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AMP Annual Partners' Meeting

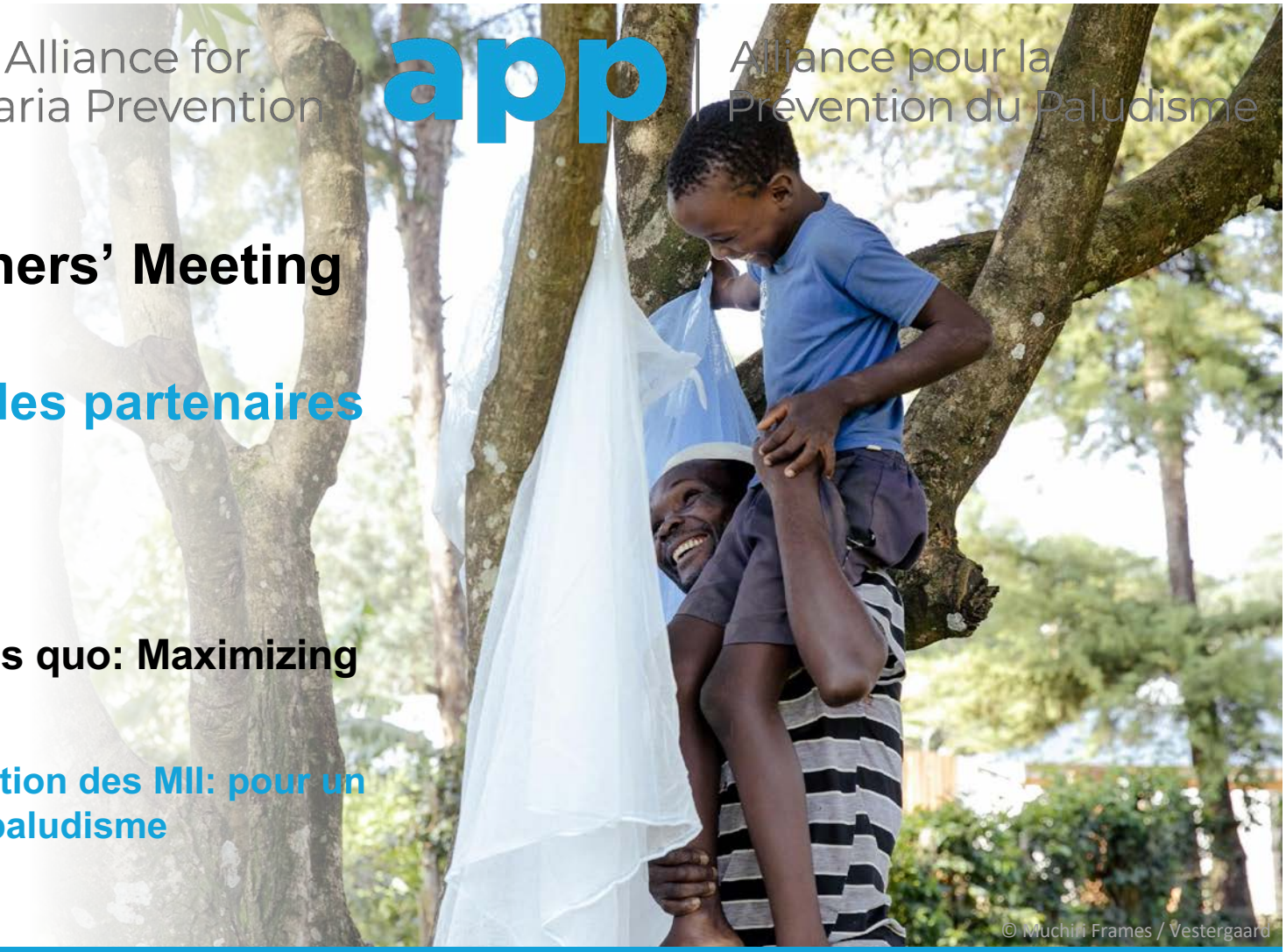
Day 1 – 7 April 2025

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



Meeting will begin shortly – la réunion va bientôt commencer

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Interpretation / Interprétation

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In person participants:

- 1 headphone and receiver per person
- English channel : Select 1
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Participants en personne :

- 1 casque et récepteur par personne
- Chaîne anglaise : Sélectionner 1
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Participants à distance :

- Chaîne anglaise : Sélectionner 1
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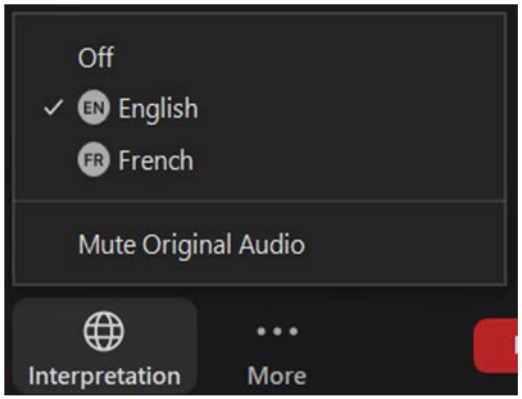

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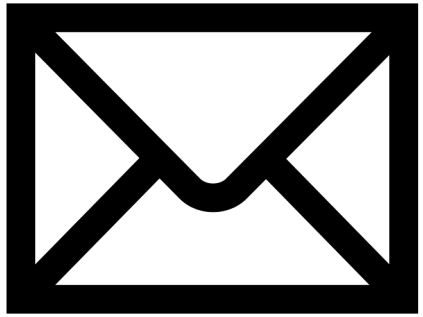
Experiencing technical difficulties?

Rencontrez-vous un problème technique?



Kindly send a message via the Zoom Chat or email us at info@tiseh.com.

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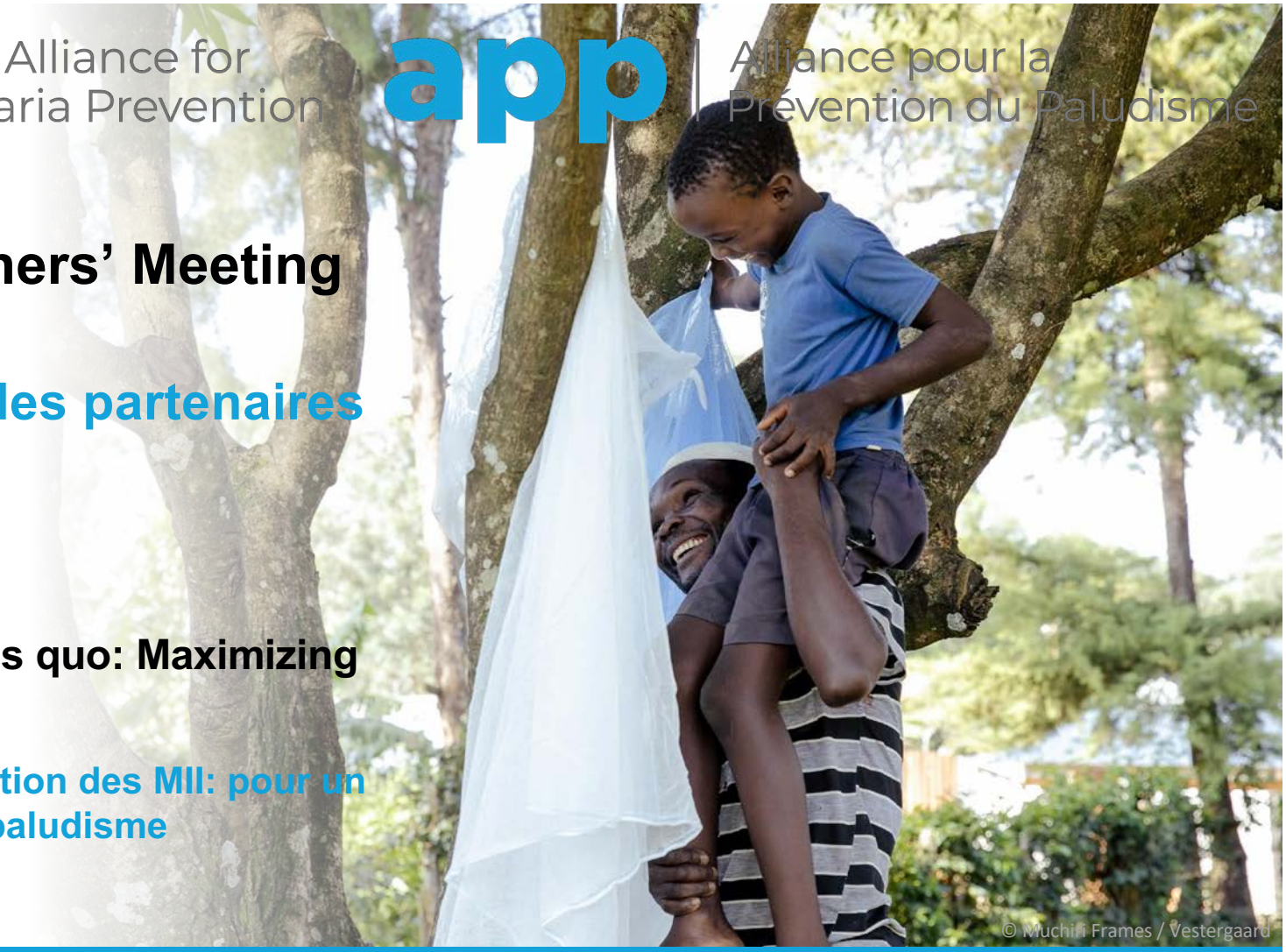

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AMP 2025 Annual Partners' Meeting

Rethinking the ITN status quo: Maximizing the impact on malaria

7 - 9 April 2025

WHO guidance on sub-national tailoring for ITNs and "optimizing" ITN access

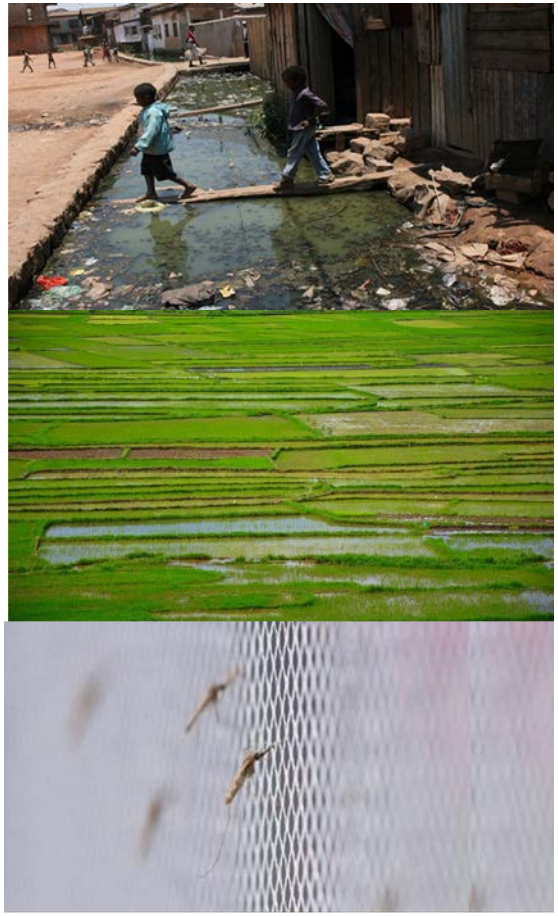
Dr Dorothy Achu
Team Lead/ Tropical and vector borne diseases
WHO – Regional office for Africa

Outline

- Background – burden of vector borne diseases
- Vector control guidelines
- Distribution, access and use of ITNs
- Subnational tailoring of antimalarial interventions
- Prioritizing of ITNs
- Practical considerations for tailoring ITNs

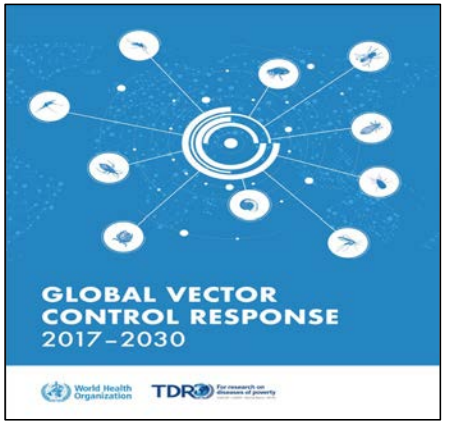
Background – Burden of vector borne diseases

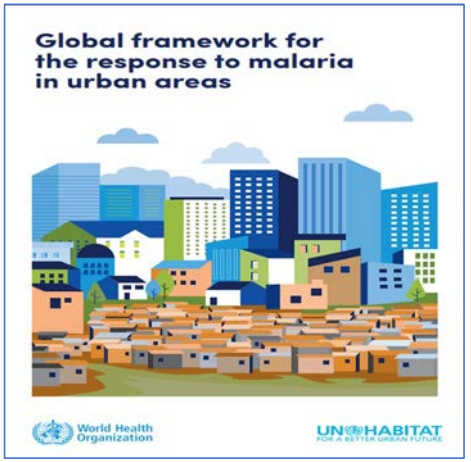
- **Vector borne diseases** account for over **17%** of all infectious diseases globally, **80%** of the population at risk, and causing > **700 000 deaths** annually.
- **Malaria** is the most prevalent parasitic infection caused 263 million cases globally, and results in more than **597 000 deaths** in 2023, **76%** occuring in children U5 years.
- **Vectors**: *Anopheles spp:* Over 40 species are efficient vectors (mostly endophagic, endophilic, nighttime)
- **Dengue** is the most prevalent viral infection in over 132 countries are at risk of contracting dengue, with an estimated 96 million cases and 40 000 deaths every year. Transmitted by transmitted by Aedes mosquitoes (endo/exophagic and endo/exophylic, daytime)
- **Other viral diseases transmitted by mosquitoes** include chikungunya fever, Zika virus fever, yellow fever *(Aedes spp*), West Nile fever, Japanese encephalitis (*Culex spp*)
- **Emerging risks:** Anopheles stephensi, changing landscapes (unplanned urbanization, agriculture, insecticide resistance



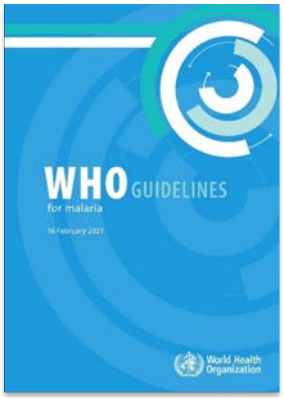
Vector control guidelines (1)

- The **Global Vector Control Response (GVCR) 2017–2030** provides strategic guidance for strengthening vector control as a fundamental approach to preventing disease and responding to outbreaks.
- **Integrated vector management** is a rational decision-making process for optimal use of resources for efficient, cost-effective and sustainable vector control
- **The Global Strategic Framework for IVM** notes that IVM requires the establishment of principles, decision-making criteria and procedures, together with timeframes and targets. The Framework identifies five key elements for the successful implementation of IVM:
  1. Advocacy, social mobilization, and community participation ;
  2. multisectoral collaboration;
  3. Integration of non-chemical and chemical vector control methods, and **with other disease control measures;**
  4. Operational research, entomological and epidemiological surveillance and evaluation and
  5. Human resources capacity building to manage IVM programmes.





Vector control guidelines (2)



Interventions recommended for large-scale deployment

- **Pyrethroid-only nets (2019)**
  - WHO recommends pyrethroid-only long-lasting insecticidal nets (LLINs) that have been prequalified by WHO for deployment for the prevention and control of malaria in children and adults living in areas with ongoing malaria transmission.
- **Pyrethroid-PBO nets (Conditional recommendation for; 2022)**
  - WHO suggest deploying pyrethroid-PBO nets instead of pyrethroid-only LLINs for the prevention and control of malaria in children and adults in areas with ongoing malaria transmission where the principal malaria vector(s) exhibit pyrethroid resistance
- **Insecticide-treated nets: Humanitarian emergency setting (2022)**
  - Insecticide-treated nets (ITNs) should be deployed for the prevention and control of malaria in children and adults in areas with ongoing malaria transmission affected by a humanitarian emergency.

Recommendations on ITNs

Strong recommendation for, Moderate certainty evidence

Pyrethroid-chlorfenapyr ITNs vs pyrethroid-only LLINs (2023)

Pyrethroid-chlorfenapyr ITNs should be deployed instead of pyrethroid-only LLINs for prevention of malaria in adults and children in areas with pyrethroid resistance.

Conditional recommendation for, Moderate certainty evidence

Pyrethroid-chlorfenapyr ITNs vs pyrethroid-PBO ITNs (2023)

Pyrethroid-chlorfenapyr ITNs can be deployed instead of pyrethroid-PBO ITNs for prevention of malaria in adults and children in areas with pyrethroid resistance.

Conditional recommendation for, Moderate certainty evidence

Pyrethroid-pyriproxyfen ITNs vs pyrethroid-only LLINs (2023)

Pyrethroid-pyriproxyfen ITNs can be deployed instead of pyrethroid-only LLINs for prevention of malaria in adults and children in areas with pyrethroid resistance.

Conditional recommendation against, Moderate certainty evidence

Pyrethroid-pyriproxyfen ITNs vs pyrethroid-PBO ITNs (2023)

Pyrethroid-pyriproxyfen ITNs are not recommended for deployment over pyrethroid-PBO ITNs for prevention of malaria in adults and children in areas with pyrethroid resistance.

https://app.magicapp.org/#/guideline/7663

Interventions recommended for large-scale deployment

- **Indoor residual spraying (2019)**
  - WHO recommends IRS using a product prequalified by WHO for the prevention and control of malaria in children and adults living in areas with ongoing malaria transmission.
- **Indoor residual spraying: Humanitarian emergency setting (2022)**
  - IRS can be deployed for the prevention and control of malaria in children and adults in areas with ongoing malaria transmission affected by a humanitarian emergency.
- **Co-deployment of ITNs and IRS (2019) – *Recommendation against***
  - Prioritize optimal coverage with either ITNs **or** IRS over combination
  - The co-deployment of ITNs and IRS is not recommended for prevention and control of malaria in children and adults in areas with ongoing malaria transmission. Priority should be given to delivering either ITNs or IRS at optimal coverage and to a high standard, rather than introducing the second intervention as a means to compensate for deficiencies in the implementation of the first intervention.

Supplementary interventions

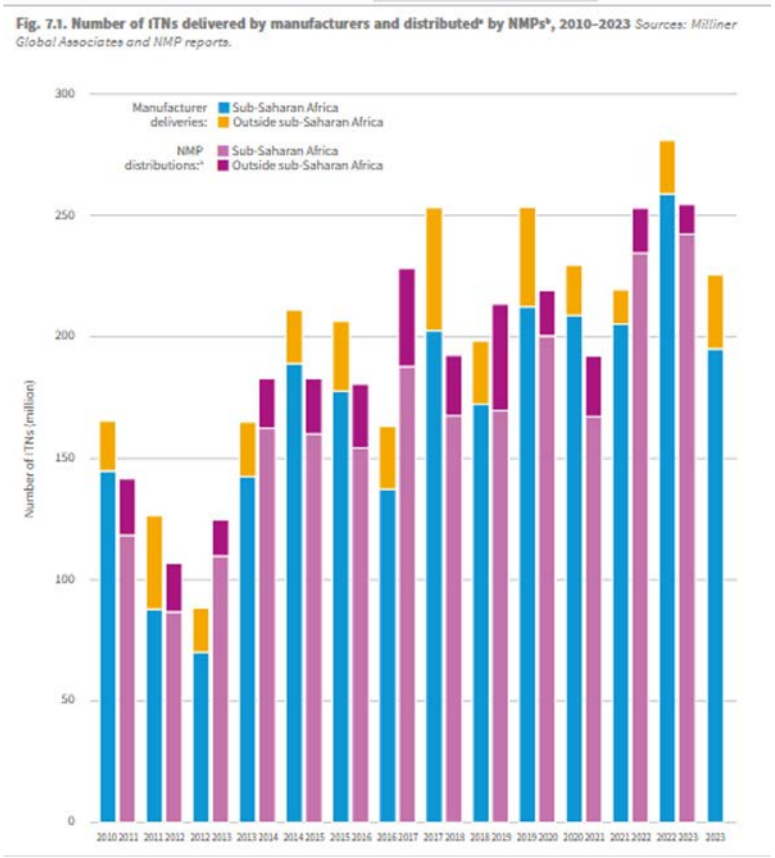
- **Larviciding (2019)**
  - WHO conditionally recommends the regular application of biological or chemical insecticides to water bodies (larviciding) for the prevention and control of malaria in children and adults living in areas with ongoing malaria transmission as a supplementary intervention in areas where optimal coverage with ITNs or IRS has been achieved, where aquatic habitats are few, fixed and findable, and where its application is both feasible and cost-effective.
- **House screening (2021)**
  - WHO conditionally recommends the use of untreated screening of residential houses for the prevention and control of malaria in children and adults living in areas with ongoing malaria transmission.
- **Topical repellents (2019)**
  - WHO conditionally recommends against the deployment of topical repellents for the prevention and control of malaria at the community level in areas with ongoing malaria transmission.
- **Insecticide-treated clothing (2019)**
  - WHO conditionally recommends against deployment of insecticide-treated clothing for the prevention and control of malaria at the community level in areas with ongoing malaria transmission; however, insecticide-treated clothing may be beneficial as an intervention to provide personal protection against malaria in specific population groups.

Vector Control Interventions

- The choice of between ITNs & IRS should be informed by contextual data, such as:
  - insecticide susceptibility,
  - vector behaviour and intervention use,
  - as well as relative cost-effectiveness.
- WHO does not recommend co-deployment of both IRS and ITNs.
  - Under resource-constrained conditions, scaling up IRS should not be considered.
  - IRS should be maintained in countries that are prone to epidemics, as part of preparedness and response.
- In March 2023, WHO published recommendations on two new generation types of insecticide-treated mosquito nets (ITNs):
  - 1) pyrethroid–chlorfenapyr nets combine a pyrethroid and a pyrrole insecticide to enhance the killing effect of the net; and
  - 2) pyrethroid–pyriproxyfen nets combine a pyrethroid with an insect growth regulator, which disrupts mosquito growth and reproduction.
- These dual active ingredient nets were designed to provide greater protection against malaria than pyrethroid-only nets.
  - New nets project indicates that dual active ingredient ITNs improved malaria control by 20–50% compared with standard pyrethroid-only nets; the studies were conducted between 2019 and 2022 in 17 countries in sub-Saharan Africa reporting insecticide resistance.

Distribution and Coverage of ITNs

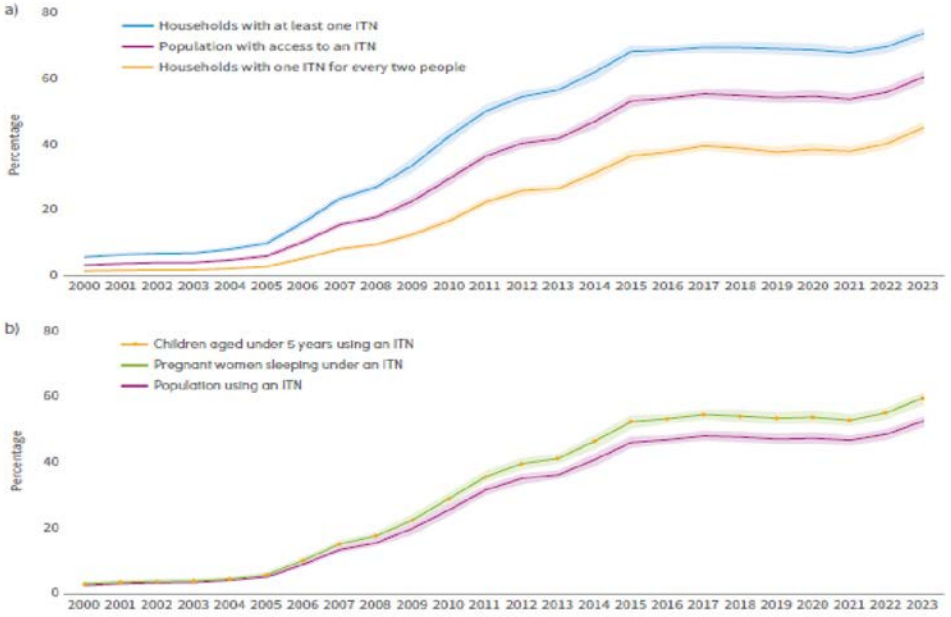
- Manufacturers delivered 226 million ITNs to malaria endemic countries in 2023,
  - a decrease of 20% compared with 2022.
  - 195.4 million (86%) to sub-Saharan Africa.
- Of the 195.4 million ITNs delivered to sub-Saharan Africa,
  - 22% were standard ITNs,
  - 58% were pyrethroid-PBO nets, and
  - 20% were dual active ingredient ITNs.
- Progress in % of households in sub-Saharan Africa by 2023:
  - With at least one ITN: 73% increasing from 5% in 2000 and 68% in 2015.
  - Owning at least one ITN for every two people increased from 1% in 2000 and 38% in 2015 to 45%.
  - Access to an ITN within households increased from 3% in 2000 and 53% in 2015 to 60%



Access and Use of ITNs

- The % of the population sleeping under an ITN also increased between 2000 and 2023:
  - 2% - **52%** for the whole population
  - 3% - **59%** for children aged under 5 years
  - 3% - **59%** for pregnant women
- In 2023, there was an overall increase in access to and use of ITNs compared with 2022

Fig. 7.2. Indicators of a) population-level access to ITNs and b) population-level use of ITNs, sub-Saharan Africa, 2000–2023 *Source: ITN coverage model by the Malaria Atlas Project (63, 64).*



ITN: insecticide-treated mosquito net.

https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2024

Prioritization of ITNs

- WHO developed guiding principles for prioritizing malaria interventions, in situations where resources are limited. https://iris.who.int/bitstream/handle/10665/376901/B09044-eng.pdf?sequence=1

- The vector control strategy selects at subnational level the most effective interventions at a scale and frequency that optimizes impact.
  - When funding is insufficient, tradeoffs must be made between the choice of effective interventions and coverage targets, as more effective ITN or IRS products are often more expensive per unit compared to the existing pyrethroid-only nets.
  - Surveillance of insecticide resistance is essential for selecting effective vector control interventions, and programmes should deploy products that contain active ingredients that are effective against their vector populations.

- For areas where deployment of ITNs is the most appropriate choice, the priority will be to ensure **access of pregnant women and children under 5 years** of age through routine ITN distribution in all malaria risk areas.

- If resources are constrained, all areas with very low current and historical malaria transmission (e.g. < 1% *P. falciparum* prevalence rate) can be excluded from ITN campaigns.
  - This applies to most urban areas, except where Anopheles stephensi has been reported.
  - In urban areas, other appropriate means of vector control, including larviciding, should be considered, based on microstratification

Prioritization of ITNs

- In case where vectors are resistant to pyrethroids:
  - Pyrethroid-chlorfenapyr ITNs should be prioritized, followed by pyrethroid-piperonyl butoxide ITNs or pyrethroid-pyriproxyfen ITNs. The deployment of pyrethroid-only ITNs should be avoided. Consider resistance status of malaria vectors, cost of ITNs and the durability of the ITNs

- For areas with stable transmission, countries need to carefully consider the resource implications of sustaining IRS instead of transitioning to ITNs.

- When changes are made in vector control strategies that lead to decreased/suboptimal intervention coverage of either IRS or ITNs, or when a vector control intervention such as IRS is withdrawn; strong surveillance and response should be prioritized

- Prioritization is an iterative process, and it will need to be continuously revised:
  - as costs and funding opportunities change over time
  - as malaria epidemiology changes due to various factors, including man-made and natural disasters;
  - when surveillance does not show the expected impact;
  - when assessment of programme performance shows changing requirements to ensure the effectiveness of interventions;
  - when new tools and knowledge become available; or as new threats emerge.

Practical considerations on ITNs

Prioritization of ITNs:

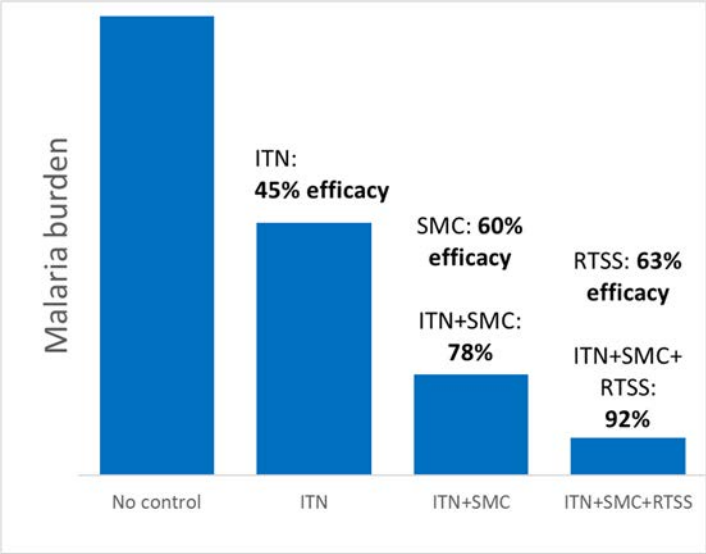
- ITNs are recommended for use at **any level of malaria endemicity** (>1% P. falciparum parasite prevalence).
- In some settings, such as in elimination areas or **humanitarian emergency situations**, ITNs may be targeted at a specific high risk population group where individual protection is the priority.
- In urban areas general infrastructure available data should be used to identify clusters of malaria transmission (**microstratification**) to decide if and where to distribute ITNs, if appropriate and acceptable to the community.
- Programmes should not prioritize mass campaigns over **routine distribution**

Optimizing ITN access in resource constrained settings:

- it is advisable to target **areas of highest need (high transmission intensity) with ITNs**. For example, countries may increase the threshold for targeting ITNs to exclude areas of very low pre-intervention transmission, especially if such areas have adequate access to effective case management.
- Ensuring that **underserved populations** with highest malaria mortality are protected first from malaria transmission is likely to lead to higher impact for resources invested.
- Special attention should be paid to **displaced populations** and other groups suffering humanitarian emergencies, as they are highly vulnerable and may be a source of onward transmission.
- Where a decision is needed on **targeting of more efficacious and expensive ITNs**, the highest burden areas, especially those with highest risk of transmission and mortality due to malaria, should be prioritized. Such decisions should be supported, with information on insecticide resistance.
- Adapt **distribution strategies** to maximize coverage while minimizing costs (community participation)

Highest impact achieved when malaria interventions strategically used together

Reduction in malaria burden when interventions are strategically used together



Insecticide Treated Net (ITN) efficacy: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000363.pub3/full

Seasonal Malaria Chemoprevention (SMC) efficacy: 85% per month, case control studies in 5 countries, https://journals.plos.org/plosmedicine/article/authors?id=10.1371/journal.pmed.1003727
(SMC for 5 months covering 70% of annual burden)

RTS,S/AS01 efficacy of seasonal vaccination over 3 years https://www.nejm.org/doi/full/10.1056/NEJMoa2026330

THANKS FOR YOUR ATTENTION

How to access WHO malaria guidance

1 WHO Global Malaria Programme website

2 MAGICapp

3 WHO Malaria Toolkit app

https://www.who.int/publications/i/item/guidelines-for-malaria

Guiding principles for prioritizing malaria interventions in resource constrained country contexts to achieve maximum impact
(https://iris.who.int/bitstream/handle/10665/376901/B09044-eng.pdf?sequence=1)

Global Fund: ITN programming in an evolving funding context

Kate Kolaczinski
Alliance for Malaria Prevention
Nairobi, April 2025

Topics

1. Funding environment
2. Vector control funding in GC7
3. Grant cycle timings
4. Strategic prioritization
5. Operational efficiencies
6. Other topics

1. Funding environment

The financing context is evolving and malaria programmes will come under greater strain; the partnership and country voices are more critical than ever

- **US funding freeze**
  - Given the interdependencies of our programmes with USG funding we are working with MoHs and other partners to understand the most crucial vulnerabilities linked to the US funding freeze
  - The context is changing rapidly - USG support to life saving programmes is being restarted in several countries - so these frequent country level partners discussions are critical
  - Like many global health partners, the Global Fund is taking prudent measures to help stretch the current funding as far as possible and to ensure the communities we serve are supported to the greatest extent – e.g.: reducing the amount of travel and the number of people traveling, pausing recruitments, pausing some staff benefits
- **GC8 replenishment**
  - The geopolitical context is challenging for resource mobilization, given competing demands and reduced ODA budgets
  - However, donor governments have been consistently strong supporters over the years and we are working closely with them in the run up to replenishment - targeting a positive outcome
  - Strong and supportive voices from partners, in particular national governments, will be helpful

Headline messages

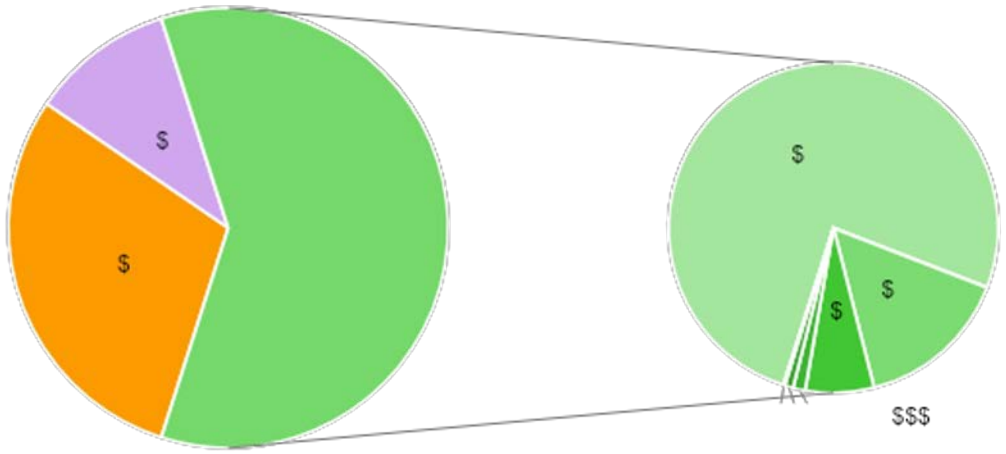
- **The financing context is evolving, going forward it is likely that many programmes will have important funding gaps for malaria**
- **It is critical that we think <u>now</u> about how to adapt and plan for that context**

2. Vector control funding in GC7

Even prior to recent funding landscape changes there were important gaps

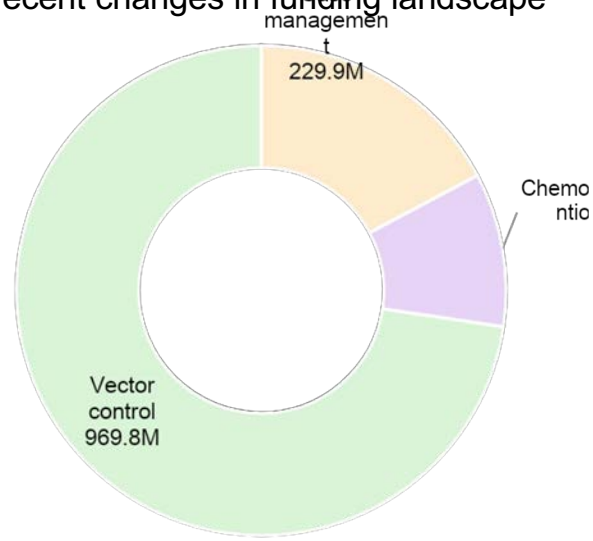
SIGNED GRANTS as of Feb 2024

Beyond core programming – essential malaria support also comes from RSSH and national programme management budget lines



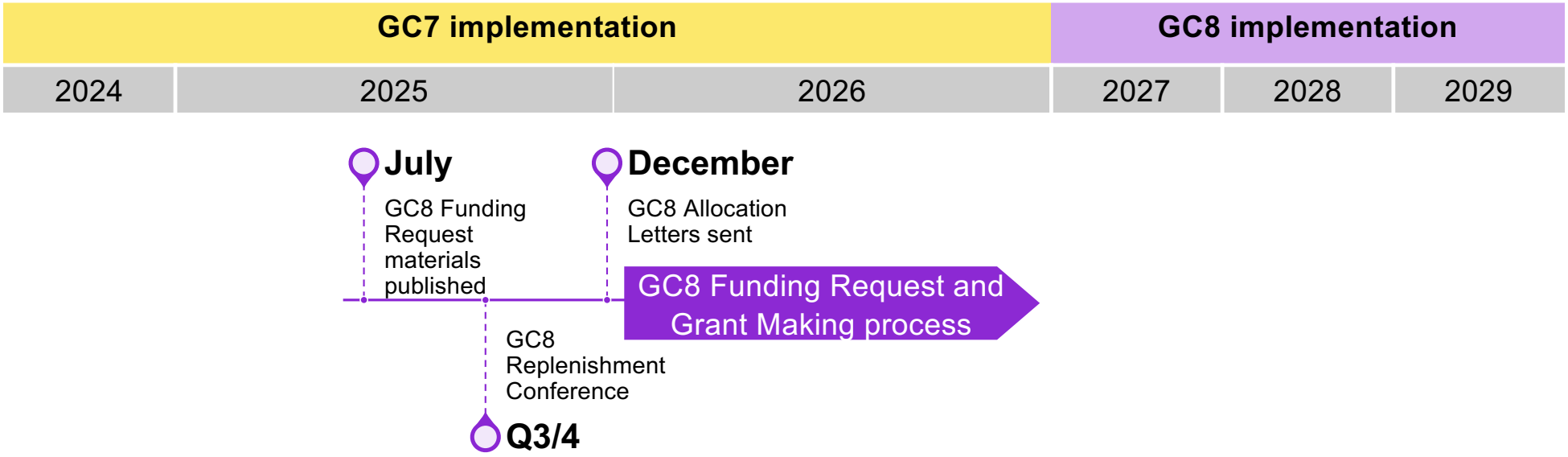
GAPs

'Unfunded quality demand at end of 2024'– does not reflect any more recent changes in funding landscape



3. Grant Cycle timing

Grant Cycle 7 implementation is underway in parallel to preparation for Grant Cycle 8



4. Strategic prioritization decisions for ITNs

Programmes can consider various strategies to maximize ITN protection on lower budgets

- Programmes are encouraged to consider a wide range of options on scope, scale and delivery channels, acknowledging there are a range of potentially sensible ways forward in different country contexts
- Any changes must be feasible the time frame – e.g. countries with large ITN orders for 2026 may have more time to relook at plans than those with ITNs arriving sooner

We expect that:

- Programmes will continue to prioritize access for biologically vulnerable groups and continuous distribution
- Urban areas with a serious *An. stephensi* threat will need to maintain some vector control
- In areas of pyrethroid resistance, appropriate nets will be deployed (*no pyrethroid-only nets in these areas*)
- Any scale back of VC in areas with moderate or high transmission will be backed by a surveillance and response plan
- Any places where IRS is stopped will be prioritized for ITN distribution (CFP- Dual AI)

Programmes could consider a range of the following options to determine the most cost-effective approaches that maintain equity of access:

- Differentiate control approaches for low transmission and urban areas, with campaigns focused on rural mod/high areas
- Reduce coverage targets for campaigns (e.g. > 1.8 p/net allocation) or targeting certain groups e.g. U5 campaigns
- Reducing campaign frequency (e.g 4y) subnationally where nets are retained longer
- Channel diversification – including higher throughput continuous distribution which may maintain flexibility to response to changing funding scenarios; potentially have lower cost per net delivered and/or lower net requirements
- Evolve M&E from national surveys to more targeted approaches such as LQAS

5. ITN operational efficiencies

Delivery costs will need to focus on the most essential activities

- Approaches to improve efficiencies will depend on the context, though experiences from other countries can be useful to spark ideas and inform thinking
- As with strategic level decisions – any operational changes must be feasible within time frame

We expect that:

- Programmes will review operational plans for all upcoming distributions to consider potential efficiencies achievable within the timeframe
- Opportunities for integration will be considered across all stages: planning, training, delivery, supervision and surveillance
- Approaches will be targeted as needed rather than one-size-fits all across the campaign area

Programmes should consider the following options, as appropriate to the context and timing:

- Single phase campaigns if more efficient
- Rely on interpersonal communication for SBCC rather than leaflets or costly TV spots
- Target SBCC to areas of most need – i.e. historically low use given access
- Maintain digitalisation but encourage BYOD, integration, use of open source and existing mobile friendly platforms
- Rely on zero budget existing spaces/resources for meetings (i.e. no venue hiring)
- Reduce training days and focus on essential participants and consider online training when appropriate
- Target supervision to critical levels, events and areas

6. Other topics

Quality Assurance Policy

- WHO PQ remains the assurance mechanism - Expert Review Panel under certain conditions
- Recommendations and requirements for traceability, insecticide resistance monitoring, and tbd post-market surveillance
- Procurement and supply manuals also being updated
- Transition support

ITN Resistance to Damage scores

- Engaged on discussions around Resistance to Damage scores
- Awaiting with interest WHO technical position
- Actively monitoring the progress in this space and considering how to best incorporate

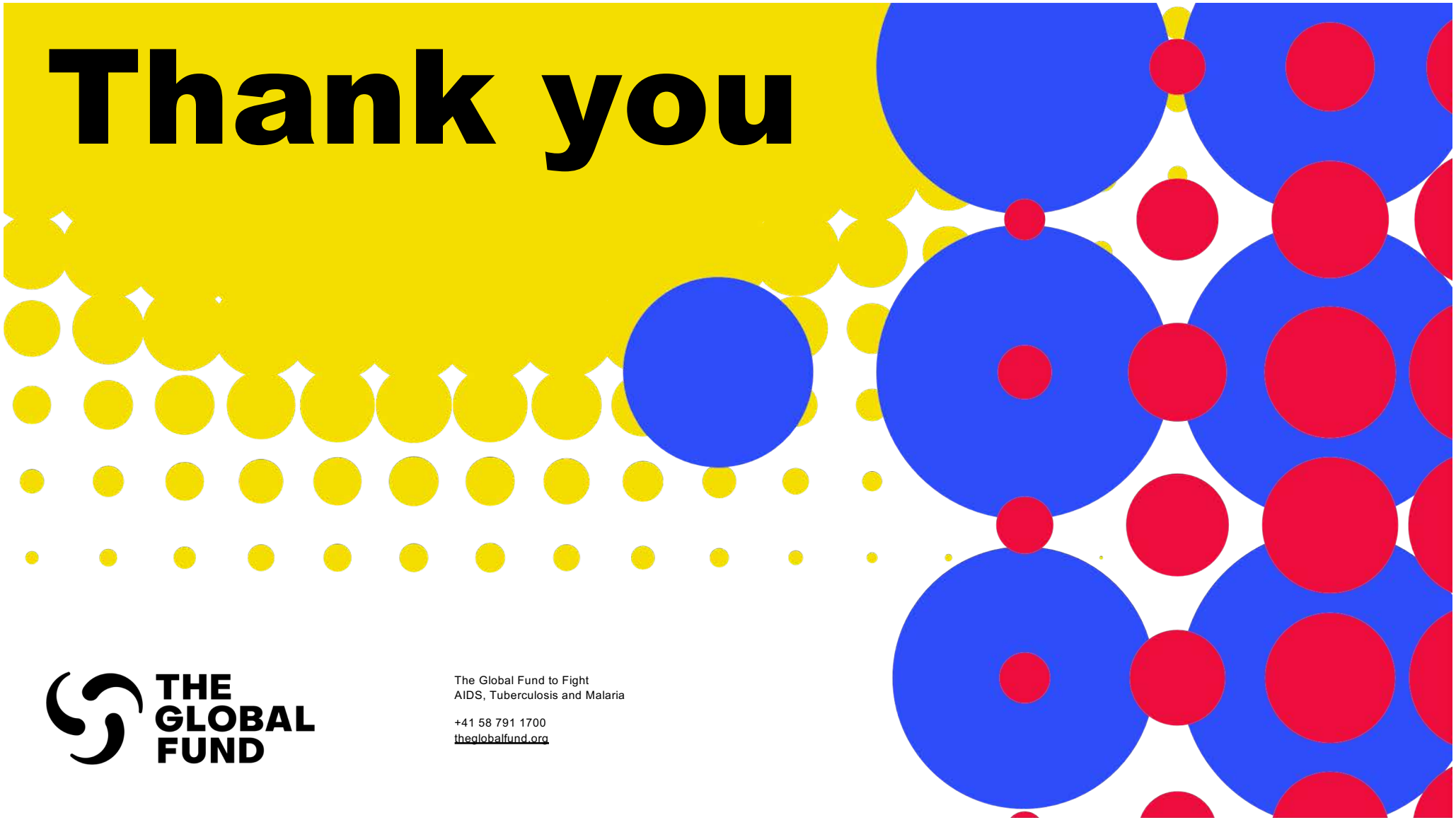
ITN packaging

- CFP Dual AI ITNs currently only available in individual bags
- Associated waste management efforts and cost
- Efforts underway to address and make available in bulk packaging as soon as possible

CFP Dual AI supply

- CFP Dual AI ITNs supply was tight for some months given high demand
- Supply is now more flexible, helped by new market entrants
- Countries could still be able to consider a switch to CFP Dual AI if affordable

Thank you



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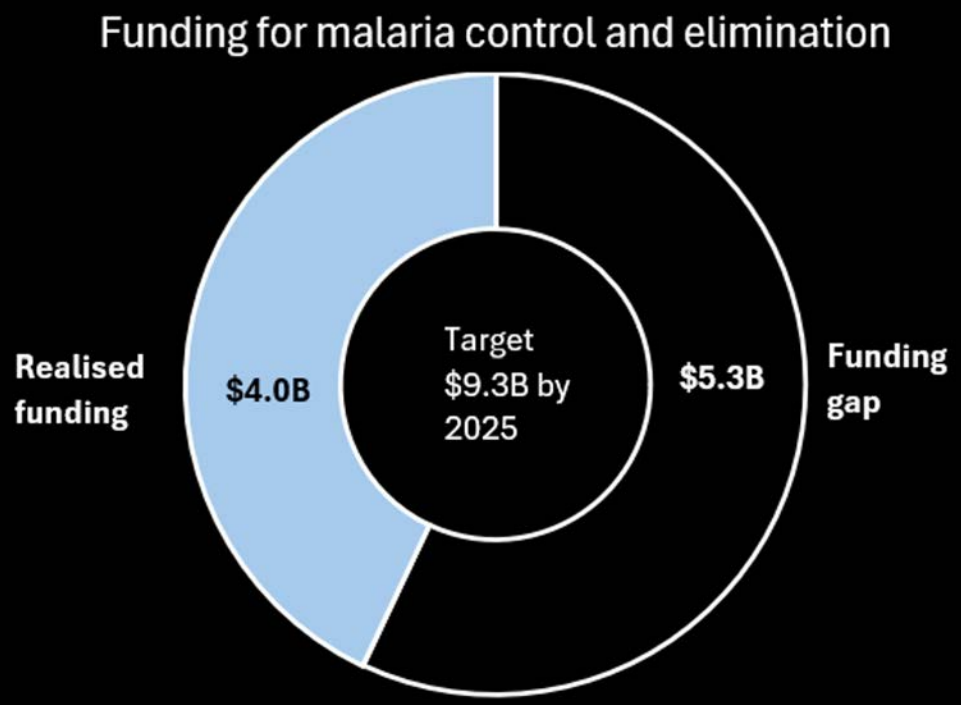
Using data in a resource constrained world

AMP conference – Nairobi 2025

Julian Austin - AMF

Big funding gaps, even before USAID cuts



Source: WHO World Malaria Report

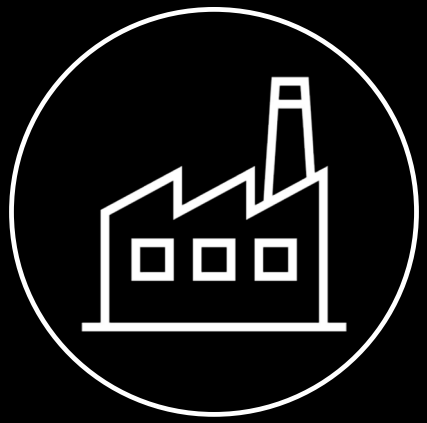
AGAINST MALARIA FOUNDATION

We strive for the greatest possible impact with every intervention

AMF works with countries and funding partners to make sure our funding protects those most at need

Data can help at all stages

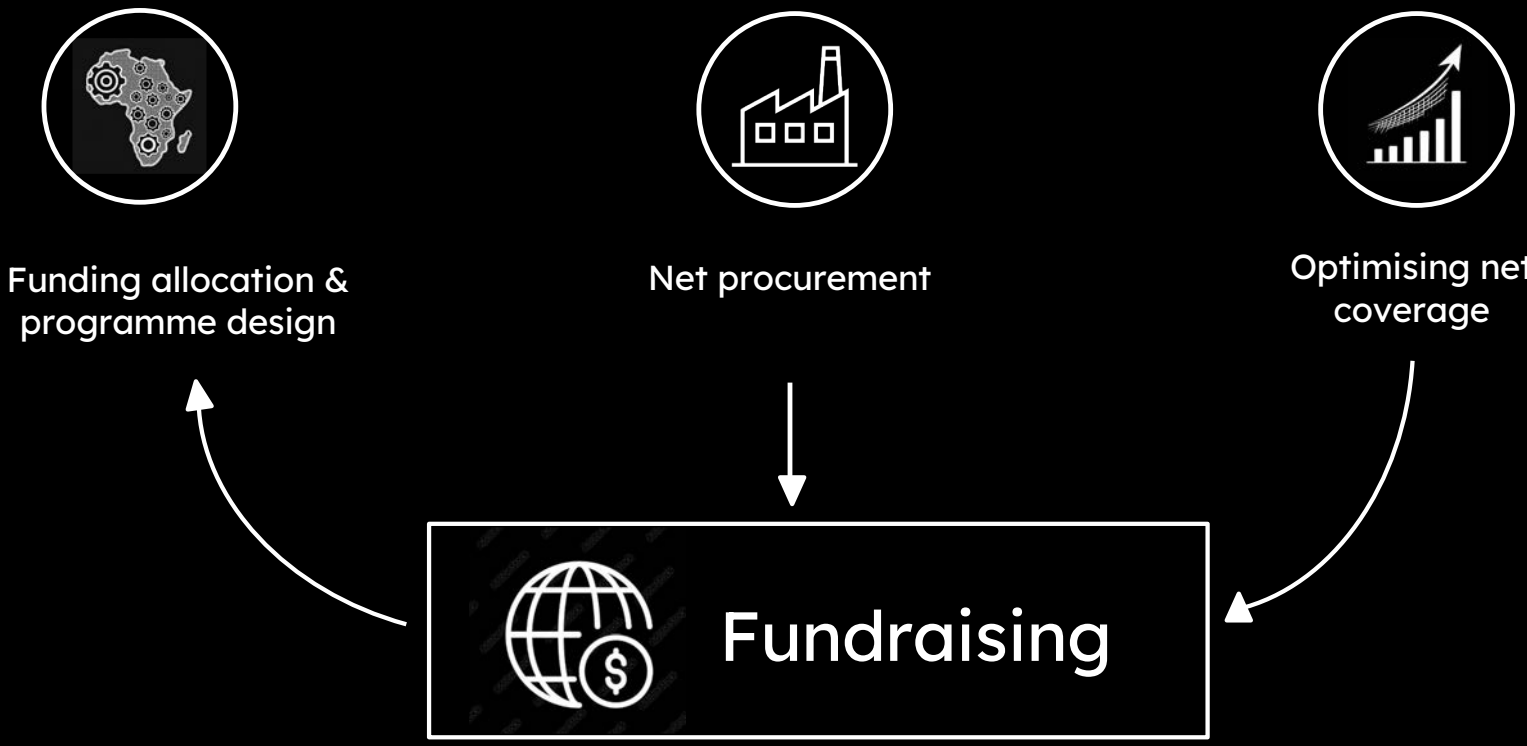
Funding allocation & programme design



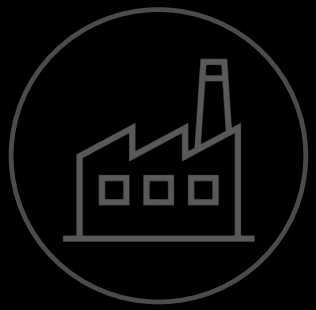
Net procurement

Optimising net coverage

If we get it right there's a feedback loop



Funding allocation & programme design



Net procurement

Optimising net coverage

Guided by malaria rates

Focused on the communities at highest risk

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But specifically the communities at highest risk that wouldn’t otherwise receive nets

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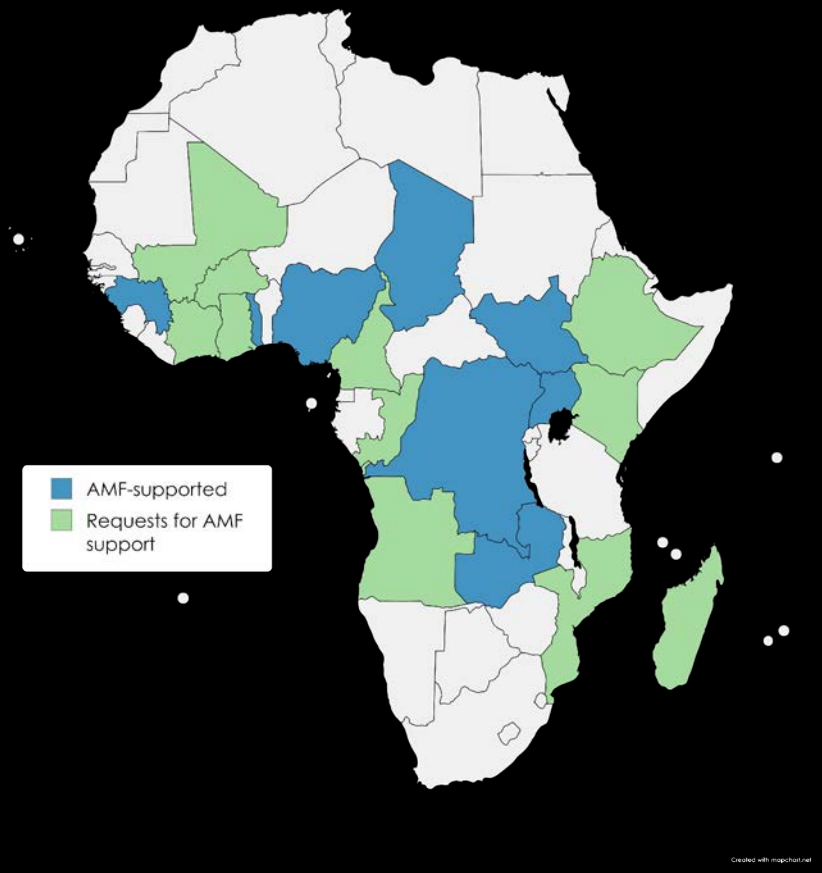
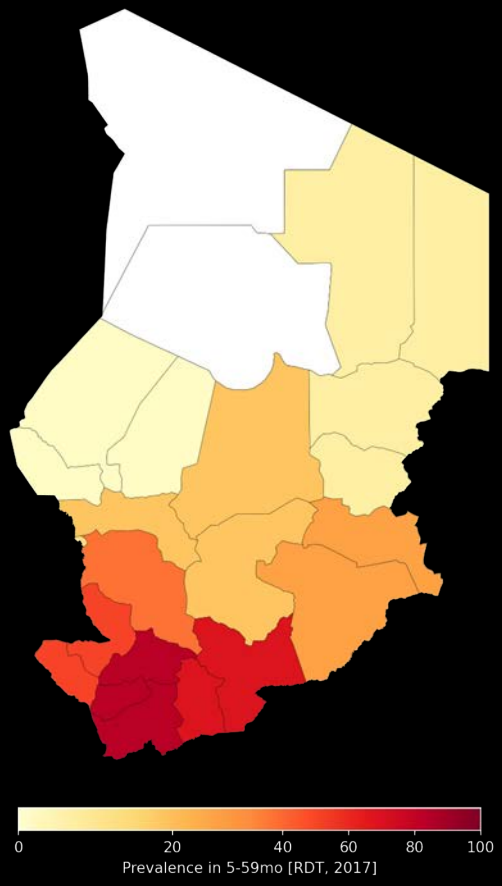


Example: Chad

UCC need in Chad
10.8m nets, $48m



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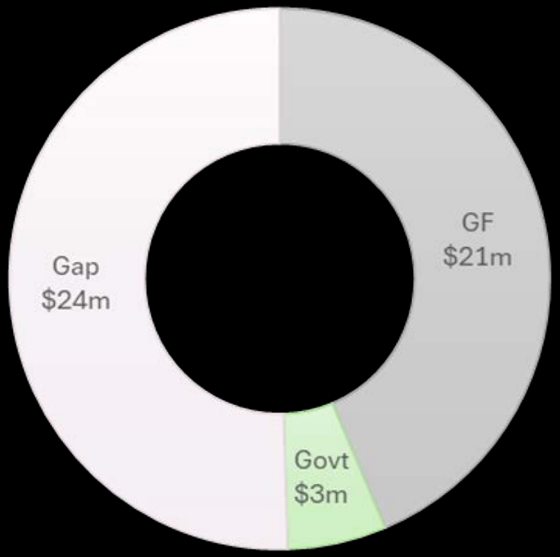

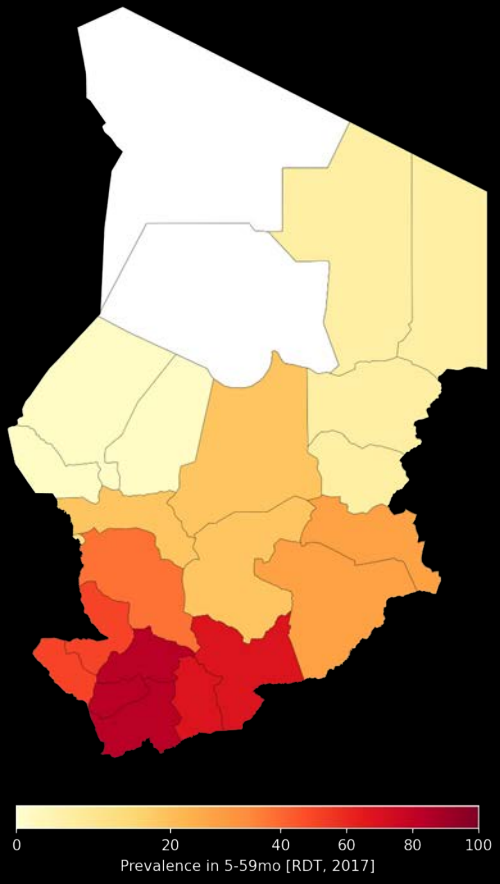

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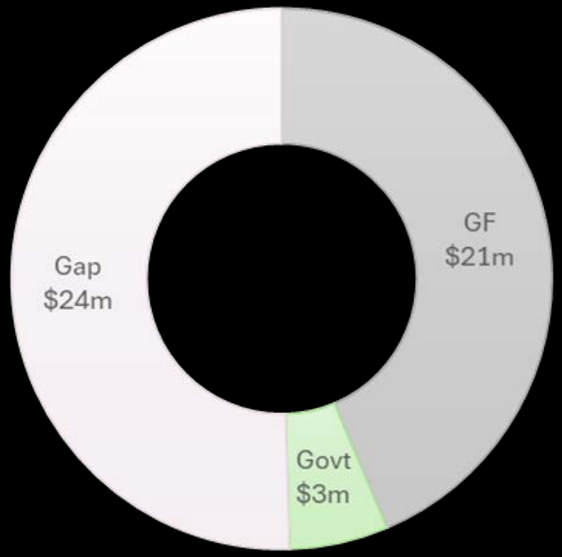

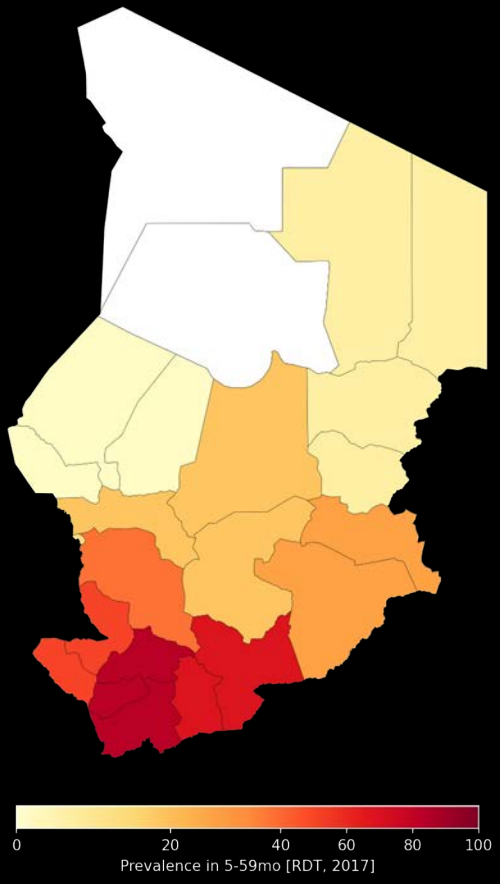

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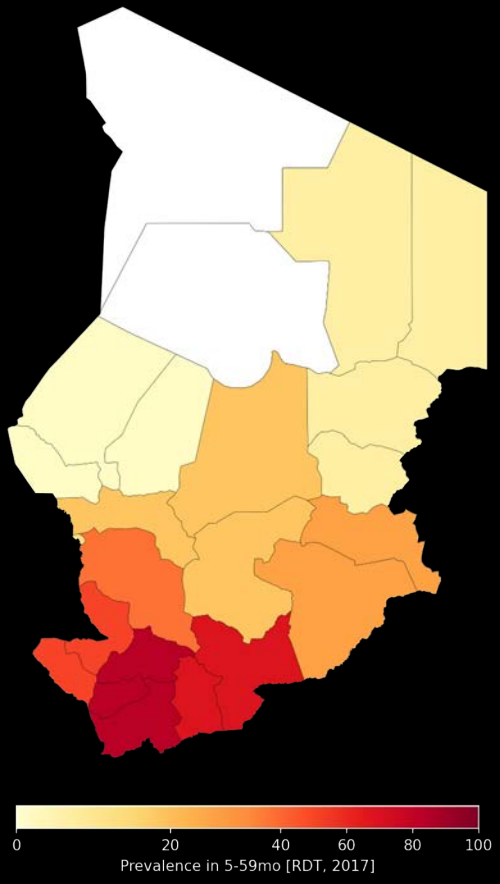

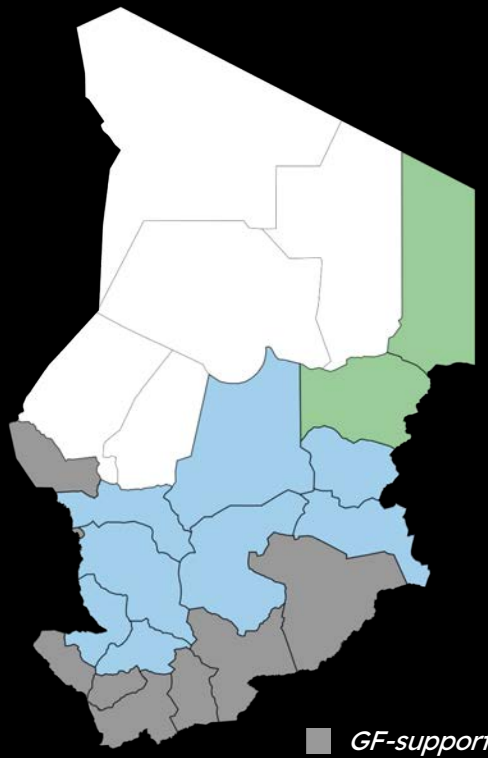

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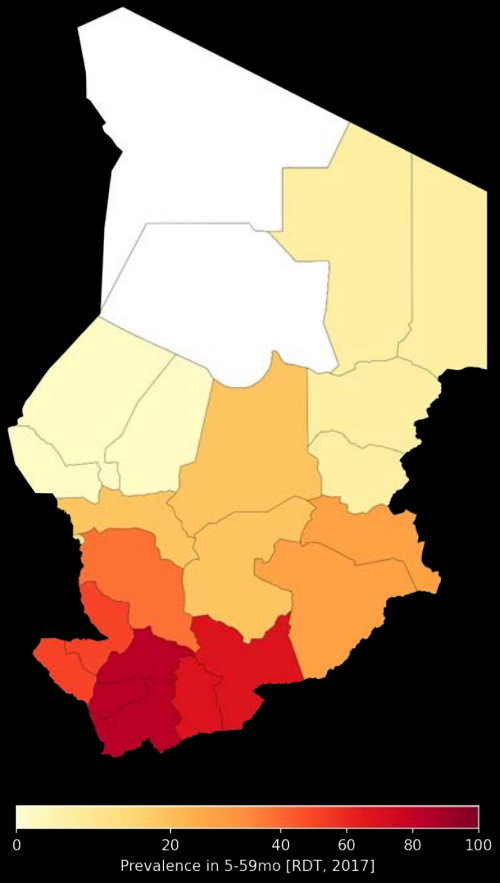

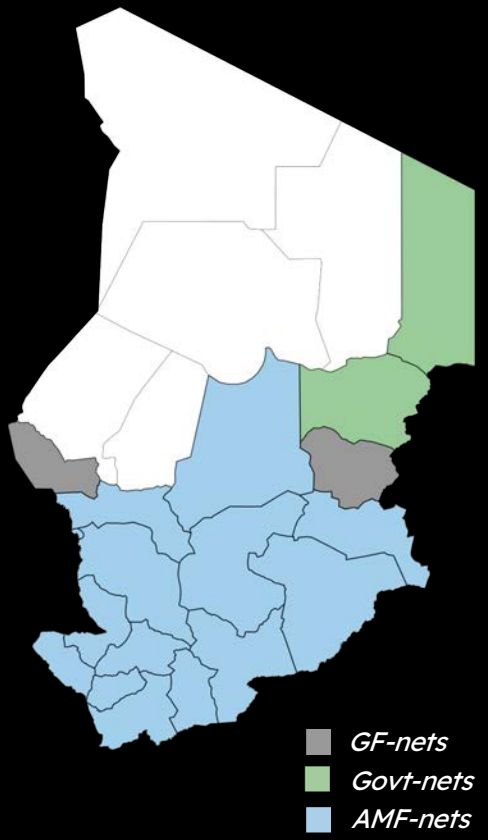

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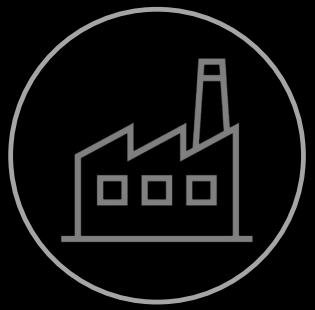
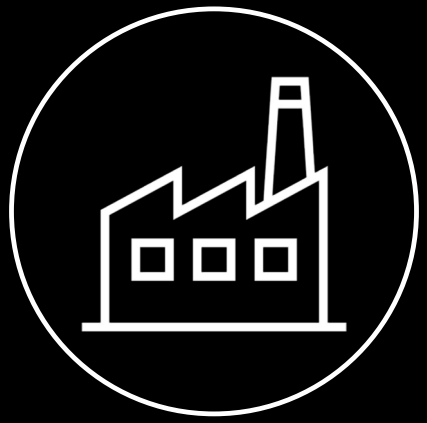


Net procurement

Optimising net coverage

Funding allocation &
programme design



Net procurement

Optimising net
coverage

Net procurement: typical process

Discussions with country

Net procurement: typical process

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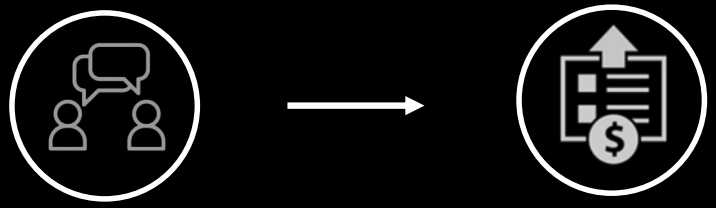


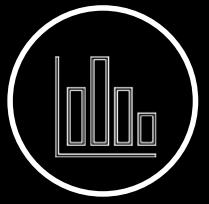
Net selection to identify most cost effective net

Analysis of entomology

Analysis of malaria burden

Net selection

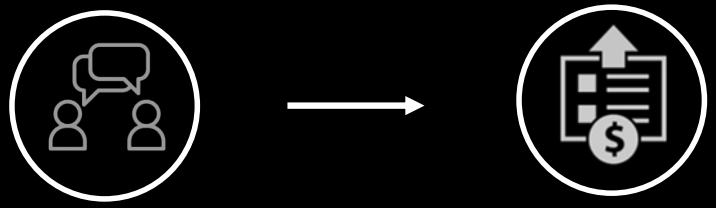
Analysis of net tendering info



Net effectiveness studies + durability monitoring

Net procurement: typical process

Discussions with country



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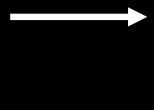
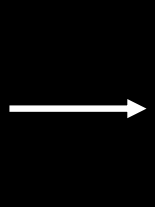


Discussion with country & cofunding partners

Net procurement: typical process

Discussions with country

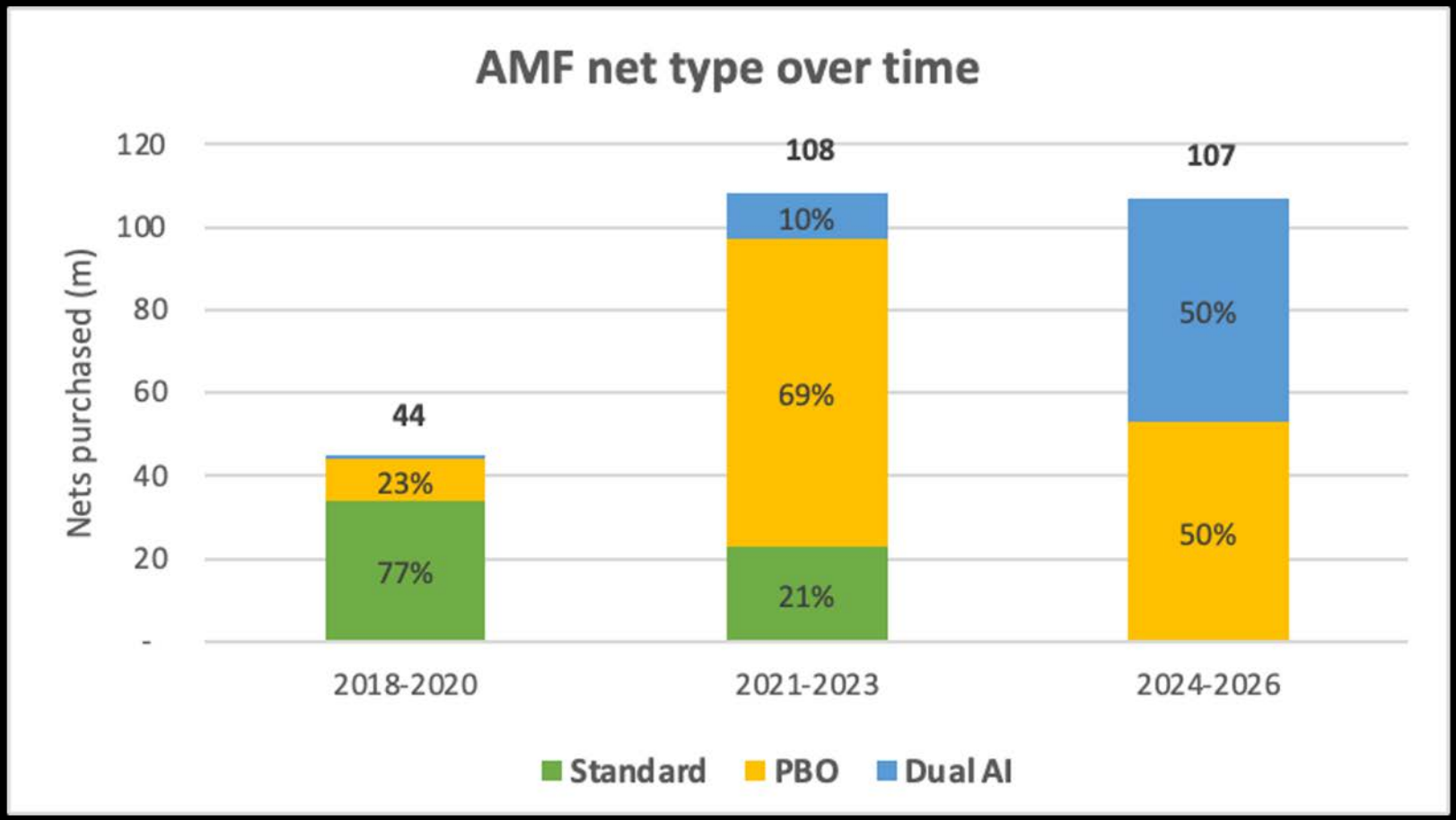


Net selection to identify most cost effective net

Discussion with country & cofunding partners

Order confirmation

Open to new nets where supported by data



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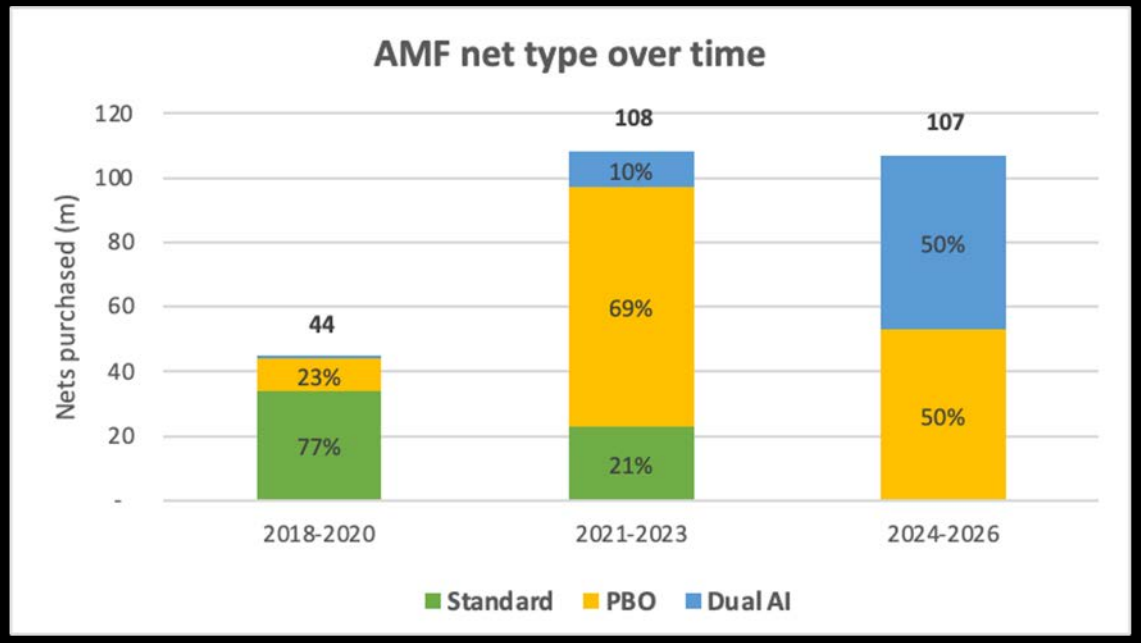
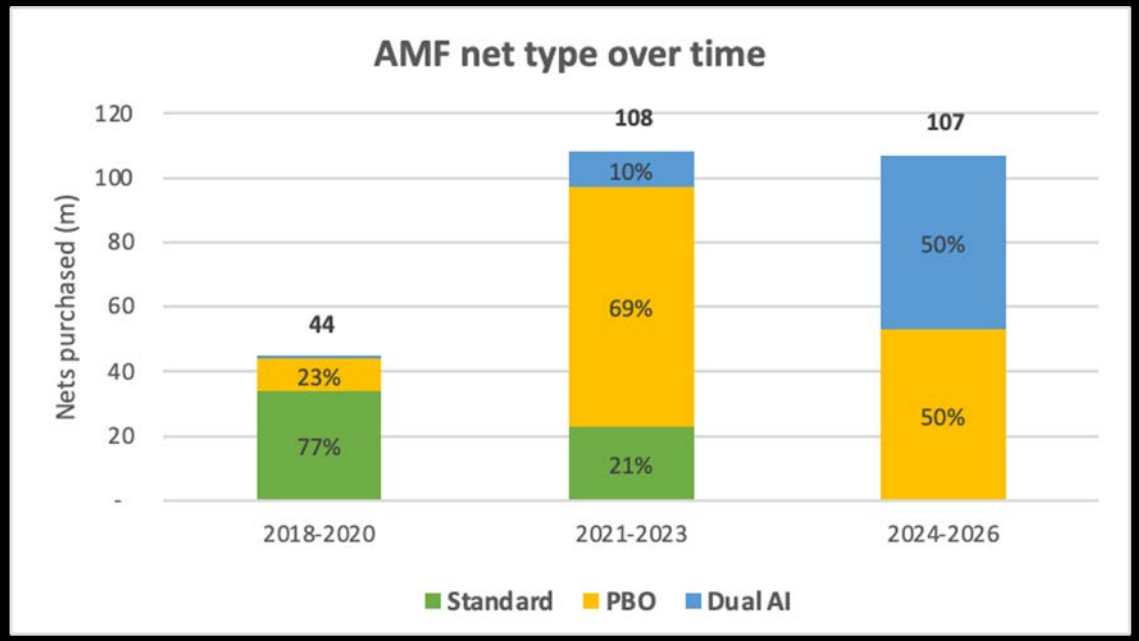


Foster innovation

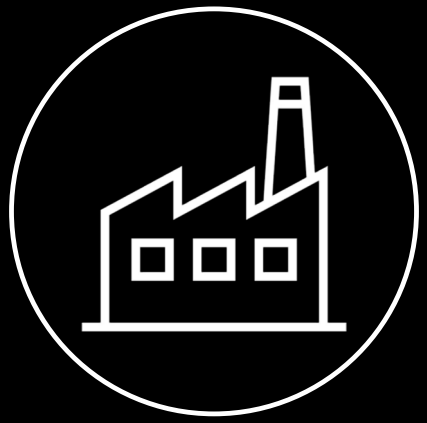
Fund new nets where supported by data



Foster innovation

Support data generation

Funding allocation &
programme design



Net procurement

Optimising net
coverage

Funding allocation &
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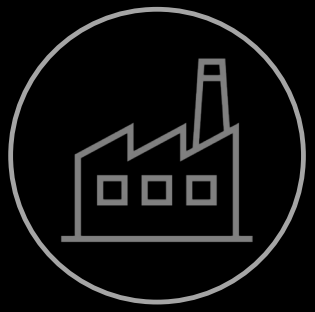
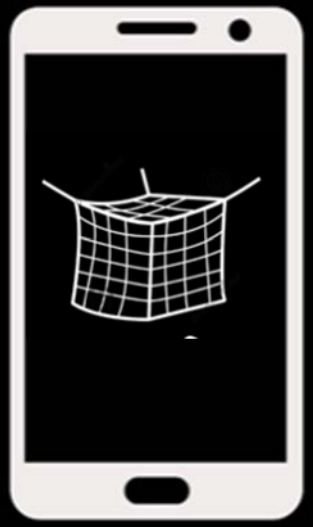


Net procurement

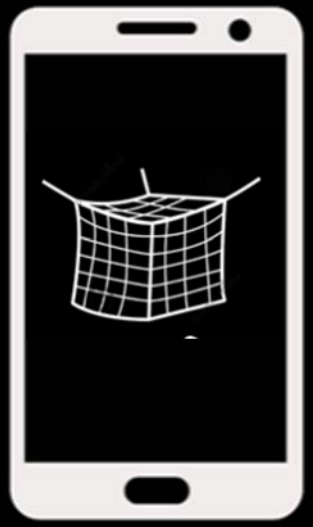
Optimising net
coverage

Campaign digitalisation



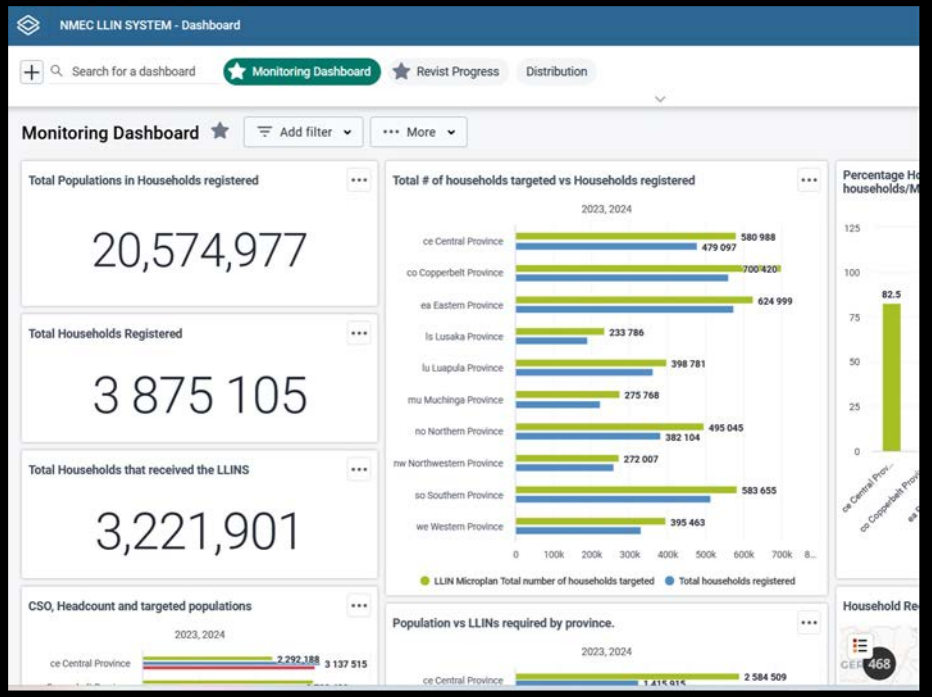
Better data quality

Campaign digitalisation



Better data quality

Dashboards enable real-time monitoring for decision making



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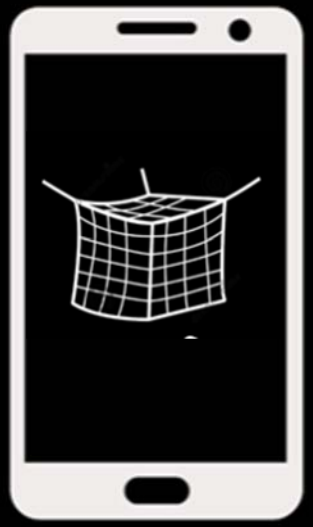

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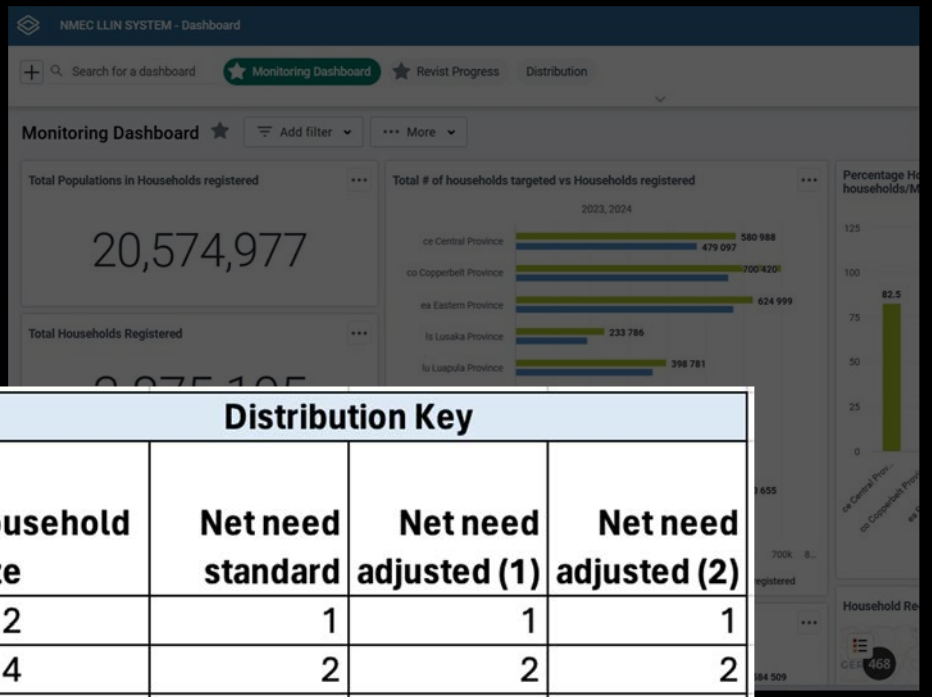
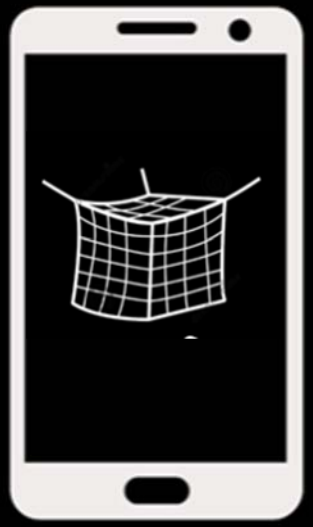


Distribution Key			
Household Size	Net need standard	Net need adjusted (1)	Net need adjusted (2)
1 - 2	1	1	1
3 - 4	2	2	2
5 - 6	3	3	3
7 - 8	4	4	3
9 - 10+	5	4	4

Campaign digitalisation



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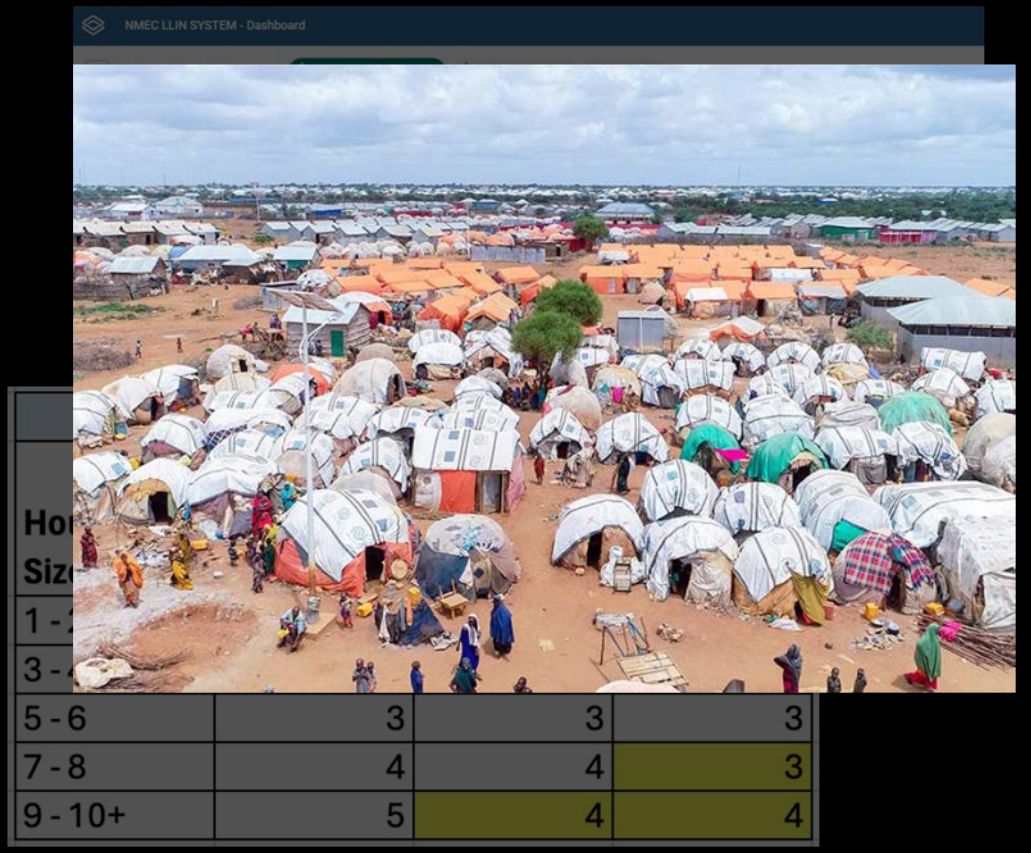

Post-distribution monitoring

Random sample of households visited

PDM18 in Akwa Ibom

Post-distribution monitoring

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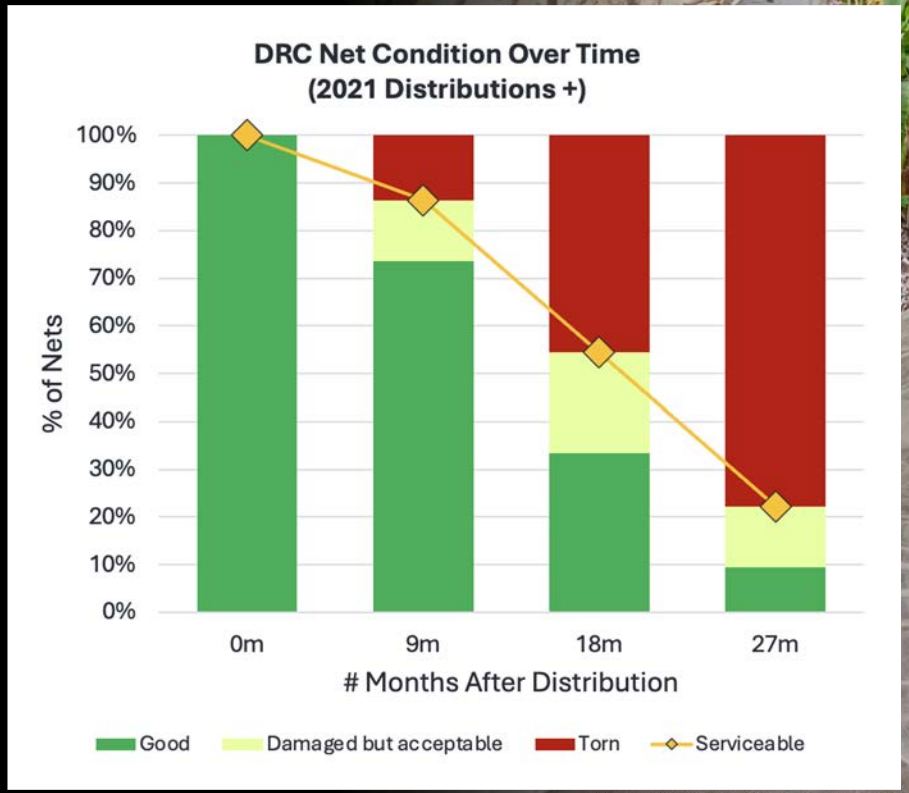
Provides indicators on net presence, use and condition to national programs, and over time



PDM18 in Akwa Ibom

Post-distribution monitoring

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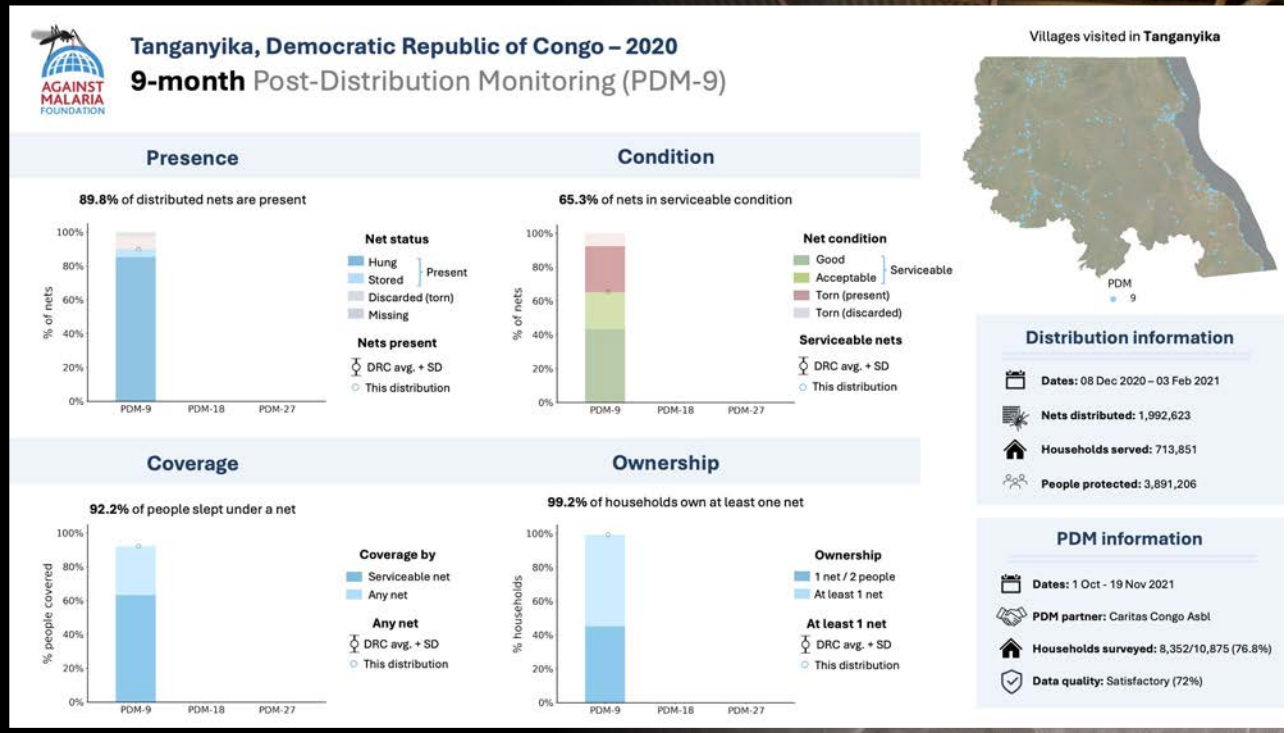
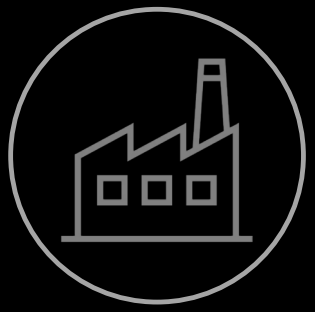
Provides indicators on net presence, use and condition to national programs, and over time

Provides AMF and donors independent information on the programmes



PDM18 in Akwa Ibom

Funding allocation &
programme design



Net procurement

Optimising net
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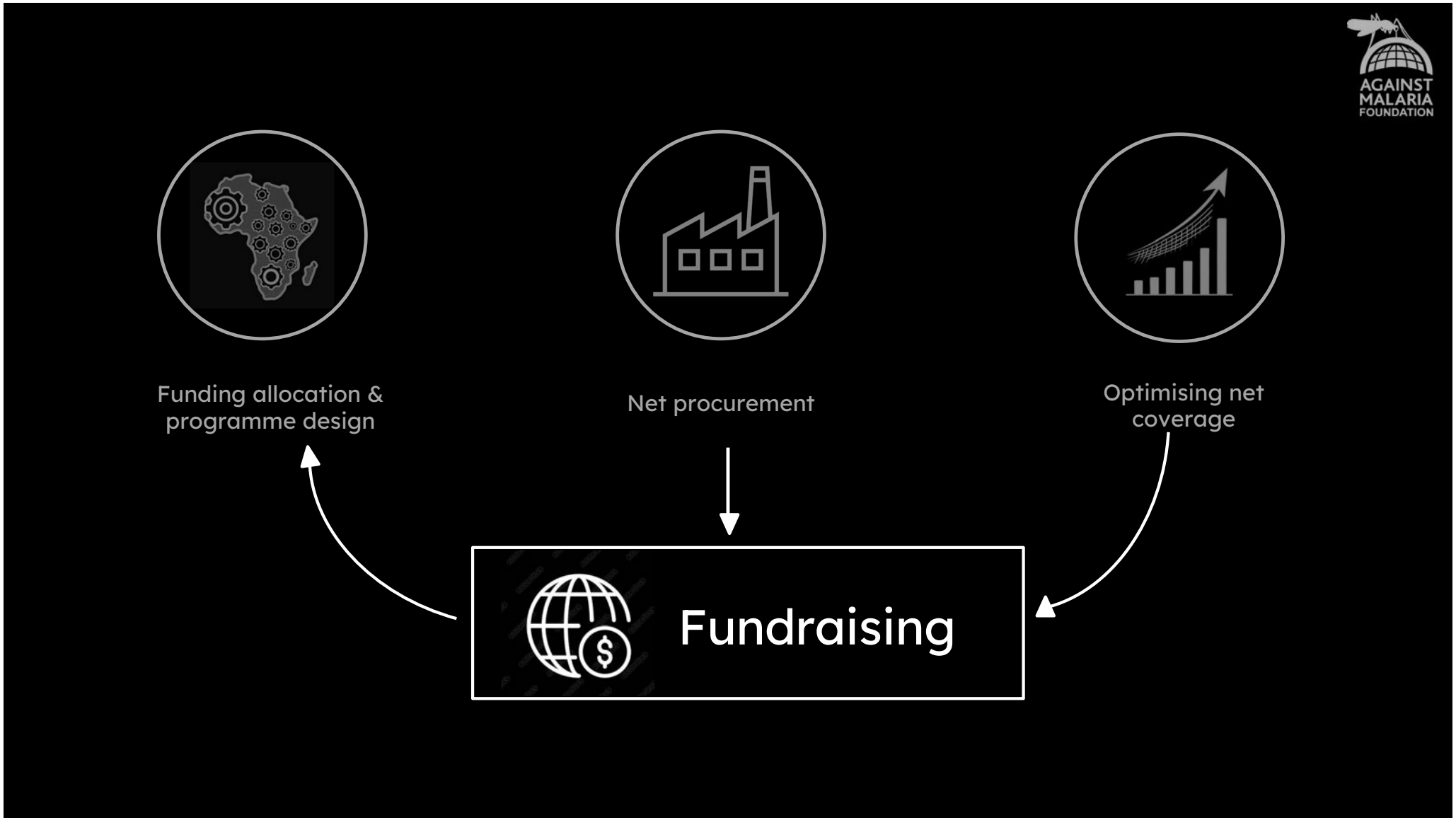

AGAINST MALARIA FOUNDATION
Funding allocation & programme design
Net procurement
Optimising net coverage
Fundraising

Summary data can help fundraising

AGAINST MALARIA FOUNDATION

Sponsors and donors

Thank you to all the people who have donated. 100% of this money will buy LLINs. US$2.00 buys one LLIN and on average protects two people. Every net matters.

Initiative: All initiatives

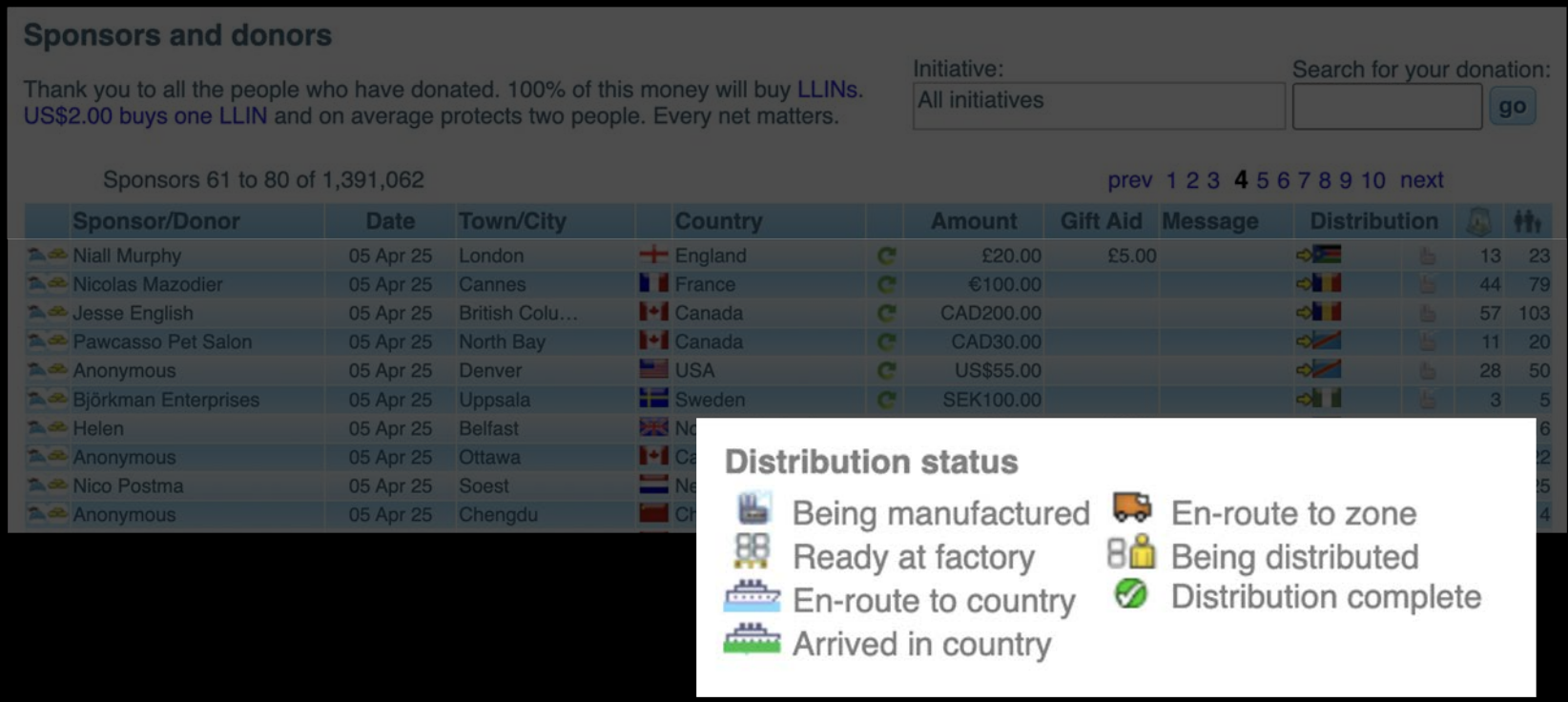
Search for your donation: go

Sponsors 61 to 80 of 1,391,062

prev 1 2 3 **4** 5 6 7 8 9 10 next

Sponsor/Donor	Date	Town/City	Country	Amount	Gift Aid	Message	Distribution		
Niall Murphy	05 Apr 25	London	England	£20.00	£5.00			13	23
Nicolas Mazodier	05 Apr 25	Cannes	France	€100.00				44	79
Jesse English	05 Apr 25	British Colu…	Canada	CAD200.00				57	103
Pawcasso Pet Salon	05 Apr 25	North Bay	Canada	CAD30.00				11	20
Anonymous	05 Apr 25	Denver	USA	US$55.00				28	50
Björkman Enterprises	05 Apr 25	Uppsala	Sweden	SEK100.00				3	5
Helen	05 Apr 25	Belfast	Northern Ireland	£14.42	£3.61			9	16
Anonymous	05 Apr 25	Ottawa	Canada	CAD50.00				12	22
Nico Postma	05 Apr 25	Soest	Netherlands	€25.00				14	25
Anonymous	05 Apr 25	Chengdu	China	€5.00				2	4

Summary data can help fundraising



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Distribution status

- Being manufactured
- Ready at factory
- En-route to country
- Arrived in country
- En-route to zone
- Being distributed
- Distribution complete

AGAINST MALARIA FOUNDATION

thank you, any questions?

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!

© Kachiri Frames / Vestergaard, Kenya

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

Achieving impact with ITNs: Rethinking the status quo

Andrew Glover*[1], *Hannah Koenker*[2], *Kate Kolaczinski*[3], *Thomas Churcher*[1]

[1] MRC Centre for Global Infectious Disease Analysis, School of Public Health, Imperial College London, UK

[2] PMI REACH Malaria, PATH, USA

[3] The Global Fund, Geneva, Switzerland

**a.glover18@imperial.ac.uk*

Presentation Outline

- Universal coverage to optimal coverage
- Was universal coverage achievable with the status quo?
- How can optimal coverage now be achieved?
- Conclusions and final thoughts

MRC Centre for Global Infectious Disease Analysis IMPERIAL

- Universal coverage to optimal coverage
- Was universal coverage achievable with the status quo?
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Universal to optimal coverage

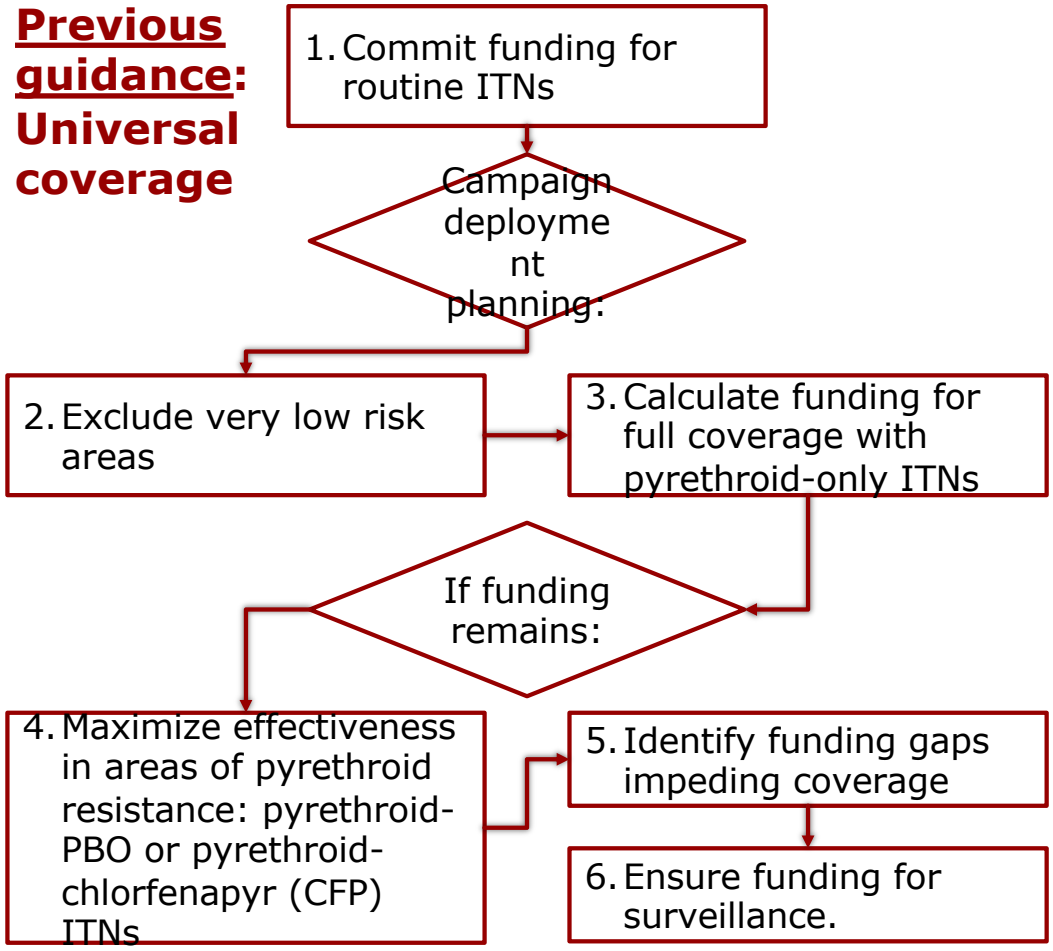
MRC Centre for Global Infectious Disease Analysis IMPERIAL

"Universal coverage is defined as 100%* access to, and use of, ITNs"

World Health Organization. WHO recommendations for achieving universal coverage with long-lasting insecticidal nets in malaria control. World Health Organization. 2013

*80% typically a minimum target

Previous guidance: Universal coverage



Universal to optimal coverage

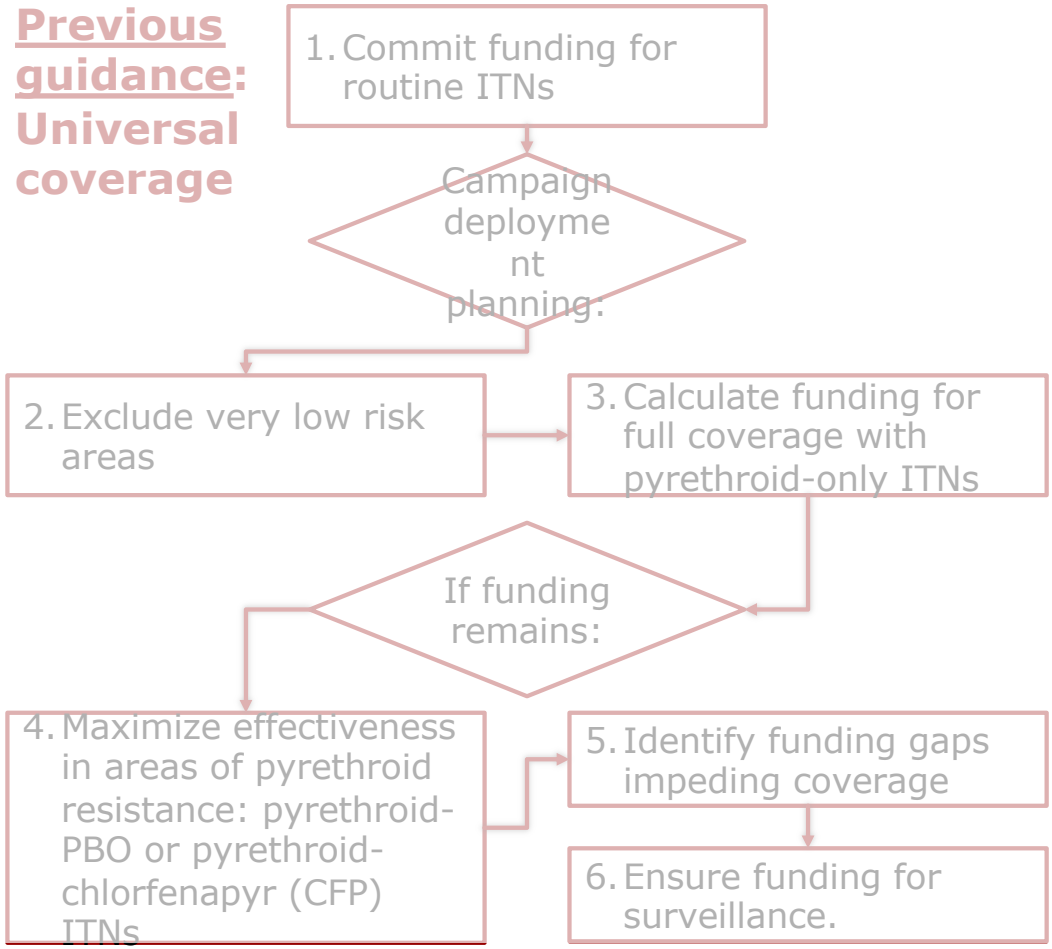
MRC Centre for Global Infectious Disease Analysis
IMPERIAL

Current guidance: Optimal coverage

World Health Organization. Guiding principles for prioritizing malaria interventions in resource-constrained country contexts to achieve maximum impact; 2024.

- **Prioritise routine** ITNs for infants and pregnant women.
- Intervention **scale and frequency** for optimal impact.
  - Exclusion of low transmission areas
  - Coverage and effectiveness **trade-offs**
- Areas with **pyrethroid resistance**:
  1. Pyrethroid-chlorfenapyr (-pyrrole)
  2. Pyrethroid-PBO
  3. Pyrethroid-pyriproxyfen
- **Surveillance** of insecticide resistance remains important

Previous guidance: Universal coverage

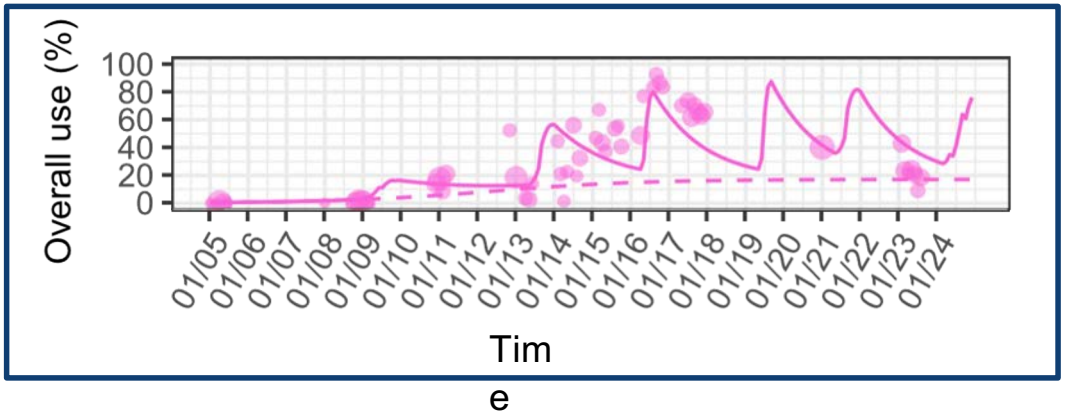


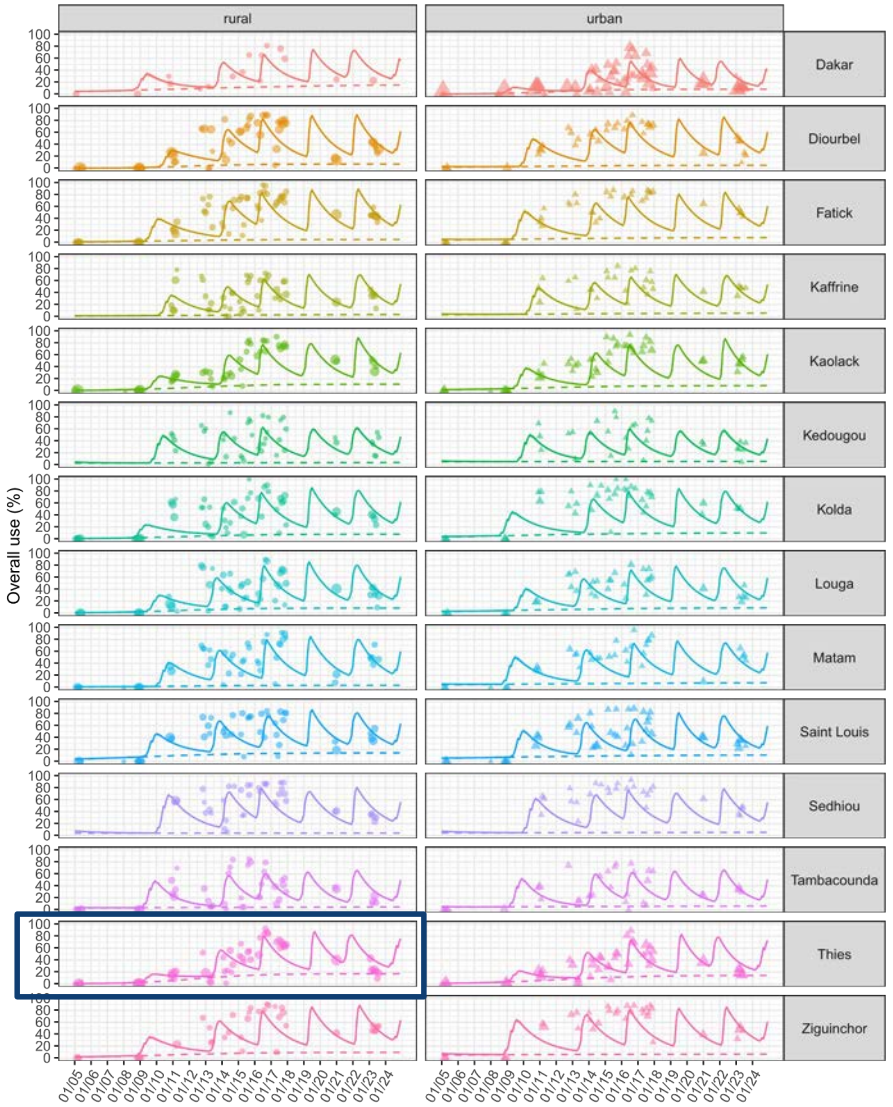
MRC Centre for Global Infectious Disease Analysis IMPERIAL

- Universal coverage to optimal coverage
- Was universal coverage achievable with the status quo?
- How can optimal coverage now be achieved?
- Conclusions and final thoughts

Historical use and access

- We fitted usage and access models to DHS & MIS data for subnational regions in 6 countries (Burkina Faso, Ghana, Malawi, Mali, Mozambique and Senegal)
- Surveys are snapshots that can be misleading
- Overall ITN use (and access) >80% achieved only briefly following mass campaigns





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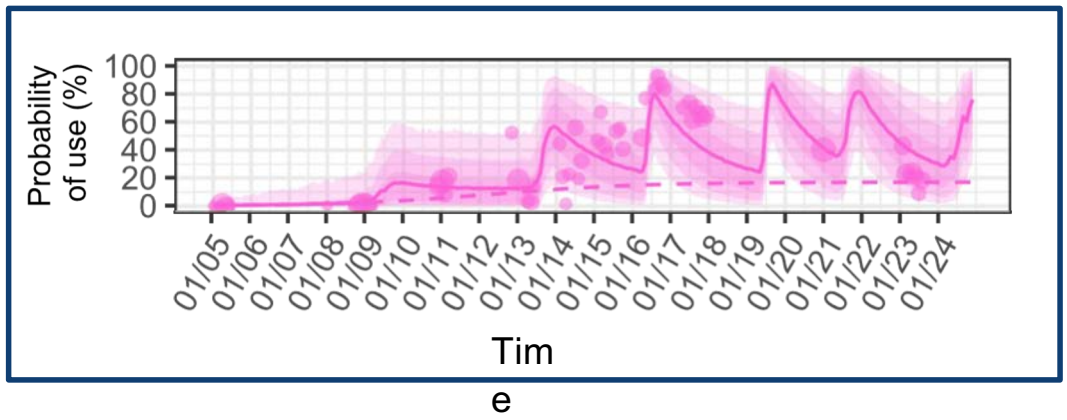
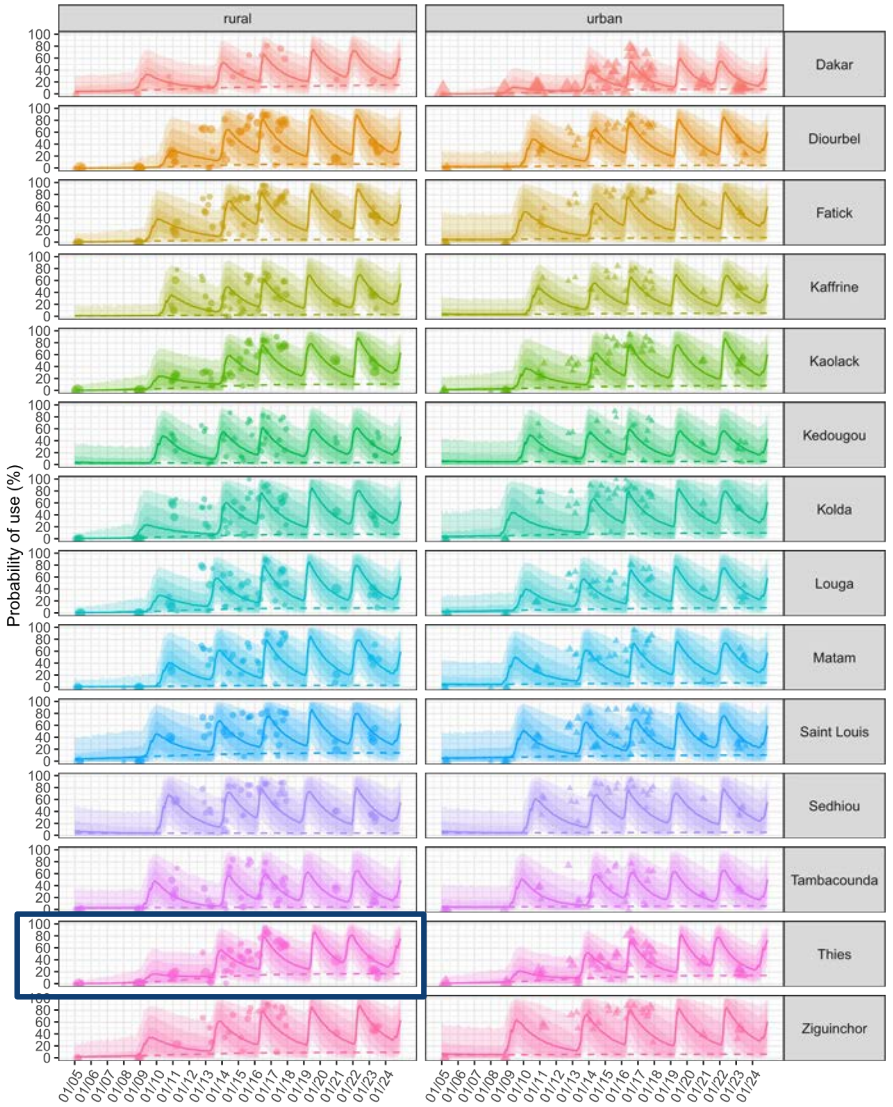
- There is notable variability in use and access

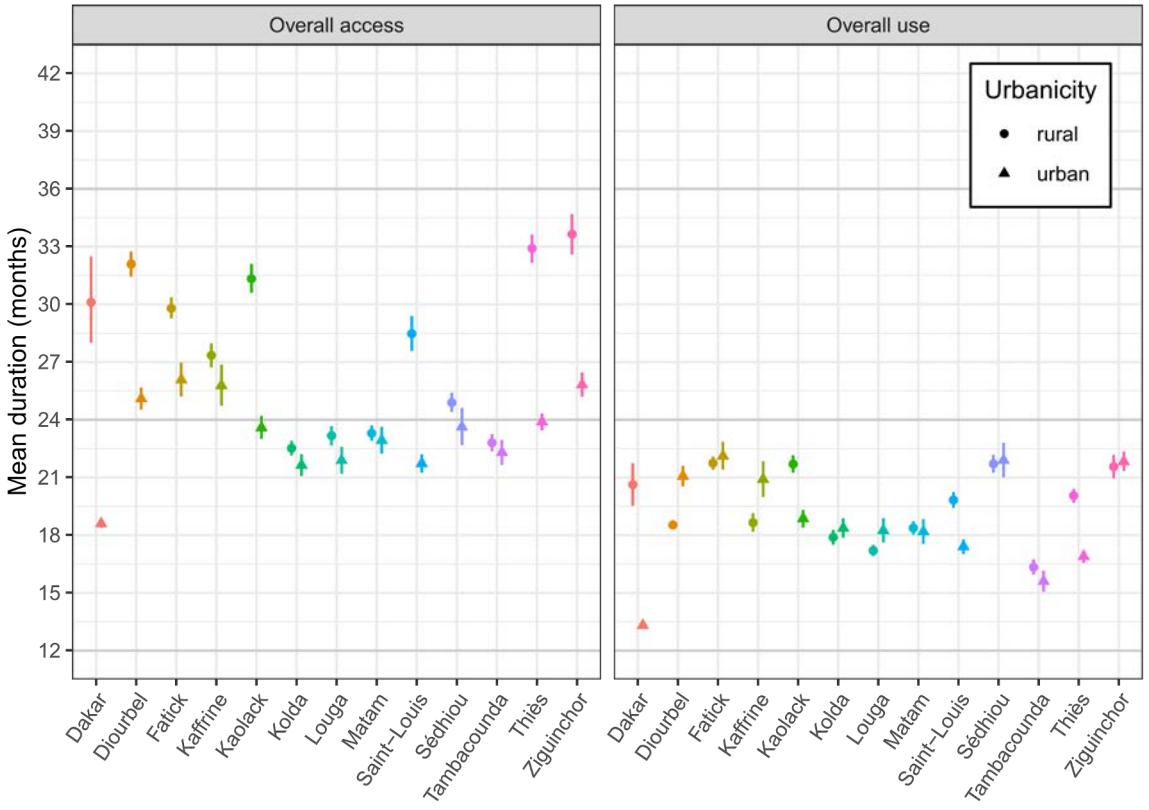


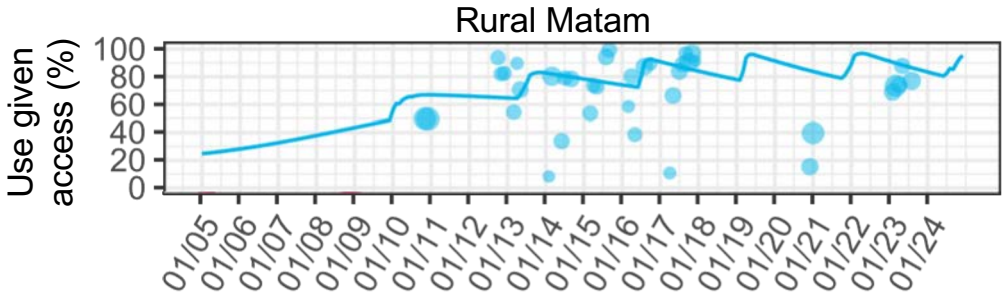


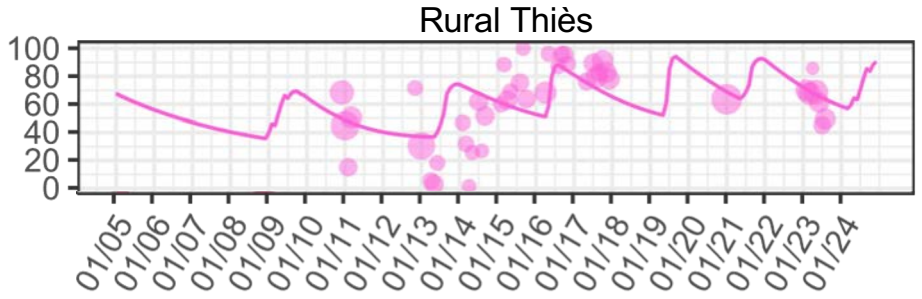
ITN retention

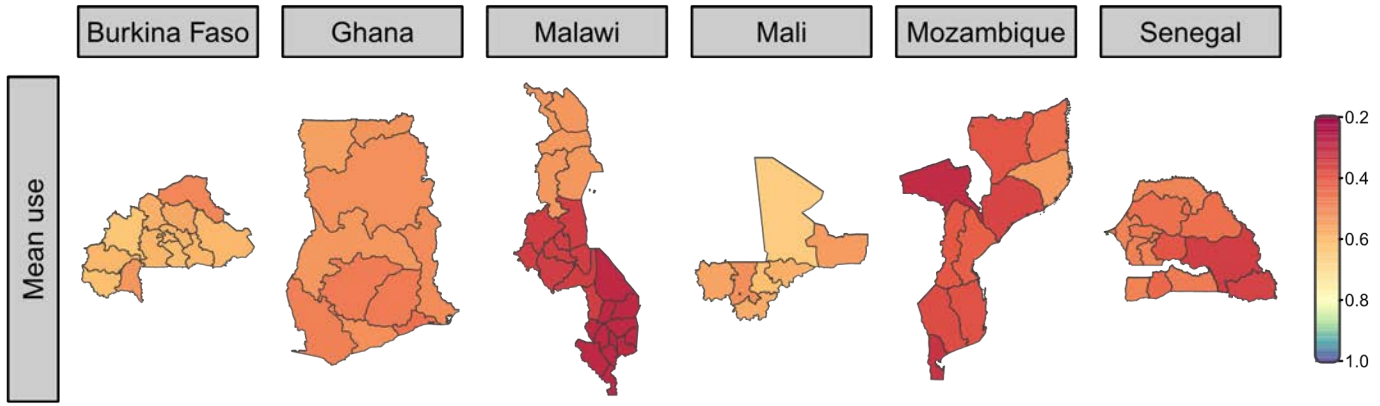
	Access	Use
Regions (n = 146) with mean duration greater than 3 years	12.3%	0.7%

- People **stop using ITNs faster** than they have access to them
- **Use given access declines over time** following a mass campaign

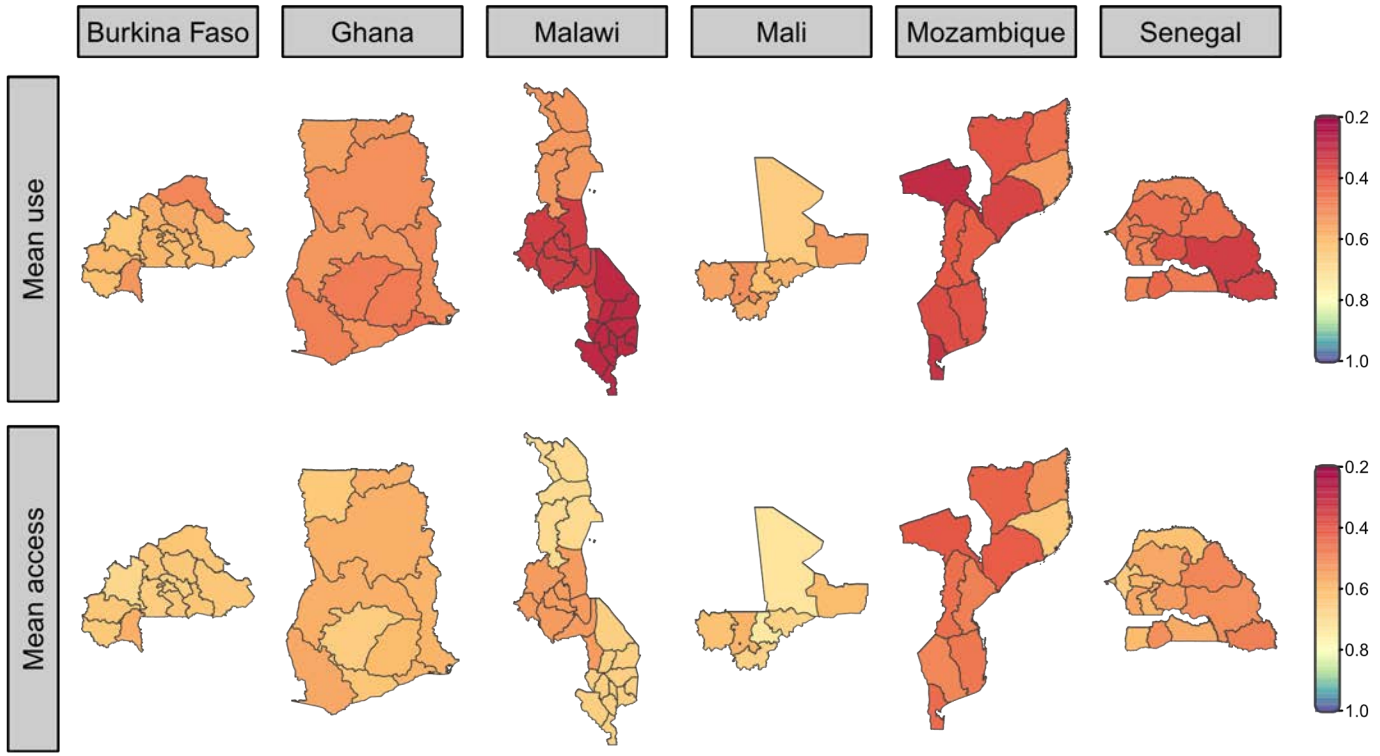




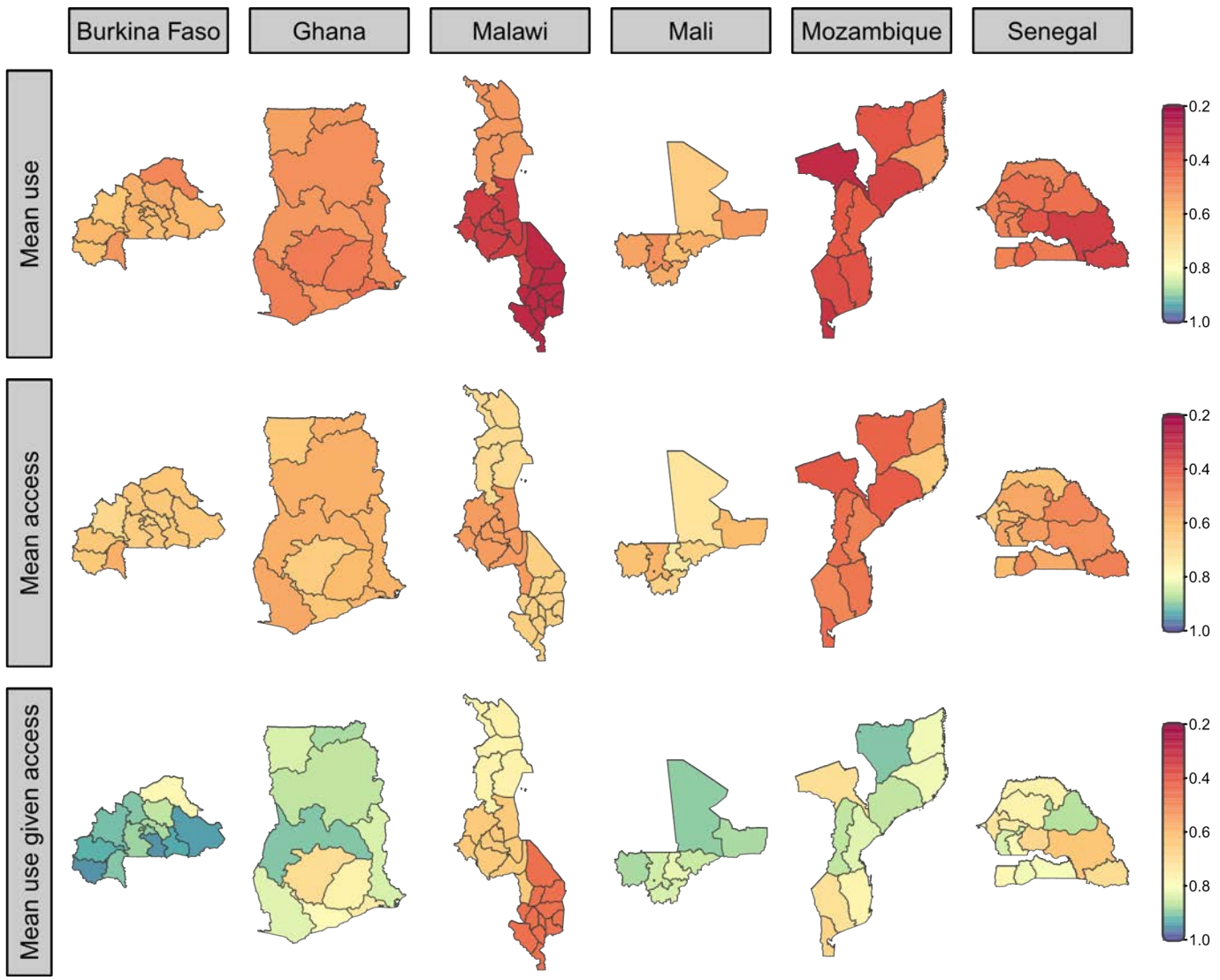




Campaign interval:	3-year	2-year
Overall mean use:	47%	55%



Campaign interval:	3-year	2-year
Overall mean use:	47%	55%
Overall mean access:	60%	67%



Campaign interval:	3-year	2-year
Overall mean use:	47%	55%
Overall mean access:	60%	67%
Overall mean use given access:	77%	89%

MRC Centre for Global Infectious Disease Analysis IMPERIAL

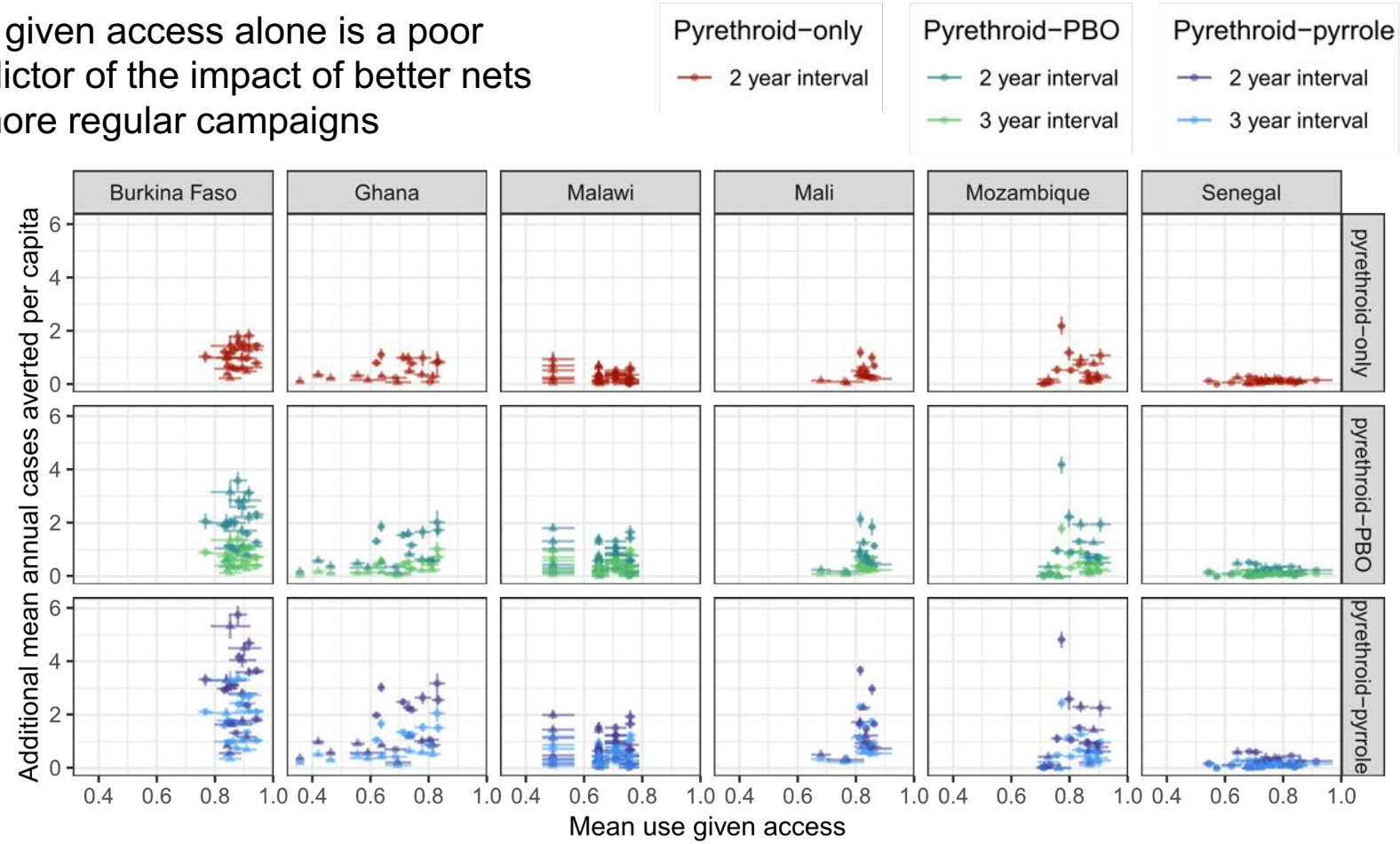
- Universal coverage to optimal coverage
- Was universal coverage achievable with the status quo?
- How can optimal coverage now be achieved?
- Conclusions and final thoughts

Approaches to maximising impact

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

- Use given access alone is a poor predictor of the impact of better nets or more regular campaigns

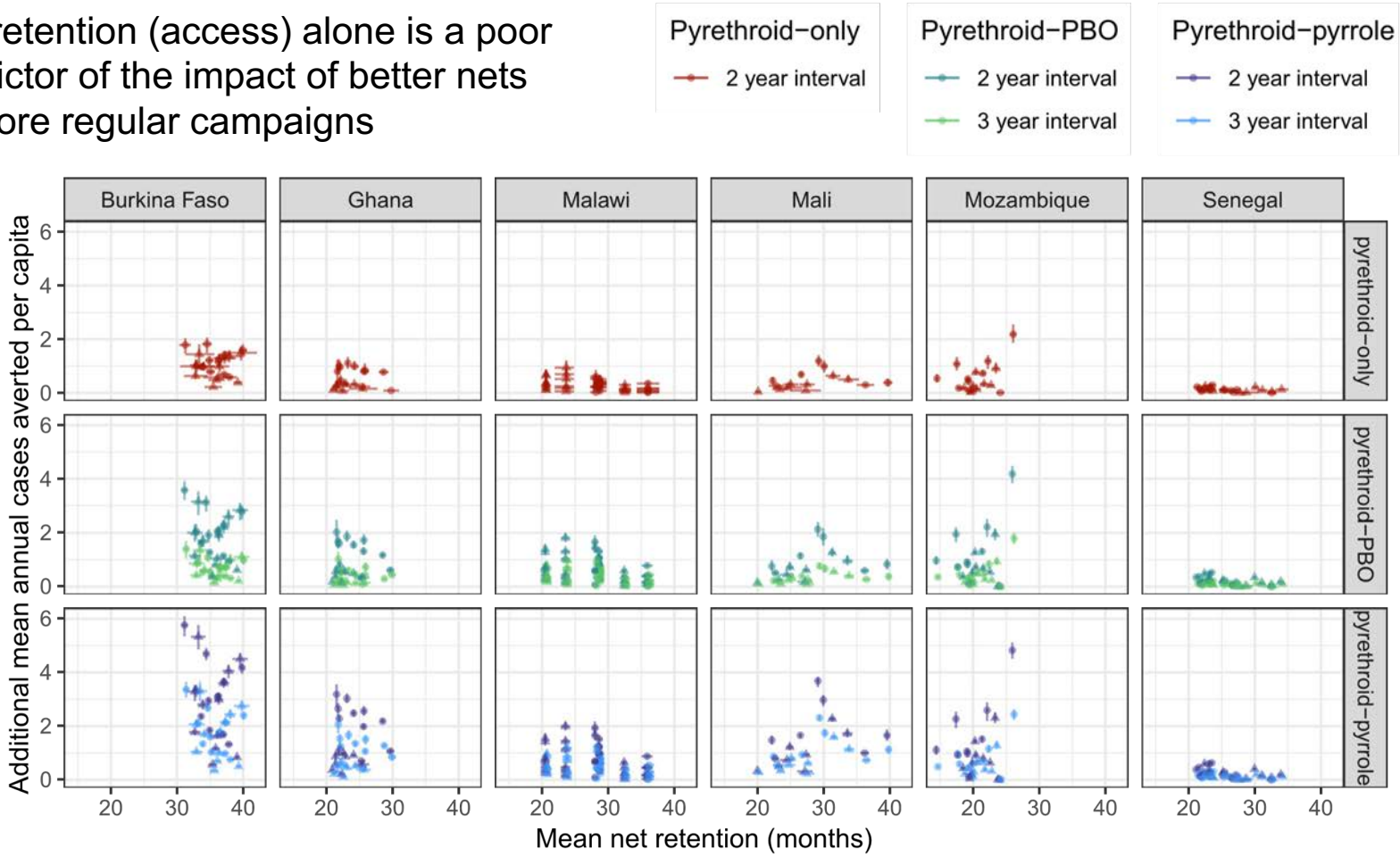


Approaches to maximising impact

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

- Net retention (access) alone is a poor predictor of the impact of better nets or more regular campaigns

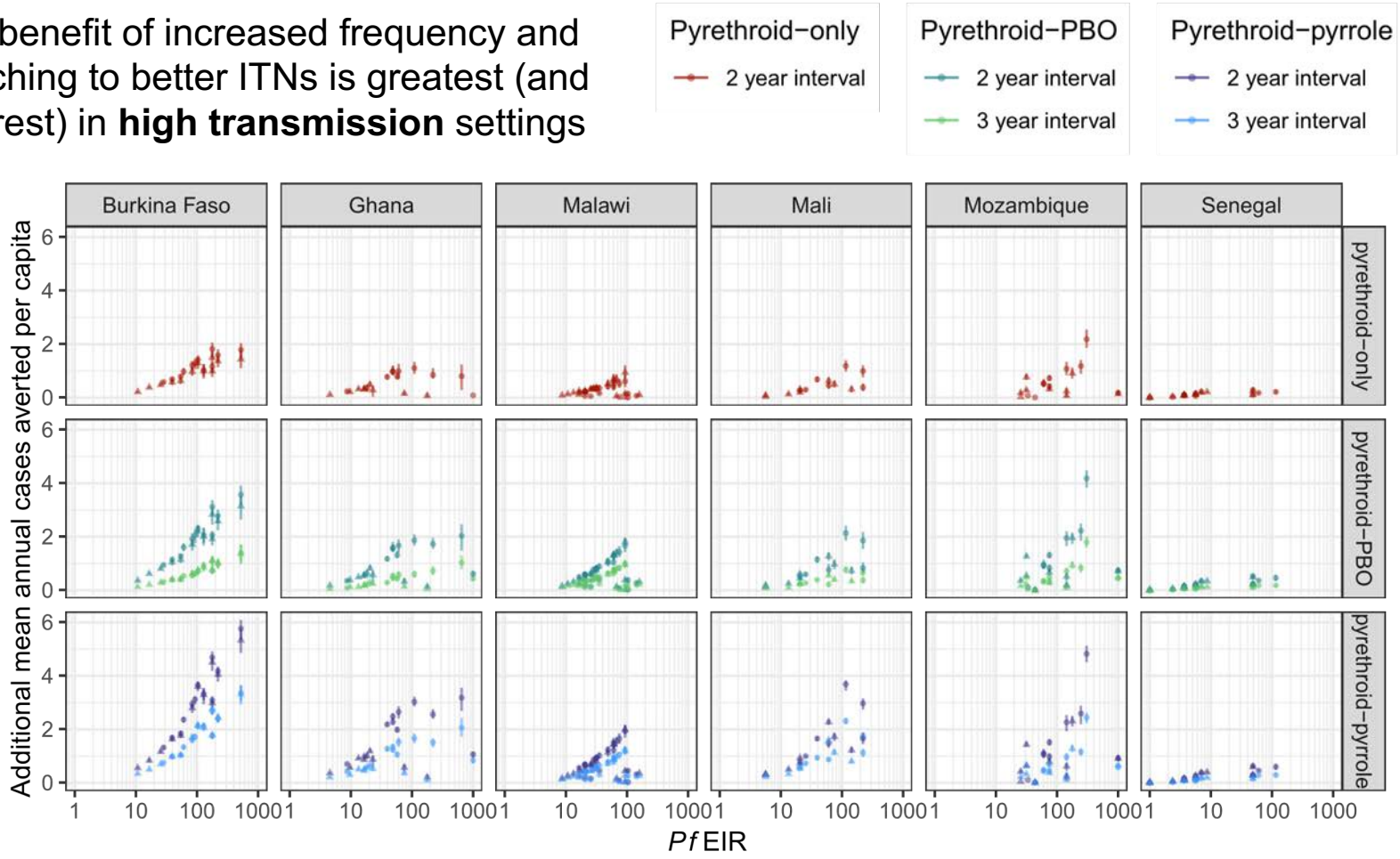


Approaches to maximising impact

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

- The benefit of increased frequency and switching to better ITNs is greatest (and clearest) in **high transmission** settings



Approaches to maximising impact

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

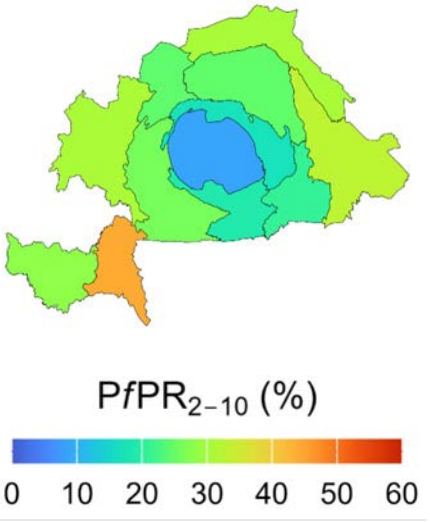
3-year pyrethroid-only campaigns:

62.9M [36.6, 82.3] ann. cases averted

Avg. ann. cost **$37.5M**

8.0M avg. ann. ITNs

Burkina Faso



Approaches to maximising impact

Continuous channels only

None | Urban | Rural | All

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

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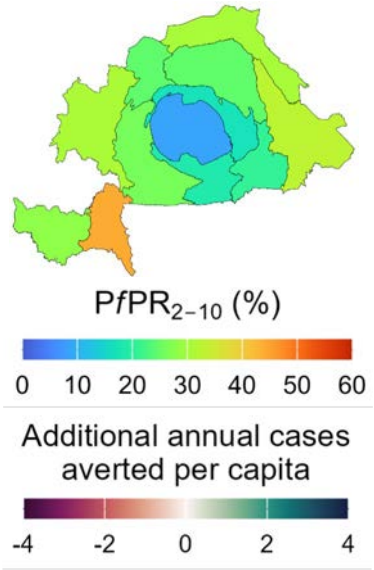

Approaches to maximising impact

Continuous channels only

None | Urban | Rural | All

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

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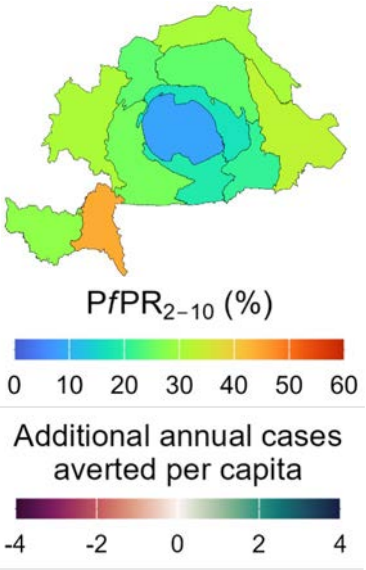

Pyrethroid-pyrrole strategy	Reduced coverage & equivalent cost
3-year campaign intervals	
M ann. cases averted Mean ann. ITNs/cost	**81.0** [52.2, 107] **7.1M / $37.5M**
2-year campaign intervals	
M ann. cases averted Mean ann. ITNs/cost	**96.0** [73.7, 124] **6.8M / $36.1M**

Approaches to maximising impact

Continuous channels only

None | Urban | Rural | All

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

3-year pyrethroid-only campaigns:

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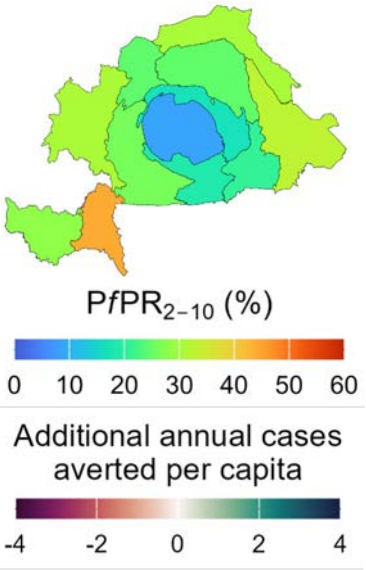

Pyrethroid-pyrrole strategy	Reduced coverage & equivalent cost	Equivalent coverage & increased cost
3-year campaign intervals		
M ann. cases averted Mean ann. ITNs/cost	**81.0** [52.2, 107] **7.1M / $37.5M**	**85.2** [55.0, 113] **8.0M / $42.5M**
2-year campaign intervals		
M ann. cases averted Mean ann. ITNs/cost	**96.0** [73.7, 124] **6.8M / $36.1M**	**122** [96.2, 147] **11.0M / $58.8M**

Approaches to maximising impact

Continuous channels only

None | Urban | Rural | All

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

3-year pyrethroid-only campaigns:

62.9M [36.6, 82.3] ann. cases averted

Avg. ann. cost **$37.5M**

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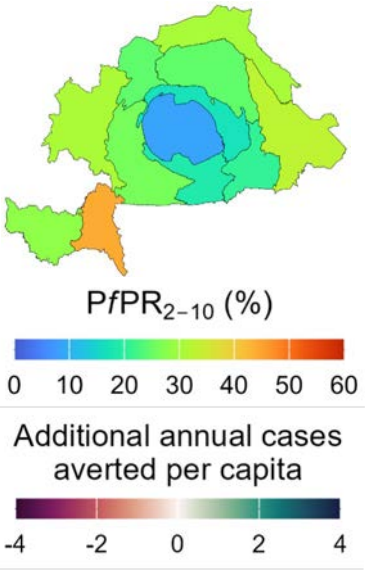

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Approaches to maximising impact

Continuous channels only

None | Urban | Rural | All

MRC Centre for Global Infectious Disease Analysis

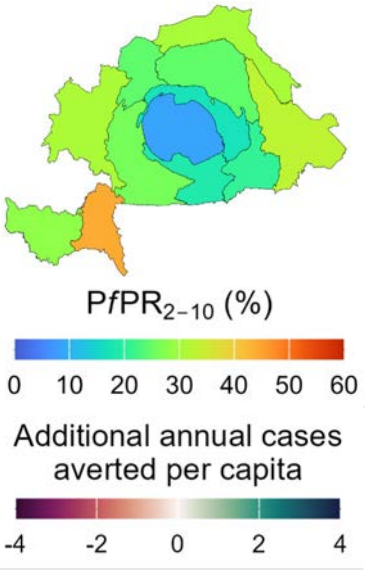
IMPERIAL

3-year pyrethroid-only campaigns:

62.9M [36.6, 82.3] ann. cases averted

Avg. ann. cost **$37.5M**

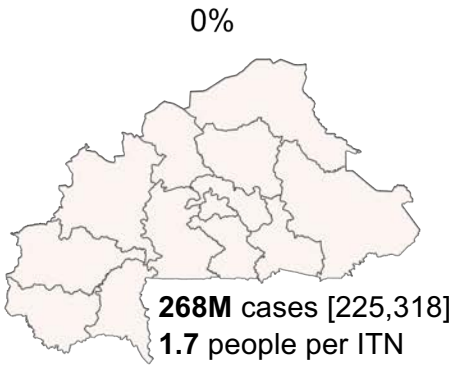
8.0M avg. ann. ITNs

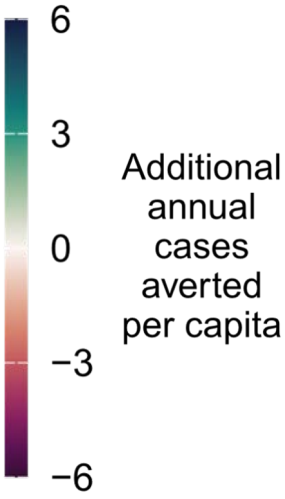


Pyrethroid-pyrrole strategy	Reduced coverage & equivalent cost	Equivalent coverage & increased cost	Equivalent coverage with deprioritisation
3-year campaign intervals			
M ann. cases averted Mean ann. ITNs/cost	**81.0** [52.2, 107] **7.1M / $37.5M**	**85.2** [55.0, 113] **8.0M / $42.5M**	**84.3** [71.4, 129] **6.7M / $35.7M**
2-year campaign intervals			
M ann. cases averted Mean ann. ITNs/cost	**96.0** [73.7, 124] **6.8M / $36.1M**	**122** [96.2, 147] **11.0M / $58.8M**	**107** [87.3, 180] **7.0M / $37.1M**

Change to budget:
(3-year intervals)

- 630k routine ITNs distributed annually in all scenarios
- Budget achieved by increasing campaign procurement ratios (people per ITN)





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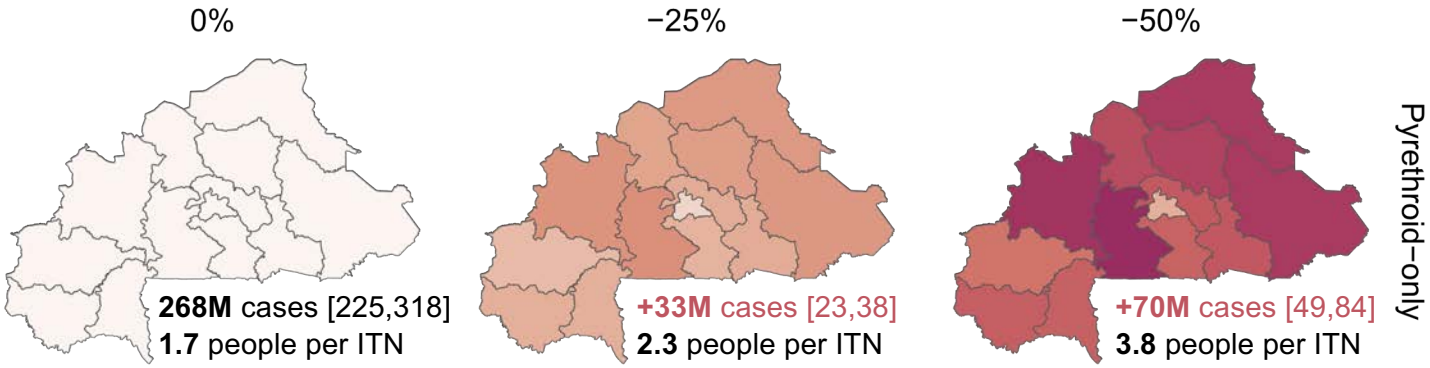

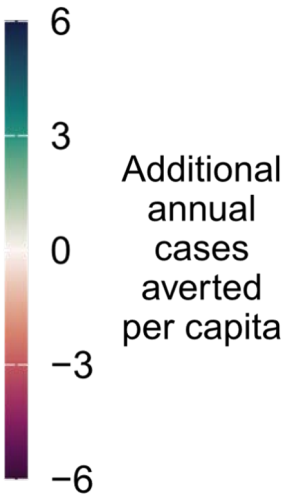

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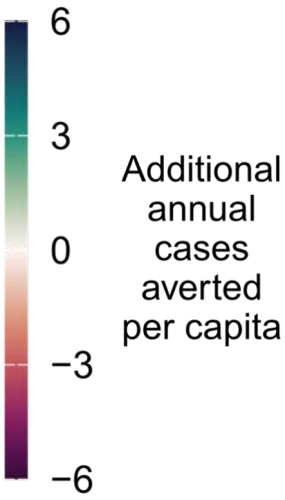

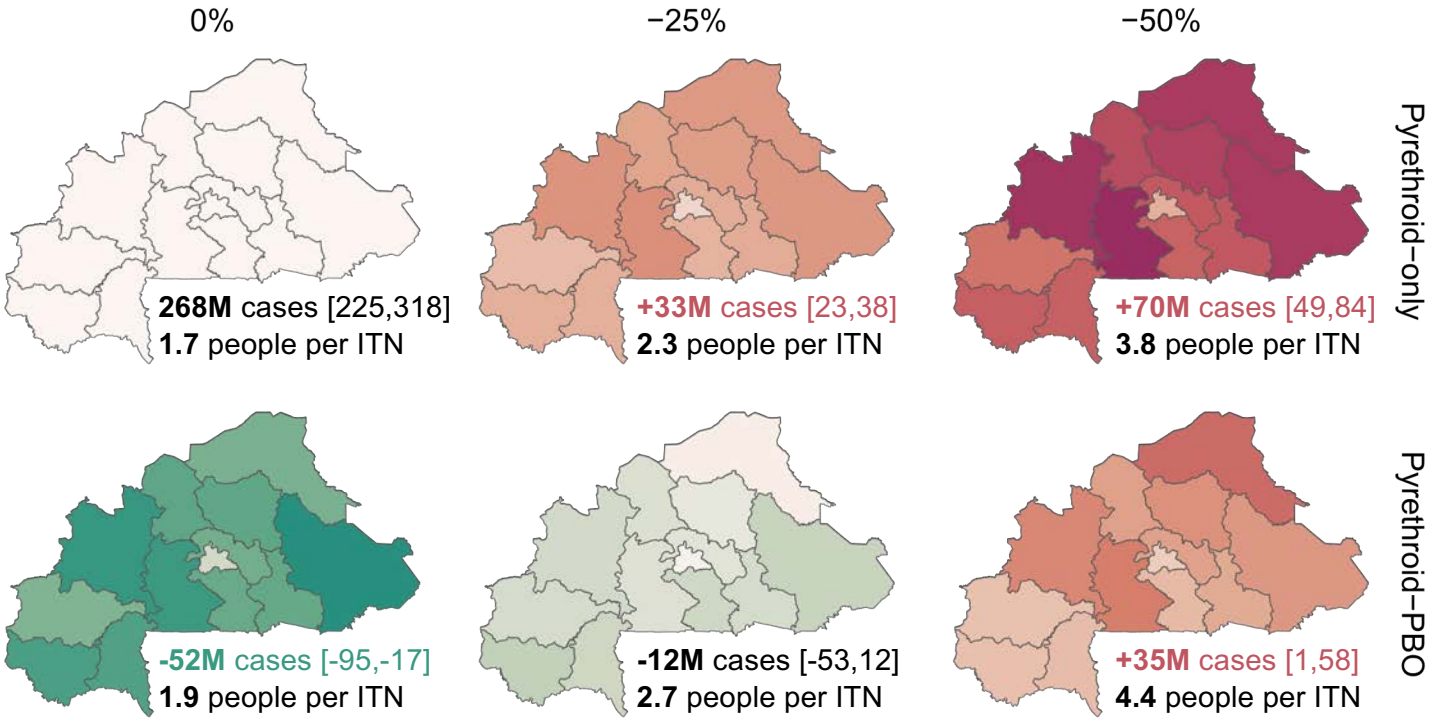

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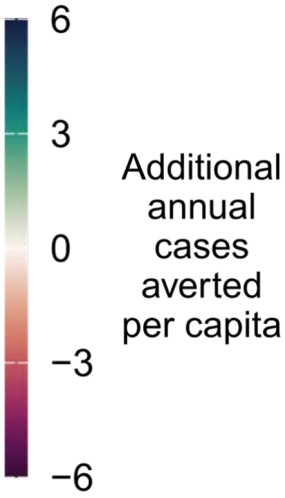
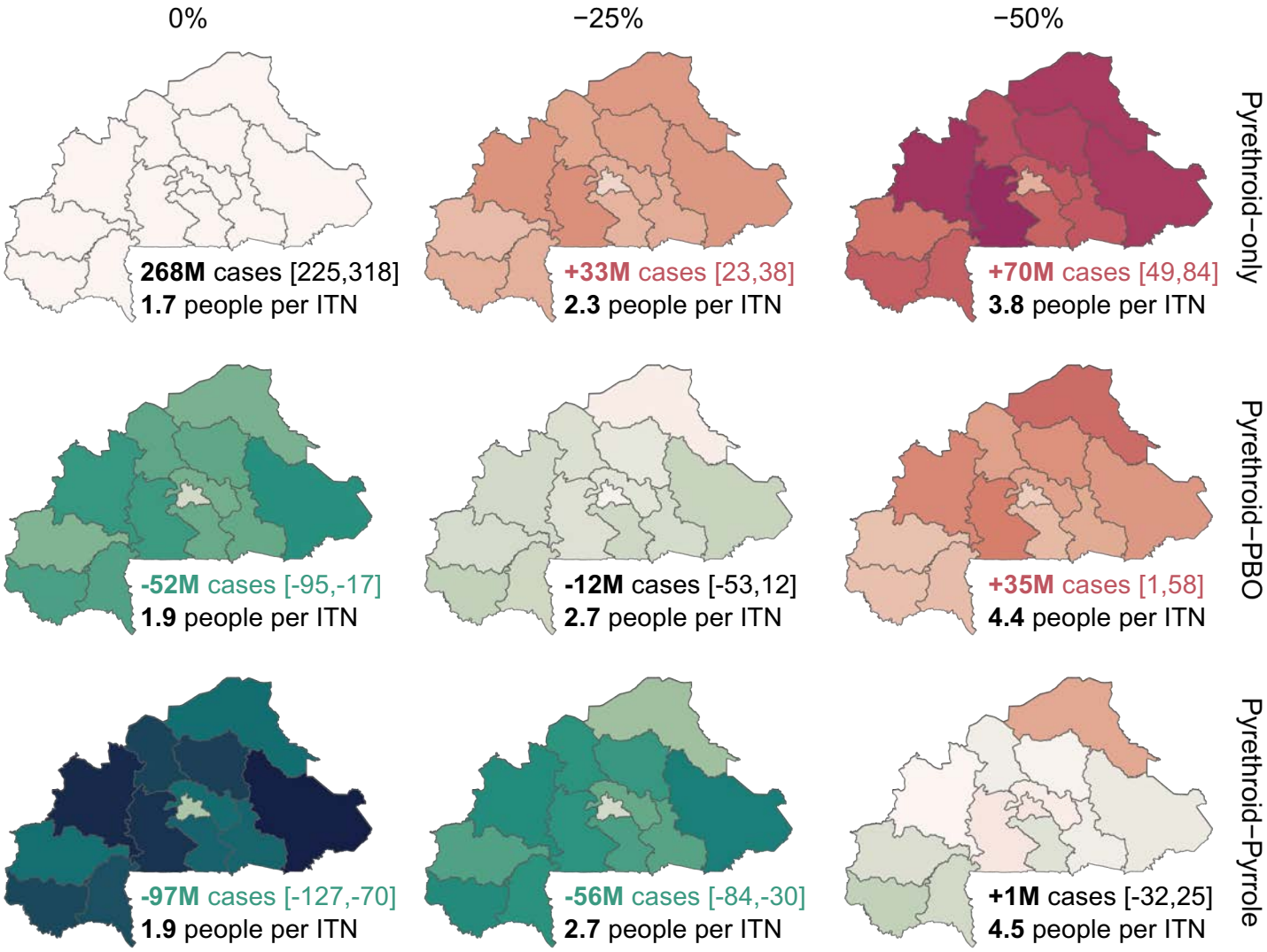
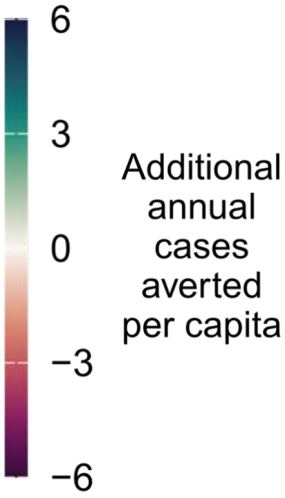
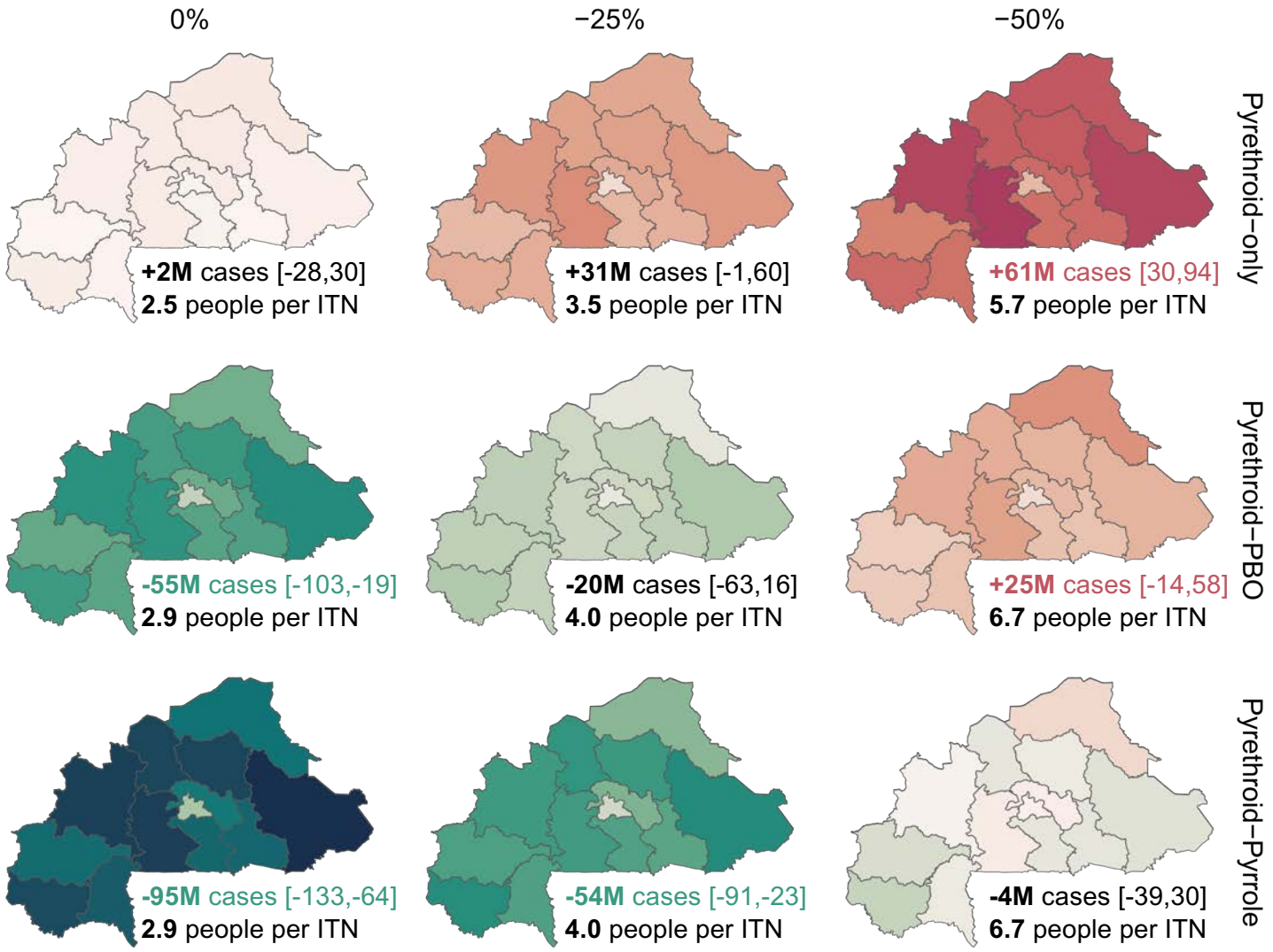




Change to budget:
(2-year intervals)

- 630k routine ITNs distributed annually in all scenarios
- Budget achieved by increasing campaign procurement ratios (people per ITN)





MRC Centre for Global Infectious Disease Analysis IMPERIAL

- Universal coverage to optimal coverage
- Was universal coverage achievable with the status quo?
- How can optimal coverage now be achieved?
- Conclusions and final thoughts

Summary

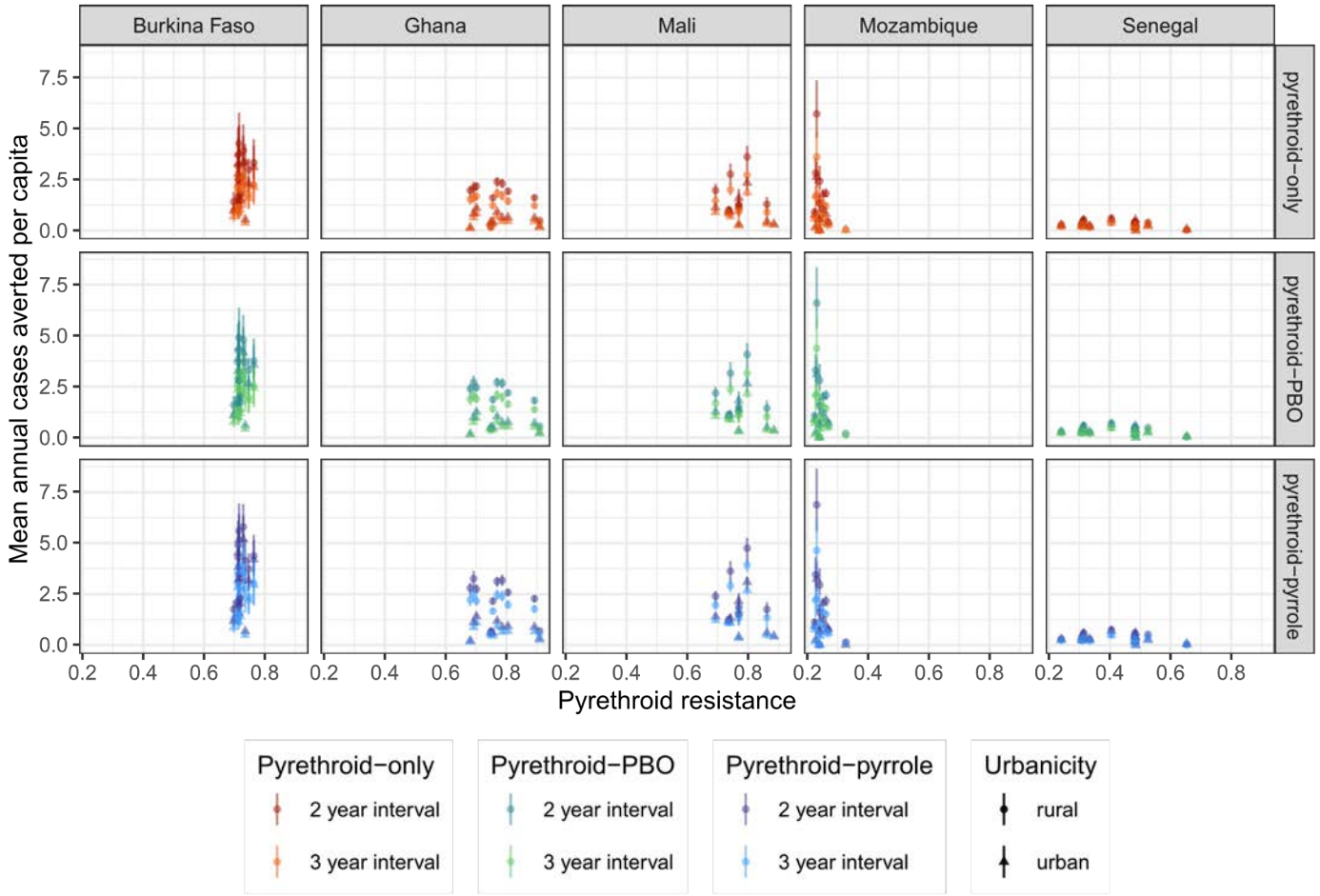
MRC Centre for Global Infectious Disease Analysis IMPERIAL

- **Universal coverage was not consistently achieved** anywhere but was (briefly) achieved after mass campaigns in most regions
- **Transmission intensity** best predicts the impact of switching to more regular campaigns and/or better ITNs
- **Prioritising higher-transmission** settings may be optimal under fixed budgets in some settings
- Switching to **fewer, but better nets** could avert:
  - **More cases** for the **same cost**
  - **Similar numbers of cases** under **reduced budgets**

Pyrethroid resistance is also a poor predictor of impact

MRC Centre for Global Infectious Disease Analysis

IMPERIAL

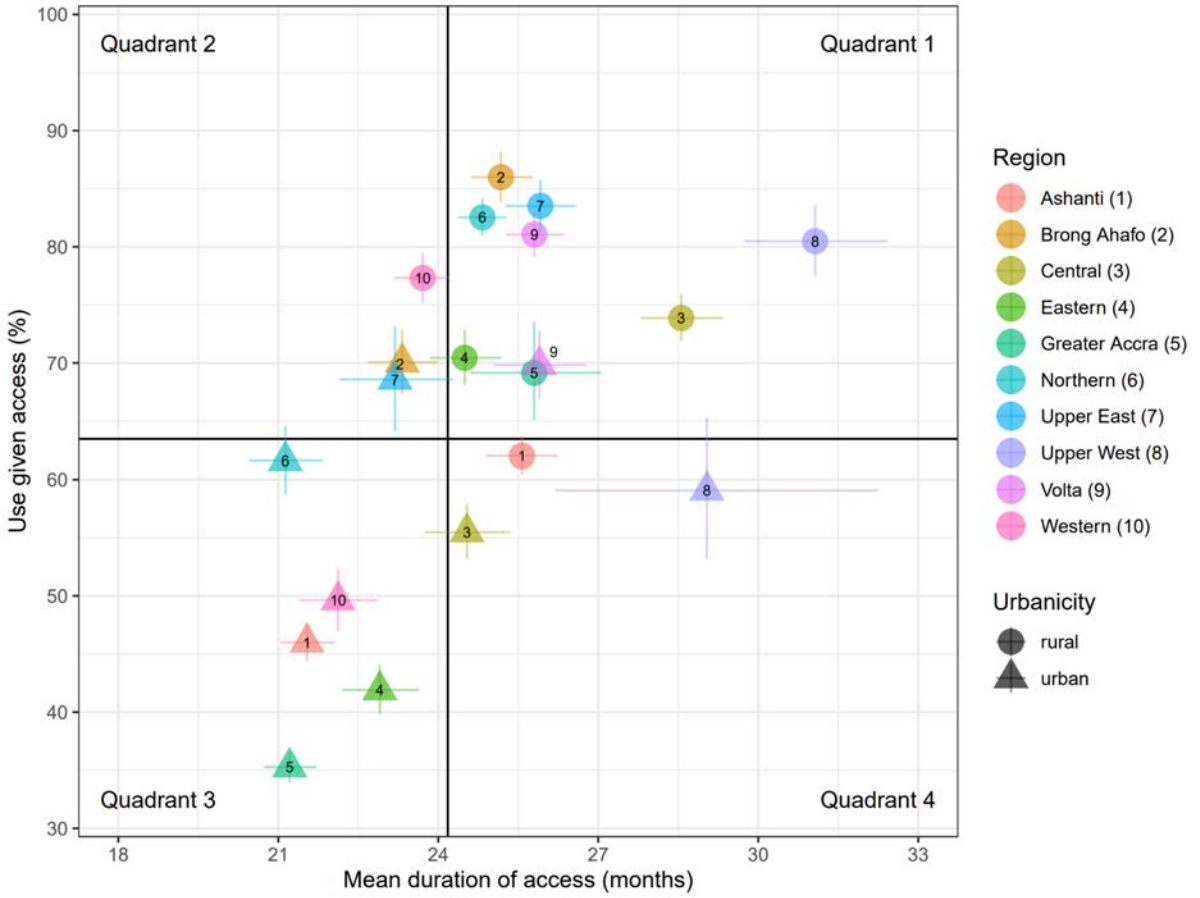


Considerations for subnational tailoring: ITN retention and use given access

MRC Centre for Global Infectious Disease Analysis

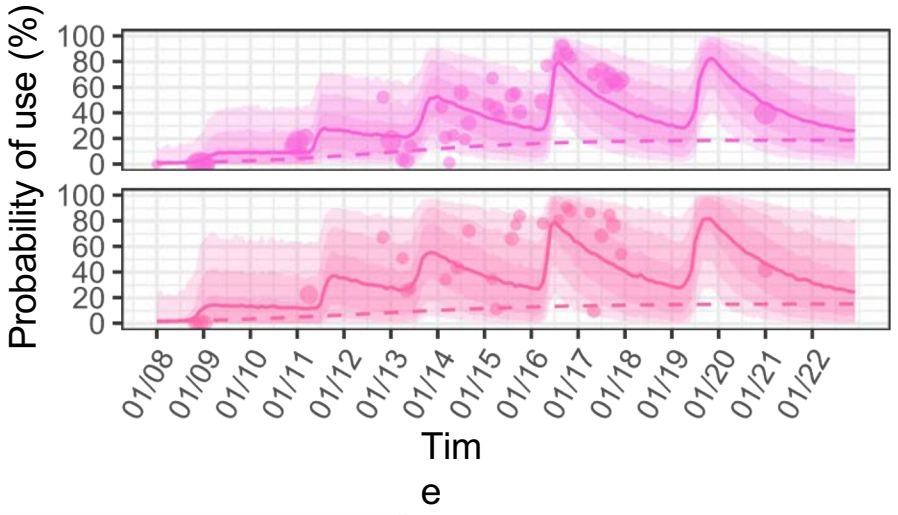
IMPERIAL

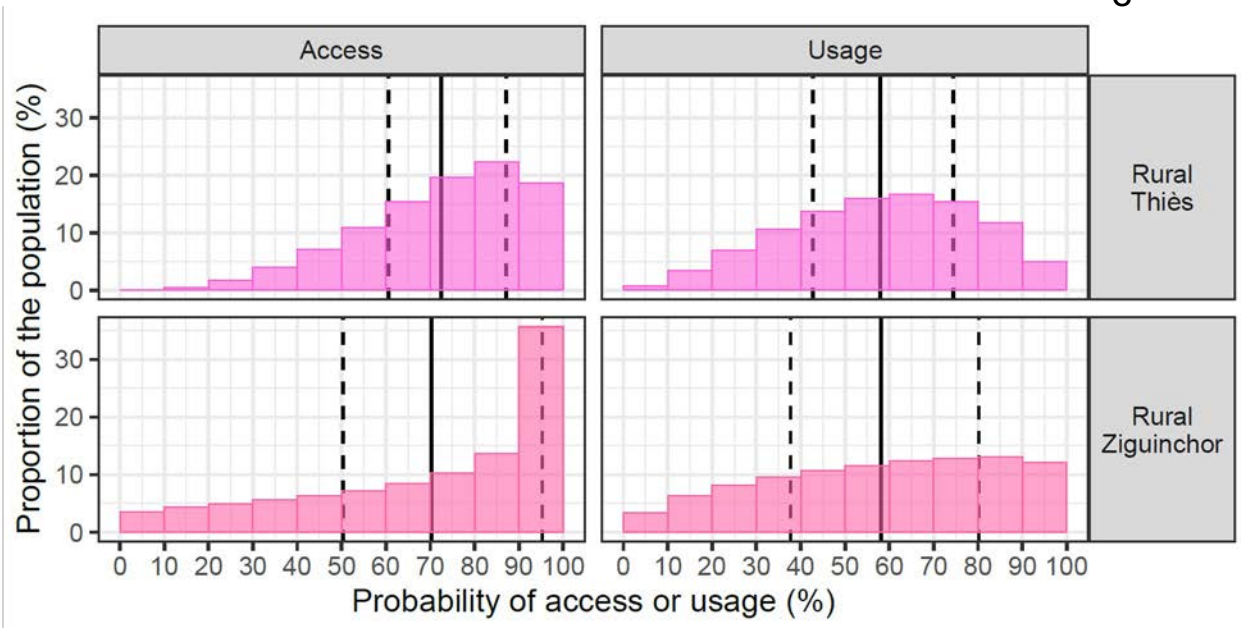
- In areas of low use given access (quadrants 3 and 4) social behavioural change interventions **may** improve overall use
- Prioritising more regular distribution of ITNs in areas of **high retention** (quadrants 1 and 4) may be more **effective**, but more regular campaigns when **retention is low** (quadrants 2 and 3) may be **more equitable**



Considerations for subnational tailoring: equity of use and access

- Overall use of ITNs is **not evenly distributed** within sub-national regions
- Overall use of ITNs is more unevenly distributed in some regions than others

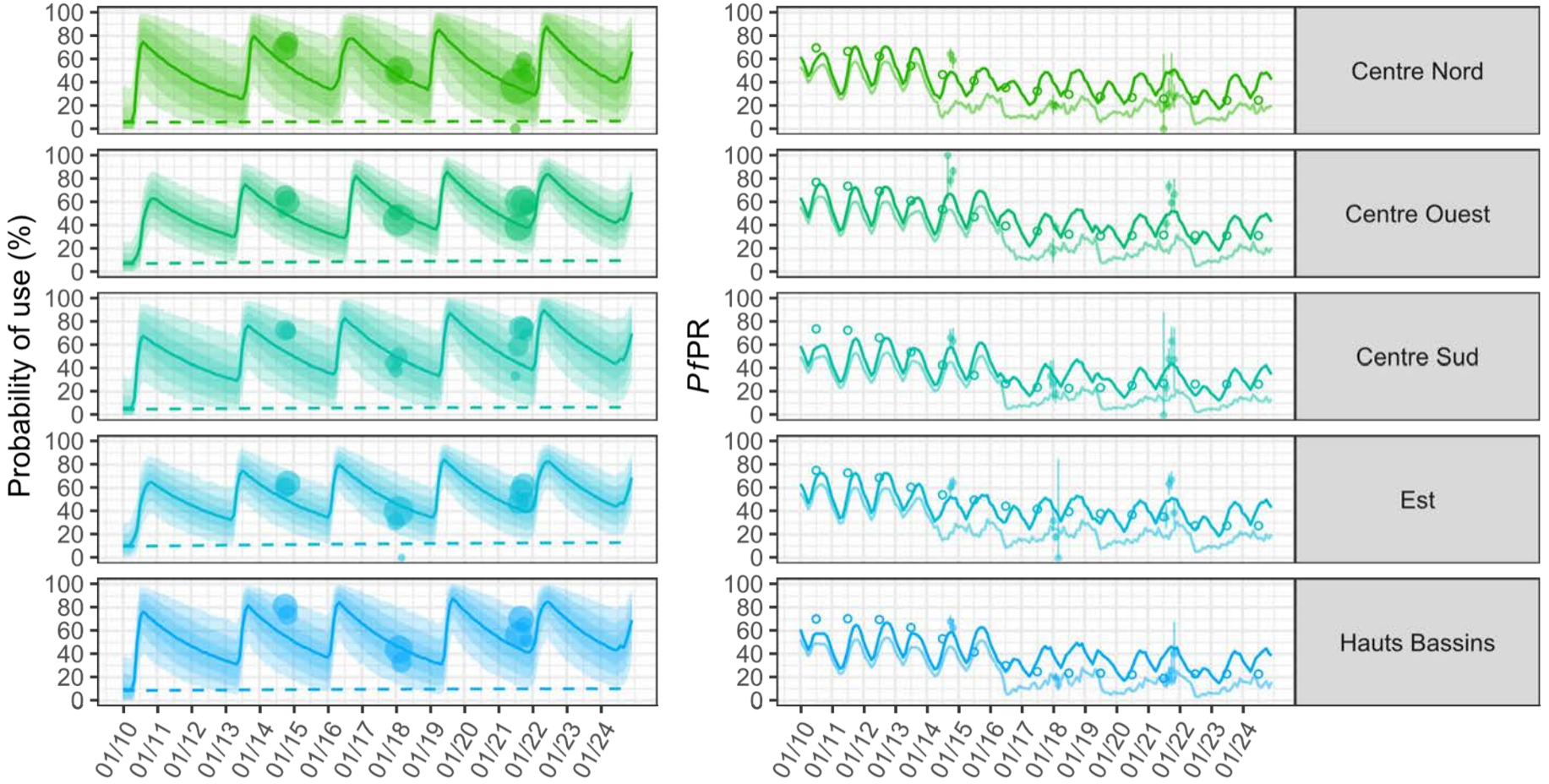




Considerations for campaign intervals: *Pf*PR rebounds over time

MRC Centre for Global Infectious Disease Analysis

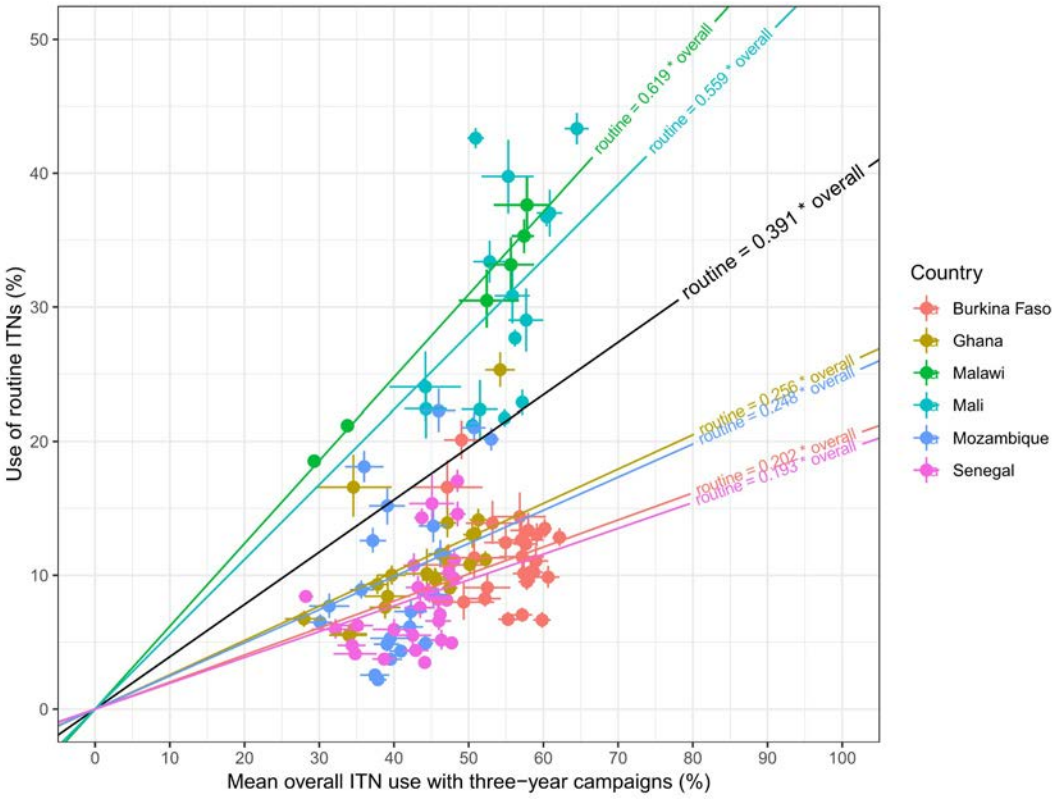
IMPERIAL

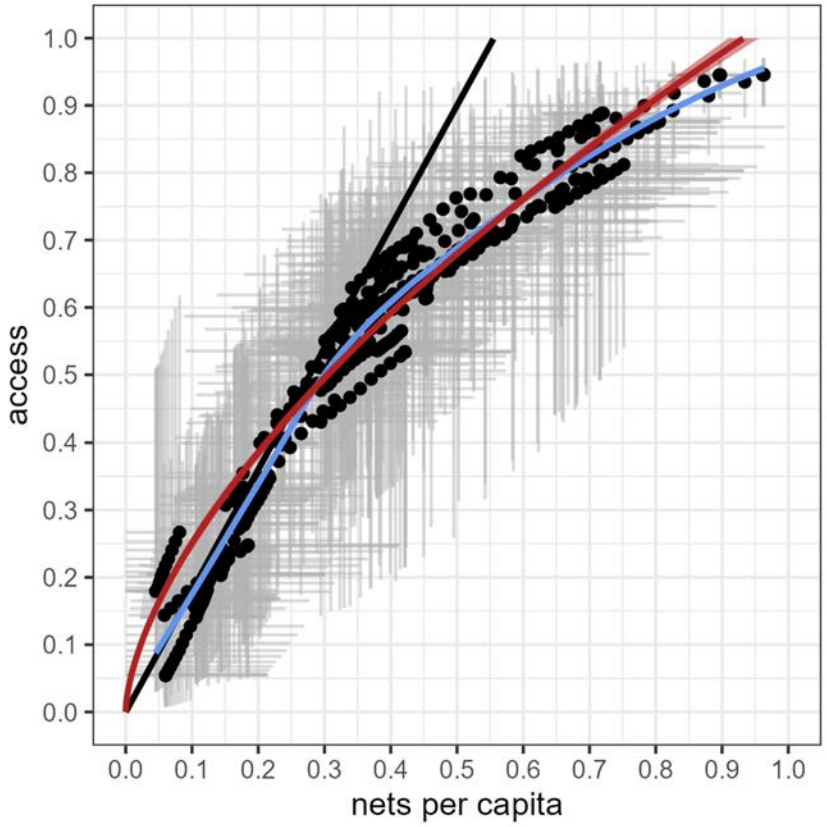


Considerations for distribution channels: 39% of used ITNs from routine channels

MRC Centre for Global Infectious Disease Analysis

IMPERIAL





Adapted from: Bertozzi-Villa, A. et al. Nature Communications 12, 1-

GOVERNMENT OF SIERRA LEONE

Ministry of Health

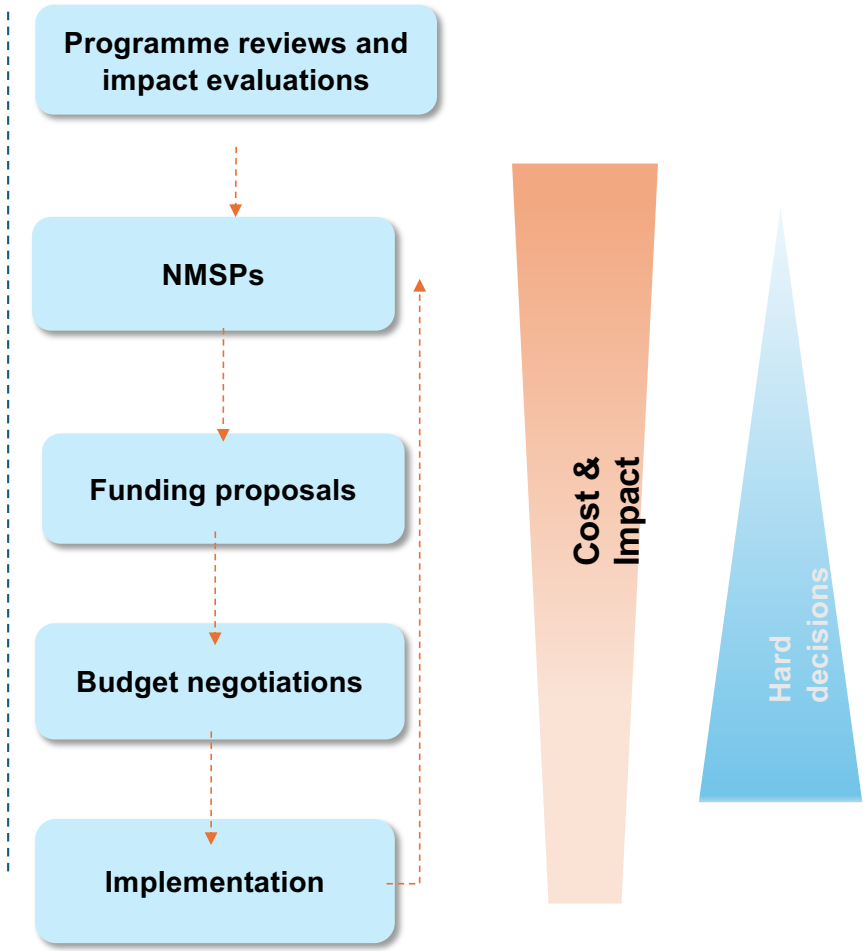
Sierra Leone

National Malaria Control Programme

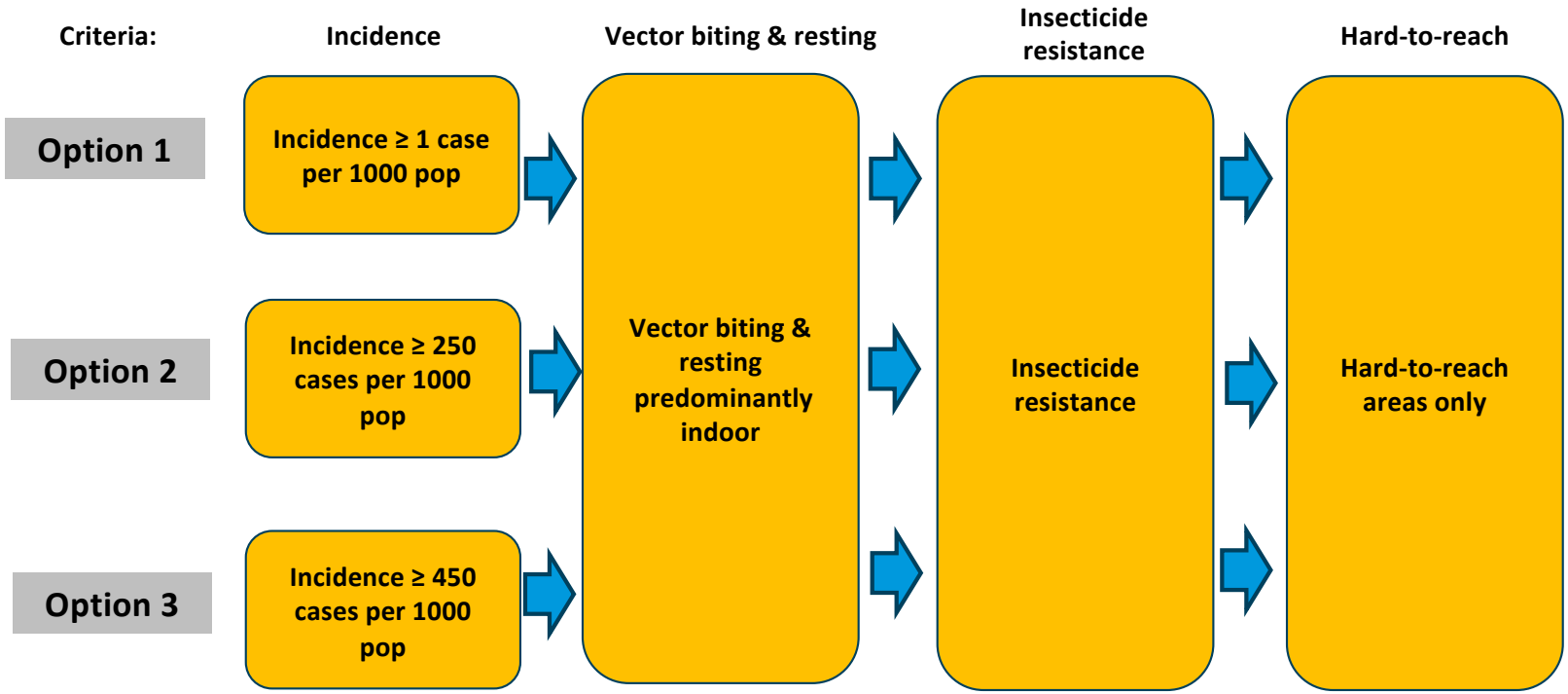
Alliance for Malaria Prevention (AMP)
Nairobi, Kenya, 7-11 March 2025

Background

- The National Malaria Control Programme (NMCP) has increasingly embraced data-driven approaches to enhance the effectiveness of malaria interventions.
- This shift towards utilizing data for decision-making involves several key processes and strategies:
- Stratification of Malaria Risks and Determinants: This involves collecting and analysis of epidemiological, entomological, environmental and intervention data
- With a comprehensive understanding of malaria risks and determinants, we develop criteria to target intervention strategies.
- Among these strategies include deploying choice of insecticide-treated nets, mode of ITN distribution and conducting indoor residual spraying

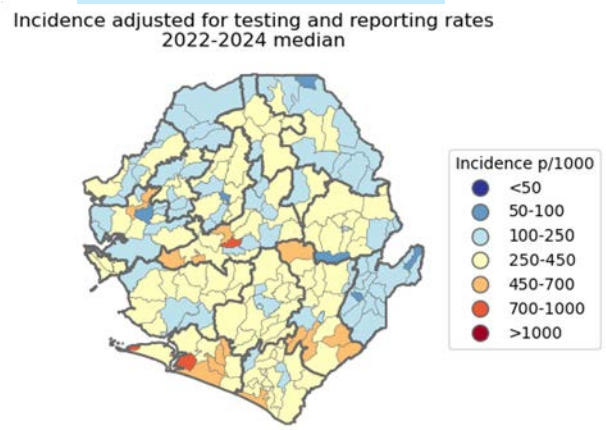


IRS targeting – options for criteria

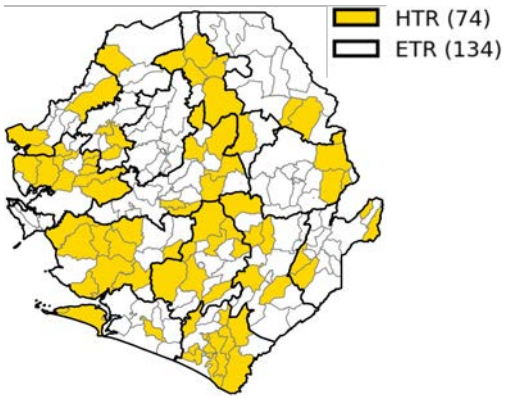


IRS targeting- Data review

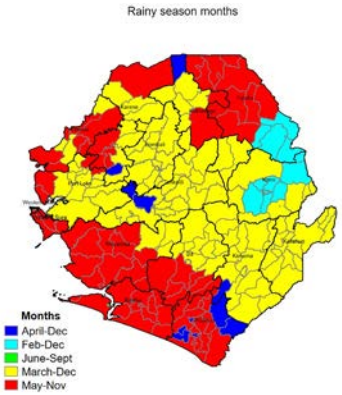
Malaria transmission



Hard to reach areas



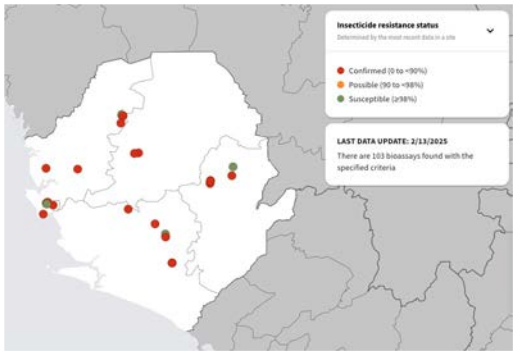
Rainfall seasonality (to inform timing)



Vector biting and resting

Widespread predominantly indoor biting and resting

Insecticide resistance



Organization

IRS targeting – application of criteria

Incidence

Vector biting & resting

Insecticide Resistance

Hard to reach

Incidence ≥ 1 case per 1000 pop

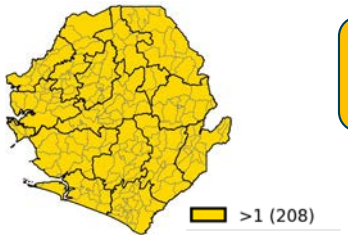
Vector biting & resting indoor

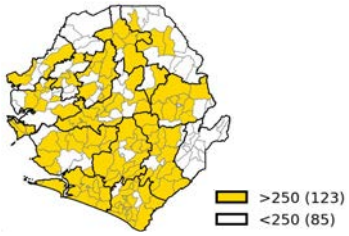
Insecticide resistance

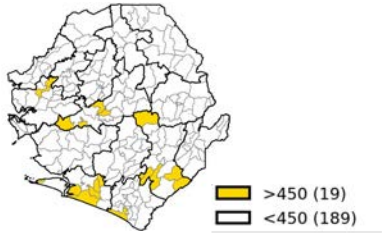
Hard-to-reach areas only

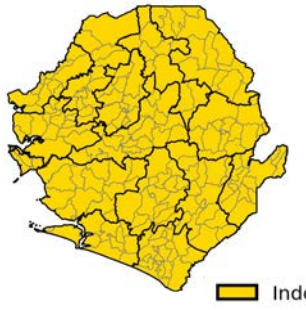
Incidence ≥ 250 cases per 1000 pop

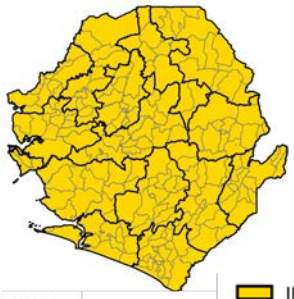
Incidence ≥ 450 cases per 1000 pop

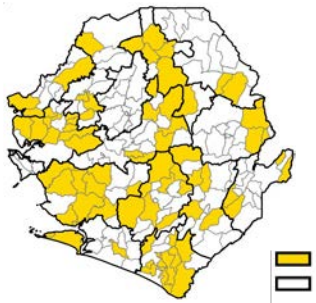








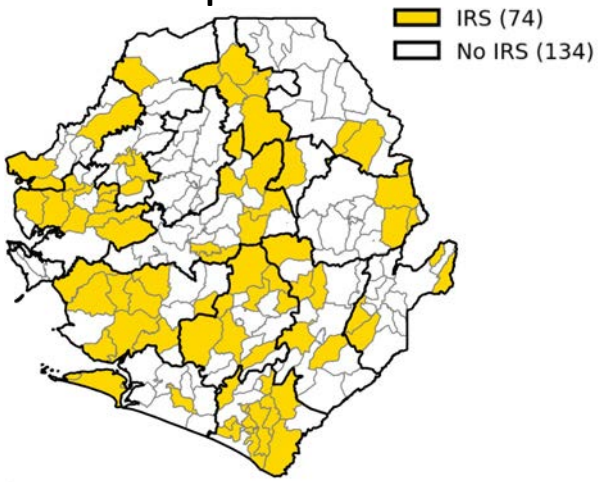




Organization

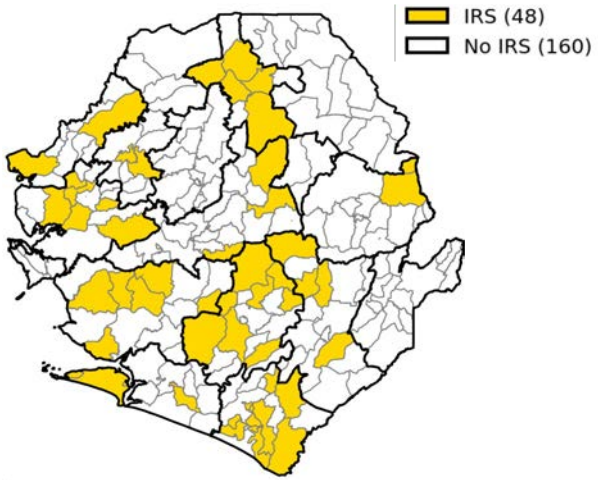
Option to select IRS targeting

Option 1



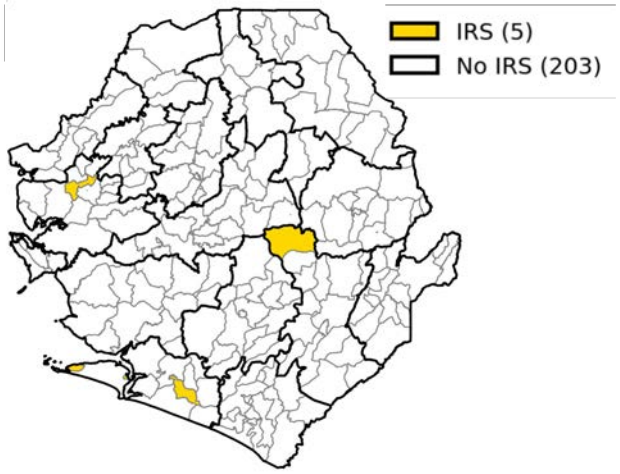
- **incidence >= 1 case per 1000 pop**
- **Vector biting & resting predominantly indoor**
- **insecticide resistant**
- **Hard-to-reach**

Option 2



- **incidence >250 cases per 1000 pop**
- **Vector biting & resting predominantly indoor**
- **insecticide resistant**
- **Hard-to-reach**

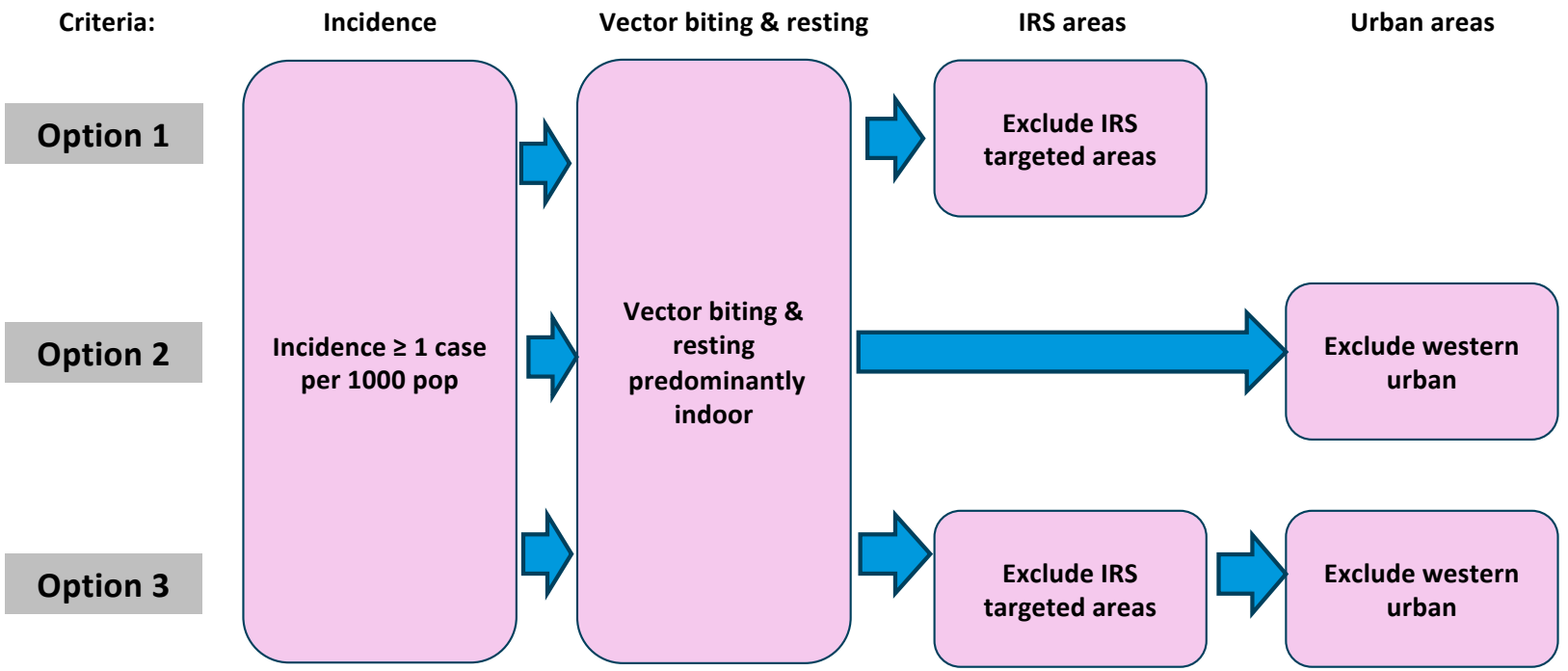
Option 3



- **incidence >450 cases per 1000 pop**
- **Vector biting & resting predominantly indoor**
- **insecticide resistant**
- **Hard-to-reach**

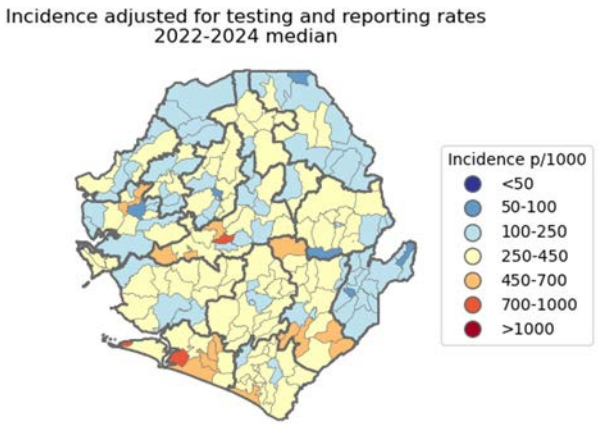
Organization

Mass ITNs targeting – options for criteria



Mass ITN campaigns-data review

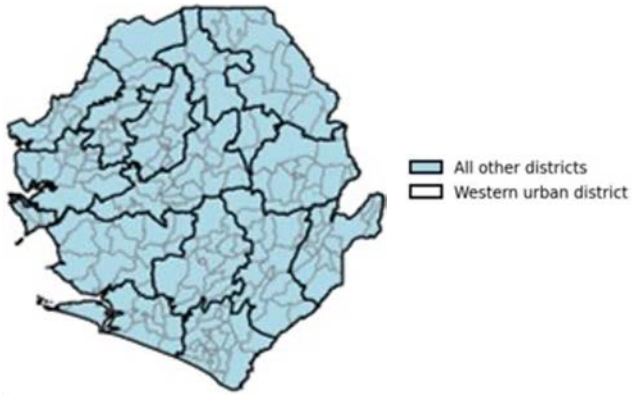
Malaria transmission



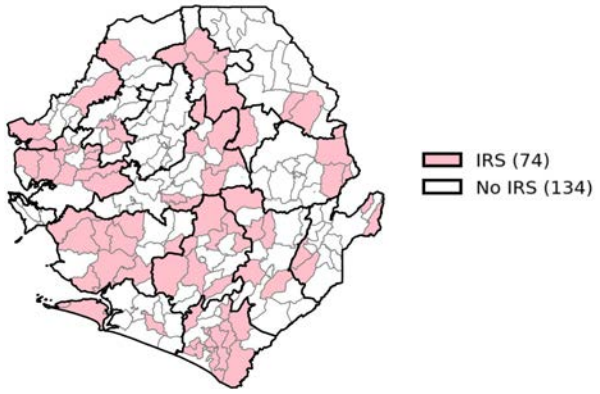
Vector biting and resting

Widespread predominantly indoor biting and resting

Urban areas

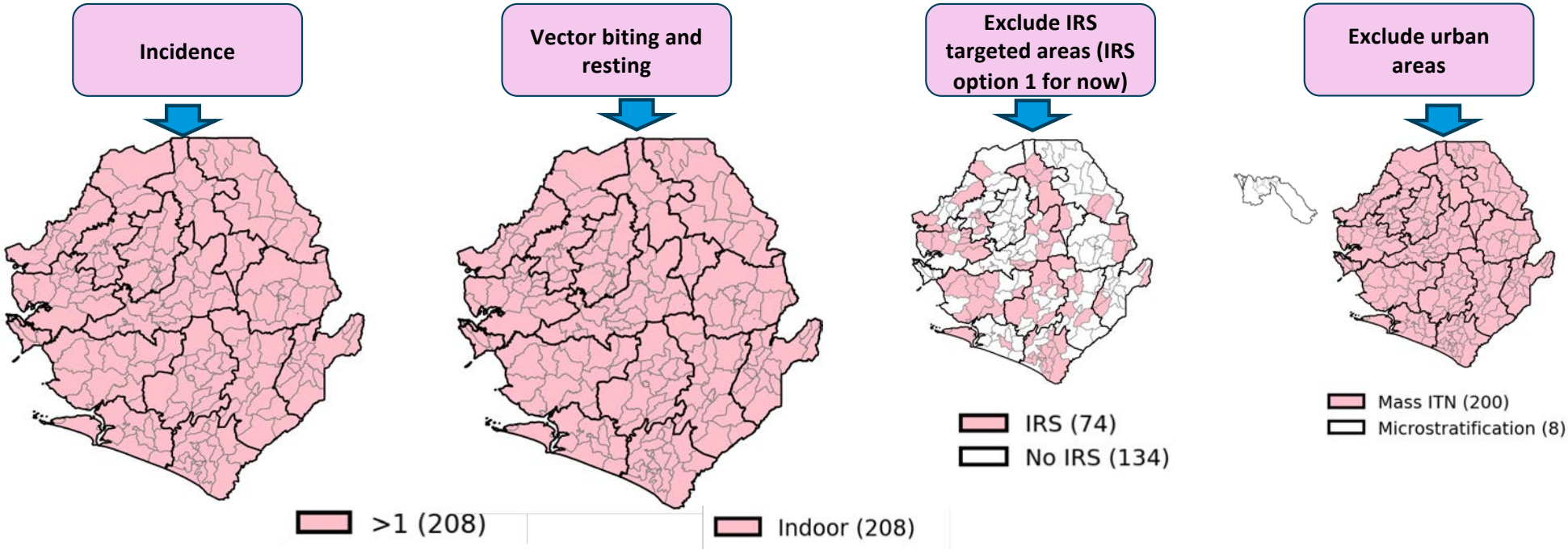


Areas targeted for IRS (IRS option 1 for placeholder)



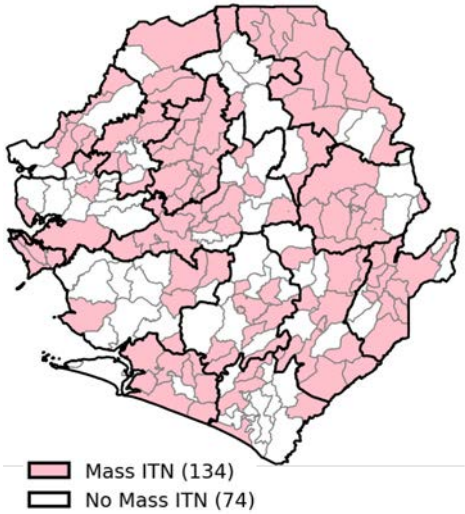
Organization

Mass ITN targeting – application of criteria



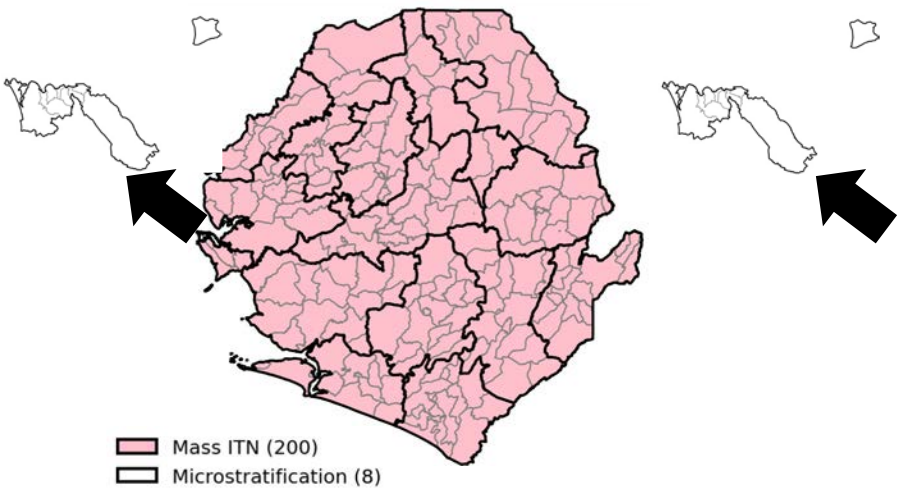
Option to select mass ITN targeting

Option 1



- incidence >= 1 case per 1000 pop
- Vector biting & resting predominantly indoor
- Exclude IRS targeted area

Option 2



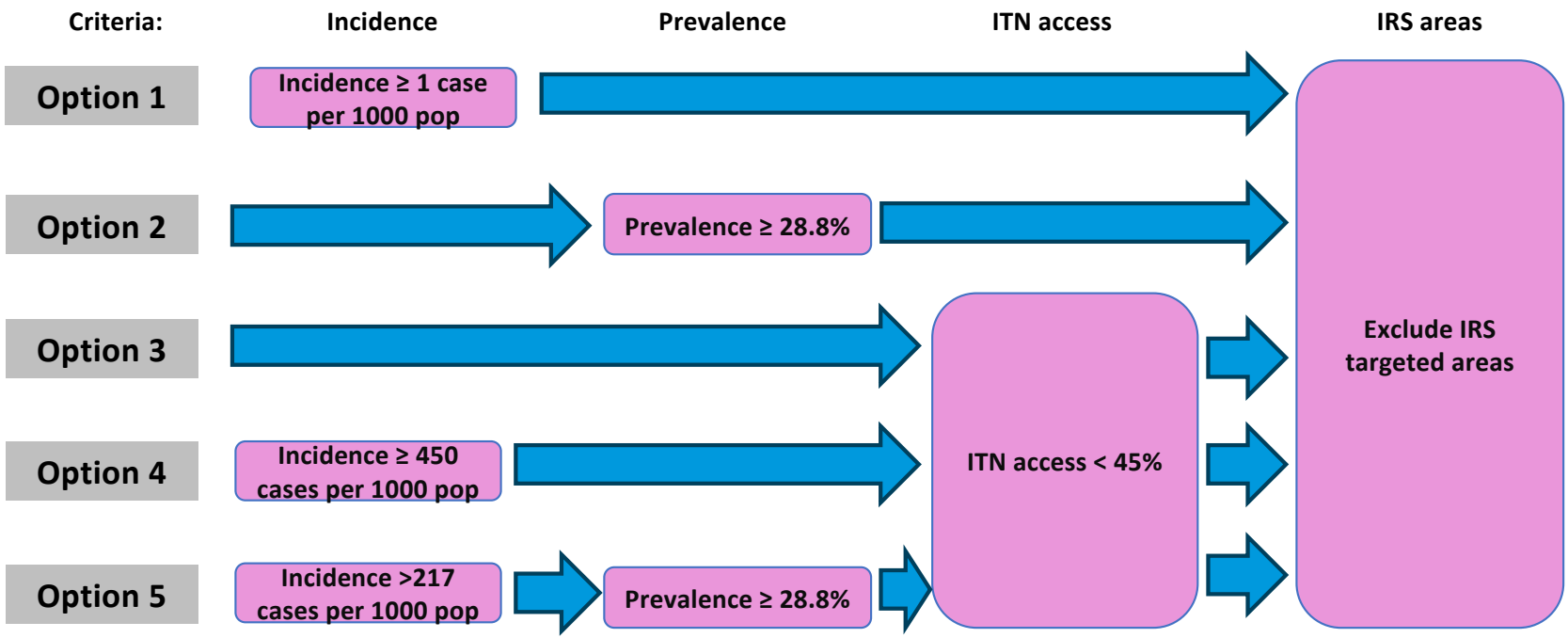
- incidence >= 1 case per 1000 pop
- Vector biting & resting predominantly indoor
- Exclude western urban

Option 3

- incidence >= 1 case per 1000 pop
- Vector biting & resting predominantly indoor
- Exclude western urban & IRS targeted areas

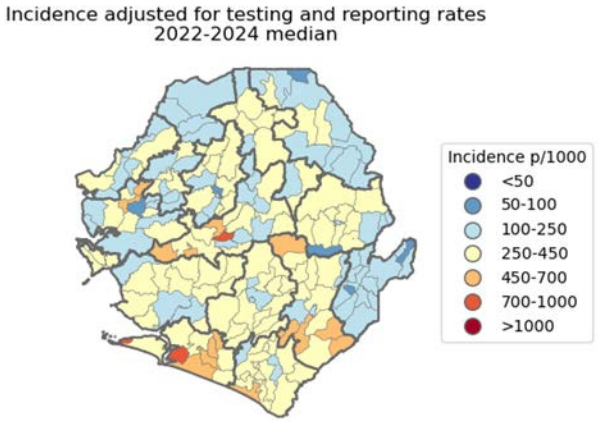
Organization

SBD targeting (Considering IRS) – options for criteria

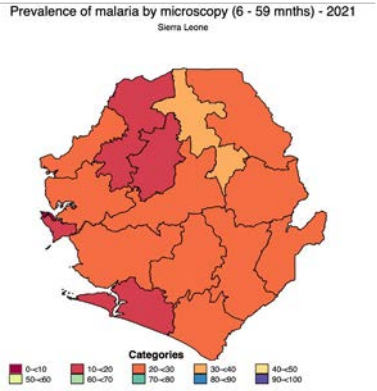


SBD targeting – data review

Malaria transmission

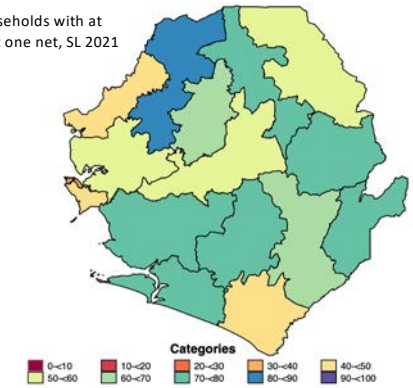


Malaria prevalence

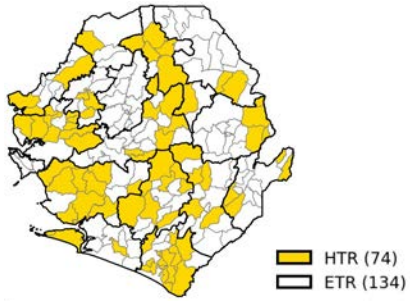


ITN access

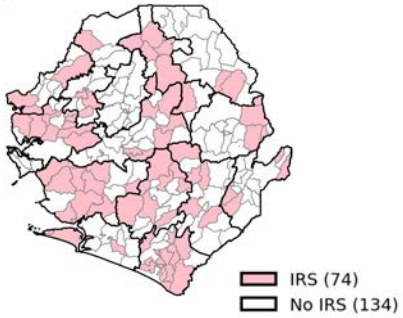
Households with at least one net, SL 2021 MIS



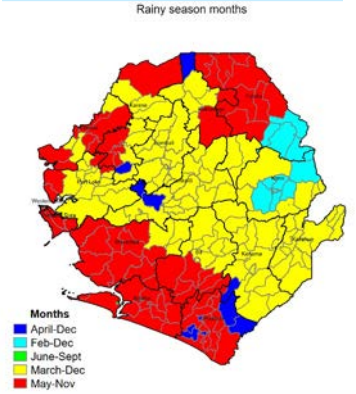
Hard to reach areas



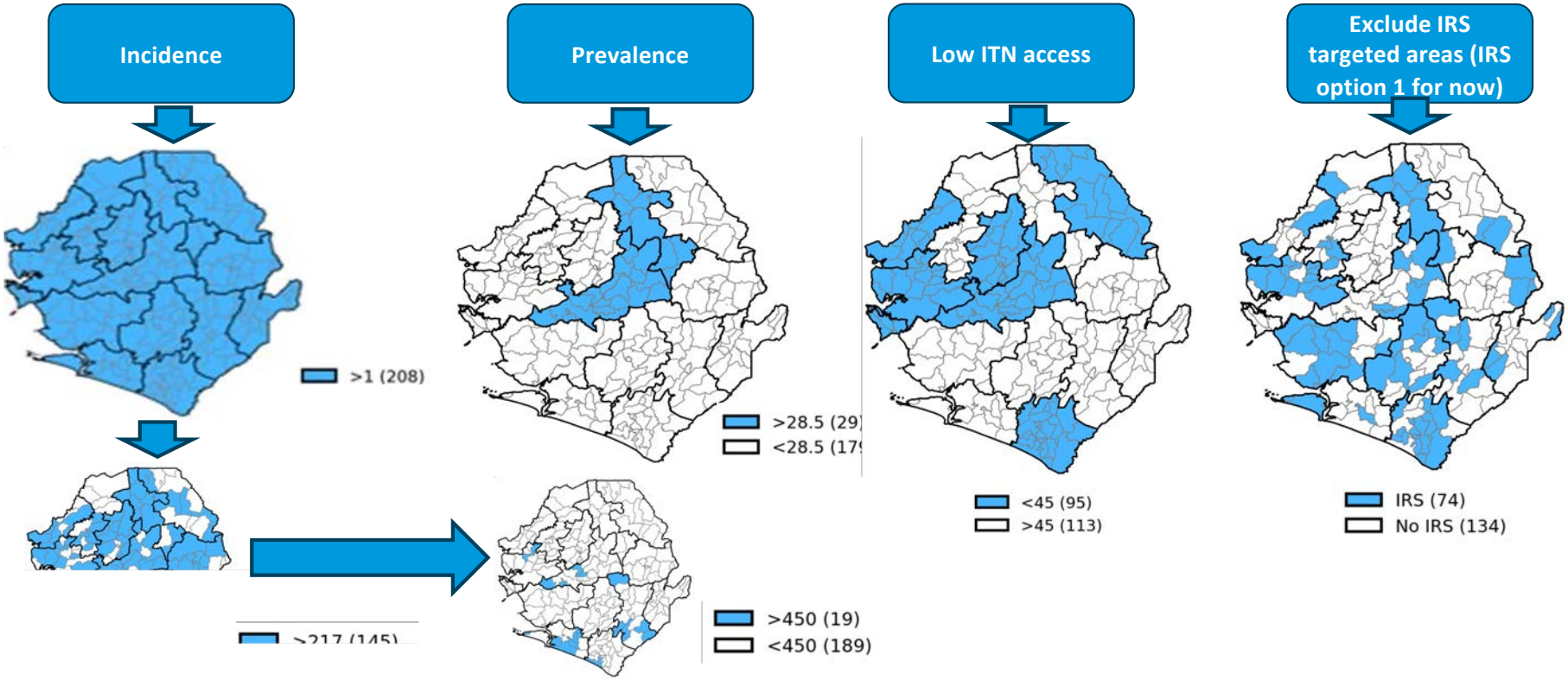
Areas targeted for IRS (IRS option 1 for placeholder)



Rainfall seasonality (to inform timing)



SBD targeting – application of criteria

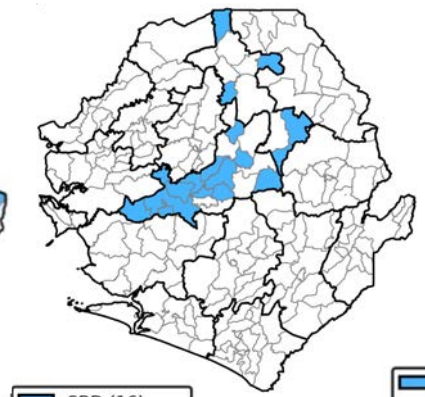


Option to select SBD option- using IRS option 1 as place holder

1st option

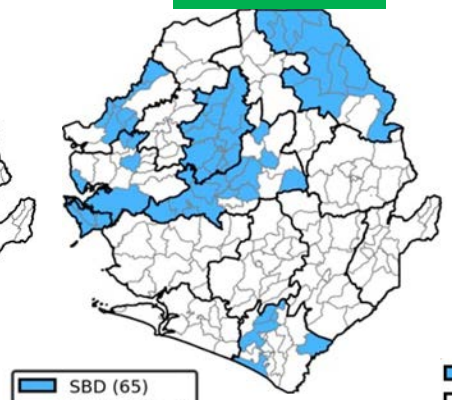
- Incidence >450 case per 1000 pop
- Exclude IRS targeted area

2nd option



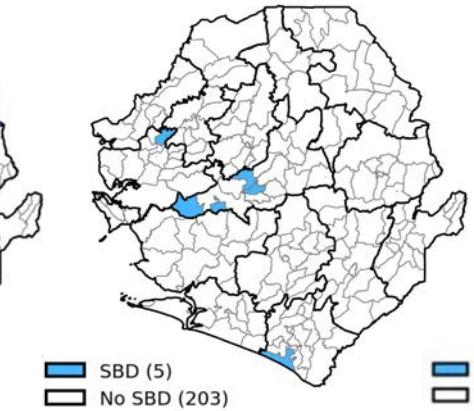
- Malaria prevalence > 28.5%
- Exclude IRS targeted area

3rd option



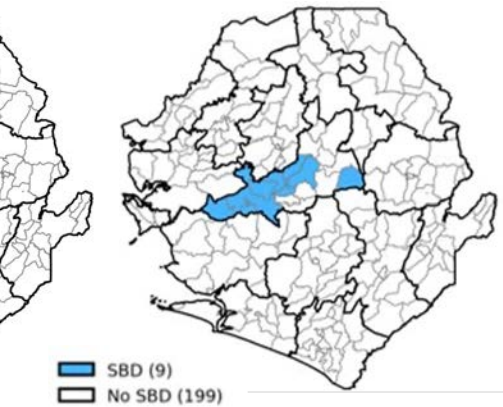
- No criteria on incidence or prevalence
- ITN access <45%
- Exclude IRS targeted area

4th option



- Incidence >450 per 1000 pop
- ITN access <45%
- Exclude IRS targeted area

5th option

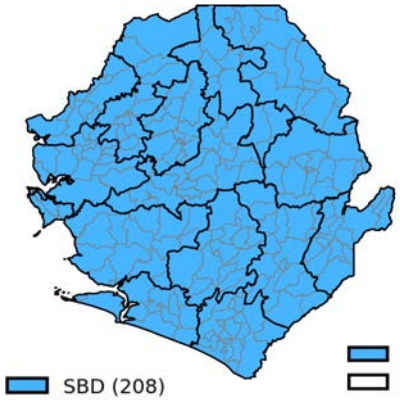


- Incidence >217 per 1000 pop
- Prevalence >28.5
- ITN access <45%
- Exclude IRS targeted area

World Health Organization

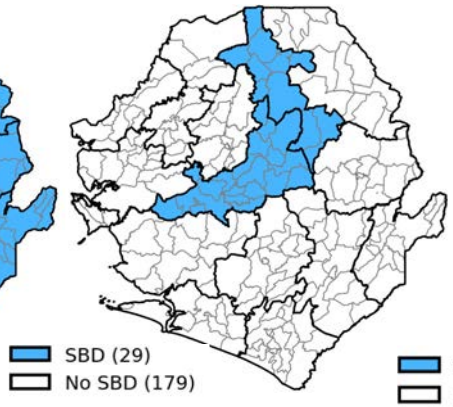
Option to select SBD option (Not considering IRS)

1st option



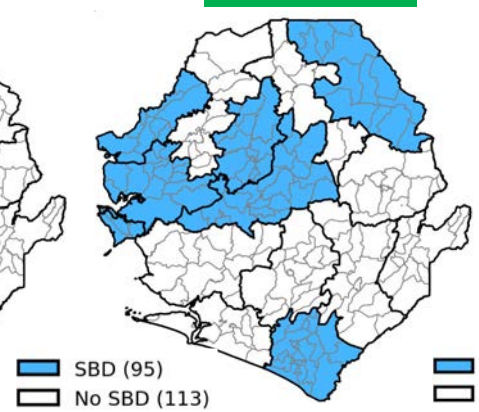
- Incidence >450 case per 1000 pop

2nd option



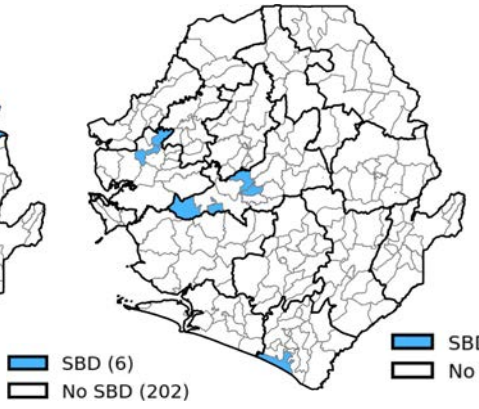
- Malaria prevalence > 28.5%

3rd option



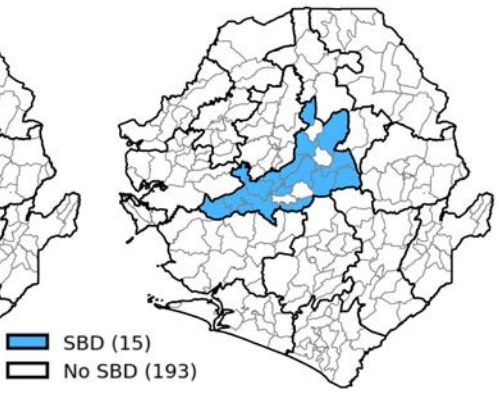
- No criteria on incidence or prevalence
- ITN access <45%

4th option



- Incidence >450 per 1000 pop
- ITN access <45%

5th option



- Incidence >217 per 1000 pop
- Prevalence >28.5
- ITN access <45%

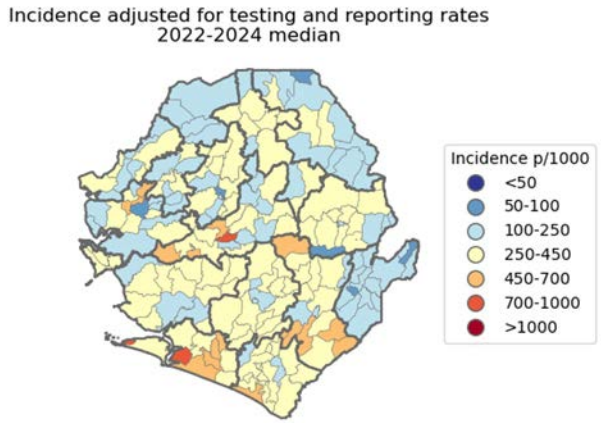
Routine ITN targeting at ANC & EPI

Criteria

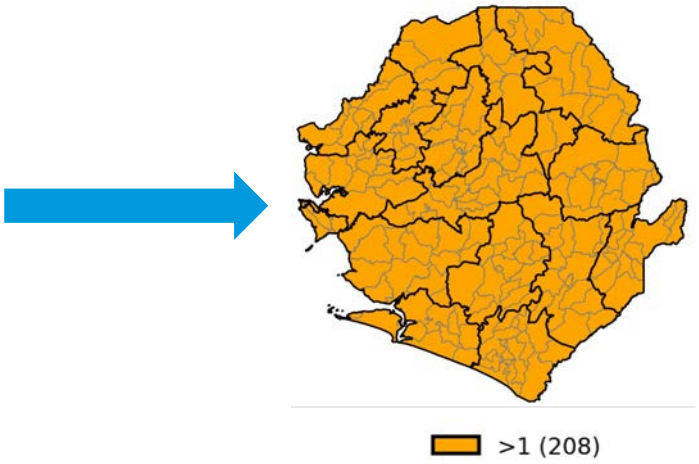
Transmission (Incidence)

Malaria transmission > 1 cases per 1000 population

Data



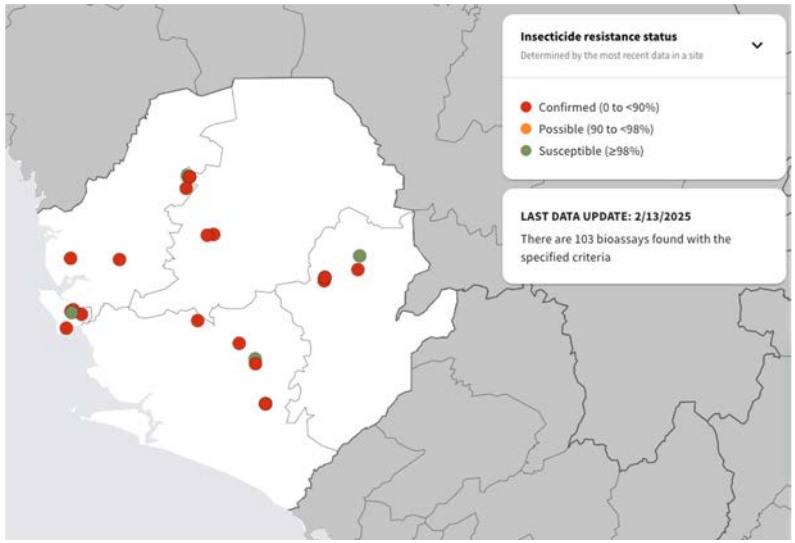
Targeting: chiefdoms for ANC and EPI distribution

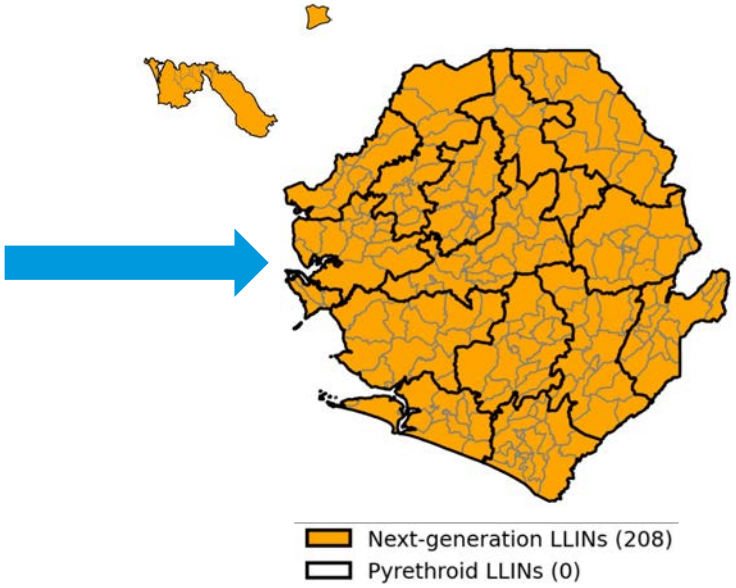


Choice of nets – PRELIMINARY targeting to be validated

Insecticide resistance

<90% mosquito mortality 24h after pyrethroid exposure





List of partners

1. WHO Global Malaria Programme, Geneva
2. WHO Country Office and Local Consultant
3. WHO AFRO (Regional and MCAT)
4. Clinton Health Access Initiative (CHAI), Country and HQ
5. Northwestern University, USA
6. AHADI (Applied Health Analytics for Delivery and Innovation), USA
7. Imperial College, London
8. PMI-Evolve, Sierra Leone
9. Stat SL, Sierra Leone

Thank you

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

Ministère de la santé et de la population
Programme National de Lutte contre le Paludisme
Congo, Brazzaville

RÉUNION ANNUELLE DES PARTENAIRES DE L'AMP 2025 ET RÉUNION SUR LA DIGITALISATION DES CAMPAGNES DE SANTÉ

7-11 Avril 2025

EVALUATION DE L'EFFICACITÉ DES MILDA UTILISÉES CONTRE *ANOPHELES GAMBIAE S.L.* VECTEUR DU PLASMODIUM AU CONGO

Présenté par
Dr NIANGA BIKOUTA Grâce

PLAN

I. Contexte

II. Méthodologie

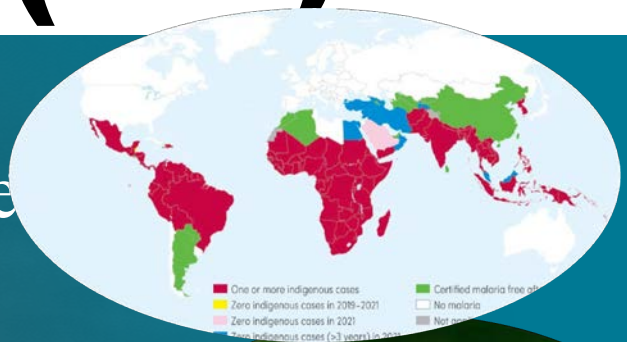
III. Résultats

IV. Discussion

V. Conclusion

I. Contexte (1/5)

- En 2023, 263 millions à travers le monde et 1 327 964 au Congo.
- *Anopheles gambiae s.s.* et *Anopheles coluzzii*.
- la principale stratégie de lutte antivectorielle est l'utilisation des MILDA.



I. Contexte (2/5)

- Les efforts déployés pour lutter contre le paludisme en **Afrique subsaharienne** ont porté leurs fruits, entraînant une réduction de **44% de l'incidence** de la maladie entre **2000 et 2019**.

- Ce progrès est en grande partie attribué à la large diffusion des **Moustiquaires Imprégnées d'Insecticide à Longue Durée d'Action (MILDA)**.

- Au cours des deux dernières décennies, **l'accès aux MILDA** est passée de **5 % en 2000** à **70 % en 2022**.

I. Contexte (3/5)

- Aujourd'hui, de nombreux pays d'Afrique subsaharienne distribuent gratuitement ces moustiquaires dans le cadre de **campagnes de couverture universelle**, organisées généralement tous les **trois ans**.

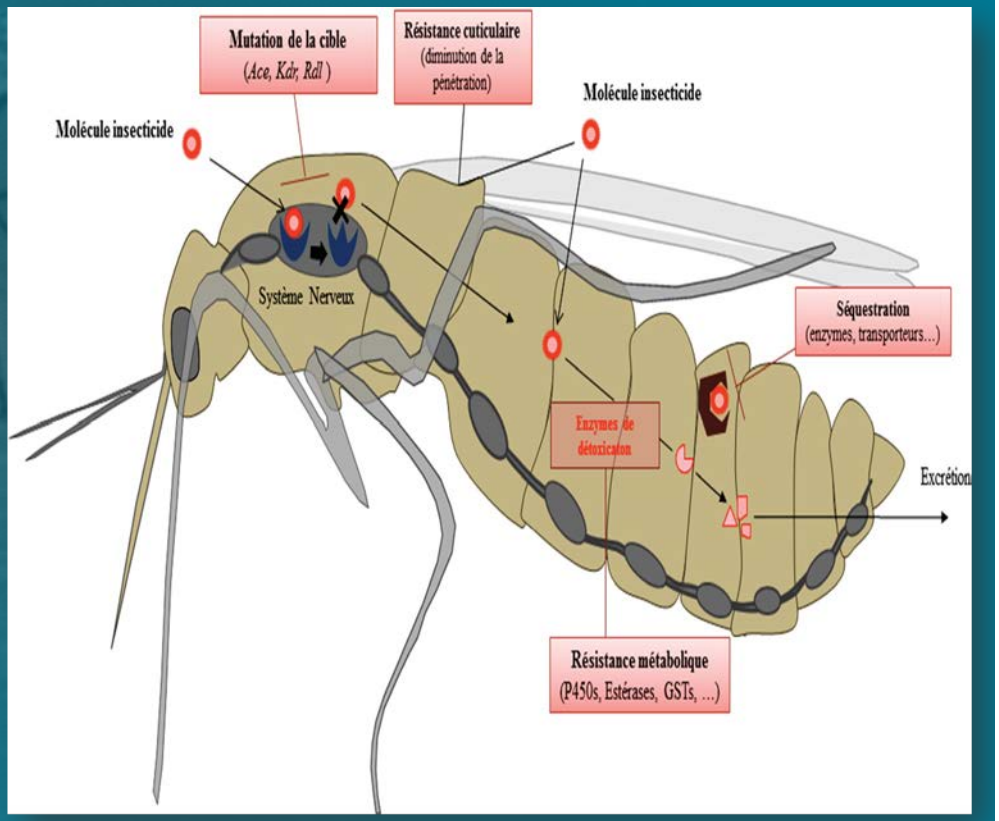
- **Au Congo :**

  Tous les trois ans, les MILDA sont distribuées: en campagne de masse: **2 640 360** (2019) et **3 363 528** en 2022/2023;

  En routine aux femmes enceintes lors des CPN et aux

I. Contexte (4/5)

- L'efficacité des MILDA repose sur la sensibilité des vecteurs aux insecticides.
- La sensibilité aux insecticides est cruciale dans la lutte contre cette maladie.
- Cependant, ces vecteurs ont développé une résistance aux insecticides au fil du temps.



I. Contexte (5/5)

- Par conséquent, il est primordial de surveiller régulièrement la sensibilité des vecteurs aux insecticides pour adapter des stratégies de lutte efficaces contre ceux-ci.

Objectifs

Evaluer l'efficacité des MILDA contre *Anopheles gambiae s.l.*, principal vecteur du *Plasmodium*;

Identifier les mécanismes de résistance associés à la résistance aux insecticides.

II. Méthodologie (1/5)

❑ Sites d'étude

Carte du Congo avec en rouge les cinq localités d'étude :

- Brazzaville,
- Pointe-Noire,
- Dolisie,
- Ouesso et
- Ewo

❑ Période : Décembre 2024 à Mars 2025

II. Méthodologie (2/5)

Collecte des larves et nymphes dans les gîtes larvaires et élevage à l'insectarium

Prospection des gîtes larvaires et collecte des larves

Larves collectées et placées dans des plateaux contenant l'eau du gîte mélangée à de l'eau minérale

Cages contenant les adultes ayant émergé des nymphes triées

II. Méthodologie (3/5)

Réalisation des tests de sensibilité aux insecticides et des PCR

Moustiquaires imprégnées utilisées

Réalisation du test d'efficacité

Réalisation de la PCR

Identification des espèces du complexe *An. gambiae* s.l.

Identification des mécanismes de résistance

II. Méthodologie (4/5)

Test d'efficacité des MILDA

Sont essentiels pour garantir l'impact des MILDA dans la **réduction de la transmission du paludisme**.

Ils permettent:

- **Evaluer la mortalité des moustiques;**
- **Mesurer la persistance de l'insecticide;**
- **Détecter d'éventuelles résistances des anophèles.**

II. Méthodologie (5/5)

Interprétation des résultats

Test d'efficacité des MILDA :

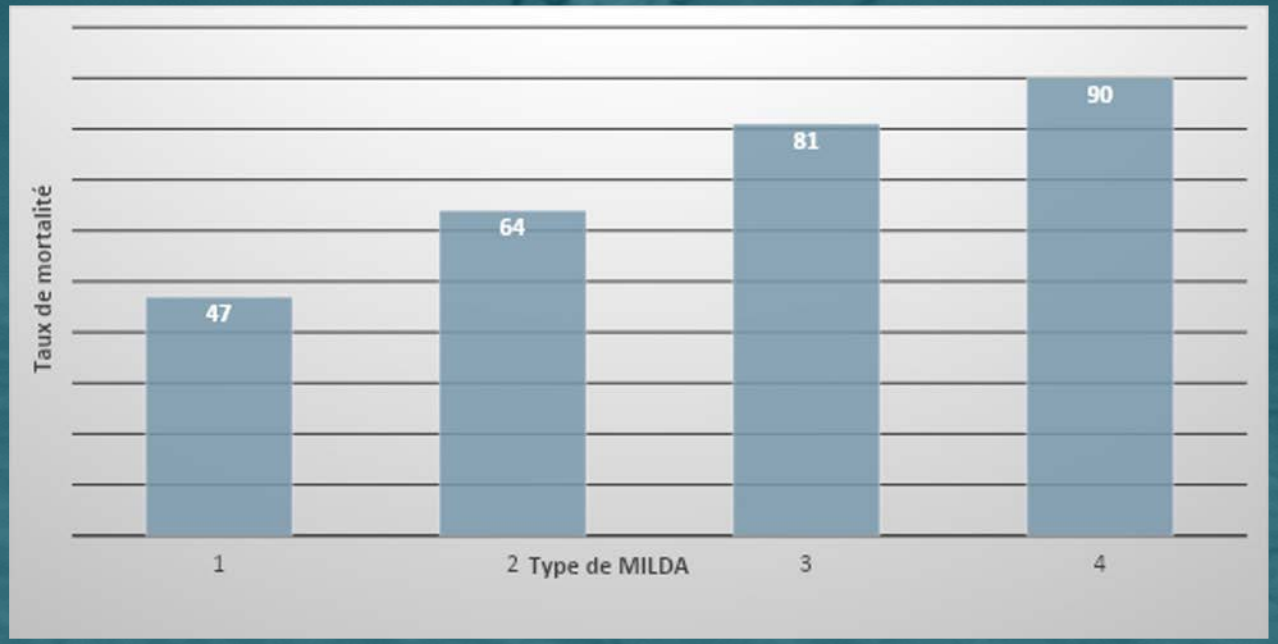
120 moustiques ont été exposés pendant 3 minutes (exposés et témoins).

Interprétation du test d'efficacité :

Une MILDA est efficace si la mortalité est ≥ 80 %

III. Résultats

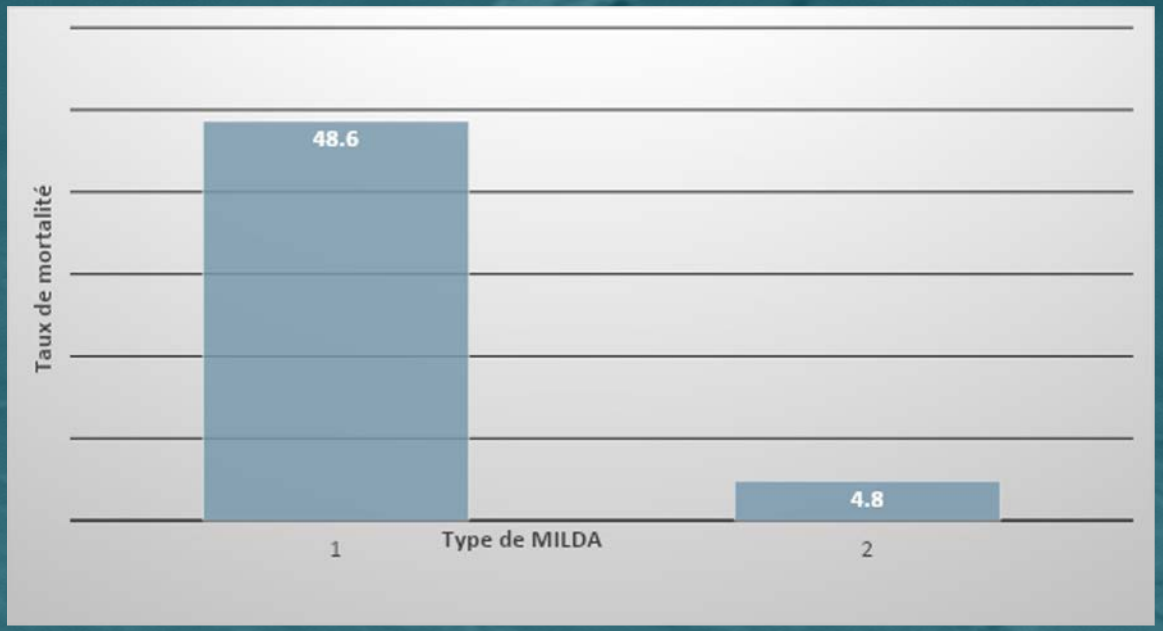
Les taux de mortalité d'*An. gambiae s.l.* après la réalisation des tests d'efficacité avec les moustiquaires Olyset Net et Interceptor G2 à Brazzaville



Les taux de mortalité ont été compris entre 47 et 90 %. Le taux de mortalité le plus élevé (90 %) a été enregistré avec la MILDA IG2 après 72 heures d'exposition à la MILDA et le taux le plus bas (47%) avec la MILDA Olyset Net.

III. Résultats (1/4)

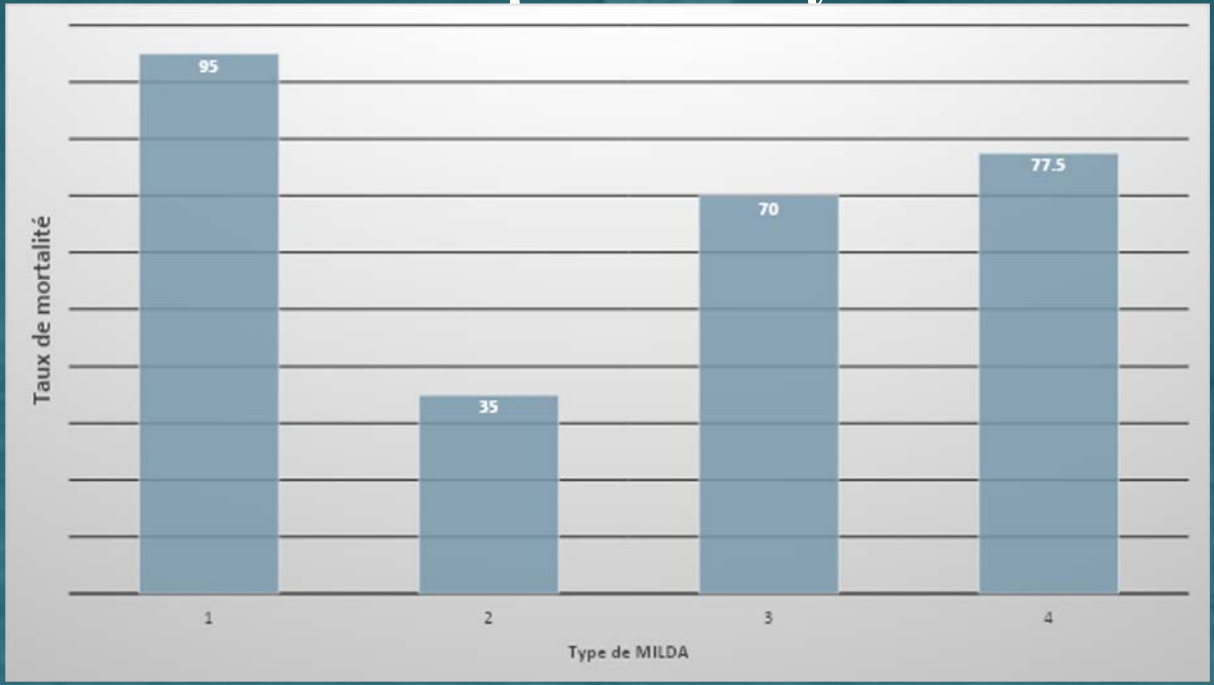
Les taux de mortalité d'*An. gambiae s.l.* après la réalisation des tests d'efficacité avec les moustiquaires Olyset Net et Interceptor G2 à Pointe-Noire



Les taux de mortalité ont été compris entre **4,8 et 48,6 %.** Le taux de mortalité le plus élevé **(48,6 %)** a été enregistré avec la MILDA Olyset Net après 24 heures d'exposition à la MILDA et le taux le plus bas **(47%)** avec la MILDA IG2 après 24 heures d'exposition .

III. Résultats (2/4)

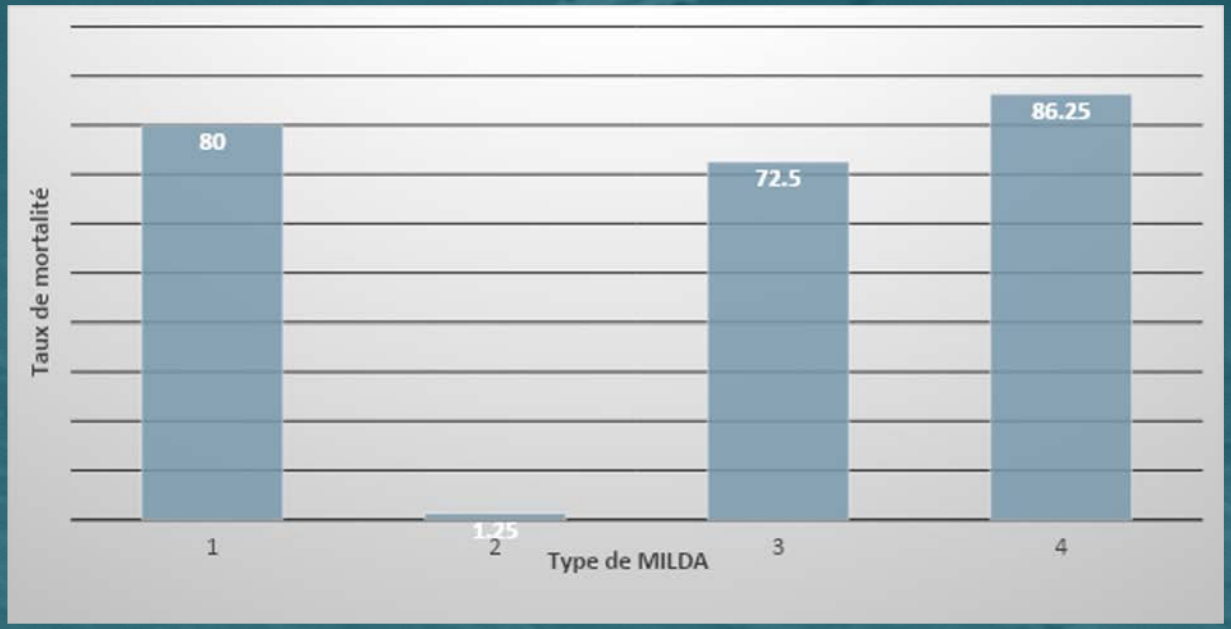
Les taux de mortalité d'*An. gambiae s.l.* après la réalisation des tests d'efficacité avec les moustiquaires Olyset Net et Interceptor G2 à Dolisie



Les taux de mortalité ont été compris entre **35 et 95 %.** Le taux de mortalité le plus élevé **(95 %)** a été enregistré avec la MILDA Olyset Net après 24 heures d'exposition à la MILDA et le taux le plus bas **(35 %)** avec la MILDA IG2 après 24 heures .

III. Résultats (3/4)

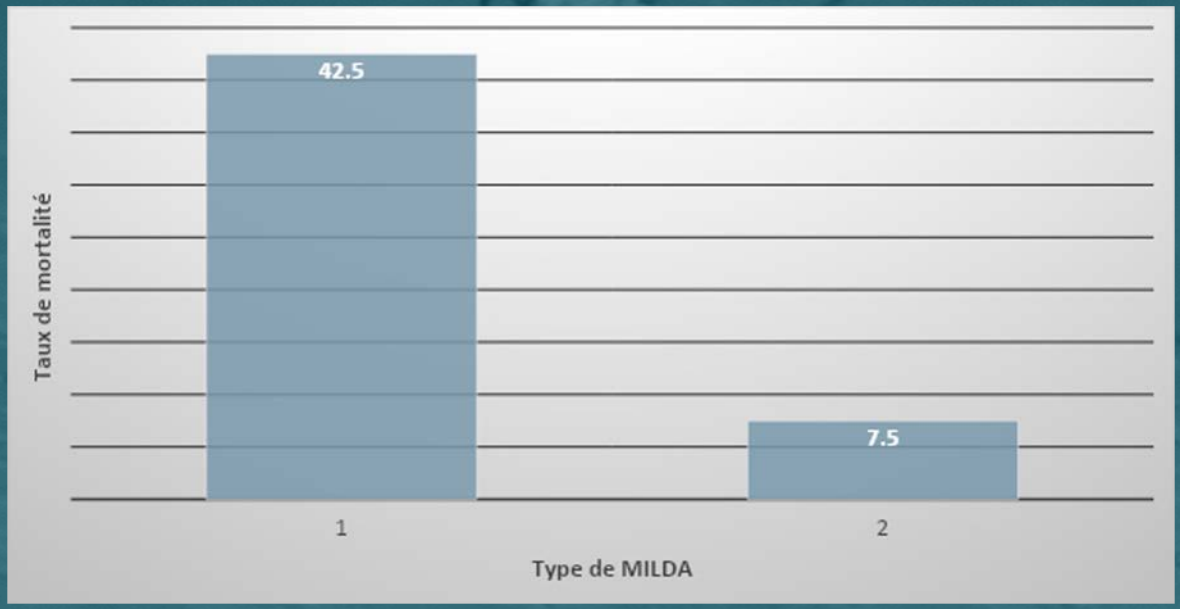
Les taux de mortalité d'*An. gambiae s.l.* après la réalisation des tests d'efficacité avec les moustiquaires Olyset Net et Interceptor G2 à Ouesso



Les taux de mortalité ont été compris entre **1,25 et 86,25 %.** Le taux de mortalité le plus élevé **(86,25%)** a été enregistré avec la MILDA IG2 après 72 heures d'exposition à la MILDA et le taux le plus bas **(1,25 %)** avec la MILDA IG2 après 24 heures d'exposition

III. Résultats (4/4)

Les taux de mortalité d'*An. gambiae s.l.* après la réalisation des tests d'efficacité avec les moustiquaires Olyset Net et Interceptor G2 à Ewo



Les taux de mortalité ont été compris entre **7,5 et 42,5 %.** Le taux de mortalité le plus élevé **(42,5 %)** a été enregistré avec la MILDA Olyset Net après 24 heures d'exposition à la MILDA et le taux le plus bas **(7,5 %)** avec la MILDA IG2 après 24 heures d'exposition .

IV. Discussion (1/4)

Les enquêtes menées dans ces localités ont eu pour objectif d'évaluer l'efficacité des MIILDA utilisées au Congo, parmi lesquelles celles distribuées lors de la dernière campagne de 2022-2023, celles prévues pour la prochaine campagne.

Les résultats obtenus au cours de cette étude ont mis en évidence une variation significative de l'efficacité des MILDA.

Ces différences permettent de mieux comprendre l'impact des caractéristiques de chaque type de MILDA dans la lutte antivectorielle.

IV. Discussion (2/4)

Les **moustiquaires Olyset Net®**, imprégnées à la perméthrine incorporée dans le polyéthylène, ont démontré une mortalité comprise entre **42,5 % et 95 %**.

Cette efficacité relativement large peut être attribuée à la libération progressive de la perméthrine, bien que la résistance aux pyréthrinoïdes ait été mise en évidence dans ces localités en 2010 et 2016 par le PNLP.

IV. Discussion (3/4)

Les **moustiquaires Interceptor® G2**, qui combinent l'alpha-cyperméthrine et le chlorfénapyr enduits sur du polyester. Le chlorfénapyr ayant une action lente, la mortalité a été évaluée jusqu'à 72 heures après exposition des anophèles aux **moustiquaires Interceptor® G2.**

Les résultats obtenus ont présenté une mortalité variable : entre **1,25 % et 64 % à 24 heures**, augmentant à **72,5 % - 81 % à 48 heures**, et atteignant **77,25 % - 90 % à 72 heures**.

IV. Discussion (4/4)

Ces résultats indiquent que le chlorfénapyr, un insecticide à action différée, peut compenser l'inefficacité de l'alpha-cyperméthrine au sein d'une population résistante.

L'efficacité d'**Interceptor®** contre des souches d'*Anopheles gambiae s.l.* résistantes aux pyréthrinoïdes en 2010 et 2016 peut s'expliquer l'innovation dans les formulations, combinant un autre mode d'action avec le chlorfénapyr et les dynamiques évolutives des moustiques résistants, influencées par une baisse de la pression de sélection.

V. Conclusion (1/2)

Ces résultats montrent une efficacité variable des MILDA selon les localités.

L'Interceptor® G2 présente une faible efficacité initiale à 24 heures, mais son effet s'accentue progressivement jusqu'à 72 heures, ce qui confirme l'action retardée du chlorfénapyr.
La prochaine phase de l'étude consistera à identifier les espèces du complexe *Anopheles gambiae s.l.* et les mécanismes de résistance afin de mieux comprendre la résistance observée dans certaines localités.

V. Conclusion (2/2)

Il est essentiel d'intégrer progressivement l'évaluation de la sensibilité des vecteurs aux insecticides pour assurer la pérennité et l'efficacité des campagnes de lutte antivectorielle.

Pour approfondir cette étude, il serait nécessaire de faire une analyse comportementale des anophèles.

PNLP Congo

Ensemble et avec l'effort de tous, l'élimination du paludisme est possible !

MERCI DE VOTRE AIMABLE ATTENTION

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Discussion
Questions & Answers

Discussion
Questions et réponses

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AMP 2025 Annual Partners' Meeting

Réunion annuelle des partenaires de l'APP 2025

Lunch Break

Pause-déjeuner

We will return shortly

A tout à l'heure

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