

New Nets Project AMP Update

Tom McLean | January 2020



The New
Nets Project

- Pyrethroid based LLINs account for 69% of all malaria cases averted in Sub Saharan Africa
- Pyrethroid resistance is endemic throughout Africa and growing in frequency and intensity
- Many trials and operational observations show that introducing an effective insecticide alongside LLINs increases protection :-
 - PBO net trials in Tanzania and Uganda
 - IRS with 3rd generation non-pyrethroid sprays
 - Cluster Randomised Trials - Mozambique and Tanzania
 - Operational observations
- The trend in Reduction of malaria incidence has stalled . Is pyrethroid resistance a contributor to this?
- In order to ensure continuing contribution of LLINs to malaria control and elimination We need
 - fully effective LLINs and to know which products are truly effective
 - Evidence to inform policy making

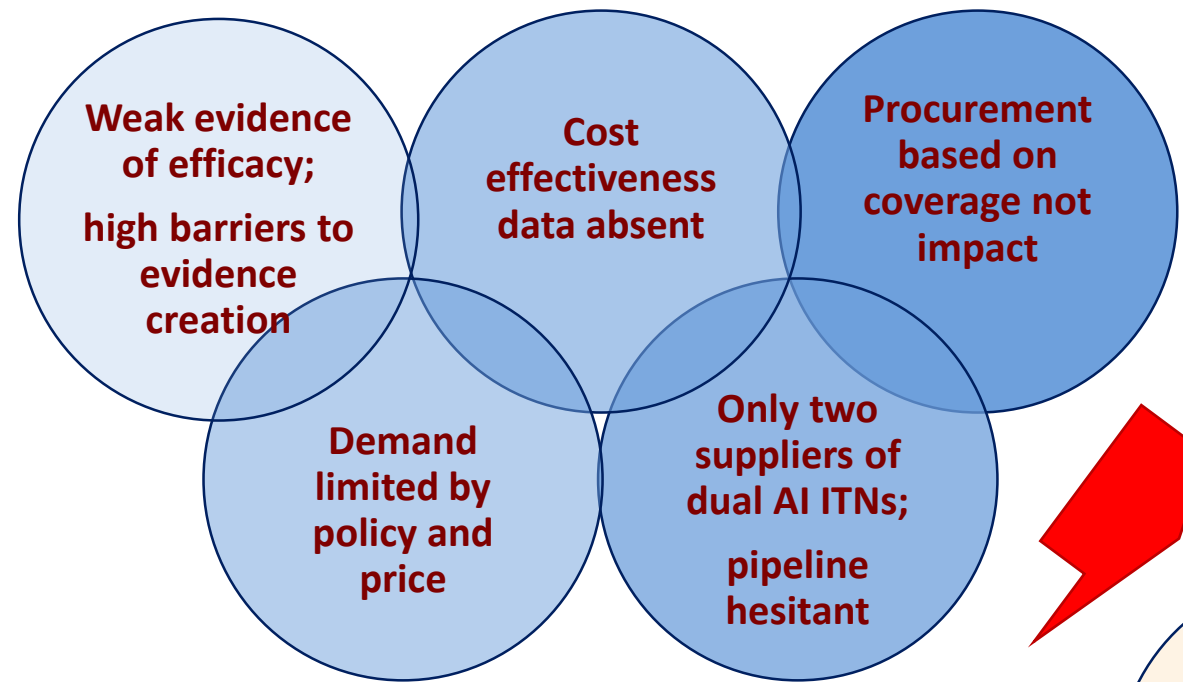
New Nets Project Scope



Funding Partners



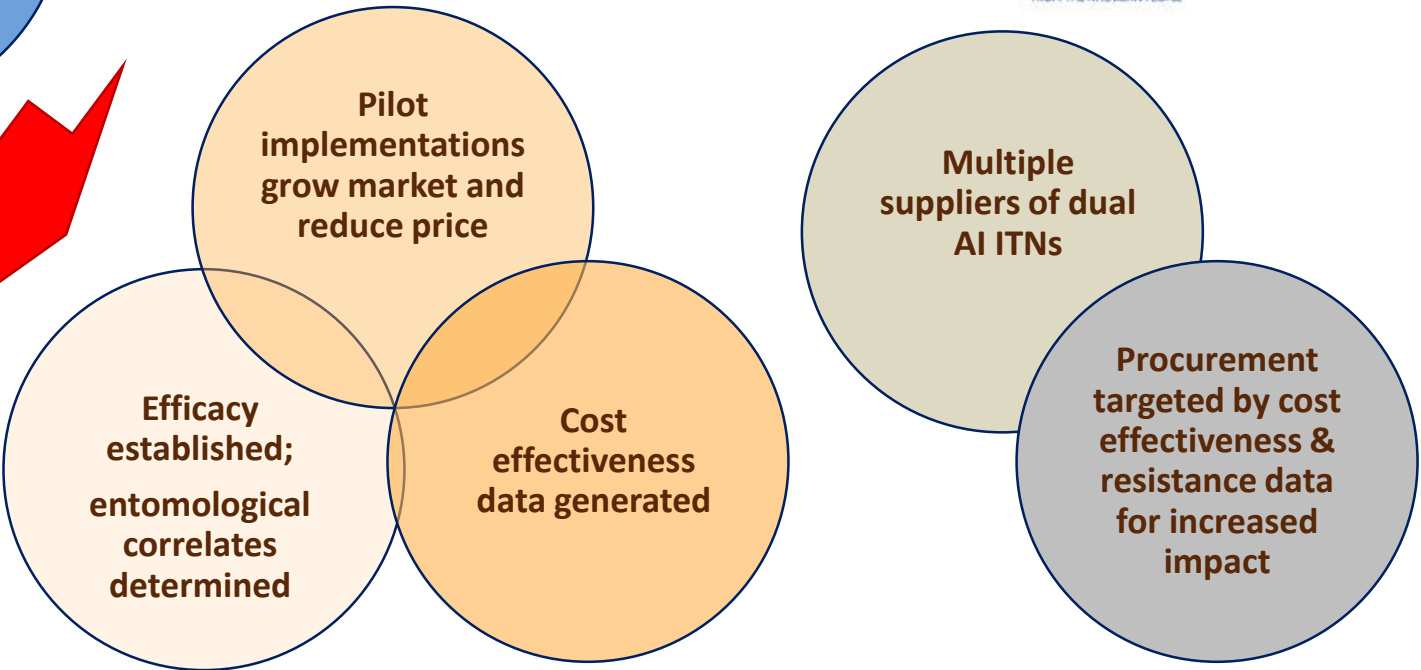
Supporting Partners



Current status of Dual AI ITN Market

BASF Interceptor G2 Dual Active Ingredient ITN
DCT Royal Guard Dual Active Ingredient ITN

(PBO based Pyrethroid + Synergist ITN)



Outcome of the New Nets Project

Next Phase TBD

New Nets Project Overview



Efficacy

Interceptor G2 and Royal Guard ITN Cluster Randomised Efficacy Trials

Cost Effectiveness

Operational Cost Effectiveness Data from Pilots

Market intervention

Co-payments for Dual AI ITNs in Pilots

Volume Guarantees for New Nets (BMGF / MedAccess)

2018

2019

2020

2021

2022

2023

New Nets Project Duration 4 Years

- Project Startup
- Country engagement
- Pre-pilot assessment
- COGs and Market research
- RCT in Tanzania begins

- 4 Effectiveness Pilots:
 - Burkina Faso
 - Mali
 - Rwanda
 - Mozambique
- RCT in Benin begins

- Operational Pilot in Cote d'Ivoire
- Effectiveness Pilot in Nigeria

- 3 Operational Pilots: Malawi, Liberia, Ghana

- Repeat 2019 Pilots

- Post project

Country Pilots

Policy and Process evolution

Operational learning for Dual AI ITN implementation

Pilot Impact data

Public Health value of Dual AI ITN

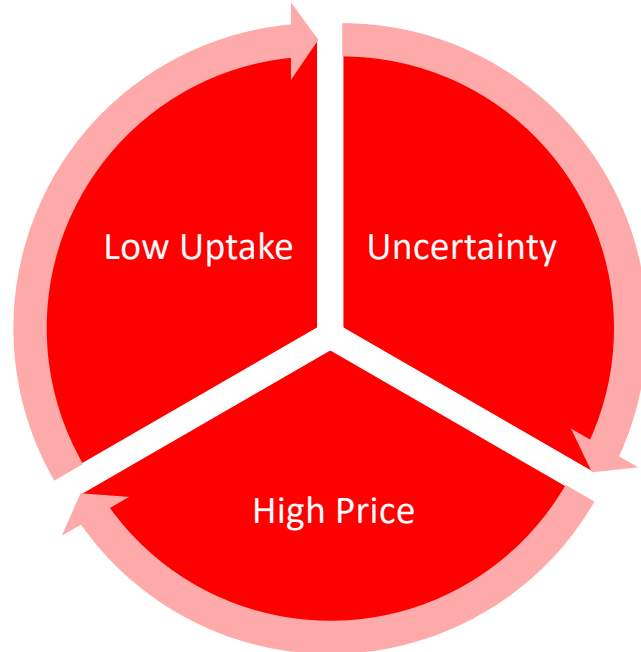
Validity of Ento correlates

Cost effectiveness of Dual AI ITNs

Transition to GF PMI

Volume guarantee

- Before Volume Guarantee



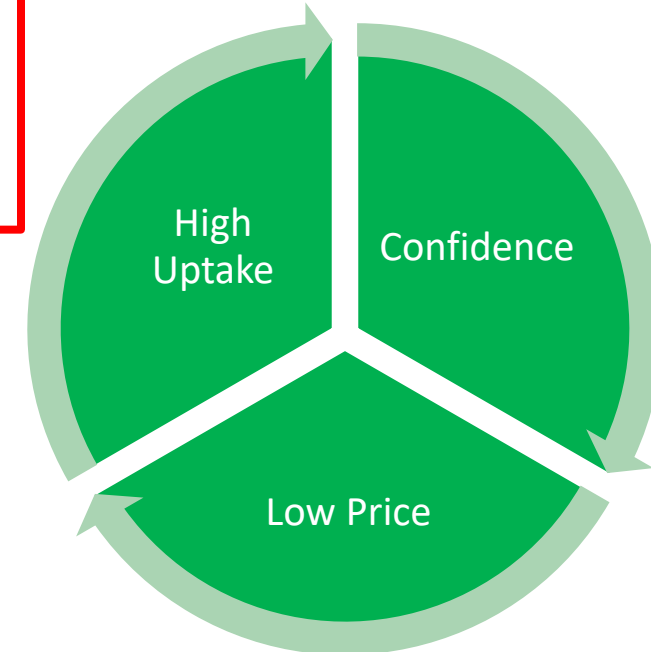
- Forecast of 12-18 million IG2 over 4 years
- High price
- No long term agreement

BASF
MedAccess
Bill & Melinda Gates Fndn

Volume guarantee

- Transparency
- Mutual objectives
- Financial leverage
- Company commitment

- With Volume Guarantee



- Commitment to buy 35 million IG2 ITNs over 4 years.
- Reduced Prices
- Long Term agreement

New Nets Project Team Roles



IVCC Lead and Coordinator

- Negotiations with industry partners,
- Co-payment system and contracts to reduce price.
- Links to Ag Chem industry.

PATH

- Cost effectiveness determination from pilot implementations

AMP

- Technical assistance to pilot implementations

PSI

- Compilation of cross-country lessons learned from pilot studies, funding for process evaluations

LSHTM

- Cluster Randomised trials of Dual AI LLINs and Entomological Correlates in trials

Tulane

- Cost effectiveness trials and data collection design

Imperial College

- Modelling of trials design and implementation impact

LSTM

- Entomological correlates of epidemiological Impact of f



The Alliance for
Malaria Prevention



Healthy lives. Measurable results.



Note also Operational and Procurement Role of Global Fund and PMI

Country	Malaria Control Program	In-country evidence partner	NNP partner
Benin	NMCP	CREC	LSHTM
Burkina Faso	NMCP	CNFRP	PATH
Rwanda	MOPDD	MOPDD/University of Rwanda	PATH
Mali	NMCP		PMIVectorLink/PATH
Mozambique	NMCP	NMCP and INS	PATH
Nigeria	NMEP	NIMR / University of Bamako	Global Fund/PATH

- **Will provide data for cost-effectiveness evaluations over range of settings**
- **Five pilots initially planned with others selected by NNP Steering Committee**
- **Criteria for pilot country selection:**
 - SSA Global Fund or PMI country
 - Documented pyrethroid resistance
 - Planned campaign in targeted year without predicted net gaps
 - Country preparedness to participate in a new ITN campaign
 - Logistics capabilities to store and distribute ITNs to the right area
 - High performing surveillance system
 - Capacity for entomological studies
 - The pilot countries are split over Africa to cover transmission settings/vectors

First pilot deployment was Burkina Faso in October 2019

- Rapid uptake of PBO based ITNs in 2019
 - Need to compare PBO and IG2 ITNs
 - Impact and Cost effectiveness
 - Different entomological and resistance contexts
- PQ listing of the Royal Guard Pyriproxifen based ITN
 - Need to compare PBO and IG2 ITNs
 - Impact and Cost effectiveness
 - Different entomological and resistance contexts
- Increase number of countries implementing Pilots
- Add pilot comparison districts with PBO or Royal Guard implementations

What is going to be evaluated in each country



The New
Nets Project



Country	Net Type, Number, and Year	Pilot and Comparis
Burkina Faso	2 million IG2 distributed 2019	<ul style="list-style-type: none"> • IG2 vs Standard LLINs • IG2 vs PBO ITNs • Durability Monitoring (PMI)
Rwanda	1.2 million IG2 2020	<ul style="list-style-type: none"> • IG2 vs Standard LLINs • IG2 vs Standard LLINs +3G IRS • Durability Monitoring (PMI)
Mozambique	2.9 million IG2 2020 Northern and Western	<ul style="list-style-type: none"> • IG2 vs Standard • + vs RG and vs PBO • + durability monitoring
Nigeria	5.2 million IG2 0.5 million Royal Guard 2020	<ul style="list-style-type: none"> • IG2 vs Standard • +vs PBO +vs RG • + durability monitoring
Mali	0.9 million IG2 2020	<ul style="list-style-type: none"> • IG2 vs Standard LLINs • Light touch evidence pilot (passive case detection) – conducted by PMI VectorLink in coordination with PATH
Cote d'Ivoire	3.1 million IG2 2021	Evaluation design and Funding under discussion
Liberia, Ghana, Malawi	<i>To be confirmed: Liberia 2.7M IG2, Ghana 2.25M IG2, Malawi 2.25M IG2 and 800k Royal Guard</i>	<ul style="list-style-type: none"> • Evaluation design and Funding under discussion

Benin RCT Overview and Status



Organizations Involved	CREC/LSHTM
Type	RCT with associated hut trial
Location	Cove, Zagnanado, Ouinhi in Zou Department, Benin
Local Vectors	<i>An. gambiae</i> and <i>An. coluzzii</i>
Dates	Sept 2018 - Aug 2022 (1 year baseline + 2 years post-intervention)
Arms/Nets tested	3 arms: Royal Guard, IG2, Interceptor
Outcome	<ul style="list-style-type: none">• Malaria case incidence in children aged 6 months to 10 years• Malaria infection prevalence in population (all ages) measured 6 months and 18 months post-distribution• Entomological inoculation rate and <i>Anopheles</i> density

- Finished census in June
 - Study will be powered to detect 30% difference in incidence reduction between new nets and standard
 - 45,100 nets of each type needed
- Pre-Baseline resistance tests June-July
 - Mortality <35% for alphacypermethrin and permethrin
- Cluster demarcation finalised August 2019
 - 61 clusters
 - core households are at least 1000m from another cluster
- Baseline survey completed end of Oct
 - ~45% prevalence (25-70% range)
- Hut trial to begin mid February
- IG2 net distribution March 2020

Effectiveness Pilot Study Objectives

In each pilot district (new net and standard LLIN comparator), enhanced surveillance activities will monitor the impact of mass distribution on 3 components, feeding into a broader analysis on cost-effectiveness



Epidemiological component – measure impact of new nets and standard ITNs, and if feasible PBO ITNs, through observational studies comparing trends in:

- Malaria incidence rates passively reported to the national health system (passive case detection (PCD)).
- Malaria infection prevalence, measured through Rapid Diagnostic Tests (RDTs), from annual cross-sectional surveys during peak transmission periods.



Entomological component – evaluate the impact of new nets and standard ITNs, and if feasible PBO ITNs, on vector population density, behavior, infection and resistance status



Anthropological component – map social determinants of impact for new nets and determine transmission risk through gathering evidence on ITN uptake and usage; collecting data on patterns, both indoors and outdoors, becomes an essential component of the evaluation of the ITN pilots for both modeling and contextual analysis of impact

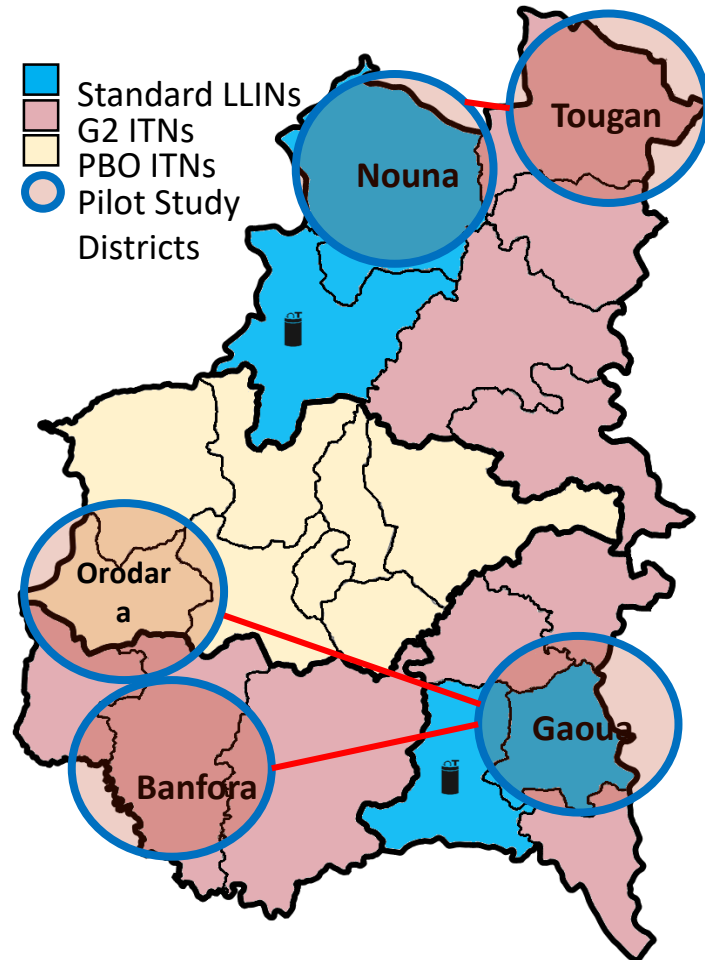


Costing and cost-effectiveness component – estimate the cost and cost-effectiveness of new nets through data on product price, delivery and deployment costs, and effectiveness based on incidence rates



Durability monitoring – estimating survivorship, attrition, physical integrity and insecticidal content throughout the study time period

See Next Presentation



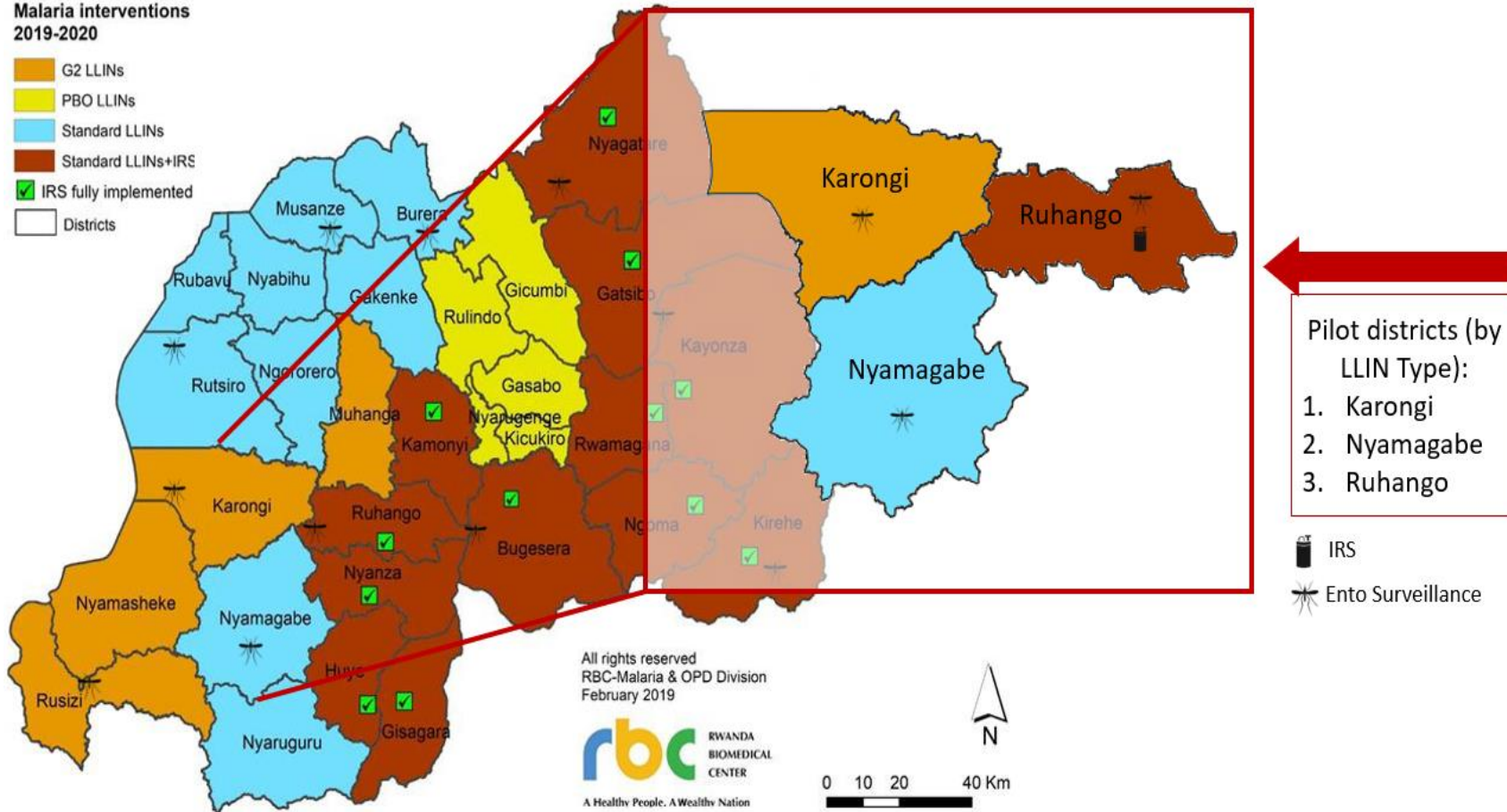
- Baseline cross-sectional survey conducted in July
 - Results 29-81% prevalence
- 2 million IG2 distributed 28th to 31st October
- Baseline durability monitoring completed Dec 2019



Rwanda Update

Malaria interventions 2019-2020

- G2 LLINs
- PBO LLINs
- Standard LLINs
- Standard LLINs+IRS
- IRS fully implemented
- Districts



- 1.2 million IG2 in country waiting imminent distribution after inspection
- Baseline cross-sectional survey planned for February 2020

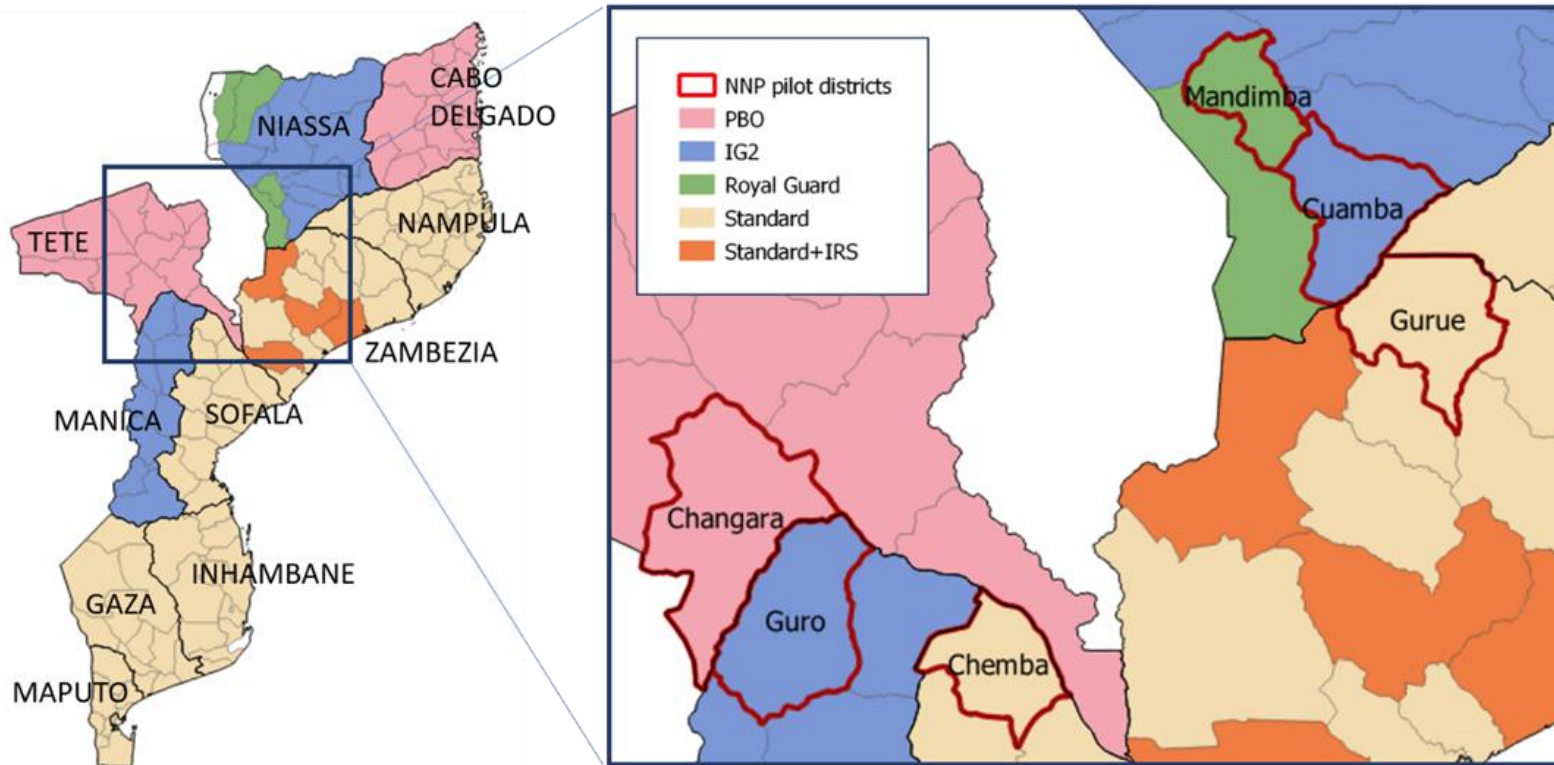
Mozambique Update



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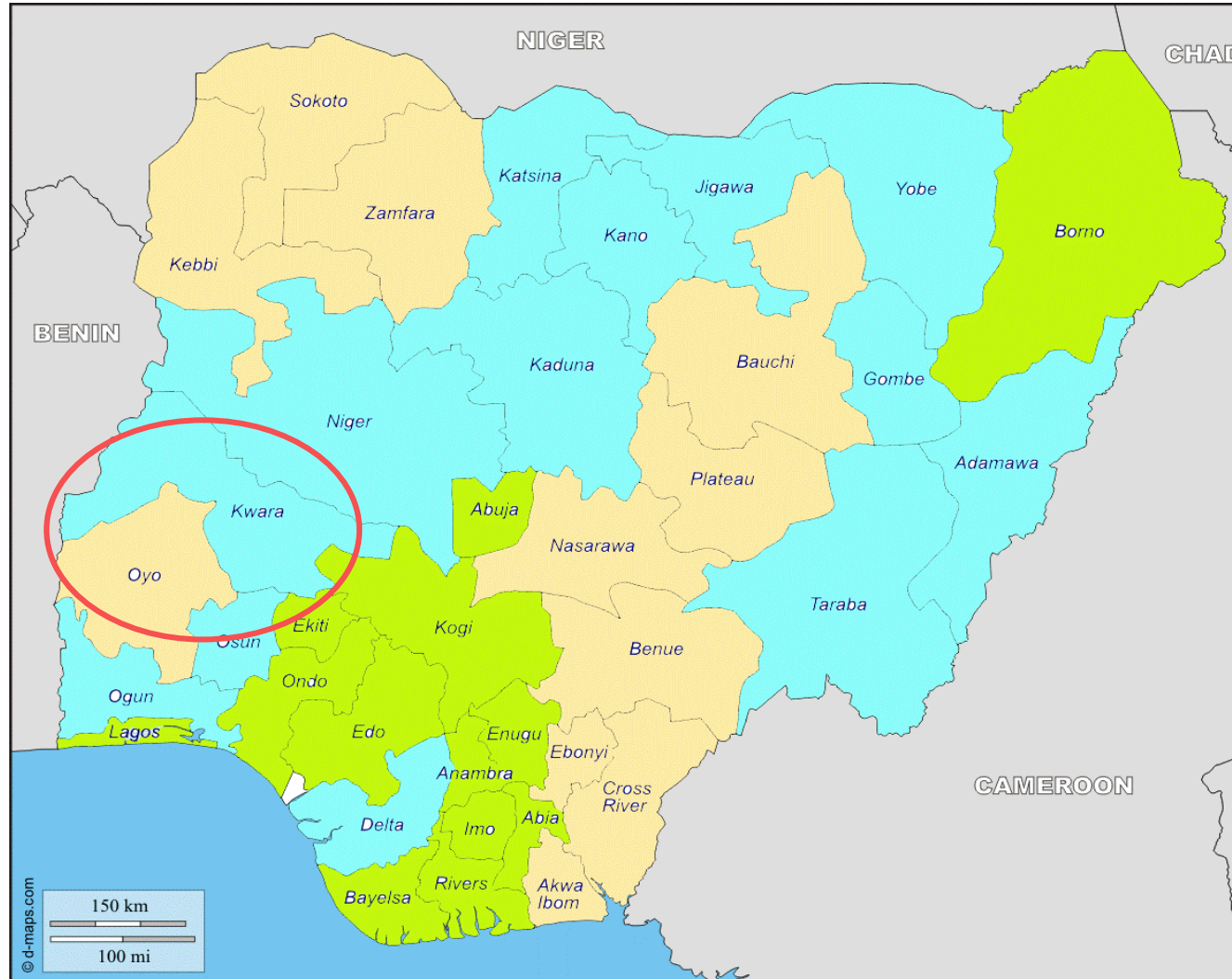
New Nets Project – Moçambique pilot districts



- Order placed for 2,905,082 nets (2,362,144 IG2, 542,938 RG)
- Delivery by March 2020 for Apr/June campaign

**will not have funds to include Milange*

Nigeria Update



- 5,691,600 new nets ordered (5,164,600 IG2, 527,000 RG)
- Net delivery June 2020 RG and July/earlyAug IG2 for Oct campaign
- PATH oversight and durability monitoring;
- Global Fund / NMEP supporting other M&E funding
 - Kware: IG2 and RG
 - Osun: standard and PBO

Mali

- Light touch evidence pilot (passive case detection) – conducted by PMI VectorLink in coordination with PATH
- 900,000 IG2 ordered with delivery scheduled by December 2019
- Distribution in Sikasso in early 2020

Cote d'Ivoire

- Operational Pilot
- Order placed for 3,141,613 IG2 for delivery Q4 2020 and distribution Q1 2021

2021 Countries

- Liberia, Ghana, Malawi MOUs pending
-

Can Phase II experimental hut trial outcomes serve as a surrogate for epidemiological and transmission outcomes ?

LSHTM and Imperial:

- Huts constructed in vicinity of both Benin and Tanzania RCTs
- Nets: standard washed or field sampled over time
- Ento outcomes modelled to determine how predictive of trial results

Companion work by LSTM funded by BMGF (ESSENTIALS):

- Augment Tanzania and Benin hut trials, add huts to Burkina Faso and Mozambique pilots
- Behavior tracking around nets
- Investigation of sublethal effects
- Detailed field resistance data collection
- Model data and compare with field ento/epi
- Define min set of ento data to predict epi outcomes



*Massue et al. Malar J (2016) 15:165

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- Evidence to inform WHO GMP policy making on LLIN choices
 - Evidence and Experience to support National Control / Elimination Campaign decision making
 - Respond to stratification
 - Optimising Product Choice
 - Data set of impact based optimisation
 - Stable and efficient supply chain for New Net products
 - Confidence that Effective Innovative vector control products will be adopted.

Thank you for your continued support and collaboration!!!

