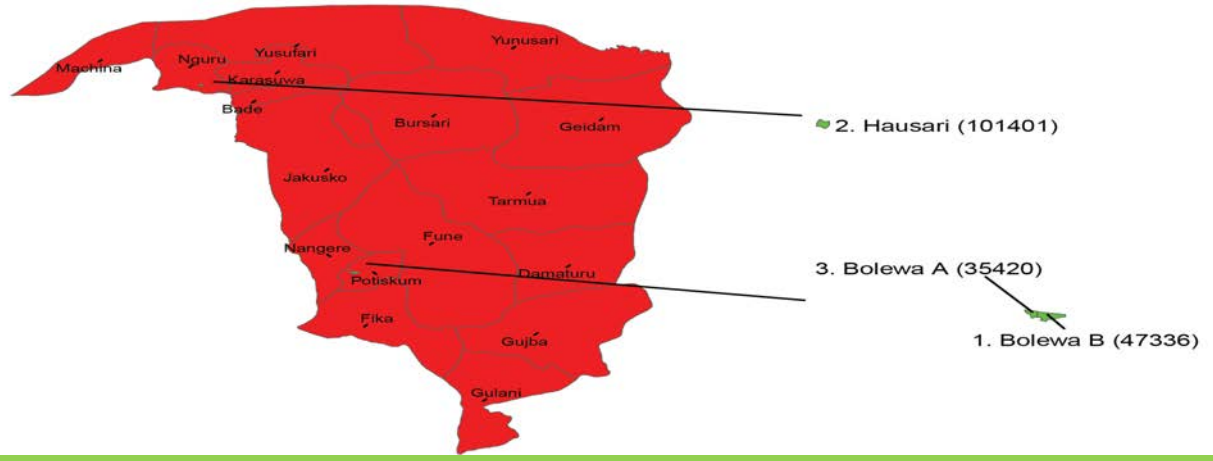


Labels

Left: LGA

Right in green: ranks, ward name, ward population

Reprioritization Scenario 4 - at least 75% of the ward is urban



Here is the link to the list of reprioritized wards

Our Vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Niger state

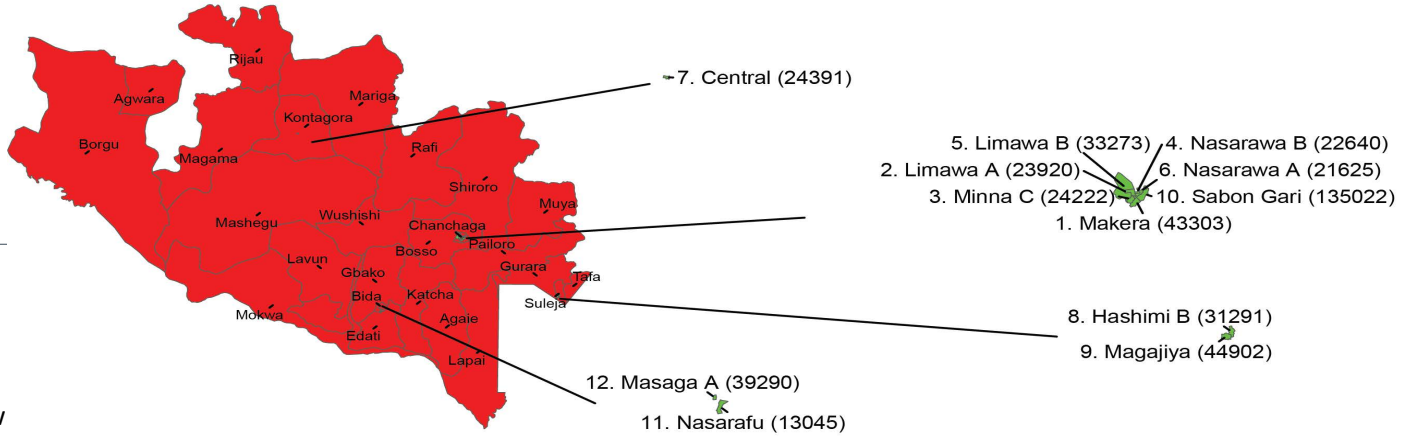
Labels

Left: LGA

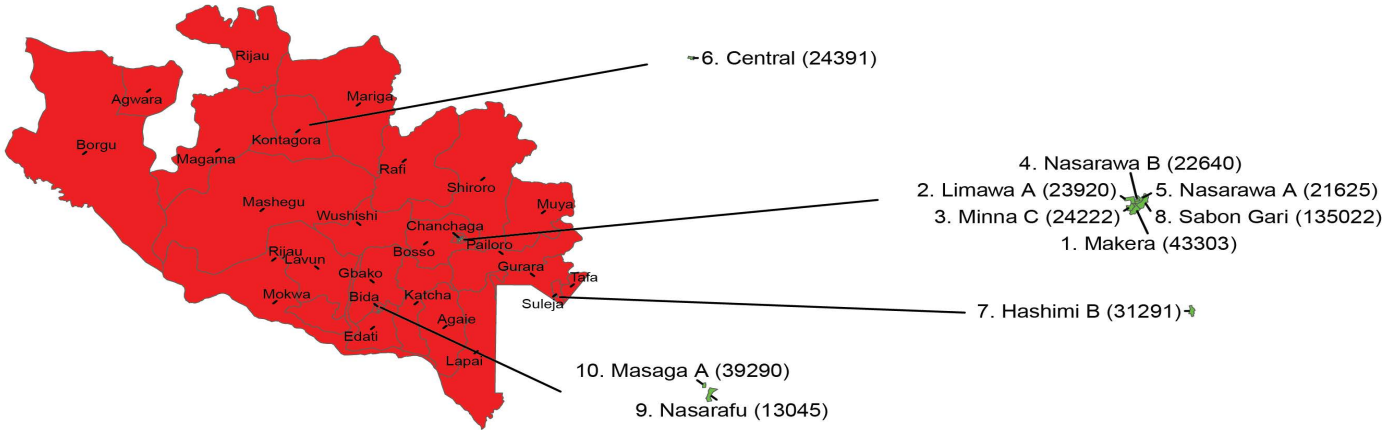
Right in green: ranks, w
name, ward population

Here is the link to the list of reprioritized w

Reprioritization Scenario 3 - at least 50% of the ward is urban



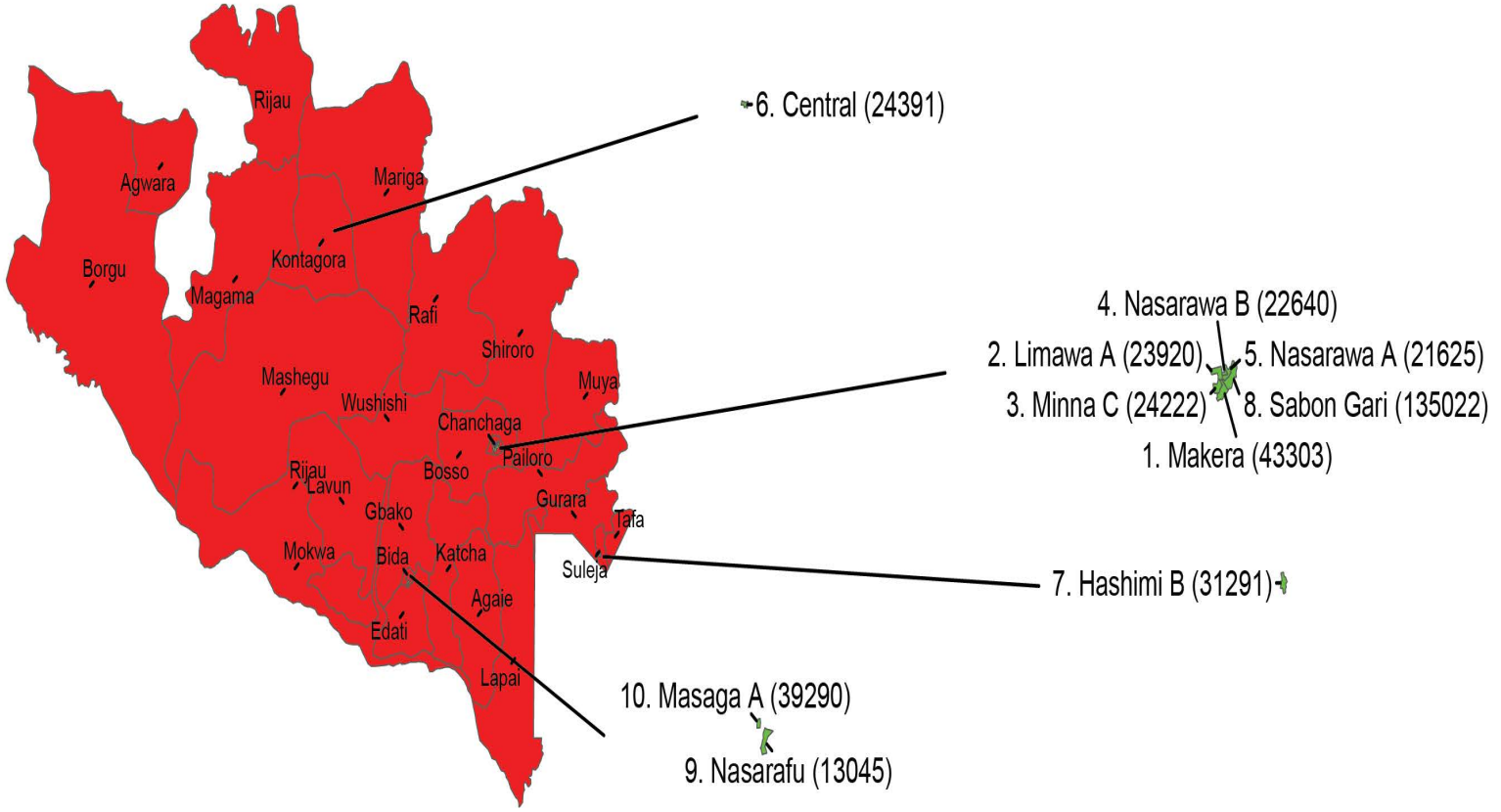
Reprioritization Scenario 4 - at least 75% of the ward is urban



Our vision - a malaria free Nigeria; Our goal – to reduce malaria burden to pre-elimination levels and bring malaria-related mortality

Niger state

Wards recommended for reprioritization by LGA in 75% urban scenario in Niger State



Summary of Recommended Wards with Estimated Populations by State

State	No of Recommended LGAs & Wards for Reprioritization	Total Population of Recommended Areas	Additional LGAs & Wards	Total Population of Additional Areas	Total LGAs & Wards for validation	Total Population of Areas for validation
Delta	5 (25)		11 (24)		12 (49)	
Kaduna	5 (27)	1,469,231	7 (13)	808,357	7 (40)	2,277,588
Kano	6 (27)	1,399,878	6 (14)	471,321	7 (41)	1,871,199
Katsina	2 (5)	262,207	2 (2)	91,624	3 (7)	353,830
Niger	4 (11)	369,343	4 (6)	212,854	5 (17)	582,197
Taraba	1 (2)	55,176	3 (18)	524,139	3 (20)	579,315
Yobe	2 (3)	130,544	2 (4)	117,393	4 (7)	247,937

Guidance for Validation from the National Task Team

Review & Plan

- SMEP reviews suggested areas and checklist for validation
- Identifies urban areas for validation or inclusion
- Conducts preliminary engagement with State Policy Makers
- Plans on the best way to conduct validation

Validate

- Key stakeholders very familiar with the terrain and settlements are identified at the State or LGA level.
- Suggested wards are taken one after another and OBJECTIVELY assessed using the provided checklist. Locations as to the LGAs they fall are confirmed. Estimated populations are provided
- Stakeholders reach a consensus on low-risk areas that will have other vector-control interventions

Review & Share

- SMEP reviews outputs from the validation process
- A state-level stakeholders' meeting is convened where final outputs are discussed and agreed on.
- The state shares outputs with data collected using the checklist with NMEP. Minutes of the stakeholders' meeting are to be shared as well.

Summary of Key Steps – Prior to Microplanning

- The IVM and SMEOR branch through the Task Team on Reprioritization generates a list of areas for possible reprioritization per State.
- The list is shared by the IVM branch with States with the implementing partners in copy for validation using/adapting a standardized checklist from SMEOR. The validation includes identifying and adding more wards that are urbanized and with relatively low TPR.
- Engagement meetings are held by NMEP with individual States to review the list and provide orientation to SMEP officers with implementing partners on how to conduct validation.
- Implementing Partner(s) support(s) the State to conduct the validation, ensuring some rigour is introduced into the process by using existing structures.
- The validation outcome is shared with the Task Team for review and alignment. Any issues will be resolved in consultation with the State and supporting implementing partner (IP). State signs off on the validated list.

Summary of Key Steps – After Microplanning

- The population generated from microplanning activity (after removing areas for reprioritization) is triangulated with several available nets by the Implementing Partner with oversight from IVM/NMEP. Where available nets are inadequate or in excess, a stakeholders' meeting is convened by the IVM branch to agree on what should be done.
- Scenarios to be considered if available nets are insufficient for the target population are as follows (in line with a decision-making flowchart for ITN prioritization in urban areas which was developed with support from Tropical Health):
  - Explore other sources of nets including requesting the State Government to procure the balance (if there is sufficient time before the campaign) or re-channelling surplus nets from other States.
  - Seek additional areas to be excluded during net distribution. Note that this is a response to an inadequacy of nets available, rather than part of the urban malaria strategy. The key elements to be considered in identifying such areas are formal settlements and low/decreasing under 5 TPR.
  - Where additional areas have been identified for reprioritization and there is still a shortage of nets capping can be done after household mobilisation and during the distribution of ITNs.
  - Do a State-level capping. The ideal would be to cap by LGA and have different caps for different LGAs based on the level of risk. However, the current technology being used in ITN campaigns is unable to do this.

TheState need to have verified working population harmonized for the use of health care intervention in the State

Challenges

- There is a fear that reprioritizing a ward may lead to the rejection of other health interventions.
- Anticipated reaction of non-ITN targeted wards - which could be, theft, violence and rejection of other health interventions. This was experienced in some states last year.
- Getting accurate population figures is always a challenge, due to outdated population census data and different health interventions having different population figures.

Lessons Learned

- The implementing partner's support for the validation process and a clear understanding of the reason for the strategy ensured hitch-free acceptance.
- Bias is always introduced in the validation when LGA RBMs are left on their own – no one wants to be instrumental in 'depriving' any area of ITNs.
- The State team was willing to proceed with the suggested areas but is reticent as they must wait for the relevant policymakers to approve.
- ITN prioritization planning when started and integrated early and as fully as possible into existing campaign processes has shown better success and acceptance
- Early engagement of stakeholders at all levels conveying the rationale for urban ITN prioritization was found to be very vital.
- Strong engagement at the community levels with clear SBC messaging helped with acceptance and compliance at all levels and managing negative community responses critical to ensure the safety and smooth deployment of the campaign and mitigate rumours

Recommendations

- Start the process early – if possible, a year before the campaigns and let it inform ITNs to be procured for each State.
- Stakeholders' engagement at various levels is important. Several meetings may be necessary for the same group of persons. The engagement process is to start early.
- Support the development/adaptation of appropriate messaging for the wards where nets will not be distributed.
- Conduct strong monitoring and surveillance in the reprioritized areas.
- The State need to have verified working population harmonized for the use of all health care interventions in the State
- There is a need to plan and implement other appropriate vector control interventions in non-ITN targeted wards. This is advisable to be conducted before or during implementation.

Our Vision - a malaria-free Nigeria; Our goal – To reduce morbidity to less than 10% parasite prevalence and mortality attributable to malaria to less than 50 deaths per 100,000 live births by 2025.

THANK YOU

TROPICAL HEALTH

A decision-making flowchart for ITN prioritization in urban areas

Eleanore Sternberg

7th April 2025

Background

Recommendations emerging from process evaluation in Kwara State

- **ITN prioritization should be integrated early and as fully as possible into existing campaign processes, including digitalization**. Digital ITN campaign tools should be modified to capture ITN prioritization decisions and outcomes, through the addition of new data capture screens and data elements as required, to maintain the full benefits of digitalization across the campaign.

- **Ensuring access to ITNs for pregnant women and children under five years of age through routine ITN distribution remains a priority**. Campaign planners should ensure that ITNs remain available at routine ITN distribution points (ANC and vaccination clinics) that are accessible to vulnerable populations living in areas that will not receive nets. This should be clearly communicated to the CMD teams so that they can direct vulnerable groups to appropriate points to receive an ITN if they are eligible.

- **Clear SBC messaging must be developed and shared with CMD teams.** Messaging around receiving nets should not be given in areas not receiving nets. If teams will still be visiting households in those areas, for example to deliver SMC as was the case in Kwara State, then teams should still deliver SBC messaging emphasizing caring for the nets that are already in the household, and other messaging such as prompt treatment seeking for fever and intermittent preventive treatment of malaria in pregnancy.

- **Clearly conveying the rationale for urban ITN prioritization and managing negative community responses are critical to ensure the safety and smooth deployment of the campaign and mitigate rumours**. CMD teams should be provided with the phone number for a senior member of staff (e.g. a member of the LGA health team) to whom community complaints can be escalated if required.

- **Adherence to the prioritization model or approach is vital for transparency and fairness**. Campaign teams should be provided with high quality maps that clearly and unambiguously delineate the boundaries of deprioritized areas, to aid accurate implementation.

Background

Recommendations emerging from process evaluation in Kwara State

- ITN prioritization should be integrated early and as fully as possible into existing campaign processes, including digitalization. Digital ITN campaign tools should be modified to capture ITN prioritization decisions and outcomes, through the addition of new data capture screens and data elements as required, to maintain the full benefits of digitalization across the campaign.

- Ensuring access to ITNs for pregnant women and children under five years of age through routine ITN distribution remains a priority. Campaign planners should ensure that ITNs remain available at routine ITN distribution points (ANC and vaccination clinics) that are accessible to vulnerable populations living in areas that will not receive nets. This should be clearly communicated to the CMD teams so that they can direct vulnerable groups to appropriate points to receive an ITN if they are eligible.

- Clear SBC messaging must be developed and shared with CMD teams. Messaging around receiving nets should not be given in areas not receiving nets. If teams will still be visiting households in those areas, for example to deliver SMC as was the case in Kwara State, then teams should still deliver SBC messaging emphasizing caring for the nets that are already in the household, and other messaging such as prompt treatment seeking for fever and intermittent preventive treatment of malaria in pregnancy.

- Clearly conveying the rationale for urban ITN prioritization and managing negative community responses are critical to ensure the safety and smooth deployment of the campaign and mitigate rumours. CMD teams should be provided with the phone number for a senior member of staff (e.g. a member of the LGA health team) to whom community complaints can be escalated if required.

- Adherence to the prioritization model or approach is vital for transparency and fairness. Campaign teams should be provided with high quality maps that clearly and unambiguously delineate the boundaries of deprioritized areas, to aid accurate implementation.

Background

- Prioritization integrated early and as fully as possible into existing campaign processes
- Transparency and fairness are essential for the success of prioritization

→ How can we systematize the decision-making process for urbanization?

→ How does that decision-making fit within the wider planning process?

Aim of flowchart

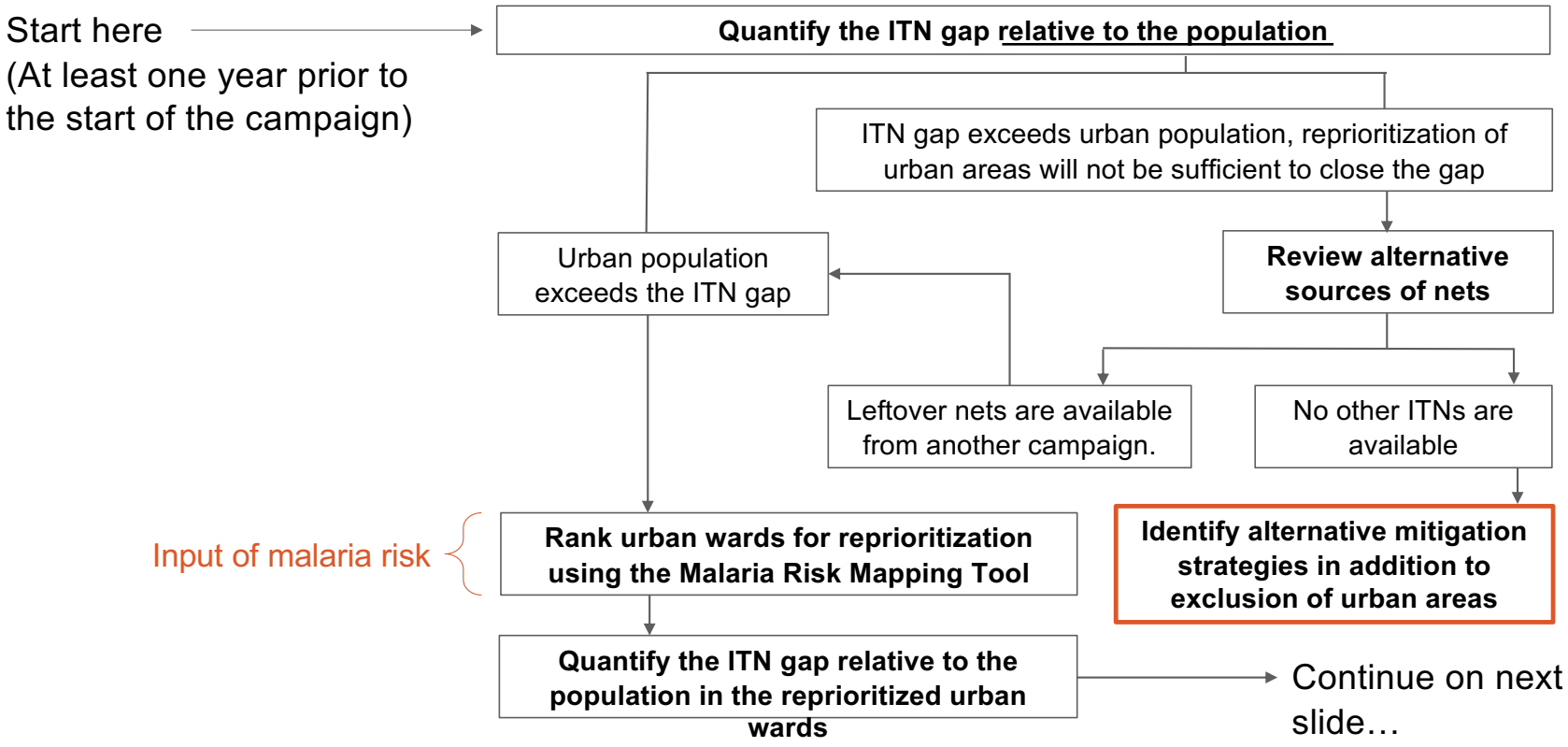
Be as precise with exclusion/inclusion criteria as is **feasible** and **necessary**, given available resources (nets, data and time).

Increase **transparency** and **consistency** in decision making.

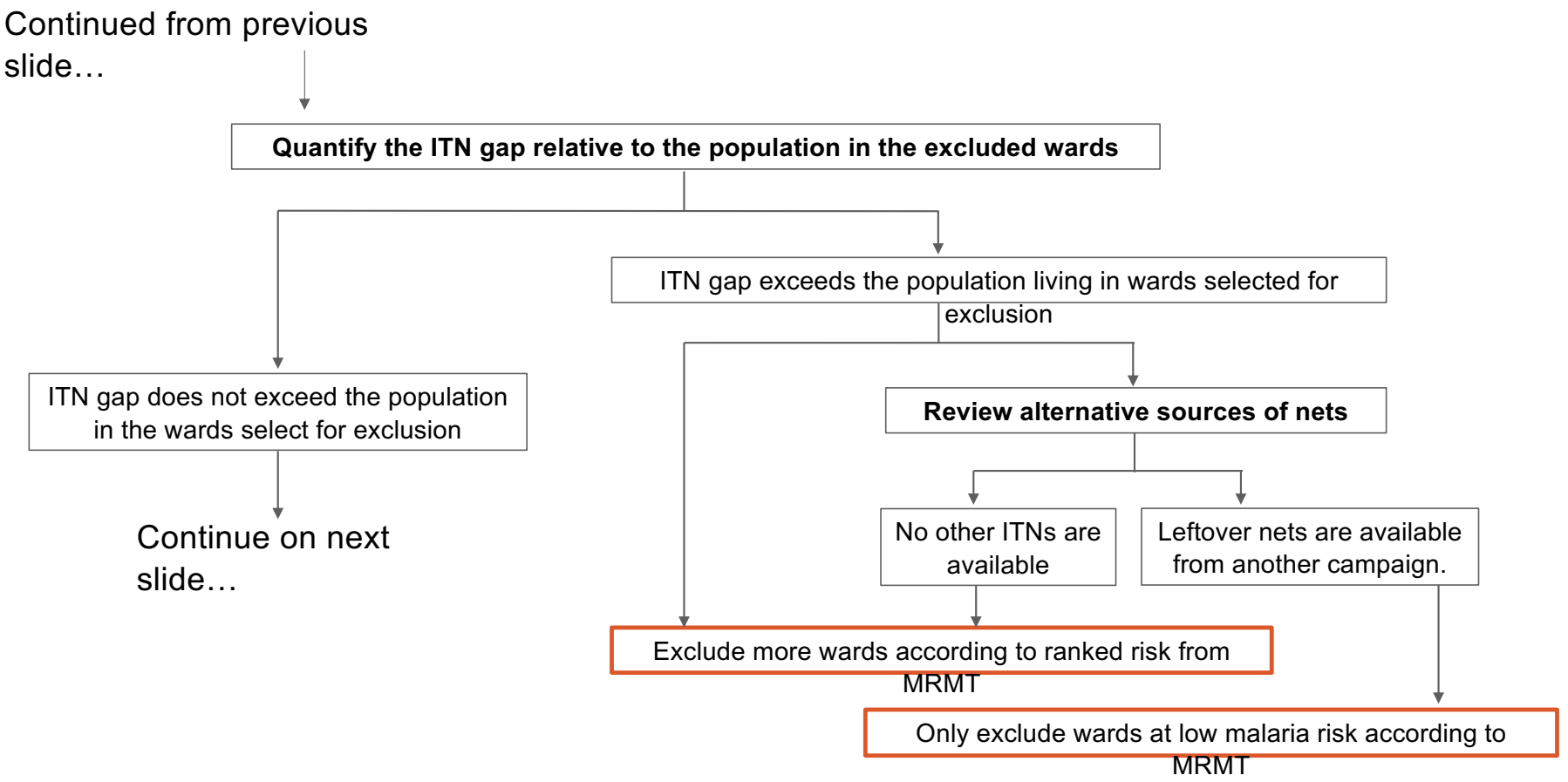
Assumptions

- There is always an ITN gap – in other words, some fraction of the population will not receive ITNs through mass distribution because there are not enough nets available.
- Operational considerations are not yet included in the decision process but will likely also inform the granularity of decision making.

Are there enough nets to cover some urban areas?

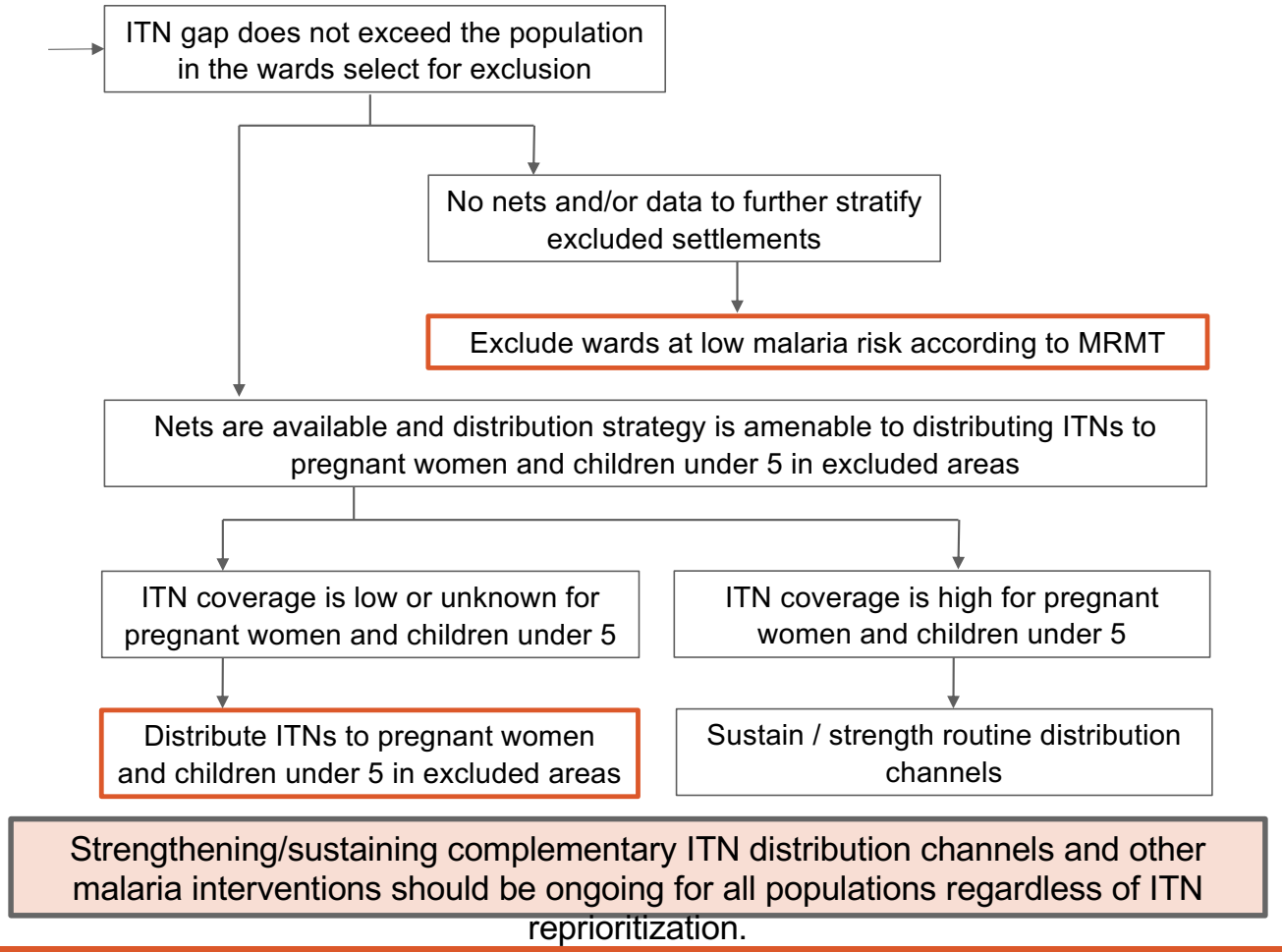


Does an initial round of exclusion close the gap?



Are there further opportunities for stratification within excluded urban areas?

Continued from previous slide…



Takeaway points

- Decision-making around inclusion/exclusion of urban areas described as an **iterative process**, based on the size of the ITN gap and the resources available to support prioritization.
- Starting with quantifying the ITN gap serves to flag situations where reprioritization will not be sufficient to close the ITN gap. This should be done early in planning, so that alternative options can be explored.
- If reprioritization alone is unlikely to close the ITN gap, then alternative sources of nets could be explored (context dependent).
- If no other nets are available for distribution, then mitigation strategies should be considered, such as: revising the household cap on number of ITNs during microplanning or after household registration, focusing on other interventions, strengthening alternative distribution channels, and strengthening SBC for prompt treatment seeking.

TROPICAL HEALTH

Thank you!

www.trophealth.com

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Discussion
Questions & Answers

Discussion
Questions et réponses

Remote participants:
Kindly use the Zoom Q&A feature to submit comments and ask questions, specifying the name of the speaker to whom the question is directed.

Participants à distance :
Nous vous prions d'utiliser la fonction Q&A sur Zoom pour soumettre vos commentaires et poser vos questions, en précisant le nom de l'orateur à qui la question est adressée.

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email info@tiseh.com

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Coffee Break

Pause café

We will return shortly!

A tout de suite!

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email info@tiseh.com

RBM Partnership To End Malaria

SME WG: Strategic Intelligence and Data Use

Measuring outcomes: Indicators, targets, use given access and alternative methods for data collection

March 2025

Wahjib Mohammed and Molly Robertson, Co-Chairs
Rose Zulliger, Independent

Harmonization of Indicators

Review of Global Fund indicators by Metrics 4 Management

Harmonization of indicators and indicator language with the WHO

WHO revision of the SME Guidelines

Indicators allow for multiple data sources

Should ease reporting so that the same information can be transmitted to multiple users

Global Fund GC8 ITN Indicators

CODE	INDICATOR	DISAGGREGATIONS
VC-1	Number of insecticide-treated nets distributed to populations at risk of malaria transmission through mass campaign	• Emergency distribution
VC-3	Number of insecticide-treated nets distributed to targeted risk groups through continuous distribution	• At risk population group - Children 0-5 - Pregnant women - School children - Others • Emergency distribution
O-1A	Proportion of population that slept under an insecticide-treated net the previous night	• Gender (female, male) • Age • Pregnancy status • Targeted risk group
O-2	Proportion of population with access to an ITN within their household	-
O-10	Proportion of population at risk potentially covered by distributed ITNs	-
O-11	Percentage of districts achieving national target for the proportion of population at risk potentially covered by distributed ITNs • Proportion of districts that met 80-99% of the target • Proportion that met 60-79% of the target • Proportion that met less than 60% of the target	-

NEW – ITN USE GIVEN ACCESS

Proportion of the population with access to an ITN in their household that slept under an ITN the previous night

Numerator: Proportion of population that slept under an insecticide-treated net the previous night [O-1]

Denominator: Proportion of population with access to an ITN within their household [O-2]

Use:Access Ratio

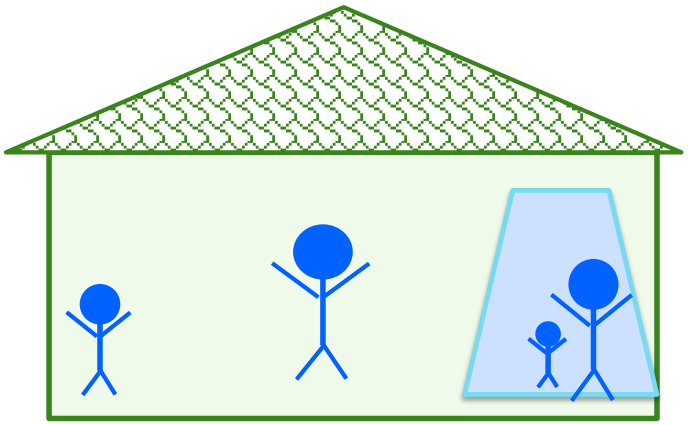
Ownership: Proportion of households that own at least one ITN.

Access: Proportion of the population with access to an ITN within their household. This indicator is calculated based on the number of ITNs in the household and the number of household members.

Use: Proportion of the population that slept under an ITN the night before the survey.

Use:Access Ratio: Result when dividing use by access (i.e. use/access). This indicator provides data on the **behavioral gap** for net use – rather than a gap because not enough nets are available.

4 people, 1 ITN

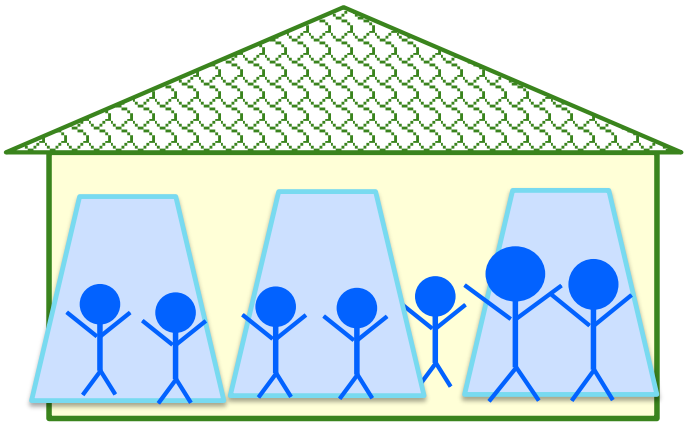


Household owns at least 1 ITN

Population access to an ITN - 50%

Household owns at least
1 ITN for 2 people

7 people, 3 ITNs



Household owns at least 1 ITN

Population access to an ITN - 86%

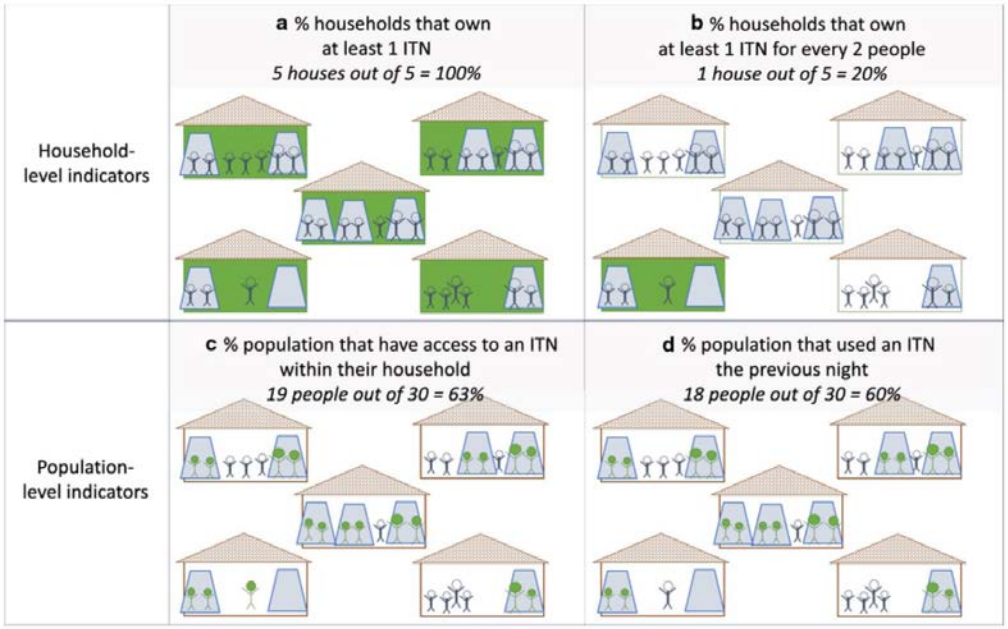
Household owns at least
1 ITN for 2 people

Population access take home points

Under existing ITN distribution modalities, we cannot expect countries to reach 80% of households owning 1 ITN for 2 people at a national level

% of households owning at least 1 ITN for 2 people hides large proportions of individual ITN protection

Population access to ITNs, <u>because it is based on people as the unit of analysis,</u> provides a more accurate picture of ITN protection, and should be considered as the better indicator of “universal coverage”



Illustrative depiction of ITN indicators using 5 households, 30 individuals, and 10 ITNs. The top row a, b demonstrate household ownership indicators, while the bottom row c, d shows population-level indicators. ITNs are depicted in tall trapezoids and individuals with stick figures. Households meeting the indicator criteria for ownership are identified in green/darker color. Individuals meeting the indicator criteria are identified with solid green color

The ITN use:access report (some key terms)

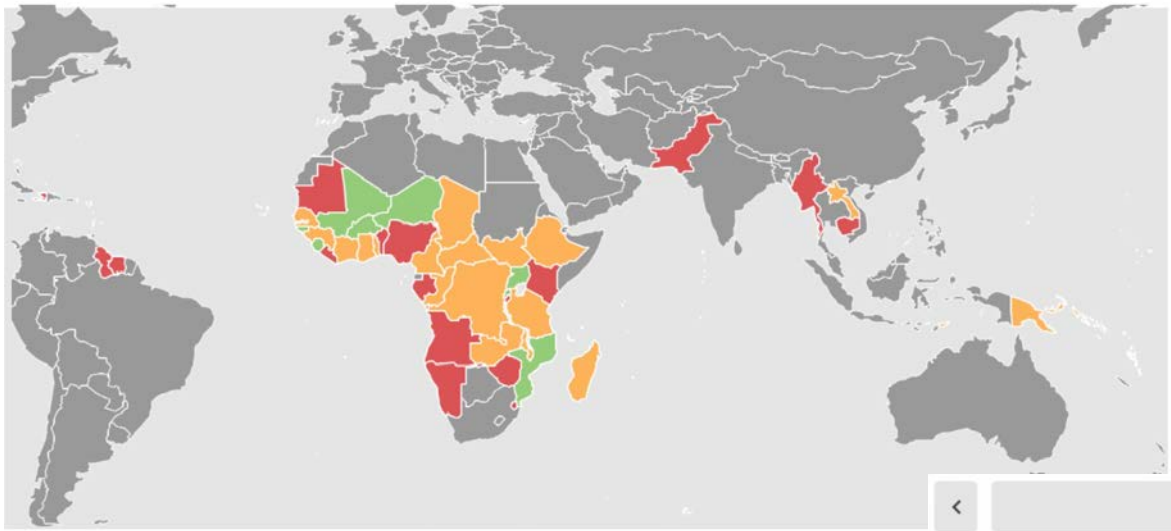
Ownership: Proportion of households that own at least one ITN.

Access: Proportion of the population with access to an ITN within their household. This indicator is calculated based on the number of ITNs in the household and the number of household members.

Use: Proportion of the population that slept under an ITN the night before the survey.

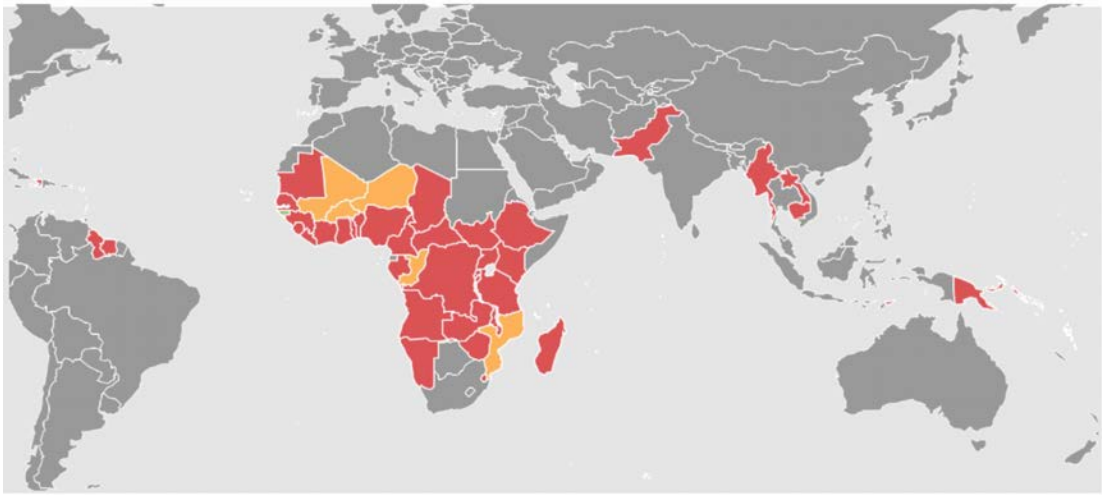
Use:Access Ratio: Result when dividing use by access (i.e. use/access). This indicator provides data on the **behavioral gap** for net use – rather than a gap because not enough nets are available.

% of households owning ≥1 ITN



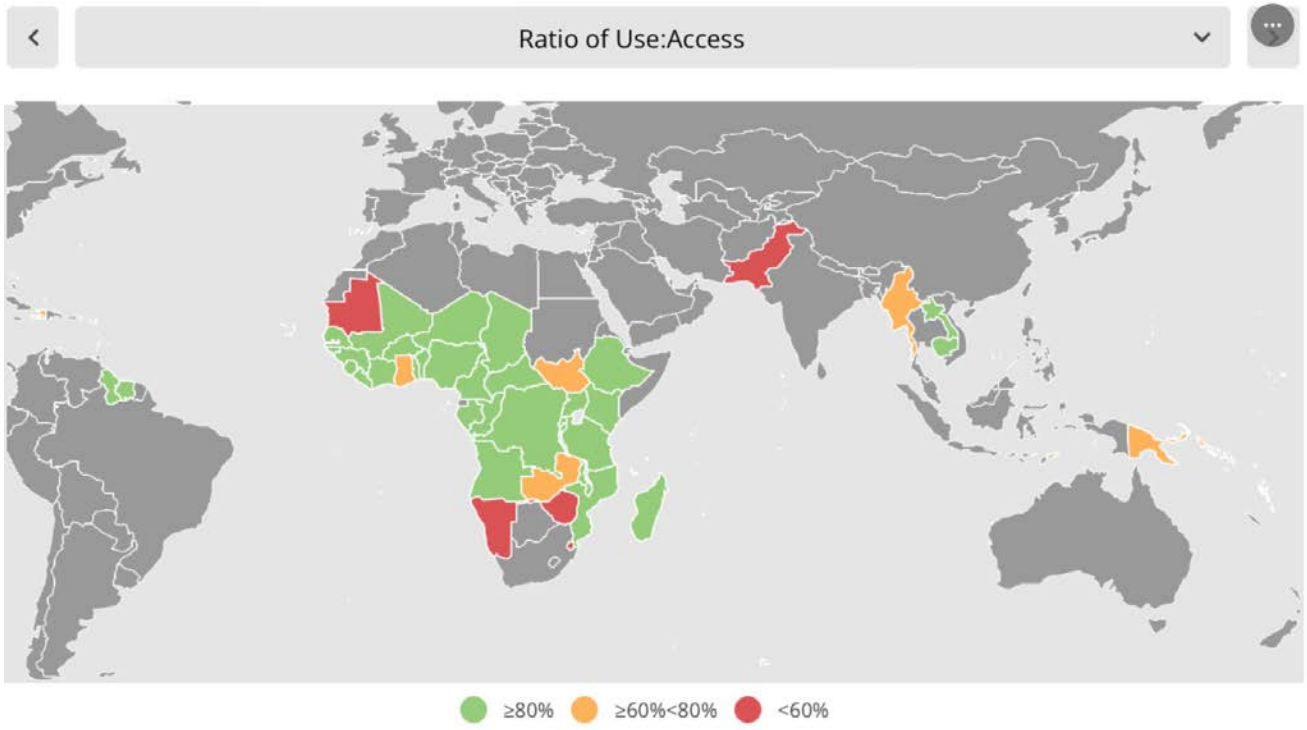
≥80% ≥60%<80% <60%

% of population that used an ITN the previous night



Use of ITNs among those who could use one is generally good

- Provides data per country based on latest pop-based surveys:
  - ITN use by age, gender and net supply
  - Seasonal variation
  - Use access by wealth and residence
  - Observations and implications



Alternative Methods for Use:Access

Threshold Measurements

cLQAS and LQAS

Proxy Measurement

ANC services (1st visit)

Caveats:

Assumes high 1st ANC visit health seeking

Often needs register modification

May introduce bias

RBM Partnership
To End Malaria

Thank you.

Assessment of LLINs Ownership and Use in 26 Selected Districts in Somalia

Federal Republic of Somalia

Ministry of Health & Human Services

unicef

for every child

Introduction to Malaria Control in Somalia

- The **Federal Ministry of Health**, **UNICEF**, and partners are working to nearly eliminate malaria in across Somalia.
- A key method is using Long-Lasting Insecticidal Nets (LLINs), especially in high-risk areas.
- In 2016, only 27.1% of households owned nets, even after mass distribution efforts.
- Many children are still in danger from malaria.

Global Best Practices

- Since 2000, LLINs, indoor spraying, and better treatment have reduced malaria worldwide.
- Giving out free nets widely helps ensure more people have them, compared to selling them in clinics or markets.

LLIN Distribution in Somalia

- From 2018 to 2020, LLINs were widely distributed with support from the Global Fund.
- Reports claimed high coverage, but there wasn't enough independent data to confirm this.

Data and Evidence Gaps

- A 2019 survey found over 90% of people in some areas owned and used LLINs.
- However, the findings weren't strong enough to guide future planning.

Next Steps

- In 2022 survey was done to check net coverage, ownership, and usage.
- The aim is to understand what affects LLIN access and improve future programs.

Overall & Specific Objectives

- **Main Goal:** To check how well people in 26 districts own and use mosquito nets (LLINs) after the 2022 distribution.

Specific Goals:

- ✓Measure how many households got and used LLINs in 2022.
- ✓See how well LLIN use matches the National Malaria Strategy.
- ✓Focus on how vulnerable and marginalized groups are using LLINs.
- ✓Understand people's attitudes and social factors that affect LLIN use.
- ✓Find out what helps or prevents proper LLIN use in homes.

METHODOLOGY

- The study focused on how people use and own mosquito nets (LLINs).
- It used both **Quantitative** & **Qualitative** to gather information.
- The WHO coverage cluster survey method was utilized to select communities for the study
- A total of **7,436 households** in **26 districts** were targeted.
- In each district, 22 groups (clusters) were randomly picked, and 13 people from each group were interviewed.
- **7,106 people** were interviewed successfully, with a high response rate of **95.6%**.

Methodology (continued):

- Basic statistics were used to understand the data.
- Logistic regression was applied to explore differences in net use based on people's background and economic status.
- The study used a 95% confidence level, with significance set at **$P < 0.05$** which is statistically significant.
- Interviews were also analyzed to understand community and stakeholder views through narrative analysis.

Findings/Results

Household Information

- Slightly more women (52.4%) than men (47.6%) participated in the study.
- 85% of respondents were married, and 74% were household heads.
- On average, households had 5.2 members, with a nearly equal split between females and males.
- Most households (62.8%) were permanent residents. Others included:
  - **Internally Displaced Persons (IDPs):** 33.1%
  - **Pastoralists:** 3.8%
  - **Refugees/returnees:** 0.4%
- Households were grouped into three wealth levels: poorest (34.3%), poor (32.9%), and least poor (32.8%).
- Most participants (74.3%) lived in urban areas, while 25.7% were in rural areas.

LLINs Ownership

- **Net Ownership:** 79% of households had mosquito nets. The highest ownership was in Bay region (90%) and Hiran (87.4%), while the lowest was in Bari (60.7%) and Lower Juba (57.6%).

- **By Household Type:** IDPs had the highest ownership (81.3%), followed by permanent residents (79.4%) and urban households (82.2%). Pastoralist and rural households had lower ownership rates.

- **Average Nets:** Each household had about 3.3 nets for 5.2 people. That's 1.9 people per net—slightly above WHO's ideal of 1.8.

- **Types of Nets:** Most nets were LLINs (81.8%) and other treated Nets (7.7%), untreated (10.5%).

- **Source of Nets:** Most nets (73.6%) came from mass campaigns by partners like GFATM/UNICEF. Some came from local NGOs or relatives (10.1%).

LLINs Ownership

- **When nets were received:** 83.2% of households had received nets less than a year before the survey during a mass campaign.
- **Net condition:** 61.3% were in good condition.
  - 26.6% had small holes.
  - 12.2% had large holes.
- **NGO Distribution:** 59% got nets over 6 months before the survey.
  - 35.7% got them within 5–6 months.
  - 5.3% got them within 4 months.
- Each household got an average of 2.8 nets.
- **Households without nets:**
  - 21% had no nets, mostly in Bardhere (48.4%), Kismayo (42.4%), and Bosaso (39.3%).
  - **Reasons:** no money (56.4%), lack of knowledge (19.2%), or nets not available (16%).
- **Attitudes:**
  - 70.2% said they would use nets if provided.
  - 24.4% said they would use them regularly.

Use Of Insecticide-Treated Nets

- **Net usage:**
  - 95.8% of households with nets had at least one person use it the night before the survey.
  - 92.3% of nets were in use.
  - Only 6.8% were not used for various reasons.
- Pastoralist/nomadic households used nets the least compared to IDPs, permanent residents, and refugees.
- Net use was similar in both urban and rural areas and across different regions.

Use Of Insecticide-Treated Nets

- **Household Net Use:**
  - 87.2% of people slept under a mosquito net the night before the survey.
  - Highest usage was among children under 5 (95.1%).
  - 12.8% did not use nets mainly due to:
    - Not enough nets for everyone (50.4%)
    - No nets available (23.2%)
    - Discomfort using nets (14.8%)
    - Family refusing to use them (6.9%)
- **Pregnant Women:**
  - 22.7% of households had a pregnant woman.
  - More were in urban areas (23.4%) than rural (20.6%).
  - Refugees had the highest share of pregnant women (26.1%), followed by:
    - IDPs (23.6%)
    - Permanent residents (22.3%)
    - Pastoralists (19.4%)

Use Of Insecticide-Treated Nets

- **Pregnant Women Net Use:**
  - 85.8% of pregnant women slept under a net.
  - Highest use among IDPs (89.5%), lowest among nomads (60%) and refugees (63.7%).
- **District Differences:**
  - Lowest net use by pregnant women was seen in Dhusamareb, Dollow, and El-Wak (around 63–65%).
  - Most other districts had over 80% usage.
- **Where Nets Were Used:**
  - 94.8% used nets indoors.
  - Some used them outside (11.3%), especially when resting.
  - Very few used them on farms (0.2%).
  - Nets were mostly used at night.
- **Reasons for Use:**
  - 36.4% used nets to avoid mosquito bites.
  - 28.1% used them to prevent malaria.
  - 34.8% used them for both reasons.

Challenges and Preferences in Using Insecticide-Treated Nets

- **Common Challenges:**
  - 25% of households reported difficulties using nets.
  - Main issues included:
    - Feeling too hot (60.3%)
    - Allergies (32.3%)
    - Poor air circulation (32%)
- **Preferences:**
  - 42% of households had preferences for net color and shape.
    - 73.1% preferred dark-colored nets.
    - 22.4% liked white nets less due to visible stains and frequent washing.
  - 54.6% had shape preferences:
    - 81.3% preferred cone-shaped nets over rectangular ones, which were seen as bulky and hard to use.
- **Health Concerns:**
  - Some people experienced skin or breathing problems after using nets.
  - These effects may be due to poor understanding of how to use the nets properly.

Perceptions of Malaria transmission

- **Understanding Malaria Transmission:**
  - 96.2% knew malaria is caused by mosquito bites.
  - However, 18.8% mistakenly believed it could come from eating/drinking with infected people, and 12.8% thought it came from dirty water.
  - 5.2% reported losing a family member to malaria in the past year (self-reported data).
- **Malaria Prevention Practices:**
  - 84.4% believed mosquito nets are the most effective prevention.
  - 66.9% mentioned keeping surroundings clean.
  - 25.9% used mosquito repellents.
  - 21.4% reported spraying insecticides indoors and outdoors.

Perceptions of Malaria transmission

- **Current Strategies:**
  MoH, UNICEF and partners used various methods like posters (IEC materials), health workers, community events, World Malaria Day, and field visits to raise awareness. These helped increase knowledge about net use.
- **Limitations:**
  The communication mostly reached people at health centers or distribution points, limiting its overall impact.
- **Suggestions for Improvement:**
  People recommended using wider-reaching methods like **TV, radio, songs, and plays** to spread messages more effectively to larger audiences.

Recommendations

- **Target Low Coverage Areas:**
  - Focus LLIN distribution on regions like Bardhere, Kismayo, and Bosaso where net ownership is low.
  - Prioritize newly arrived IDPs fleeing drought and insecurity.
- **Prioritize Underserved Populations:**
  - Increase efforts in pastoralist/nomadic and rural communities with lower net ownership.
  - Improve access for populations facing healthcare and prevention service gaps.

Recommendations

- **Improve District-Level Coverage:**
  - Address low net use in districts like El-Wak, Luuq, Bulaburte, Marka, Wanlaweyn, and Balad.
  - Run targeted awareness campaigns in low-usage areas.
- **Address Household Habits:**
  - Encourage net use both indoors and outdoors, especially during early evenings and daytime rest.
  - Educate that mosquito bites can occur anytime, not just at night.
- **Increase Awareness on Proper Use:**
  - Educate on correct net usage, maintenance, and airing nets before use to avoid discomfort.
  - Raise awareness about preventing heat, allergies, and circulation issues.

Recommendations

- **Design Preferences Should Be Considered:**
  - Promote **conically** shaped nets (preferred by 81.3%).
  - Address preferences for dark-colored nets for durability and visibility.
- **Improve Health Communication:**
  - Expand messaging beyond just LLINs to all malaria interventions.
  - Use diverse channels like TV, radio, plays, and songs to reach wider audiences.
- **Combat Health Misconceptions:**
  - Clarify myths around LLINs causing skin issues or cancer.
  - Launch strong public education and media efforts to promote safe LLIN use.
- **Enhance Communication Strategy:**
  - Broaden beyond campaign days and health centers.
  - Ensure comprehensive, continuous messaging across all malaria prevention efforts.

END

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Discussion
Questions & Answers

Discussion
Questions et réponses

Remote participants:
Kindly use the Zoom Q&A feature to submit comments and ask questions, specifying the name of the speaker to whom the question is directed.

Participants à distance :
Nous vous prions d'utiliser la fonction Q&A sur Zoom pour soumettre vos commentaires et poser vos questions, en précisant le nom de l'orateur à qui la question est adressée.

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email info@tiseh.com

The Post-Market Data Collection Toolkit: Turning insights into action

Julie-Anne Akiko Tangena

AMP 2025 Annual Partners Meeting

7th of April 2025

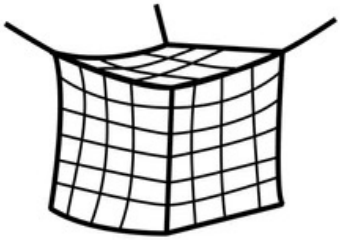
IVCC

BILL & MELINDA GATES foundation

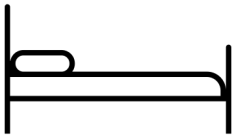
LSTM
LIVERPOOL SCHOOL OF TROPICAL MEDICINE
Since 1898

Variability in net and environment shape its lifespan

Variability in net and environment shape its lifespan

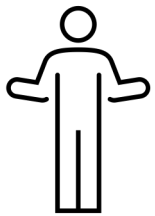


Physical and insecticidal properties

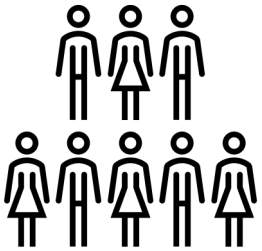


Sleeping environment

Environmental factors

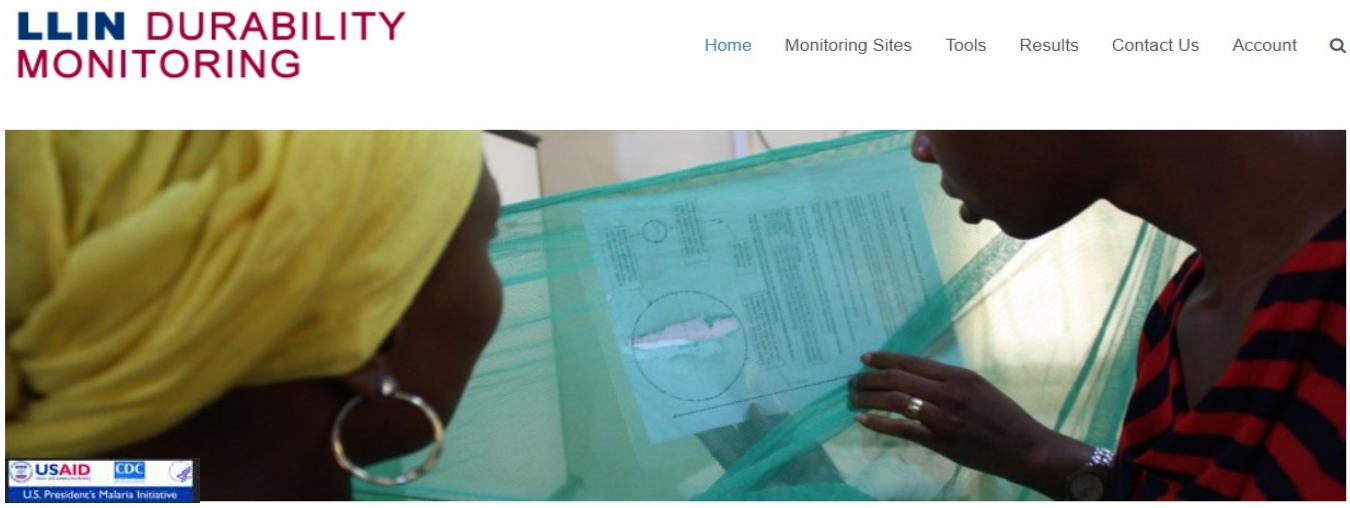


Individual

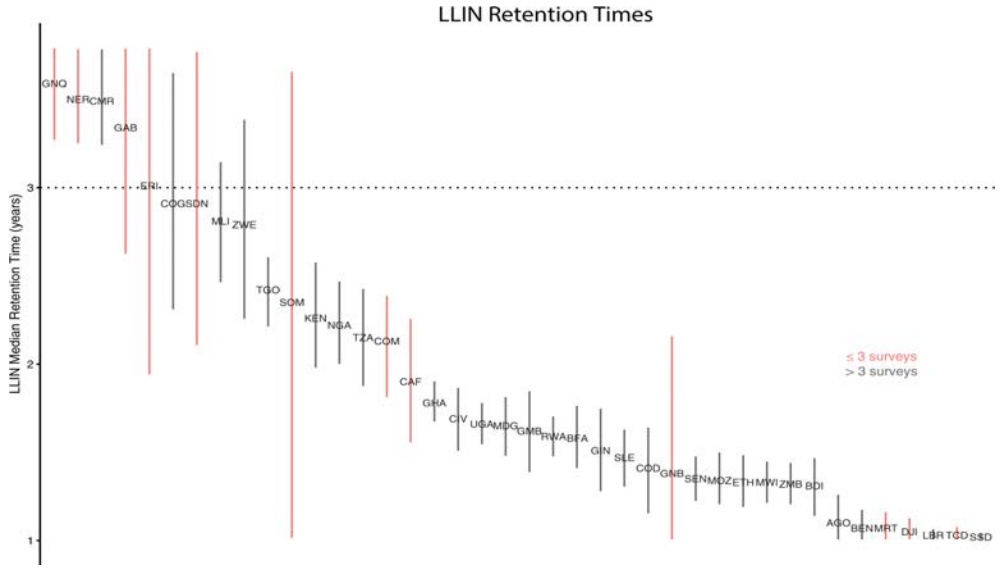


Community

Post Market Data Collection: Field measurements of net durability



ITNs are not lasting long enough



**Bertozzi-Villa A, Bever CA, Koenker H, Weiss DJ, Vargas-Ruiz C, Nandi AK, et al. Maps and metrics of insecticide-treated net access, use, and nets-per-capita in Africa from 2000-2020. Nature Communications. 2021; 12:3589.*

Insufficient resources for durability monitoring

Programmes need guidance to understand PMDC landscape

Challenging

→ There is a clear call for guidelines that help identify and collect durability indicators for country decision-making.

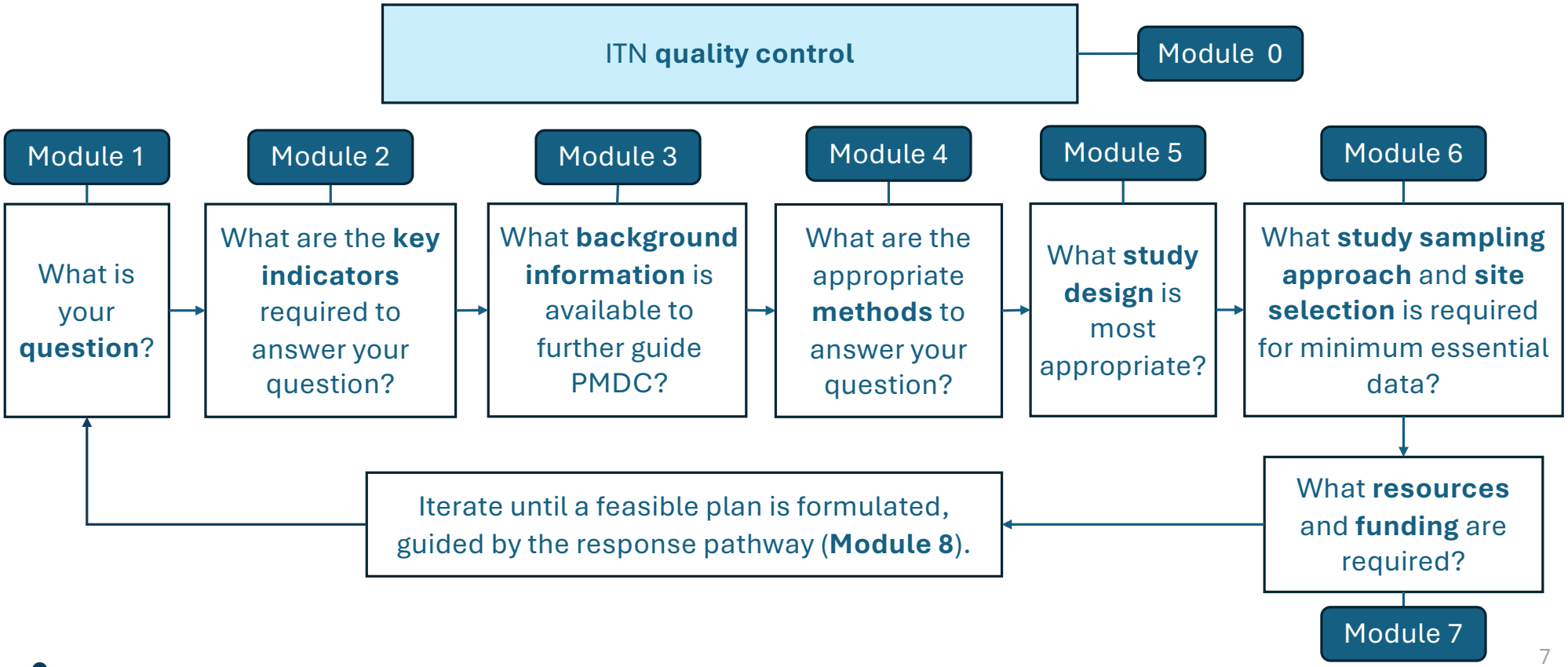
The Post Market Data Collection toolkit

Situation Assessment

Tailored response

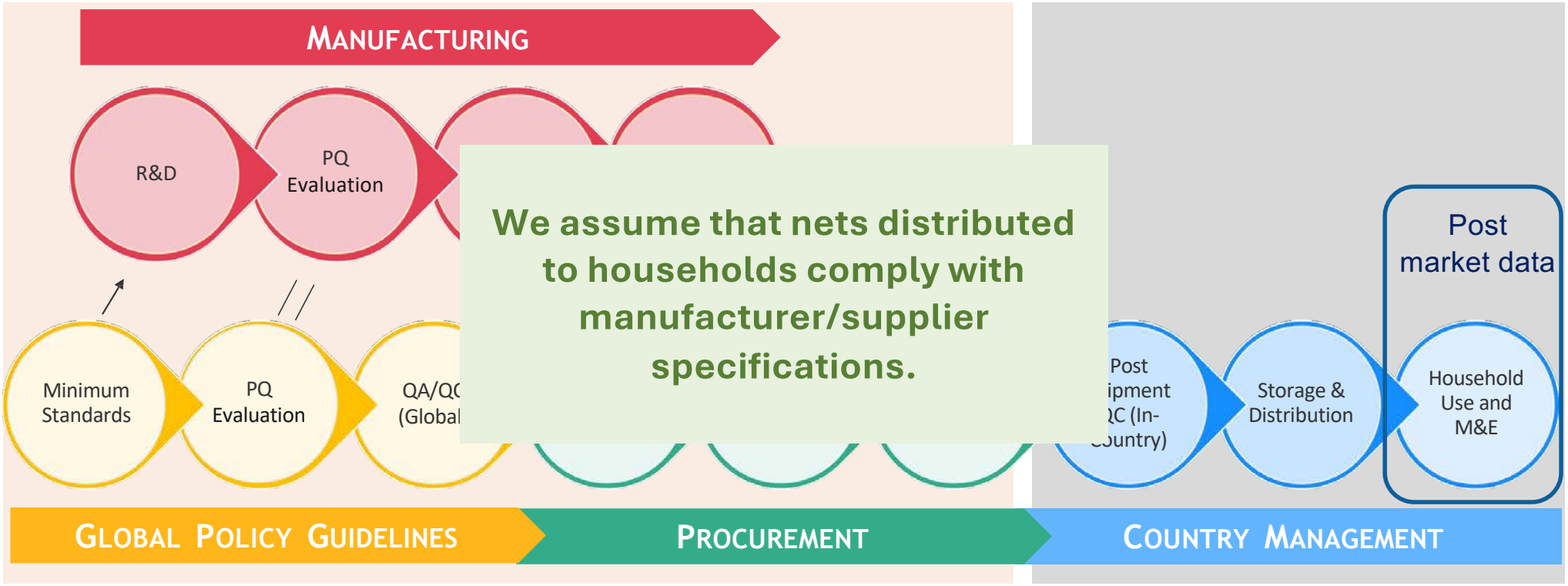
Program management and sustainability

PMDC Toolkit modules



Case study

Module 0. Net quality control



Module 1. What is your question?

Physical durability	Insecticidal/ chemical activity	Net use and individual behaviours	ITN setting
• Can we determine the optimal net replacement intervals? • Is there a difference in physical durability compared to previous distributions?	• Is the insecticidal activity across the lifespan sufficient to control the local mosquito population? • Can we determine the optimal net replacement intervals?	• Are people keeping their ITNs for the duration of their useful life? • What is the acceptability of the ITNs compared to other ITN types?	• Is the ITN environment accelerating net degradation? • What individual factors are associated with longer ITN retention?

Decision: How often should ITNs be distributed?

- **Question: How long are ITNs lasting in the field?**

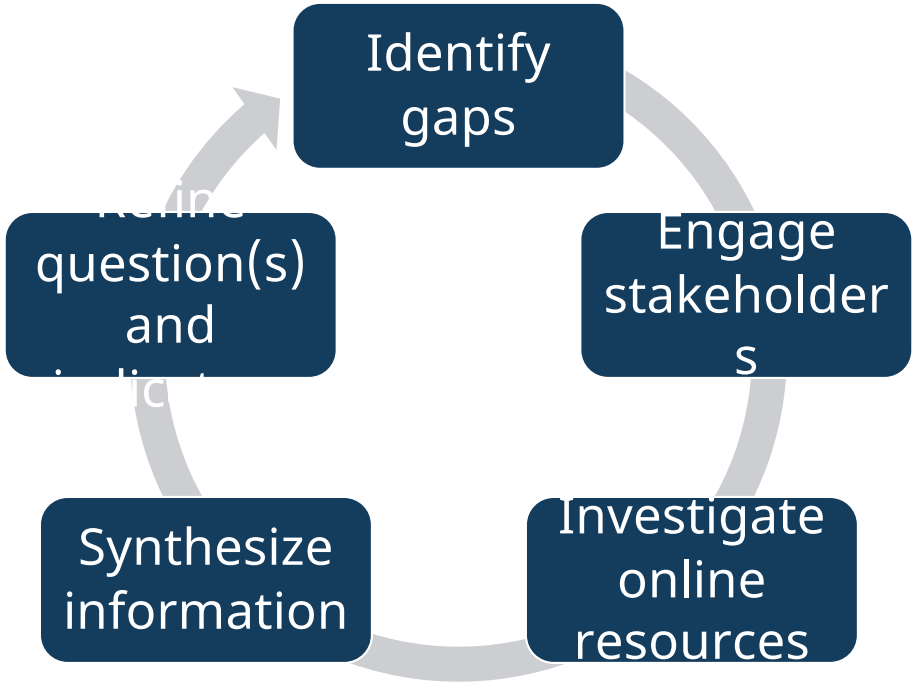
Module 2. What are the key indicators required to answer your question?

Primary indicators

Secondary indicators

Question: How long are ITNs lasting in the field?

Module 3. What background information is available?

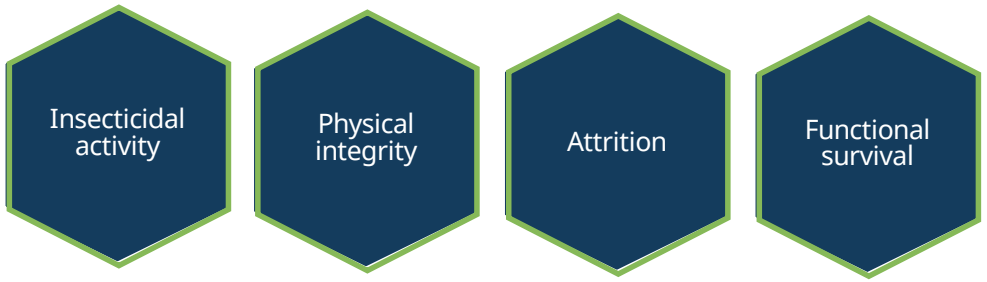


Question: How long are ITNs lasting in the field?

→Understand heterogeneity across the country?
→ITN type information from other countries?

Module 4. What are the appropriate methods?

Question: How long are ITNs lasting in the field?



Module 4. What are the appropriate methods?

Question: How long are ITNs lasting in the field?

Insecticidal activity

WHO cone test

WHO tube test

Tunnel test

Experimental hut studies (IACT)

Module 5. What study design is most appropriate?

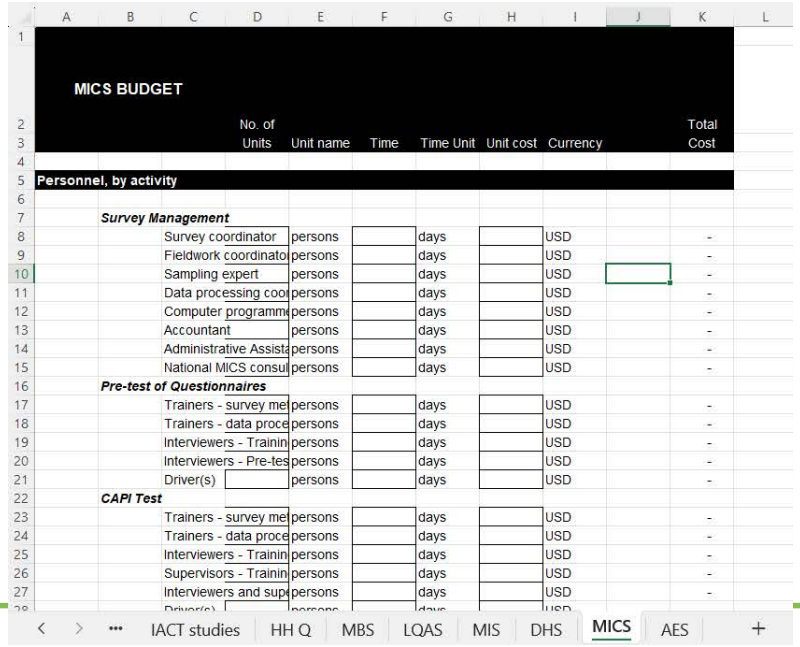
Question: How long are ITNs lasting in the field?

→ Are the nets of interest already distributed or still in storage?

→ Can the nets in the field be identified to the respective distribution campaign?

Module 6. What is your study sampling approach and site selection?

Module 7. What resources and funding are required?

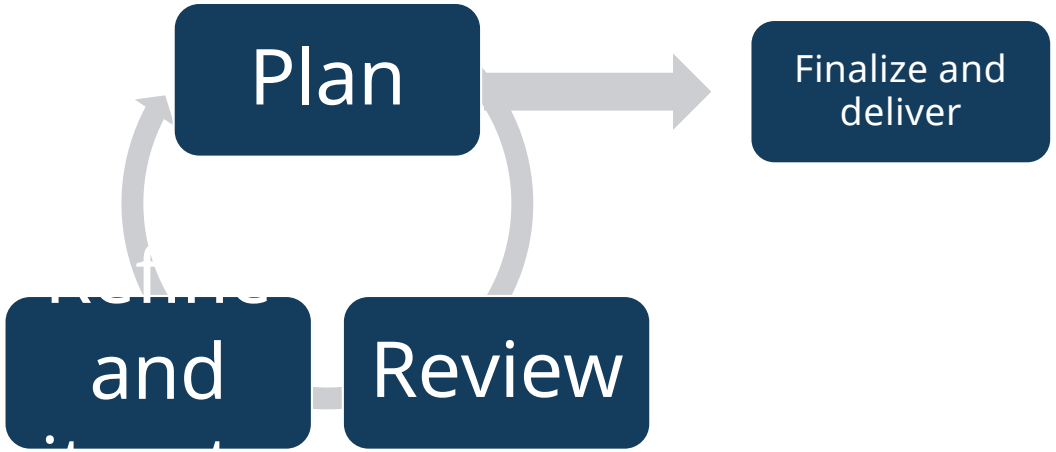


MICS BUDGET

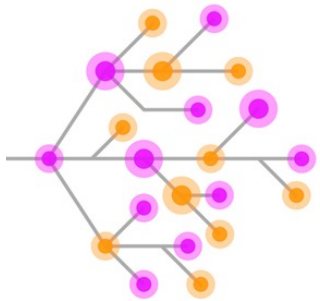
	No. of Units	Unit name	Time	Time Unit	Unit cost	Currency		Total Cost
Personnel, by activity								
Survey Management								
Survey coordinator		persons		days		USD		-
Fieldwork coordinator		persons		days		USD		-
Sampling expert		persons		days		USD		-
Data processing coor		persons		days		USD		-
Computer programme		persons		days		USD		-
Accountant		persons		days		USD		-
Administrative Assista		persons		days		USD		-
National MICS consul		persons		days		USD		-
Pre-test of Questionnaires								
Trainers - survey me		persons		days		USD		-
Trainers - data proce		persons		days		USD		-
Interviewers - Trainin		persons		days		USD		-
Interviewers - Pre-tes		persons		days		USD		-
Driver(s)		persons		days		USD		-
CAPI Test								
Trainers - survey me		persons		days		USD		-
Trainers - data proce		persons		days		USD		-
Interviewers - Trainin		persons		days		USD		-
Supervisors - Trainin		persons		days		USD		-
Interviewers and sup		persons		days		USD		-

IACT studies | HH Q | MBS | LQAS | MIS | DHS | MICS | AES

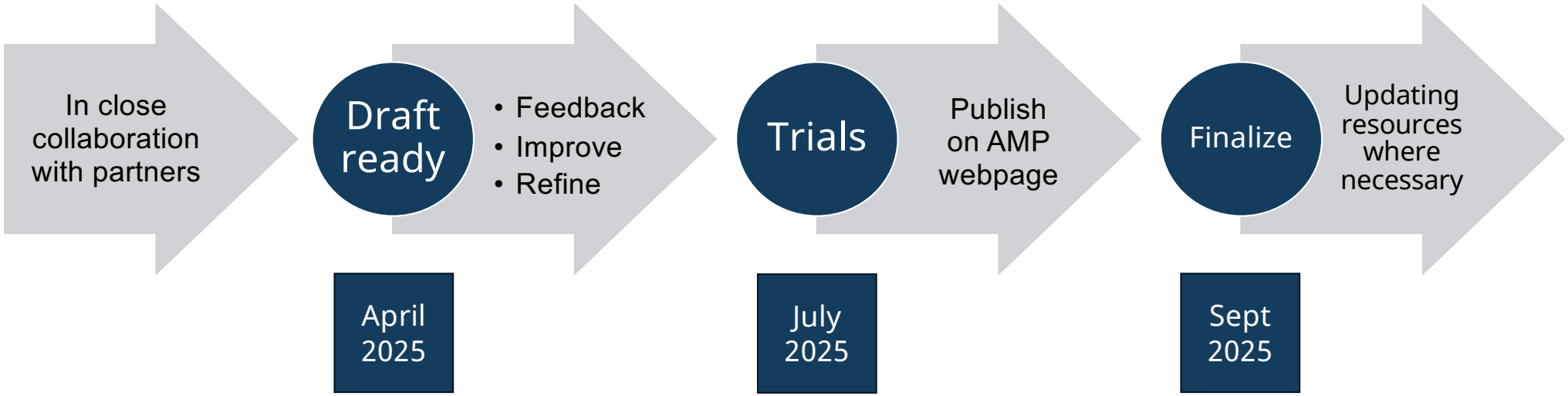
Module 8. Iterate until feasible plan is produced



Turning insights into action



Timeline and next steps



Thank you

amp | The Alliance for Malaria Prevention

TROPICAL HEALTH

Malaria Elimination Initiative
UCSF
University of California San Francisco

CLINTON HEALTH ACCESS INITIATIVE

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Discussion
Questions & Answers

Discussion
Questions et réponses

Remote participants:
Kindly use the Zoom Q&A feature to submit comments and ask questions, specifying the name of the speaker to whom the question is directed.

Participants à distance :
Nous vous prions d'utiliser la fonction Q&A sur Zoom pour soumettre vos commentaires et poser vos questions, en précisant le nom de l'orateur à qui la question est adressée.

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email info@tiseh.com

amp | The Alliance for Malaria Prevention

app | Alliance pour la Prévention du Paludisme

Thank you for attending Day One!
We look forward to seeing you tomorrow at 9:00 AM EAT for Day Two.

Réunion annuelle des partenaires de l'APP Merci d'avoir participé à la première journée !
Nous nous retrouvons demain à 9h00 EAT pour la deuxième journée.

Please select your session for Wednesday if you haven't done so already by scanning the QR code!

Veuillez sélectionner votre session pour mercredi si ce n'est pas encore fait en scannant le code QR!

Technical Sessions – 9 April 2025 – Participant session selection

Meeting will begin shortly – la réunion va bientôt commencer