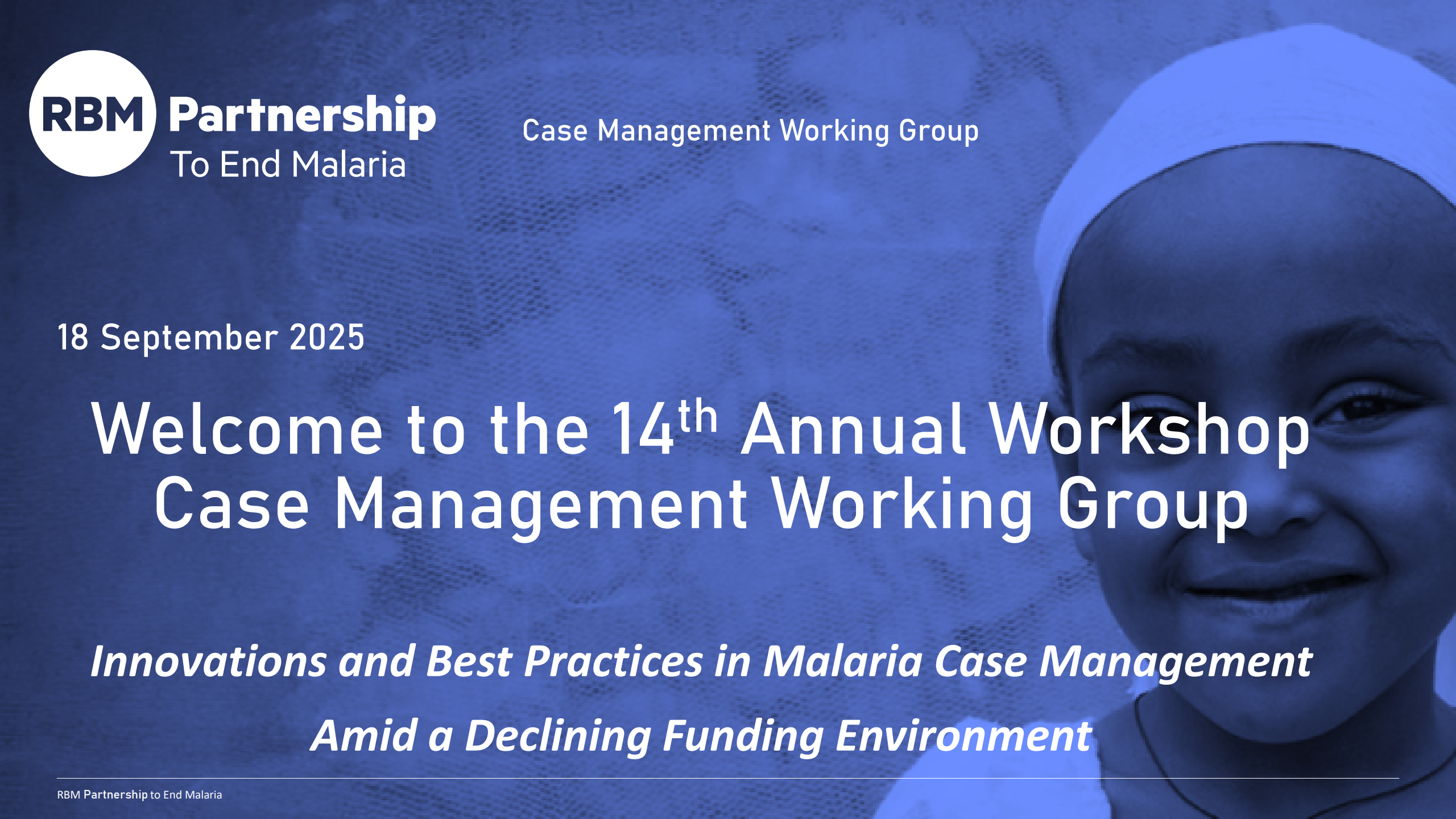
RBM Partnership To End Malaria

Case Management Working Group



18 September 2025

Welcome to the 14th Annual Workshop Case Management Working Group

Innovations and Best Practices in Malaria Case Management Amid a Declining Funding Environment

RBM Partnership
To End Malaria

18 September 2025

[Session 5] Work Stream 4 Care and Treatment

Co-lead Aissata Barry

RBM Partnership
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18 September 2025

Antimalarial Drug Resistance: Prioritizing surveillance in a context of resource uncertainty

Moderators: Aissata Barry

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Antimalarial Drug Resistance: Prioritizing surveillance in a context of resource uncertainty

18 September 2025

1. Presentation: Improving molecular monitoring of antimalarial drug efficacy and resistance

Christian Nsanzabana, Swiss TPH

Swiss TPH

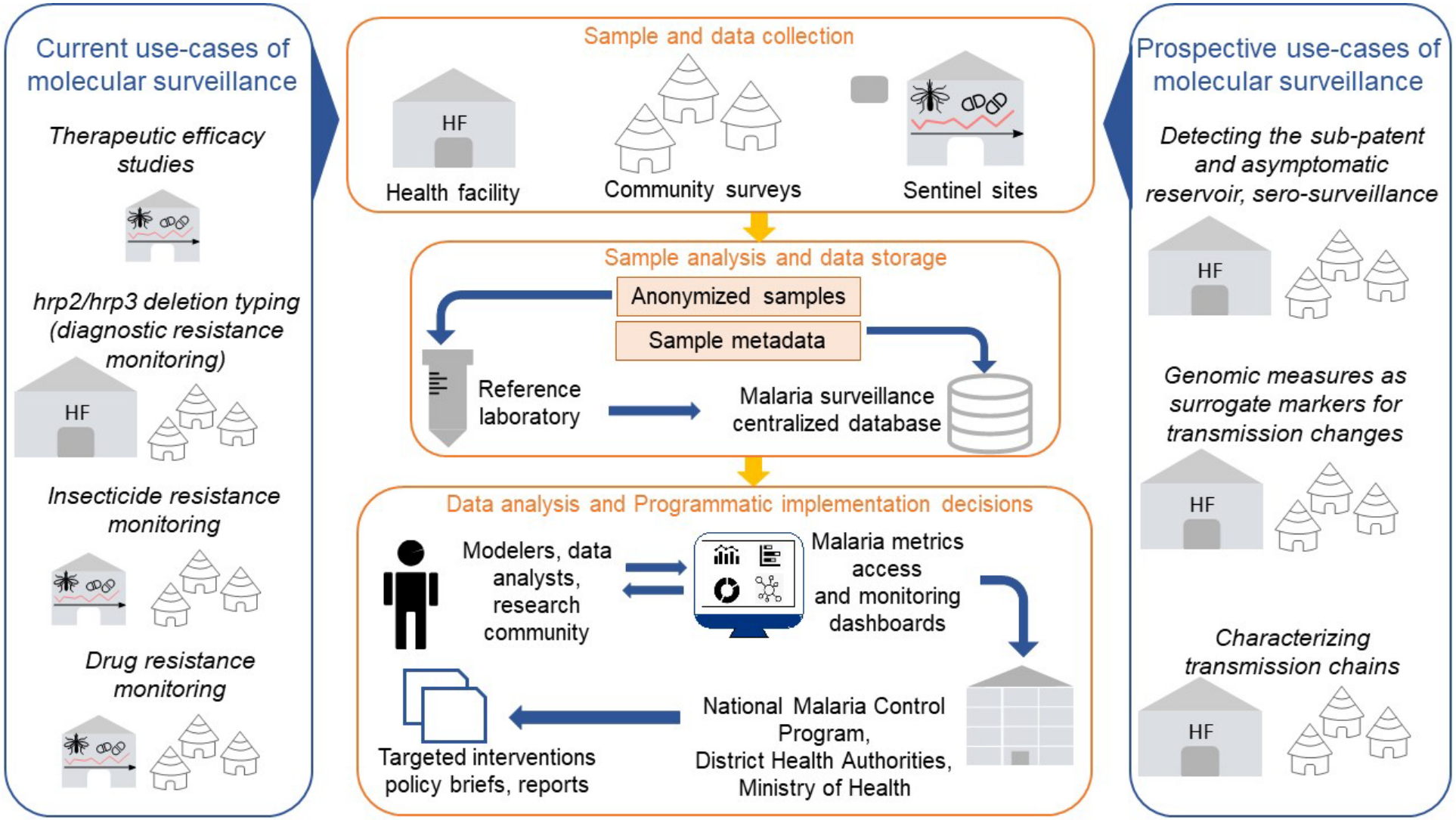
Improving molecular monitoring of antimalarial drug efficacy and resistance

RBM CMWG-14

Christian Nsanzabana

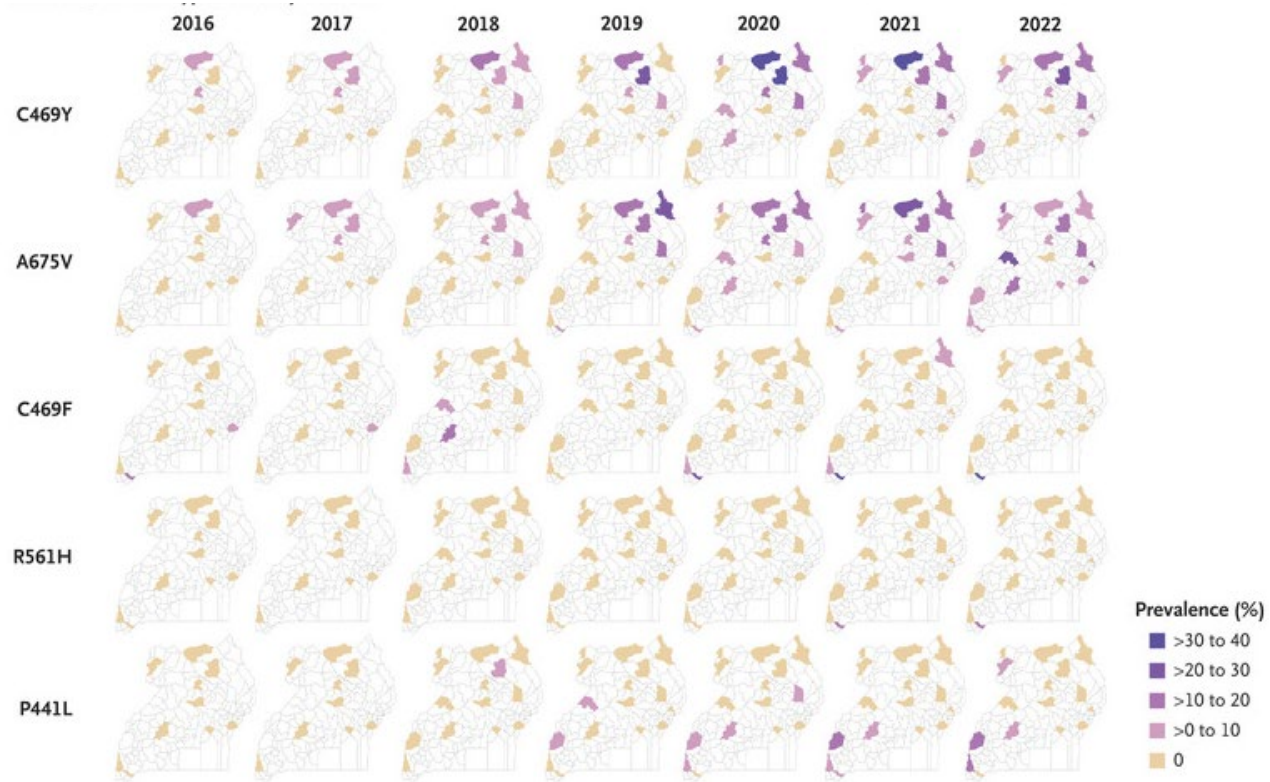
Abidjan, 18 September 2025

Use cases for malaria genomics

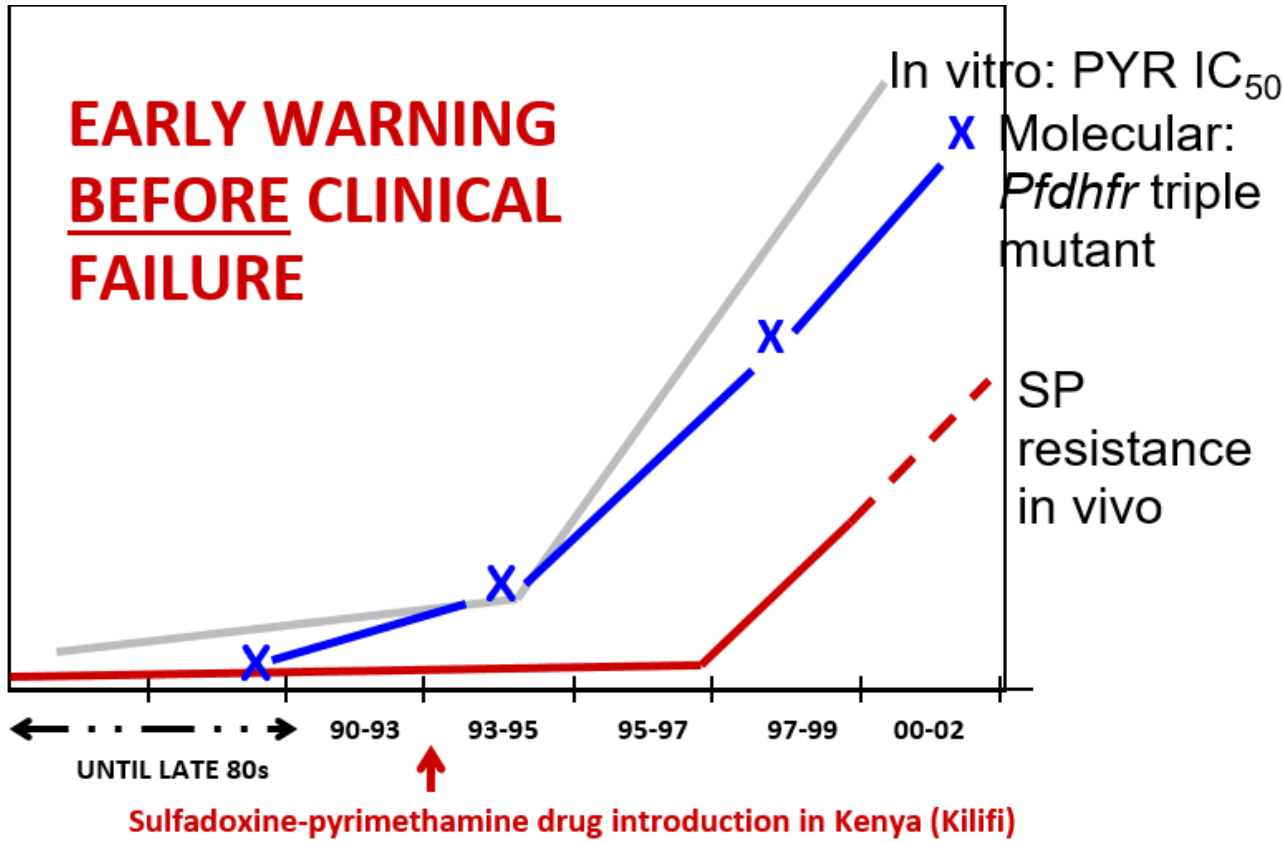


Golumbeanu et al. 2023;112(1_Suppl):35-47

Monitoring the emergence and spread of resistant parasites



Conrad et al. N Engl J Med. 2023;389(8):722-732



Data from Alexis Nzila, Edward Mberu Kamau and Carol Sibley

Monitoring insecticide resistance

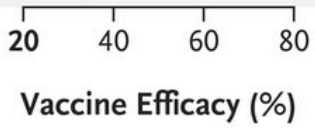
Method	Advantages	Disadvantages
Bioassays using WHO defined diagnostic doses of insecticide	Standardized, simple to perform, detect resistance regardless of mechanism	Lack sensitivity and provide no information about level and type of resistance (except when using with synergists), to be done on live mosquitoes
Dose response bioassays	Provides data on level of resistance in population, regardless of mechanism	Require large numbers of alive mosquitoes, and data from different groups not readily comparable
Biochemical assays to detect activity of enzymes associated with insecticide resistance	Provides information on specific mechanisms responsible for resistance	Requires cold chain. Not available for all resistance mechanisms, sensitivity and specificity issues for some assays (e.g. GST)
Molecular assays to detect resistant alleles	Very sensitive. Can detect recessive alleles and therefore provide an 'early warning' of future resistance.	Requires specialized and costly equipment. Only available for a limited number of resistance mechanisms.

Corbel V and N'Guessan R. Env Sci Med. 2013; http://dx.doi.org/10.5772/5611

Monitoring vaccine resistance

A Cumulative Vaccine Efficacy

Haplotype Locus	RTS,S Vaccine	Control Vaccine	Haplotype-Specific Efficacy		Differential Efficacy		
	No. of Events (% Cumulative Incidence)		Vaccine Efficacy (95% CI)	P Value	P Value	FWER P Value	Q Value
Circumsporozoite protein C-terminal					0.04*	—	—
3D7 match	72 (1.7)	67 (3.2)	50.3 (34.6–62.3)	<0.001			
3D7 mismatch	1109 (26.2)	842 (39.0)	33.4 (29.3–37.2)	<0.001			
DV10					0.02	0.61	0.15*
3D7 match	90 (2.1)	86 (4.0)	50.2 (36.4–61.0)	<0.001			
3D7 mismatch	1091 (25.7)	822 (38.1)	33.0 (28.8–36.9)	<0.001			
LD					0.03	0.66	0.15*
3D7 match	77 (1.8)	74 (3.5)	51.0 (36.3–62.4)	<0.001			
3D7 mismatch	1104 (26.1)	834 (38.6)	33.1 (29.0–37.0)	<0.001			
Th2R					0.03	0.81	0.15*
3D7 match	72 (1.7)	68 (3.2)	50.7 (35.3–62.4)	<0.001			
3D7 mismatch	1109 (26.2)	840 (38.9)	33.3 (29.2–37.2)	<0.001			
Th3R					0.08	1.00	0.20*
3D7 match	103 (2.4)	91 (4.3)	46.4 (32.4–57.5)	<0.001			
3D7 mismatch	1078 (25.4)	817 (37.8)	33.3 (29.1–37.2)	<0.001			



Neafsey et al. N Engl J Med. 2015 ;373(21):2025-2037

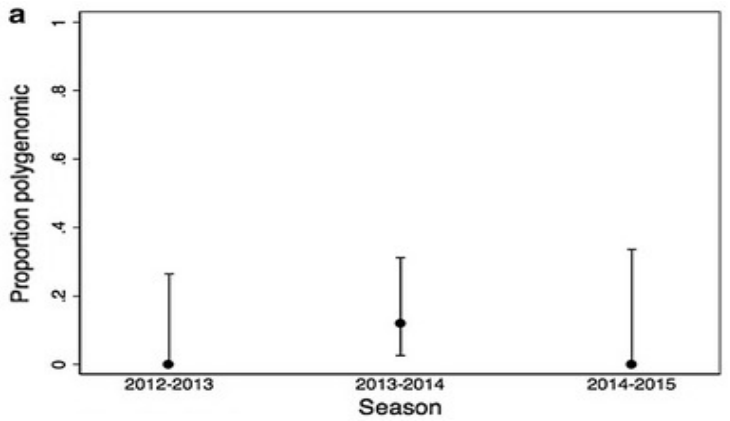
Sampling strategy

1 Use case	2 Goal	3 Target population	4 Sampling approach	5 Frequency	6 Parameters for sample size
Early warning of biological threats	Detect emerging artemisinin resistance variants	Malaria clinical cases among children	Multi-cluster sampling	Cross-Sectional	1. Expected prevalence 2. Statistical power 3. Design effect
Detection of transmission sources	Case classification (local/imported)	Whole population	Dense (all malaria cases in elimination settings)	Continuous	1. Pairs of infections 2. Genetic relatedness 3. Genetic resolution
Inform transmission dynamics	Changes in transmission	Whole or sentinel population	All malaria cases in a representative area	Longitudinal	1. Genetic diversity 2. Infection clonality 3. Genetic resolution

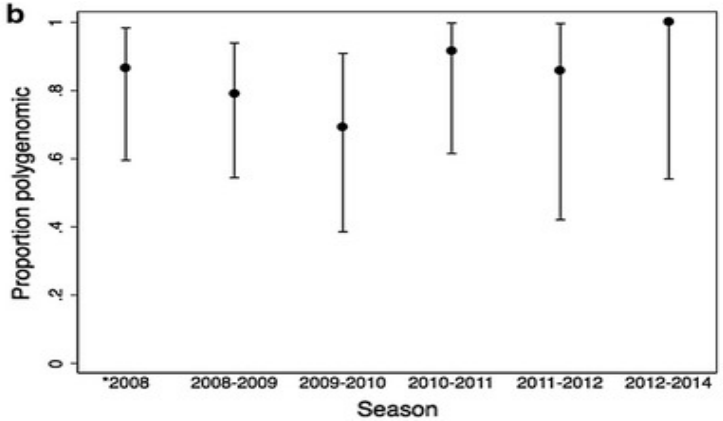
Mayor et al. Trends Parasitol. 2023;39(11):954-968

Large reservoir of parasites in asymptomatic carriers

Passive case detection: symptomatic



Active case detection: asymptomatic

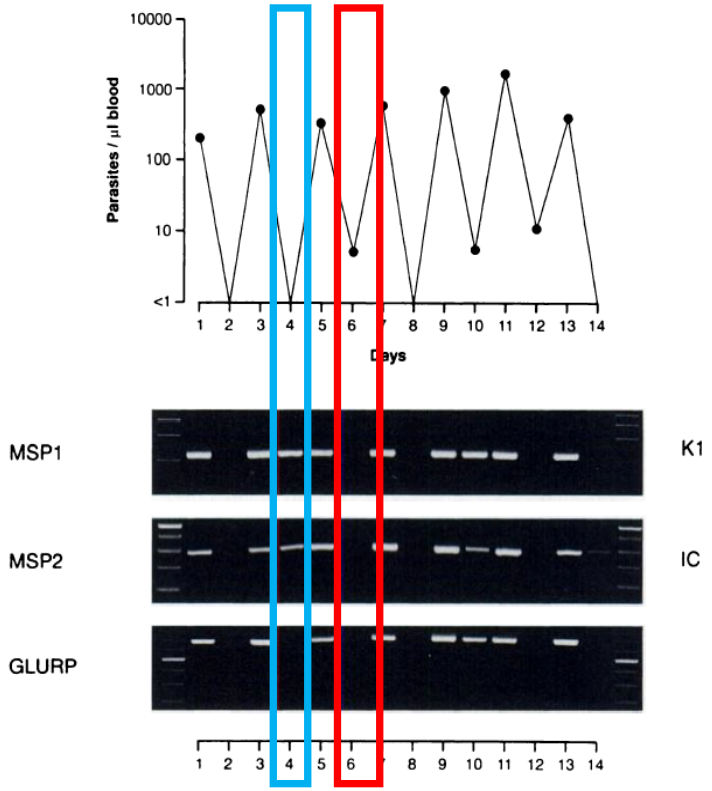


Searle et al., Malaria J. 2017, 16: 154.

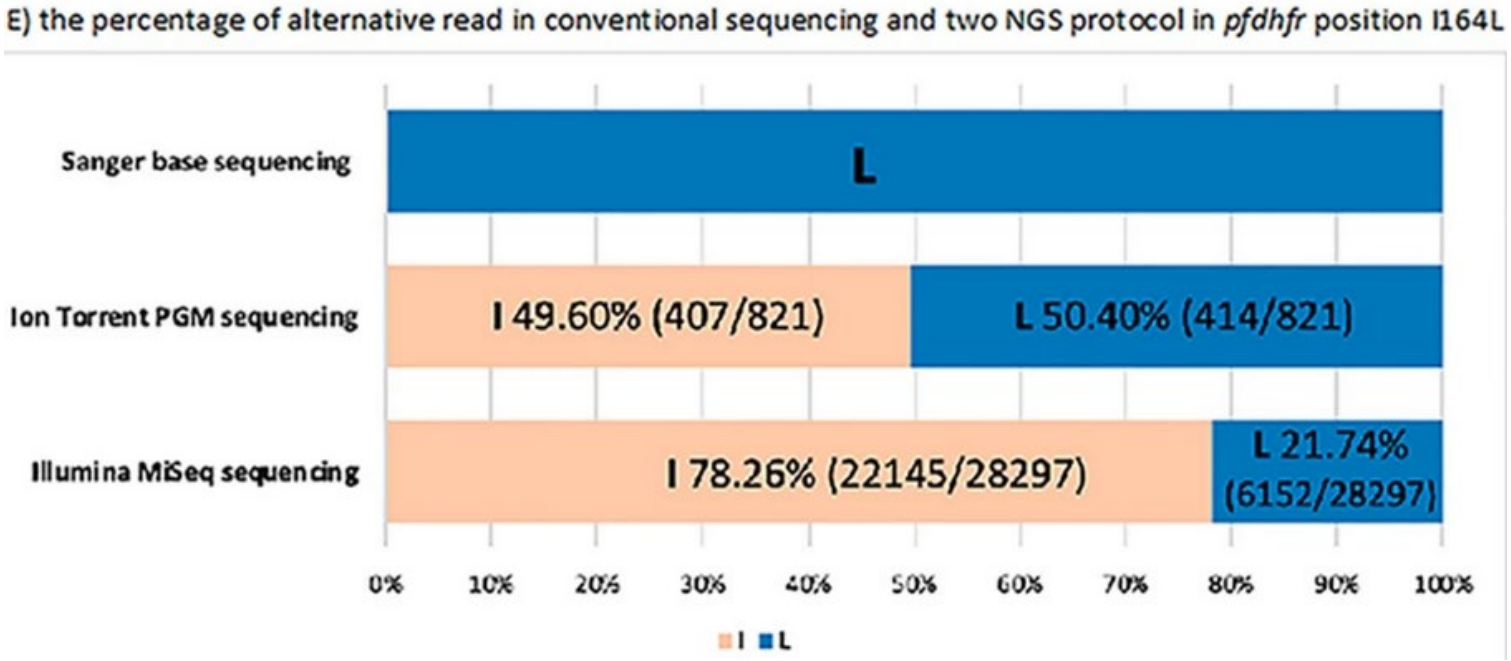
Limitations of genotyping techniques

- Daily changes in parasite density and complexity of infection
- Fluctuation important for sampling
- Improved sensitivity using amplicon deep sequencing (detection of minority clones)

Genotyping from an asymptomatic 10-year old child from Tanzania

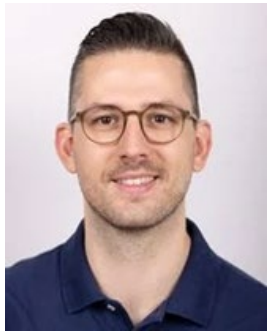


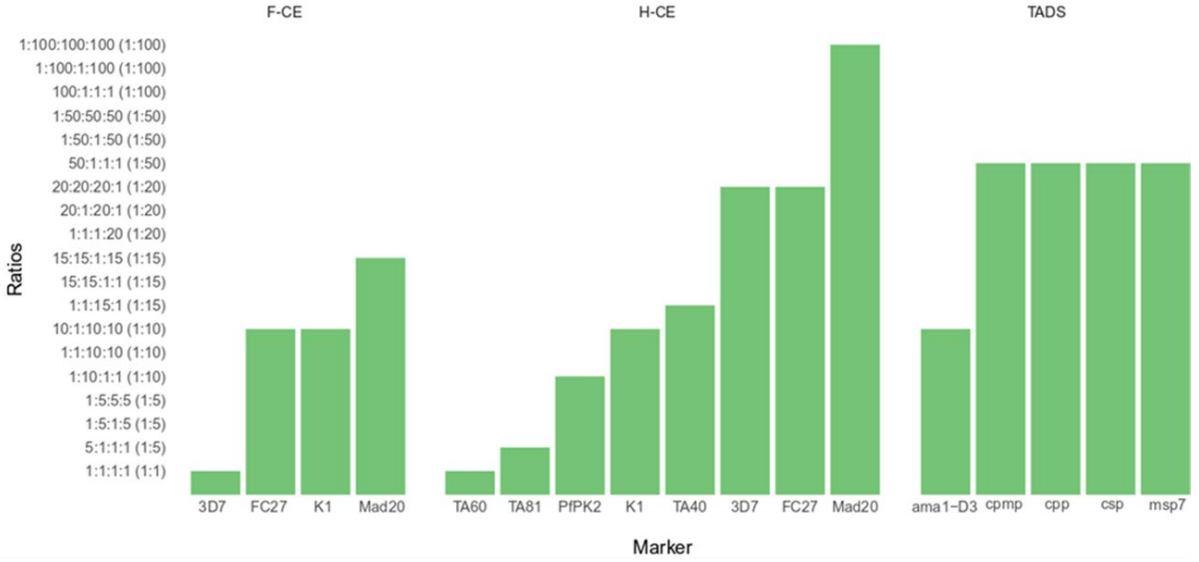
Farnet et al. Am J Trop Med Hyg. 1997; 56(5):538-47

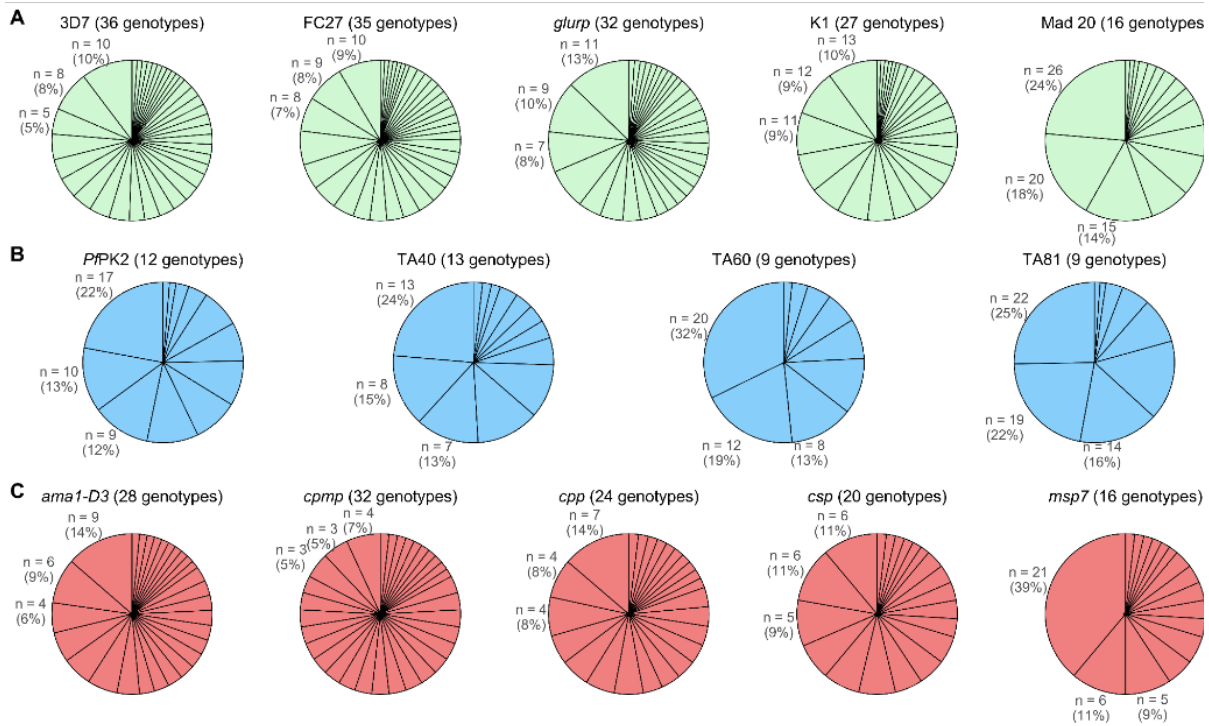


Kunasol et al. Sci Rep. 2022;12(1):5563.

Comparison of different techniques to distinguish reinfection from recrudescence

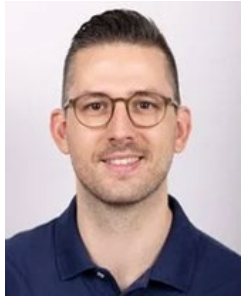



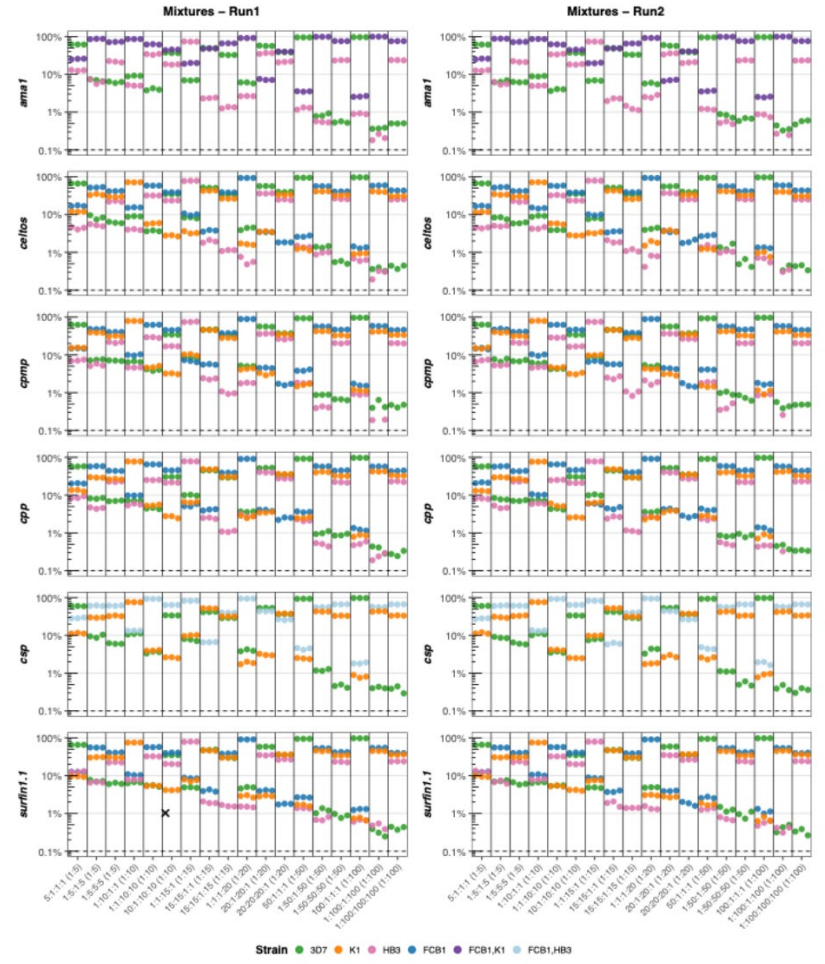





Schnoz A. et al. Lancet Microbe. 2024;5(11):100914.

Nanopore to distinguish reinfection from recrudescence

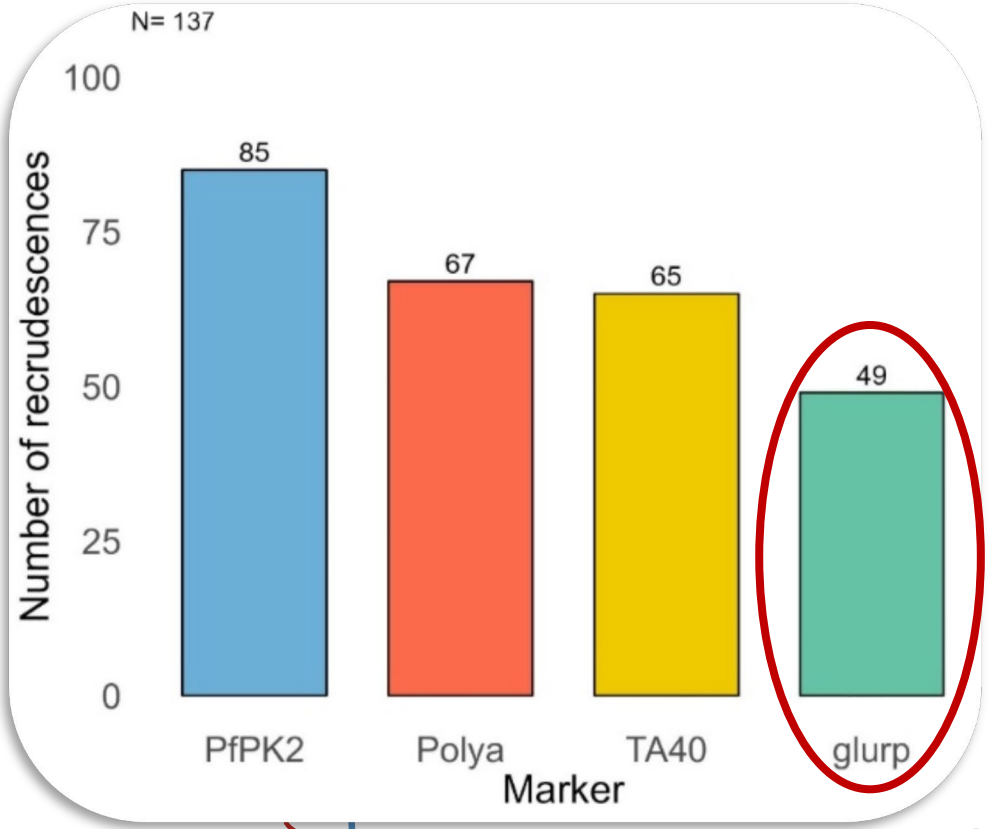


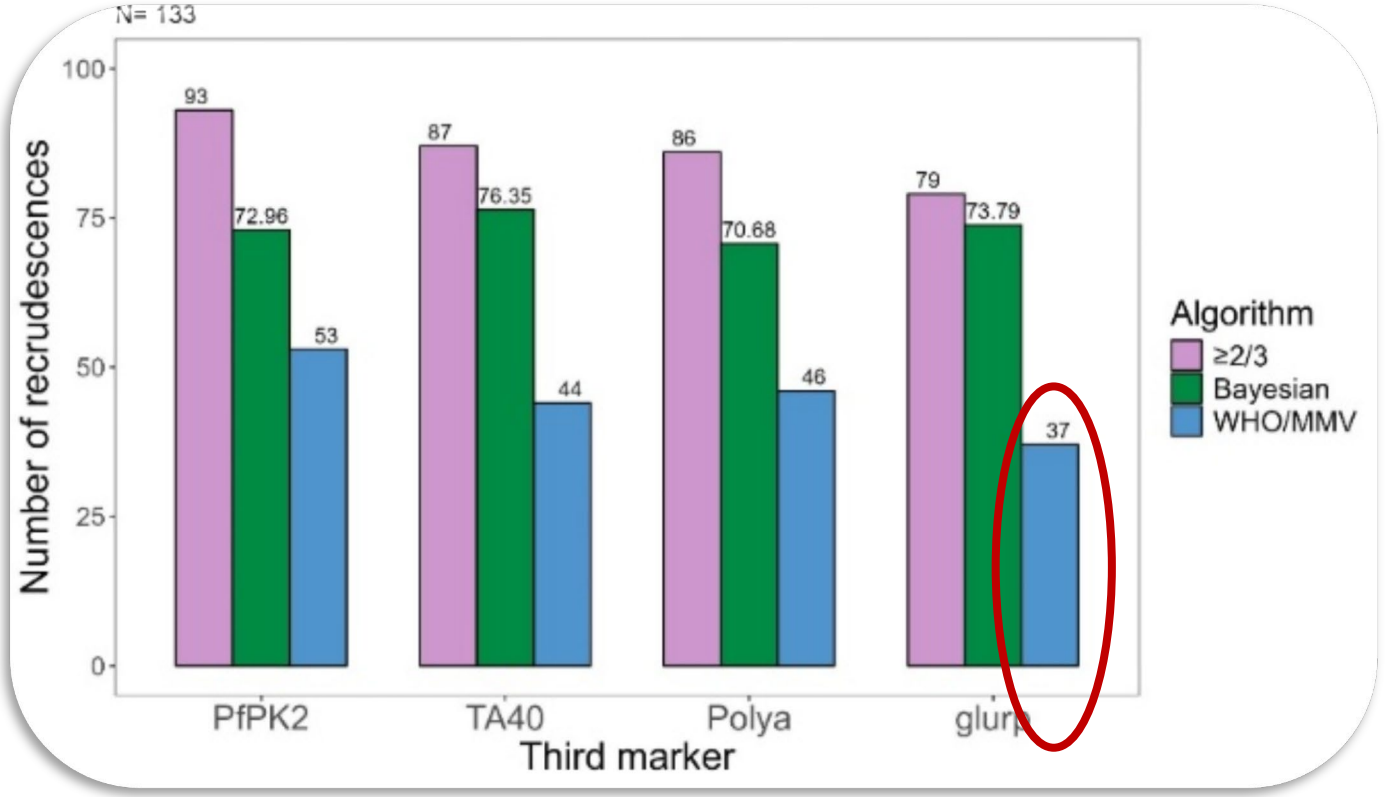


Holzschuh. et al. Sci Rep. , 2025, accepted

Replacing *glurp* by microsatellites



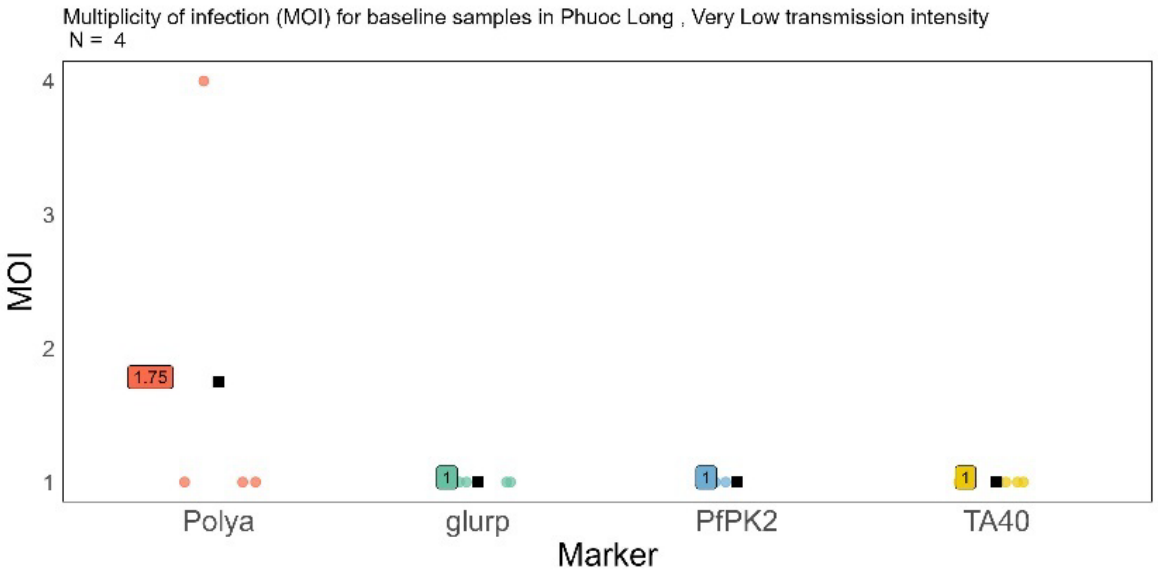


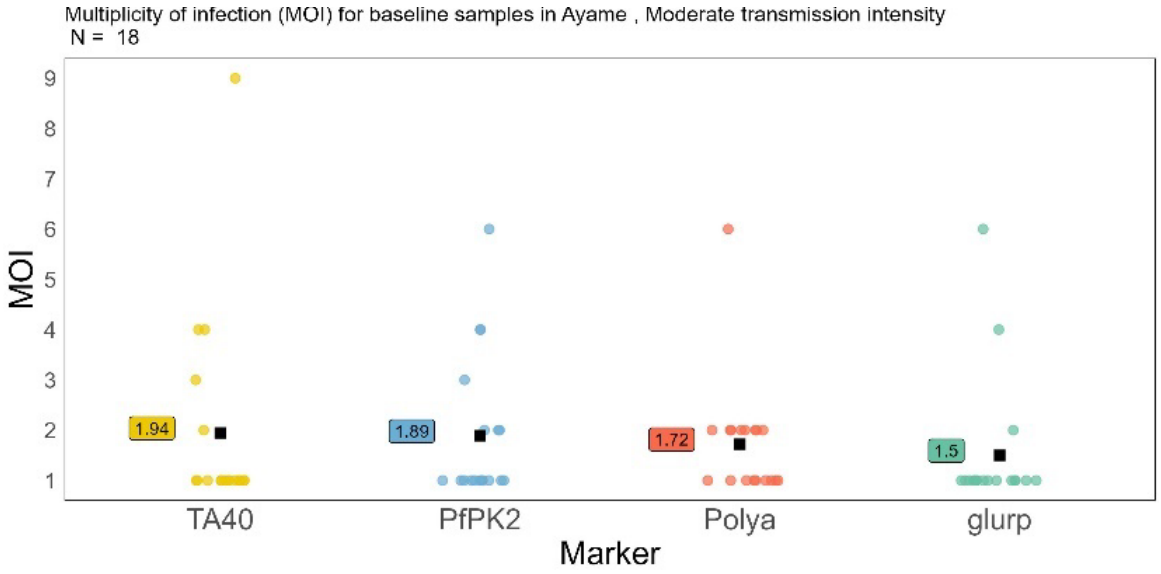


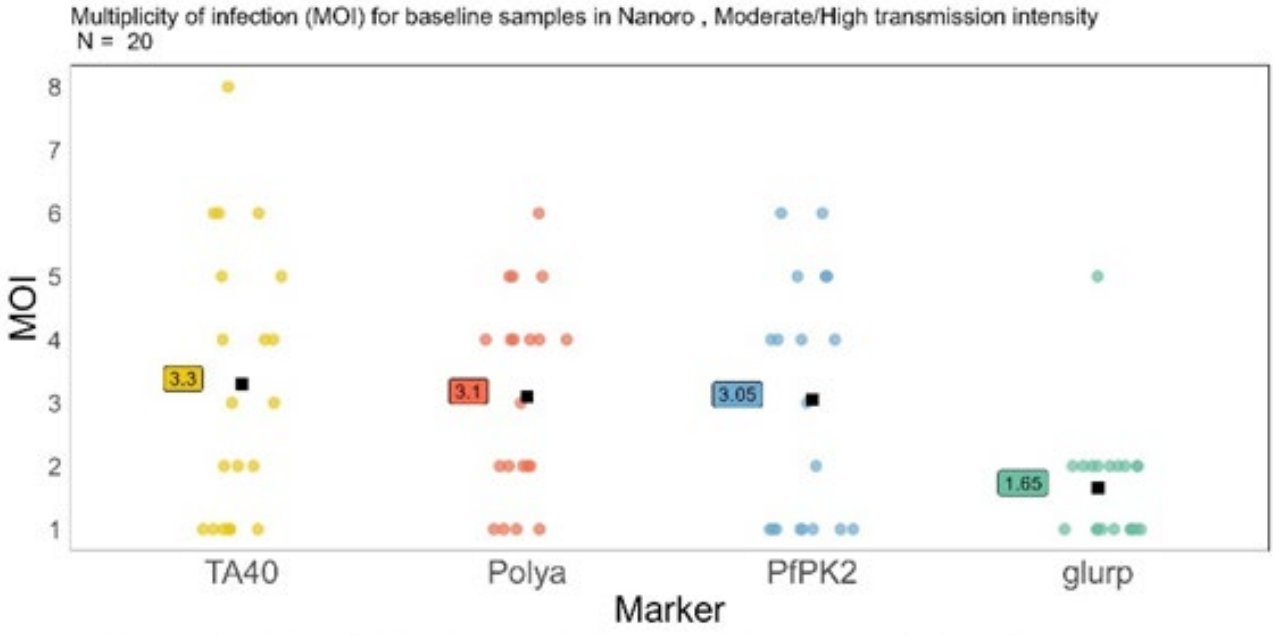
Replacing *glurp* by microsatellites



High variability in MOI when using high resolution genotyping techniques

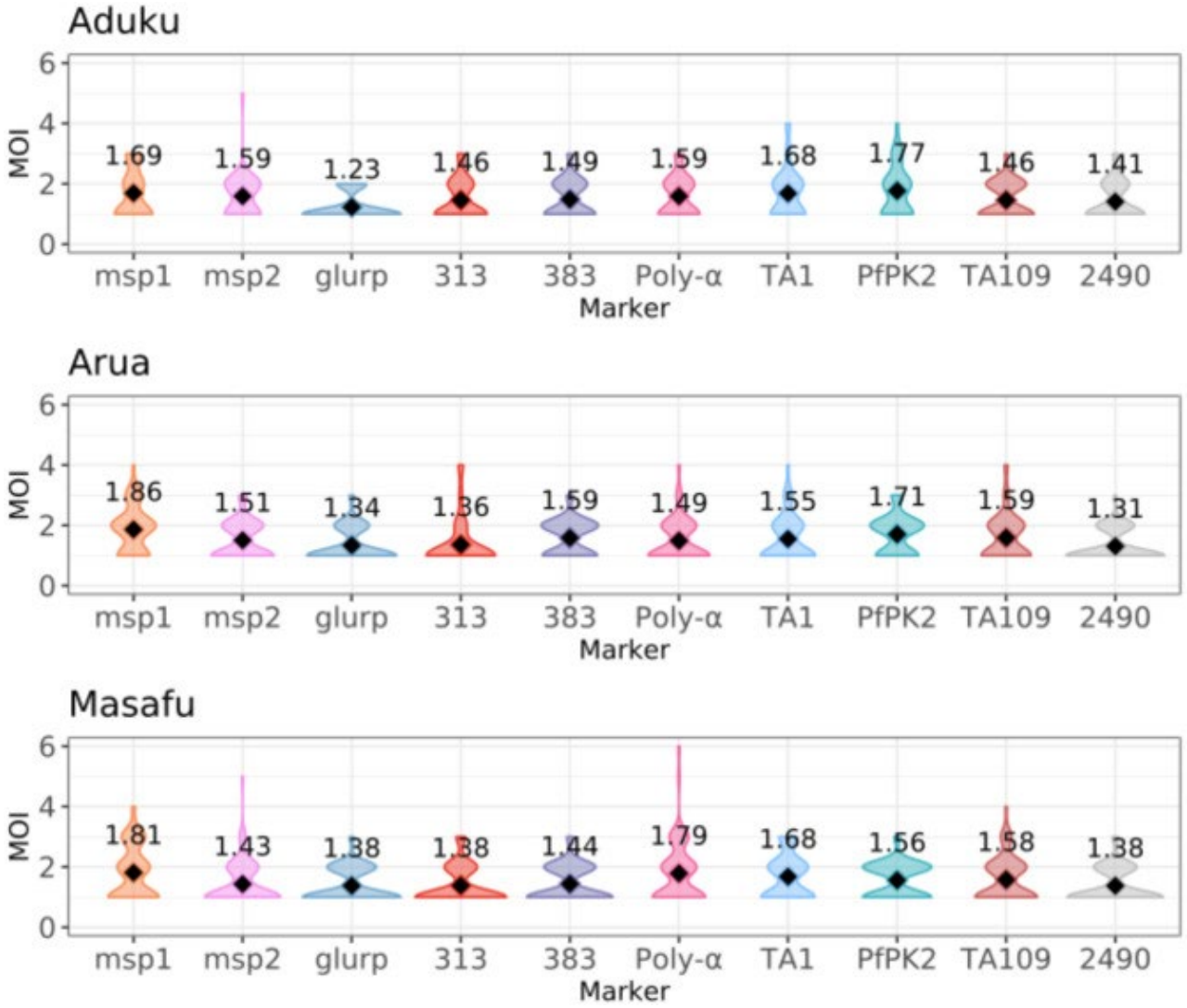






Replacing *glurp* by microsatellites





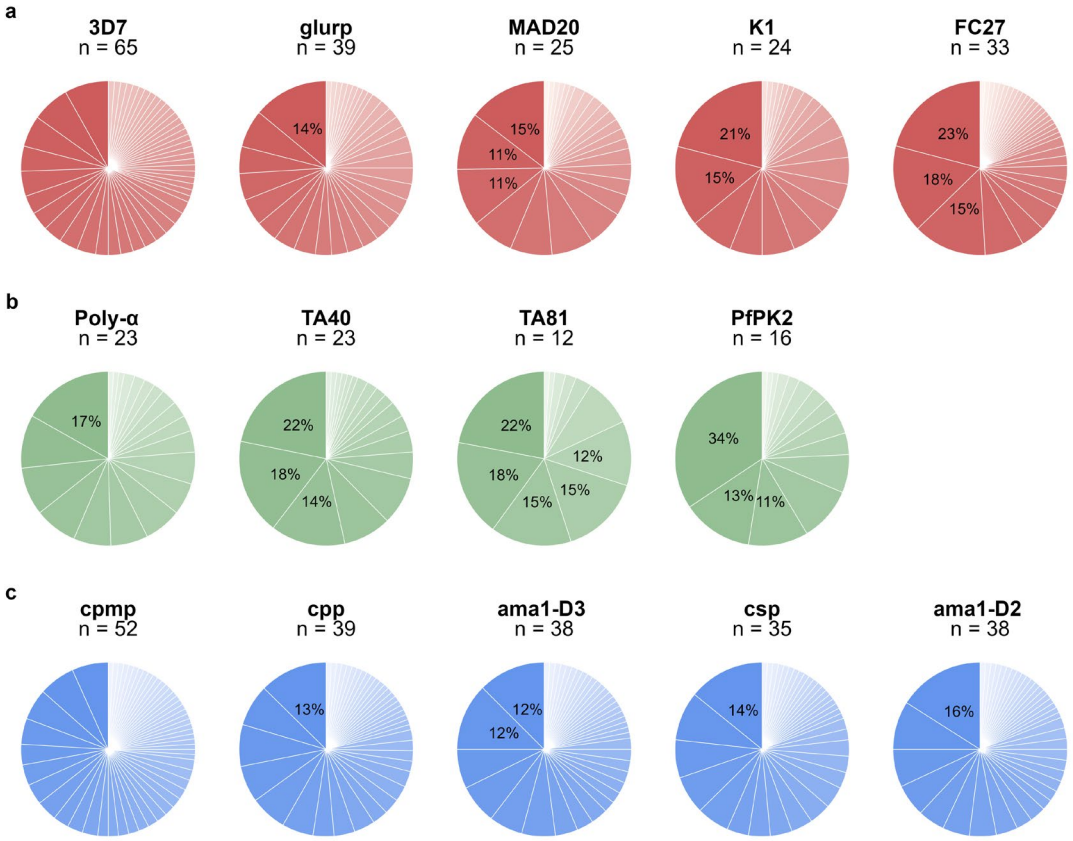
Low variability in MOI when using low resolution genotyping techniques

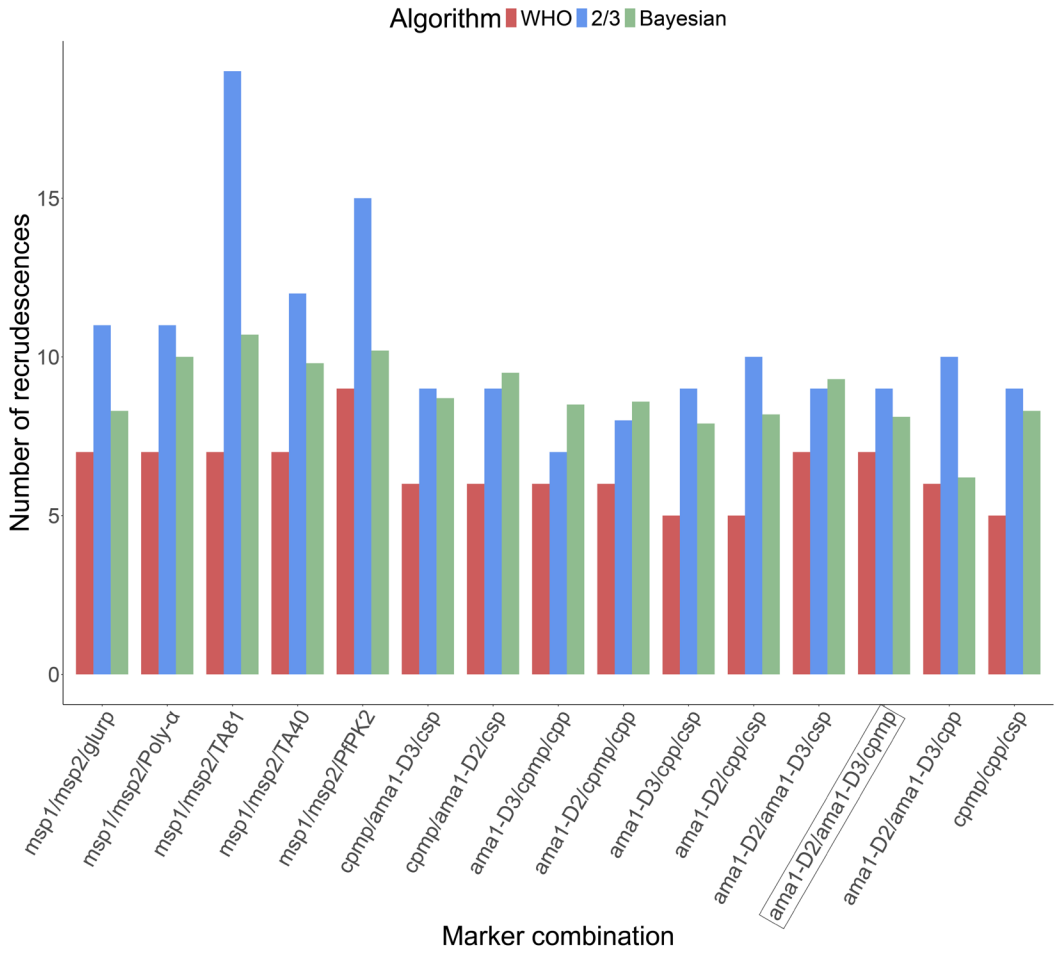
Mwesigwa et al. Sci Rep. 2025;15(1):4375.

Improving genotyping techniques with AmpSeq



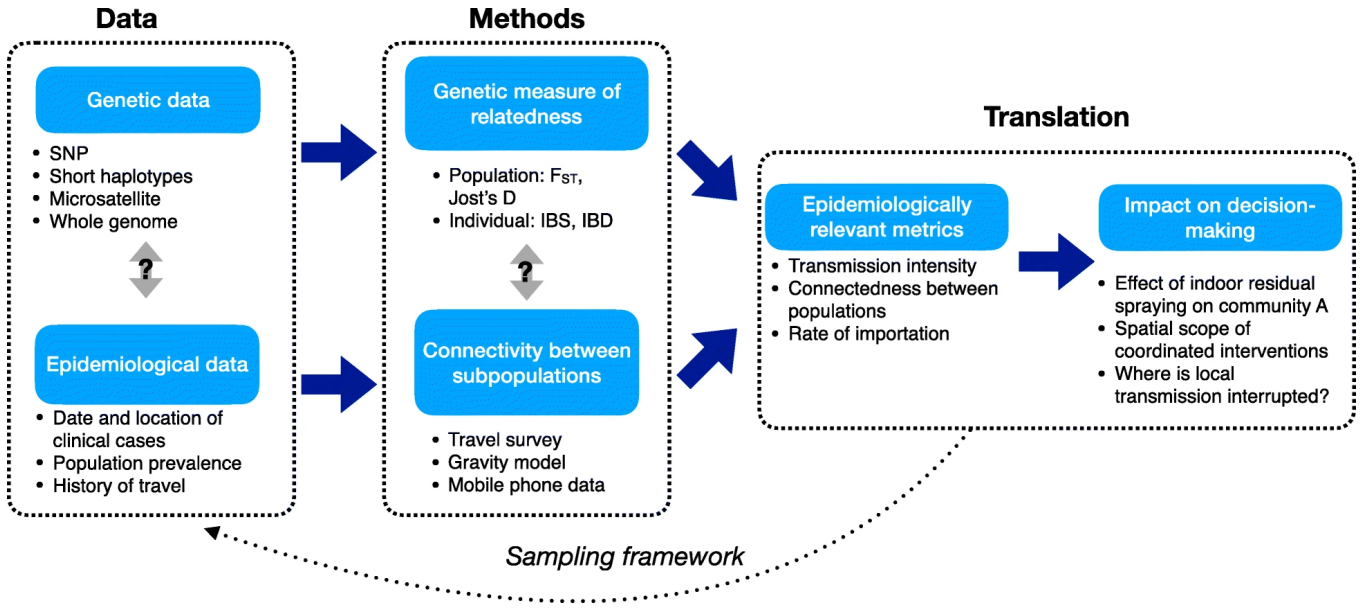




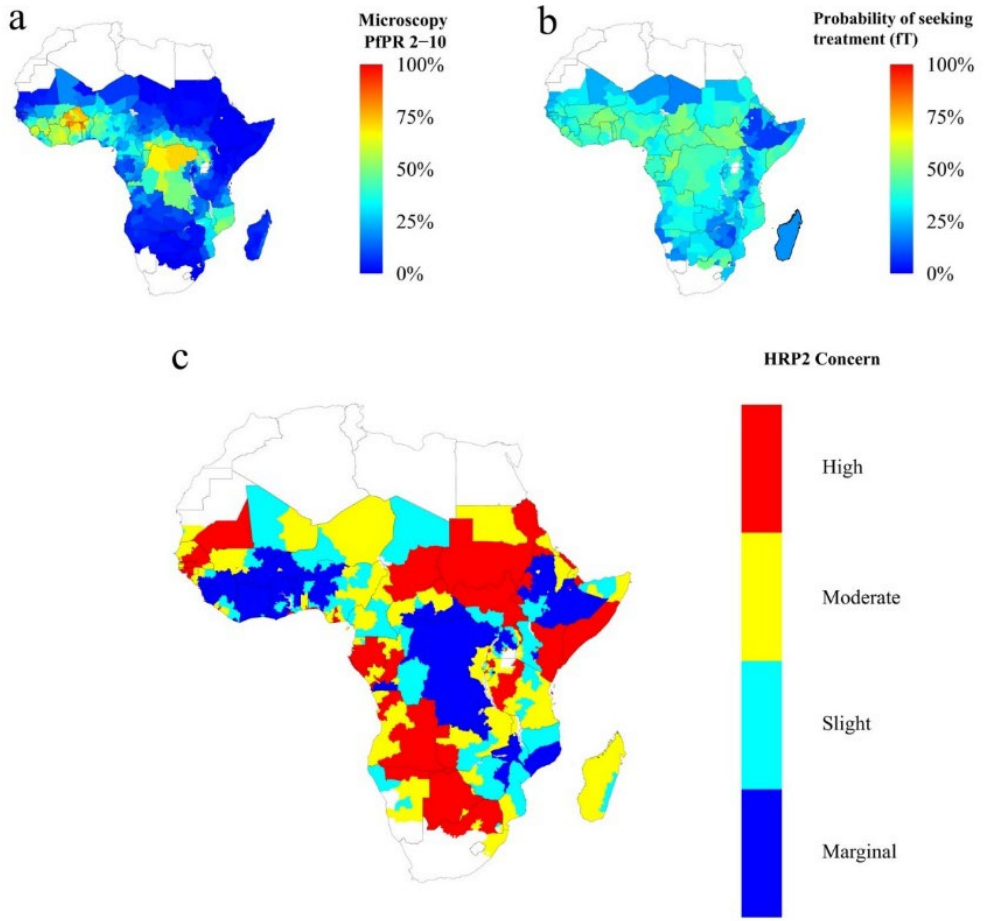


→ High diversity for *msp2*/3D7, *glurp*, and all AmpSeq markers

Integration of genomic into routine surveillance

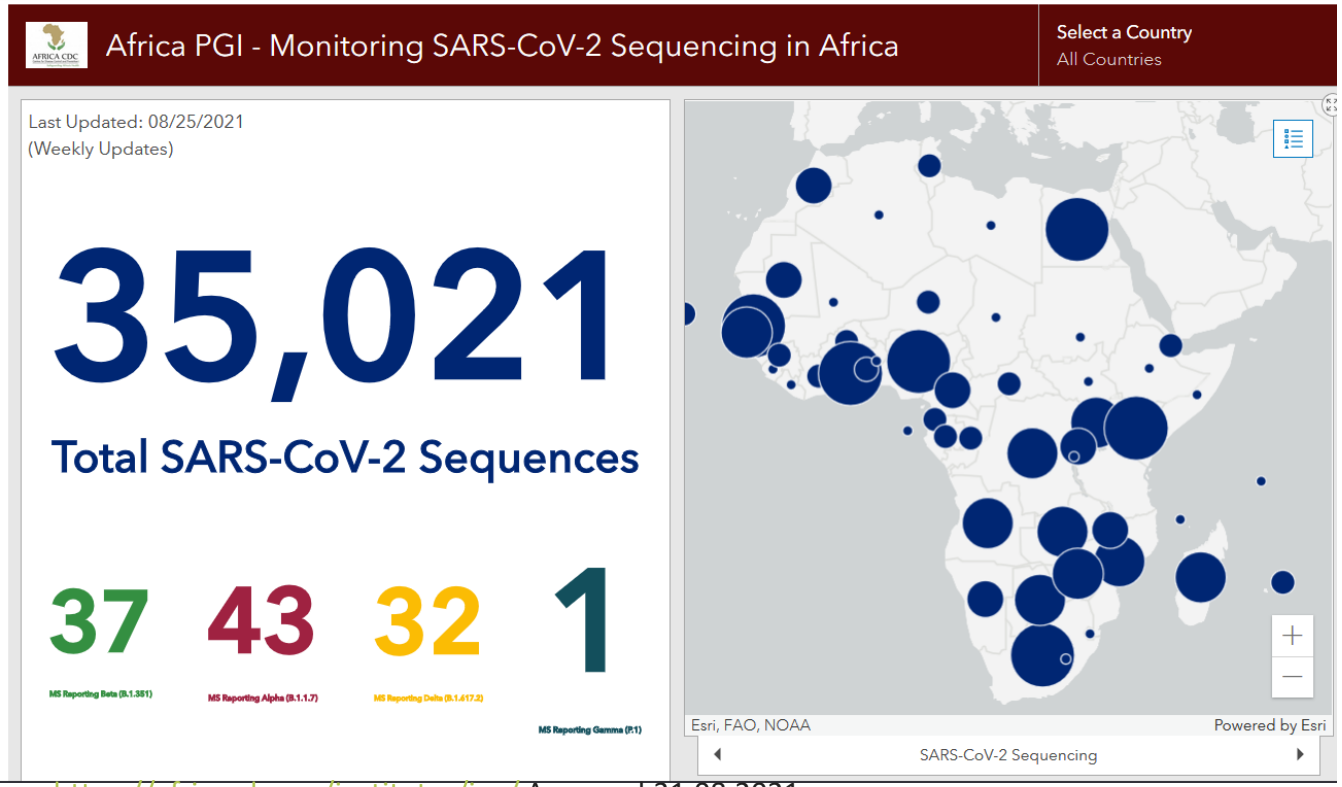


Wesolowski et al. BMC Med. 2018;16(1):190.

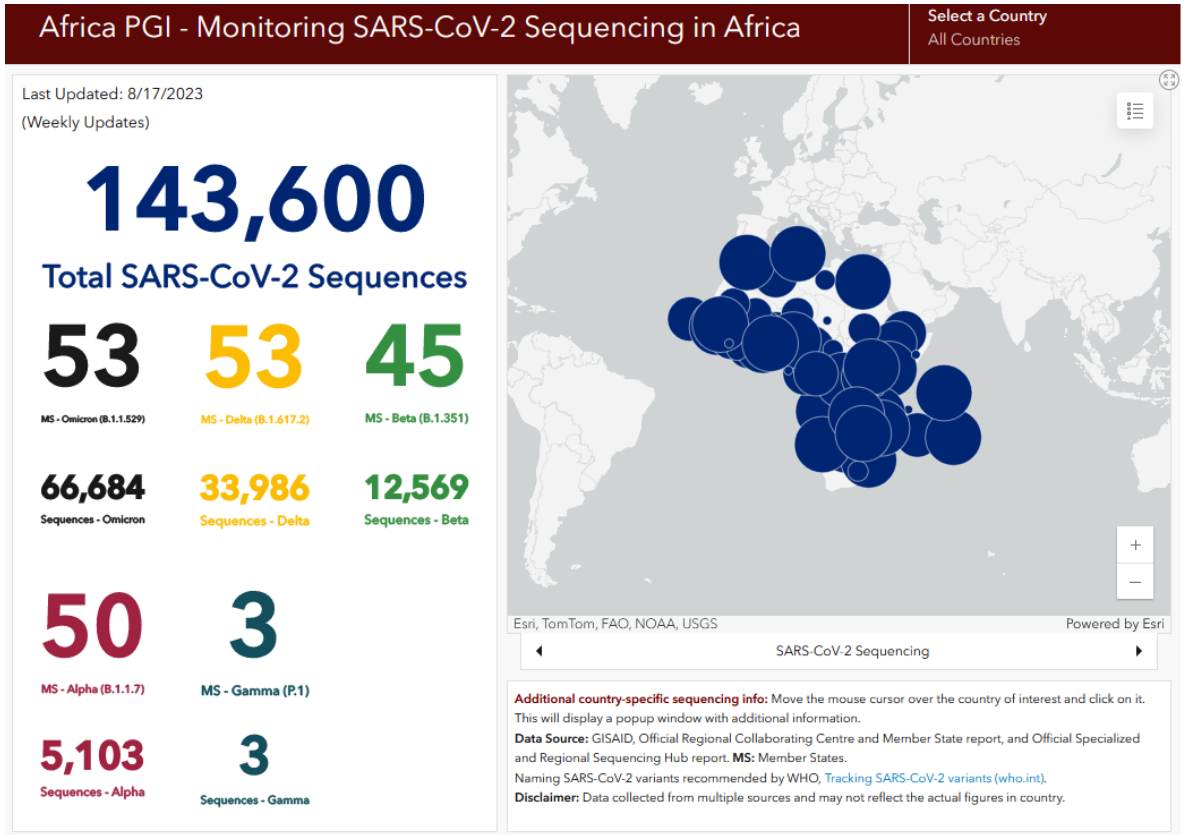


Watson et al. Elife. 2017:6:e25008.

Increasing sequencing capacity in Africa

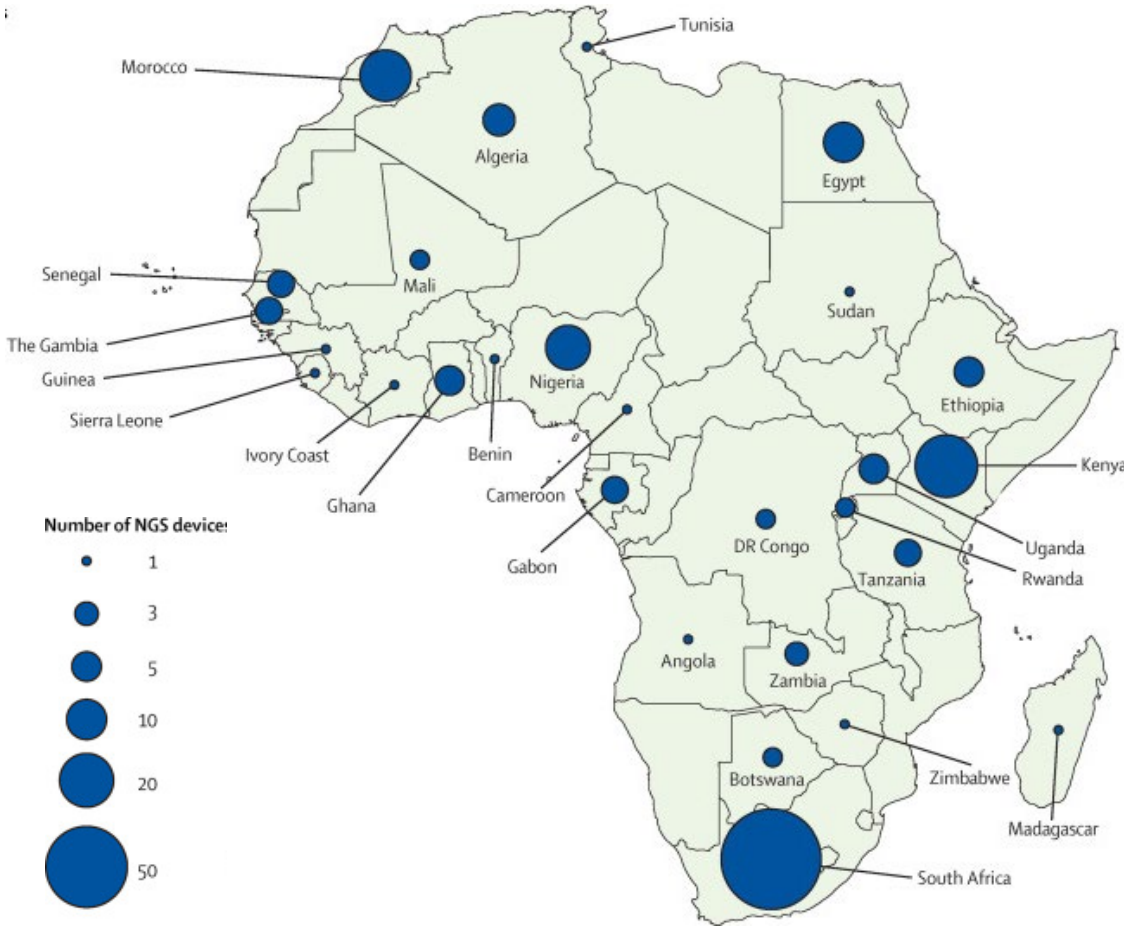


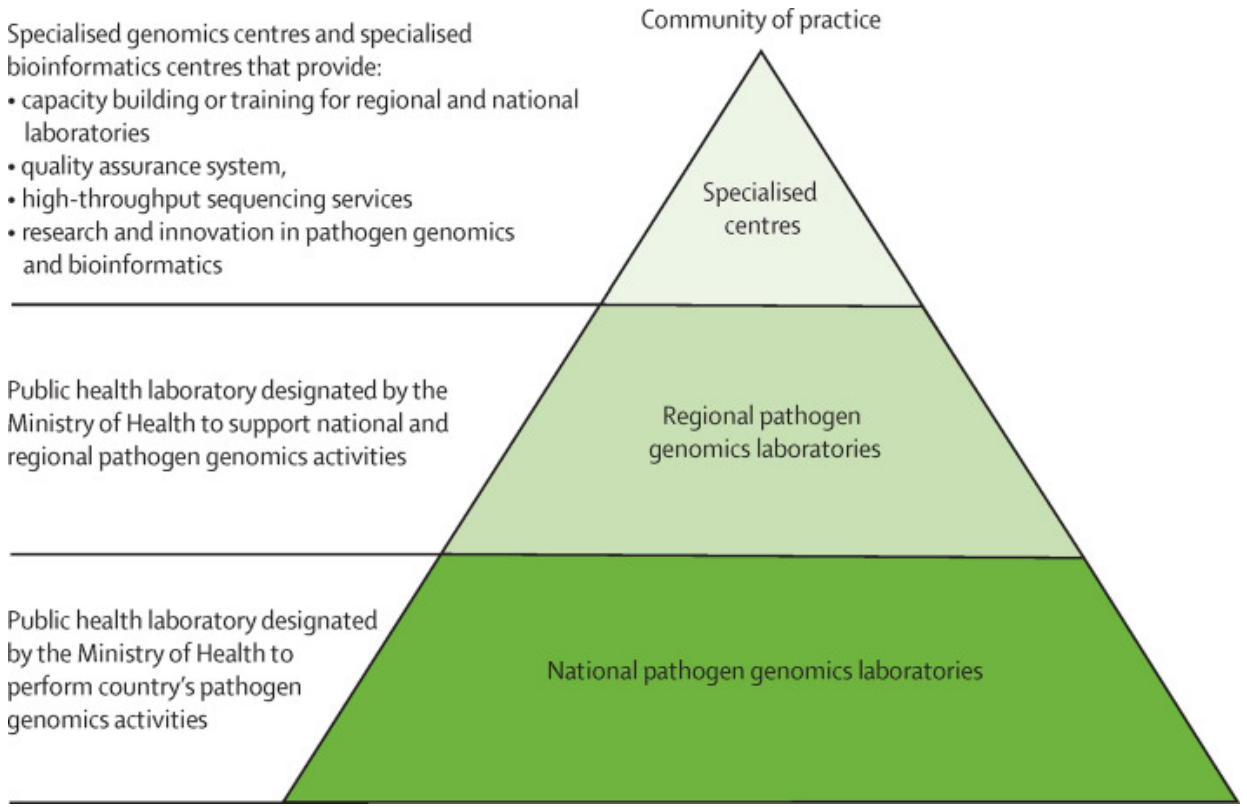
https://africacdc.org/institutes/ipg/ Accessed 31.08.2021



https://africacdc.org/institutes/ipg/ Accessed 23.04.2024

Pathogen genomics surveillance network structure





Inzaule et al. Lancet Infect Dis. 2021;21(9):e281-e289

Way forward

- Molecular surveillance should be part of routine surveillance for antimalarial drug resistance
- Prevalence/frequency of resistance markers could inform the selection of TES sites
- Consider the inclusion of asymptomatic carriers in molecular surveys
- Next generation sequencing techniques should be preferential adopted due to their ability to detect minority variants
- Laboratories performing PCR correction should validate their assay (s) based on predefined target product profile (TPP)
- More research is needed to develop models that can predict treatment efficacy dynamics based on molecular markers
- External quality assurance (EQA) scheme should be developed to support laboratories in malaria endemic settings to establish genomic assays for routine surveillance

Acknowledgements

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

IDRC
INFECTIOUS DISEASES RESEARCH COLLABORATION

rbc Rwanda Biomedical Centre
Healthy People, Wealthy Nation

FNSNF
FONDS NATIONAL SUISSE
SCHWEIZERISCHER NATIONALFONDS
FONDO NAZIONALE SVIZZERO
SWISS NATIONAL SCIENCE FOUNDATION

NOVARTIS

Swiss TPH

Thank you for your attention !

christian.nsanzabana@swisstph.ch

Department of Medicine

Malaria genotyping group



RBM Partnership To End Malaria

Antimalarial Drug Resistance: Prioritizing surveillance in a context of resource uncertainty

18 September 2025

2. WHO updated protocol guidance: TES, MMS

Charlotte Rasmussen, WHO

Antimalarial drug resistance

14th RBM Case Management Working Group Workshop

Abidjan, Cote d'Ivoire

September 2025

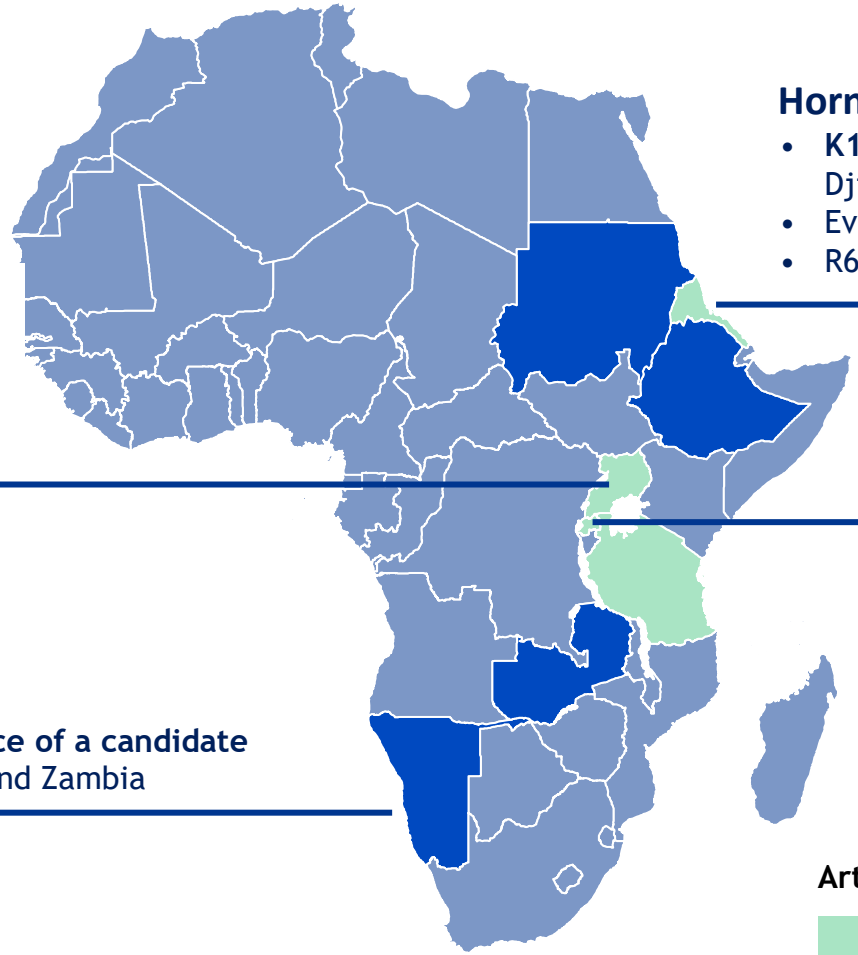
Charlotte Rasmussen
WHO/HQ
Geneva

World Health Organization

Drug resistance status

World Health Organization

Drug resistance | Artemisinin partial resistance emerging and spreading



Horn of Africa

- **K13 mutation R622I** detected in several countries including Djibouti, Eritrea, Ethiopia, Sudan and Somalia
- Evidence of slow parasite clearance in Eritrea
- R622I has been detected in parasites *with Pfhrp2/3* deletions

Uganda

- **Different K13 mutations are spreading** with foci where parasites carry validated artemisinin resistance markers

Rwanda & Tanzania

- **K13 mutations, predominately R561H,** have been found at high prevalence in studies with evidence of delayed clearance in Rwanda and Tanzania

Southern Africa

- 2023 survey found **high prevalence of a candidate K13 marker (P441L)** in Namibia and Zambia

Artemisinin partial resistance:

Confirmed

(Evidence of delayed clearance in patients with validated markers)

Suspected

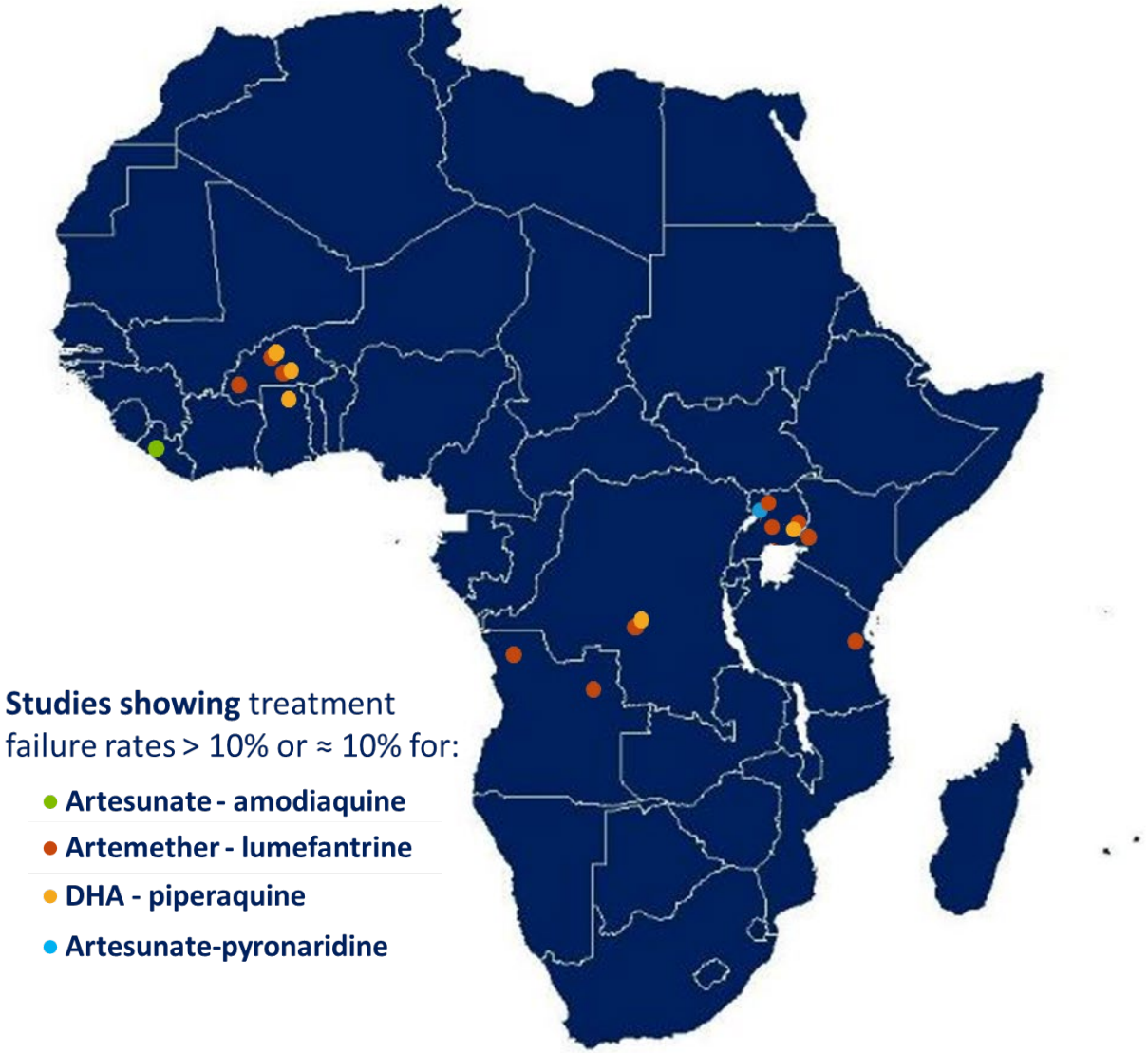
(Evidence of delayed clearance or >5% with validated or candidate markers)

World Health Organization

Gaps in information impede effective responses to resistance

- ACT partner drug resistance would result in high treatment failure rates
- Scattered reports of high treatment failure
- Identifying true decline in efficacy in the data is challenged by:
  - Molecular markers for resistance are missing for key ACT partner drugs.
  - Difficulties in distinguishing recrudescence from reinfection
  - Challenge related to adherence to standard TES protocol and quality of implementation
- Areas with no or limited data either due to no studies being done, or data not analyzed and shared.

TES with high failure rates from 2015 - 2024



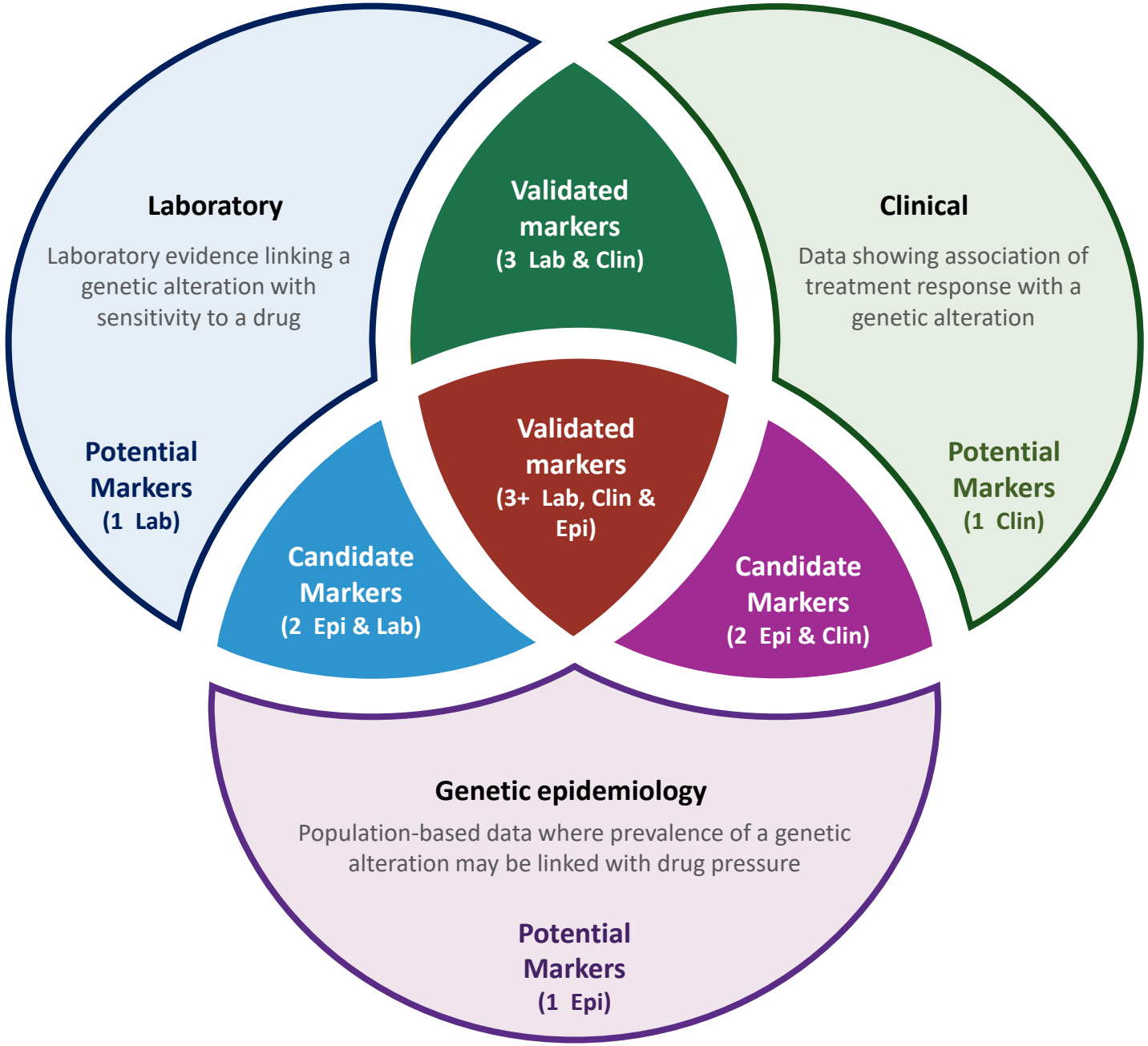
Drug resistance activities

- Development of a compendium of molecular markers
- Review of guidance on drug efficacy surveillance including the methodology for distinguishing recrudescence and reinfection

World Health Organization

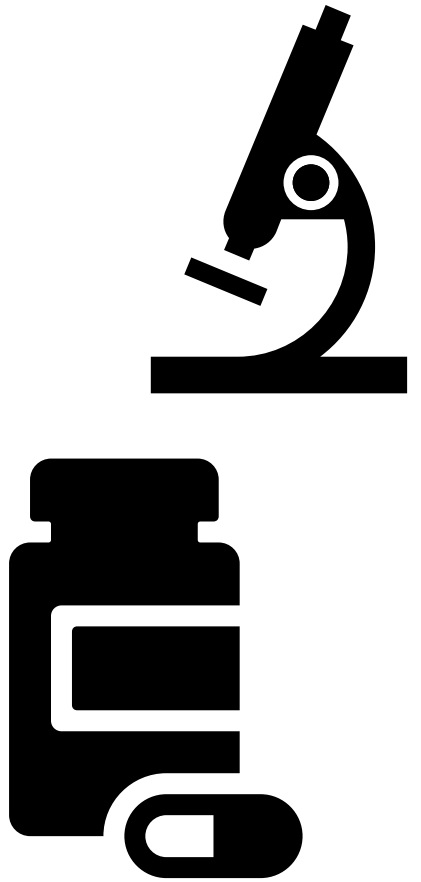
Compendium of antimalarial drug resistance

- **Objective of compendium**: To facilitate prioritisation of molecular marker surveillance and research by systematically categorizing drug resistance markers
- Compendium being generated by review of data in three areas:
  - **Laboratory evidence** linking a genetic alteration with in vitro sensitivity to a drug
  - **Clinical evidence** showing association of treatment response with a genetic alteration
  - **Genetic epidemiological evidence** showing prevalence of a genetic alterations that could be linked with drug pressure
- **Being finalised with a group of experts. Plan to publish in October 2025**



Review of guidance on drug efficacy surveillance - Why monitor the efficacy of antimalarial drugs?

- **Surveillance of therapeutic efficacy (in vivo) over time** is a critical component of effective malaria case management and generates:
  - critical information for **determining whether drugs recommended in the national treatment policy are still effective**,
  - **evidence-base to inform introduction of new treatment** into national malaria treatment policies, and
  - make a **timely response to spread of drug resistance** possible.



World Health Organization

Challenges – gaps in information in context of decreasing funding

Funding for efficacy surveillance is decreasing. To use **remaining resources optimally** and generate **timely, policy-relevant information**, there is a need to:

1. Improve **speed in data generation and sharing** so findings can influence upcoming studies and decisions
    - Common delays stem from slow analysis, data entry, or genetic testing (e.g., distinguishing recrudescence from reinfection)
    - Speed up data sharing—efficacy surveillance should not be treated solely as academic research where data are withheld until publication

World Health Organization

Challenges – responding to decreasing funding

2. Ensure studies are of sufficient **quality** to avoid wasting scarce funds on data that cannot be used to inform policy
    - Quality issues often arise from protocols with design weaknesses or issues in implementation, due to insufficient training or resources for field staff
        - Example: To cut costs, the evening dose of AL is sometimes not directly observed, resulting in data that are difficult to interpret and diminishing the value of the entire study
    - A roster of experts has been established to support study implementation and uphold quality standards
    - High reinfection rates make it even more important to improve the ability to distinguish recrudescence and reinfection

World Health Organization

Challenges – responding to decreasing funding

3. Prioritize studies that **address the most critical policy**
    - Rapid sharing of data within and between countries is essential to guide where and what studies should be conducted.
    - Establishing sub-regional networks should focus on facilitating this timely data exchange.
    - Genomic data can contribute to informing need for studies, but reliable markers for most partner drugs remain limited.
        - For example, *PfKelch13* mutations can signal where further studies may be needed—yet in Tanzania and Uganda, declines in AL efficacy occurred without these mutations, while high efficacy was reported in areas where *PfKelch13* mutations were present.

World Health Organization

Review existing guidance on antimalarial drug efficacy surveillance

Review of TES guidance

Overall objective:

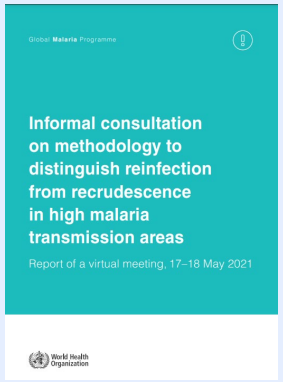
- To review and revise the WHO guidance on antimalarial drug efficacy surveillance, ensuring it incorporates recent advancements and meets the needs of national malaria programmes and researchers.

Specific objectives

- Update guidance related to efficacy surveillance, including the location, timing, sample size, and quality control of studies.
- Review the TES protocol and update the mandatory and optional components where applicable.
- Update annexes and tools based on the updated version of the protocol, including data entry tools, SOPs, and the study monitoring checklists.

World Health Organization

Genotyping to classify cases as recrudescence or reinfections



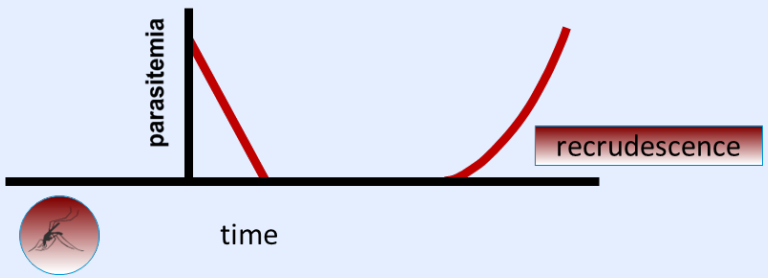
- Since 2008, the recommendation was to use the markers msp1, msp2 and glurp

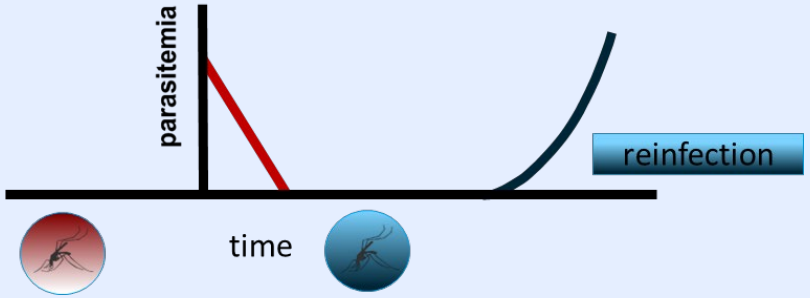
Recommendation in 2021 on markers and methods

- msp1 and msp2 continued to be used but **glurp should be replaced with one microsatellite** from the following: Poly-α, Pfpk2 and TA1 (in Africa)
- **Match-counting (3/3)** should be maintained as the primary analysis methodology for reporting and policy change. Bayesian and 2/3 algorithms may be applied for evaluation and comparison, but not for primary reporting.
- These methods should be applied in both low to moderate and high transmission settings in Africa. **Outside Africa, the current method (msp1/msp2/glurp) should still be applied**.

- **These recommendation was seen as interim until better data using different methods were obtained. Therefore, WHO will have a review of newly generated data to possibly inform new recommendations**

World Health Organization





Thank you

World Health Organization

RBM Partnership
To End Malaria

Antimalarial Drug Resistance: Prioritizing surveillance in a context of resource uncertainty

18 September 2025

3. Update on AMDR Global consultation

Patrick Okello, RBM



AMDR global consultation

14th annual RBM Case Management Working Group Workshop
Abidjan, Côte d'Ivoire
18 September 2025

Overview of global consultation on AMDR coordination

- RBM & WHO led a "Global Consultation on Coordination of Antimalarial Drug Resistance Surveillance and Response Efforts in Africa" as part of the **Big Push to end malaria**
- A constituency-based, two-phased approach was followed:
  - Phase 1: Pre-consultations with each constituency to gather input on expectations, challenges and priorities for AMDR coordination
  - Phase 2: In-person, 2-day meeting held on 12-13 March 2025 in Geneva, Switzerland

Constituencies

Organization / Country	Countries	Academia	Technical & Strategic Partners	Regional/ Continental Partners	Financial Partners	Private Sector
	• Ethiopia • Rwanda • Uganda • Tanzania • Zambia • Burkina Faso • Nigeria • Sudan	• LSTM&H/MORU/ NIMR Tanzania • MARC-SE • WWARN • HANMAT • DeTACT	• PATH • CHAI • MMV • JHPIEGO • PSI – ACT Watch Lite	• ALMA • Africa CDC • RBM focal point for SADC	• UNITAID • US CDC • Gates Foundation • Global Fund • FCDO • L'Initiative - Expertise France	• Novartis • GSK

The in-person meeting aimed to establish a **shared understanding on AMDR challenges & create a roadmap for global & subregional coordination**

Key outcomes

- Identification of the top four AMDR priorities.
- Agreement on 5 sub-regional networks on drug resistance and response as multi-country platforms for data sharing and policy response.
- Alignment on global topics requiring collaboration and assigned lead organization.



Identification of the top four AMDR priorities

- Following the global consultation held in March, **four groups were established**, each focused on one of the top AMDR priorities.
- Participants of the global consultation selected their group preferences, ensuring balanced representation from all constituencies.
- The groups held **six virtual discussions**, during which they **brainstormed** and **refined ideas** within their assigned thematic areas.

Identification of the top four AMDR priorities

Selected ideas emerged from the discussions

Detection
Sharing of quality data *Facilitated by Aissata Barry & Abdoulaye Djimdé*
• Define minimal essential data package required • Explore the use of existing platforms • Propose approaches for more rapid data dissemination while preserving data ownership and still allowing publication
TES & MMS capacity *Facilitated by Charlotte Rasmussen & Agaba Bosco*
• Identify potential funding sources to support protocol mapping • Mapping existing protocols

Response
Strategy & implementation of antimalarial drug diversification *Facilitated by Jan Kolaczinski & Aimable Mbituyumuremyi*
• Raise country awareness, develop communication strategies • Establish peer-to-peer exchange platforms to share implementation experience • Develop a clear product introduction roadmap with better visibility, more efficient in an accelerated timeframe.
Translation of surveillance data into framework for policy & political action *Facilitated by Samson Katikiti & Michael Katende*
• Delayed AMDR data / evidence sharing • Limited technical support for interpreting data • NMP competing priorities exacerbated by resource constraints

Alignment on global topics

Group		Topic
Upstream	1	Research agenda
	2	Norms, standards & guidance
Midstream	3	Product development
	4	Policy & regulatory pathways
	5	Market shaping
	6	Demand forecasting & global supply chains
Downstream	7	Technical assistance
	8	Resource mobilization
	9	Advocacy & communication
	10	M&E + surveillance & progress

Establishment of sub-regional networks on drug resistance and response as multi-country platforms for data sharing and policy response

Eastern Africa



Political umbrella	EA - RCC	
Technical networks	HANMAT	"EANMAT"
	Secretariat = EMRO	Secretariat = TBD

HANMAT
Remaining countries of EA-RCC

Southern Africa



Political umbrella	SADC
Technical networks	SADC Elimination Initiative
	Secretariat = TBD

SADC Elimination Initiative

Western Africa



Political umbrella	ECOWAS & AES
Technical networks	WANSAR
	Secretariat = TBD

WANSAR

Central Africa



Political umbrella	ECCAS
Technical networks	OCEAC & DRC & Burundi
	Secretariat = TBD

OCEAC & DRC & Burundi

For each subregion, a dual-level coordination mechanism is needed with a political umbrella for sustainability & technical networks for implementation

12-13 March AMDR Global Consultation

14 May 1st progress call

16 July 2nd progress call

World Health Organization | RBM Partnership To End Malaria

Organization

March | April | May | June | July | August | September | November | 2026

Road Map for HANMAT

27 May HANMAT meeting

June Establish Steering Committee

September Ministerial meeting with AMDR on agenda

Road Map for EANMAT

May-July Regional Task Team leds development of documents (concept note, MOU, TORs, position paper)

July RTT provided support to Tanzania & Rwanda for submitting a NoI to UK Research and Innovation

19-21 August RTT workshop Kigali, Rwanda

September - Validation of draft documents for establishment of network

November -Present the network to EAC Sectoral Council on Health for adoption and policy guidance

Road Map for SADC Elim. Initiative

April 2025 Consultation with SADC Secretariat Concept note developed Data collection for situational analysis initiated

July 2025 Managers consultation

September 2025 Validation of situational analysis and strategy

November 2025 Approval by SADC Ministers

Road Map for CENTRAL AFRICA

26 May Engagement with OCEAC & ECCAS, Focal OCEAC person designated Pending focal person designation-ongoing follow up

2 June Consultation with CSOs

20 June Consultation with CA countries - designation of Cameroon, Gabon and DRC

September-October Finalisation of consultations (academia, CSOs) and organization of the first virtual meeting of the task force (ToRs, governance, workplan)

Road Map for WANSAR

June CSO member identified

11 June Virtual regional consultation with NMPs, WHO AFRO, RBM

15 July Virtual regional consultation with research & academia, WHO AFRO, RBM

September 2025 Convene a meeting (in-person)- review and validate ToRs, governance structure

Launch of Steering Committee in 2025

** Applies to all


RBM Partnership
To End Malaria

RBM Partnership
To End Malaria

18 September 2025

Measuring and optimizing quality of case management

Moderators: Aissata Barry

RBM Partnership To End Malaria

Measuring and optimizing quality of case management

18 September 2025

1. Country example: Ghana

Paul Boateng, NMCP Ghana



Measuring and Optimizing Quality of Malaria Case Management: A Country Example - Ghana

14th RBM CMWG Annual Meeting, Abidjan

Dr. Paul Boateng

Thursday, September 18, 2025

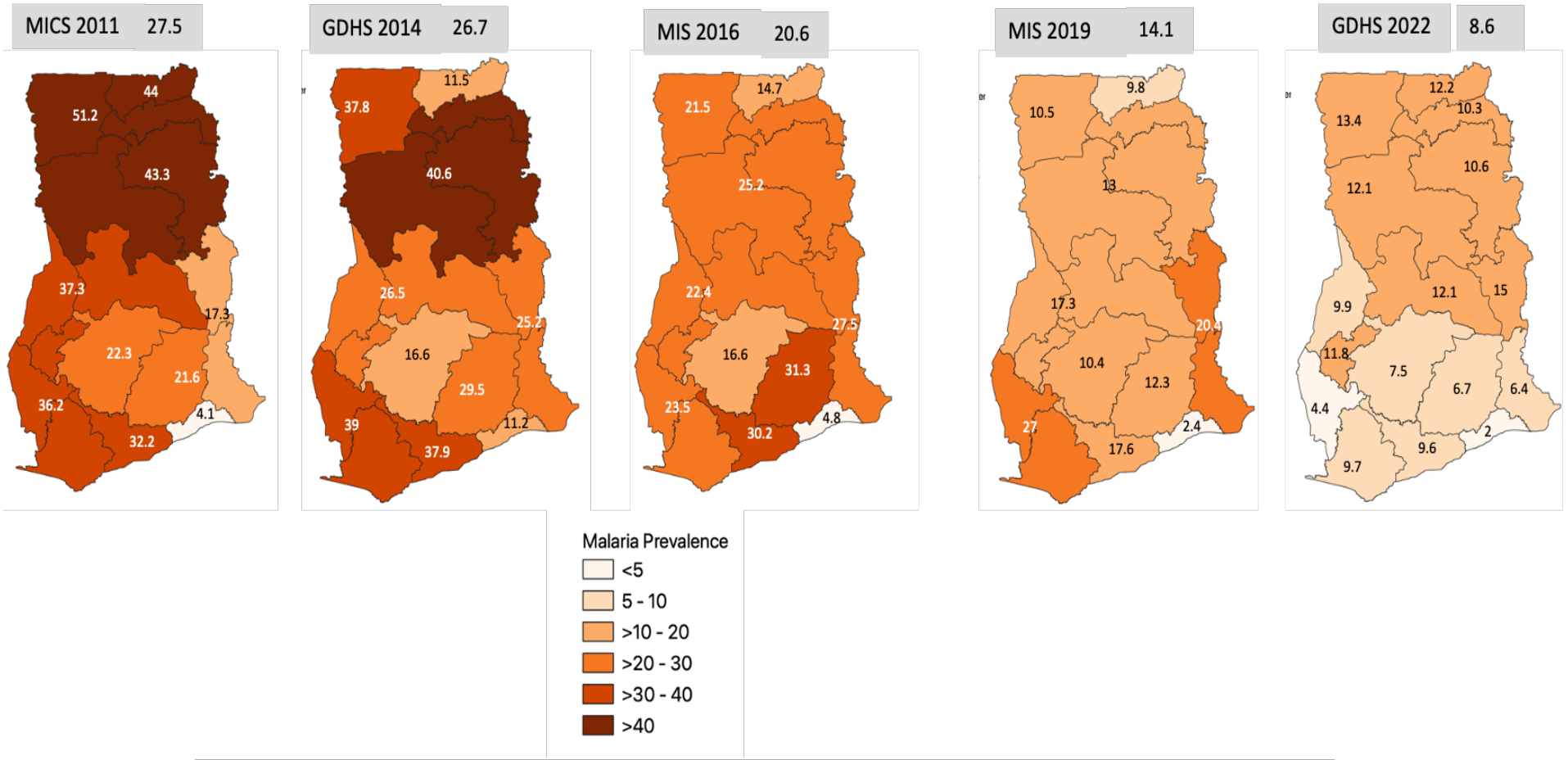
National Malaria Elimination Programme-Ghana

Presentation Outline

- Progress with malaria control in Ghana
- Strategic Plan 2024-2028 Goals
- Approaches to measuring quality and optimization strategies and its impact
- Challenges
- Conclusion

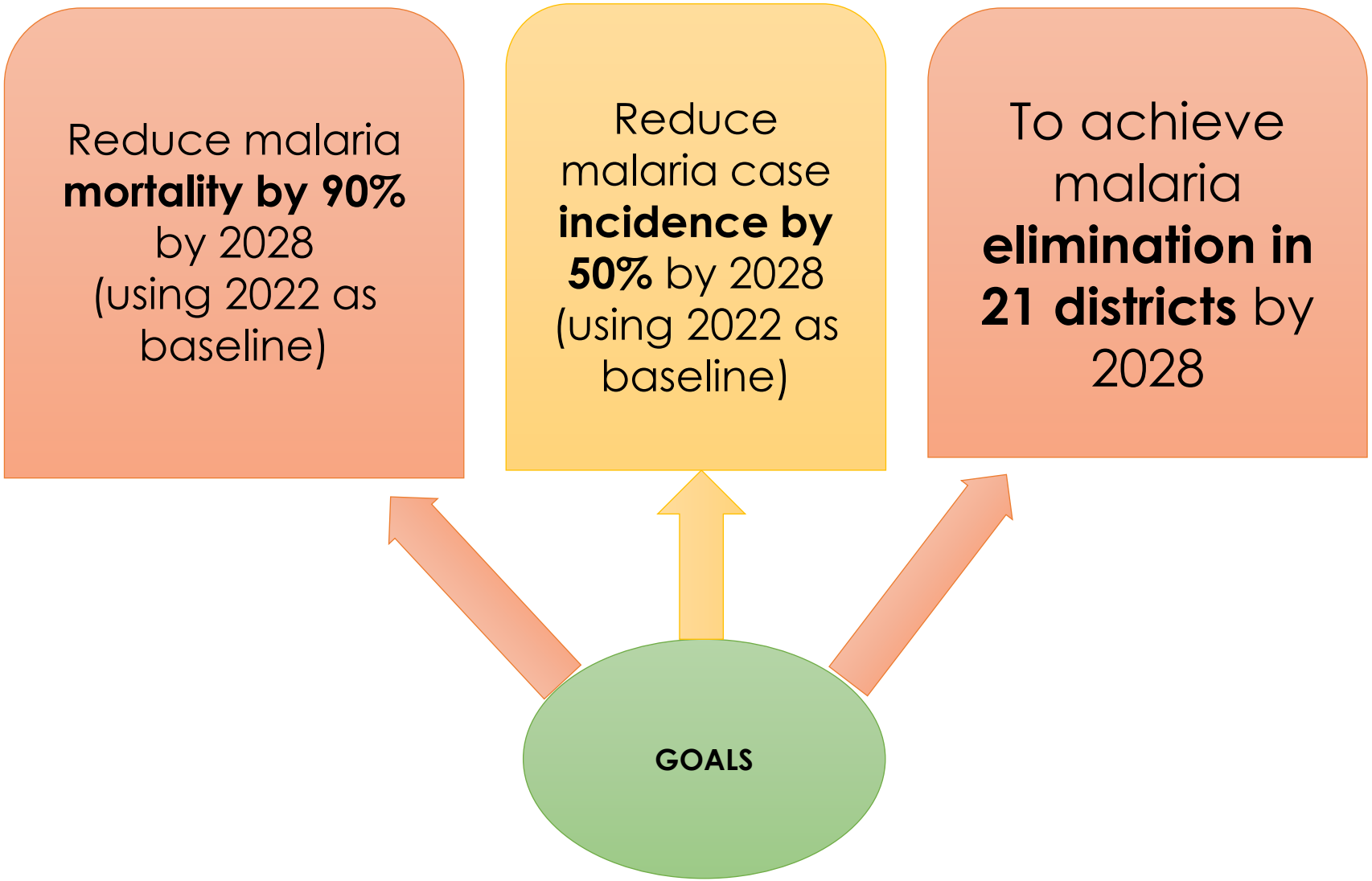
Significant Progress- Prevalence- Ghana

Malaria Parasite Prevalence, 2011-2022



Percentage of children age 6-59 months who tested positive for malaria by microscopy by region, 2011-2022; Source: GDHS/MIS

Goals Strategic Plan 2024-2028



Ghana's Approach to Measuring Quality & Optimization Strategies

- Multifaced
- Each with its own strengths and weaknesses

Ghana's Approach to Measuring Quality & Optimization Strategies (1)

Routine District Health Information Systems 2(DHIMS2)

- National Health Data Source
- Monthly reporting
- Testing rate, confirmed put on ACT, Presumptive Treatment Rate, Adherence to Negative Test Results, No. Admissions, No. Deaths

Current Optimization Strategies	Next Steps -
- **Data validation** (all levels)with feedback - **Interoperability** of other data/reporting systems e.g. Ghana Malaria Interventions App (GMIS), HNQIS etc.	- **Integrate** LHIMS data Avoid duplication of efforts - Creation of **real-time dashboard**

Ghana's Approach to Measuring Quality & Optimization Strategies (2)

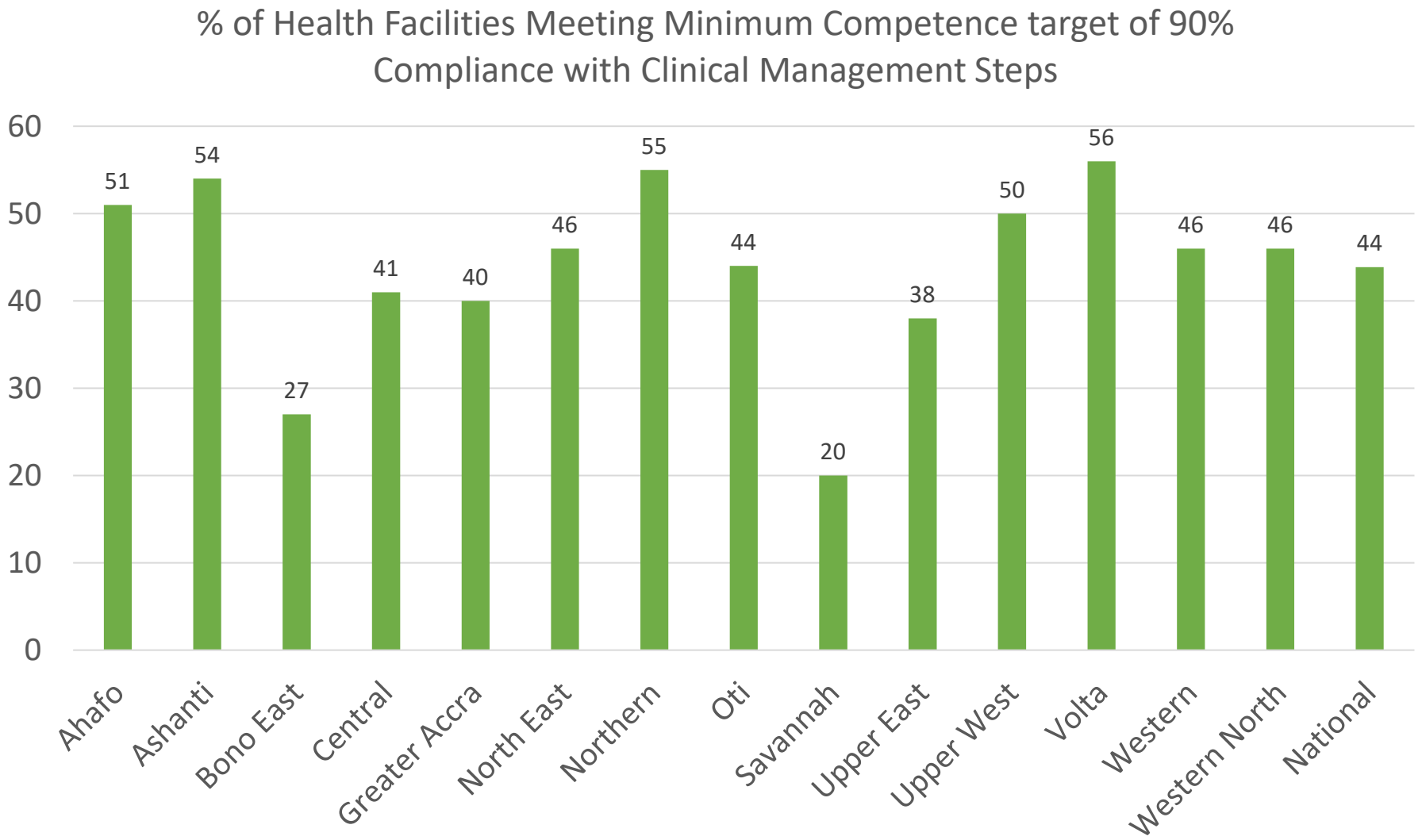
Malaria Onsite Training and Supportive Supervision (OTSS)

- Provides **more granular data-** knowledge and competency assessment
- Covered **many aspects of malaria programming**

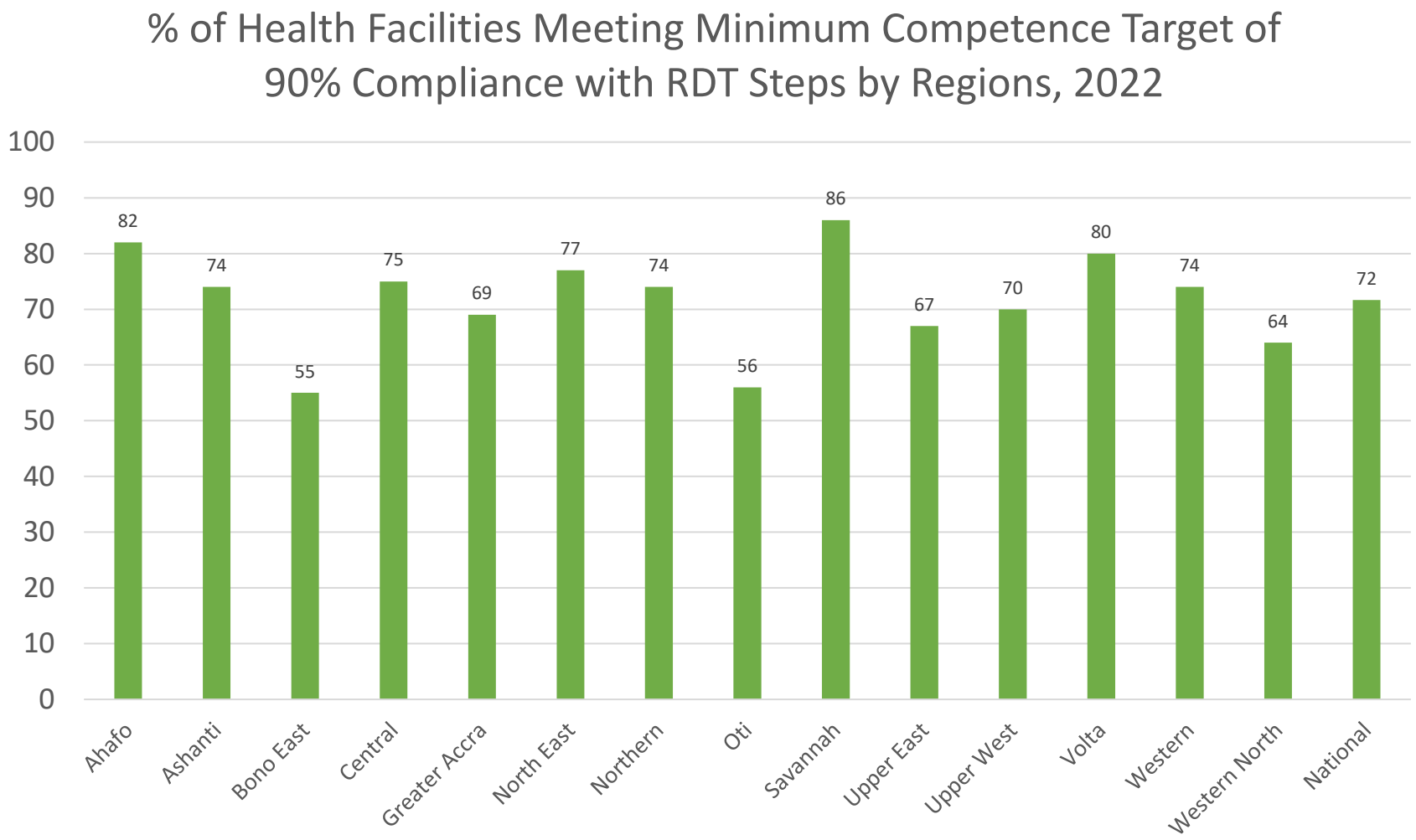




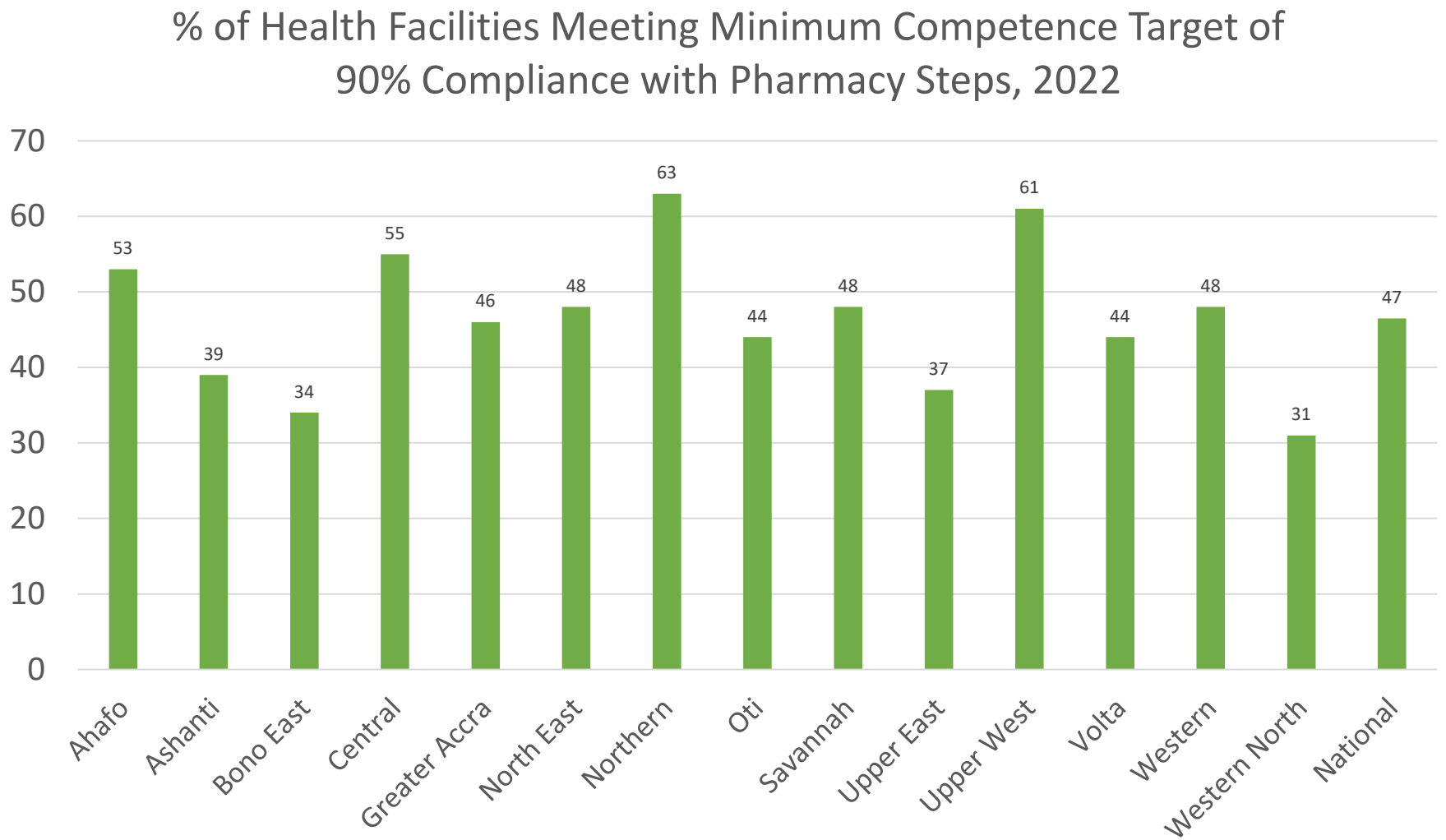
Ghana's Approach to Measuring Quality & Optimization Strategies (3)- OTSS Data



Ghana's Approach to Measuring Quality & Optimization Strategies (4a)- OTSS Data



Ghana's Approach to Measuring Quality & Optimization Strategies (4b)- OTSS Data



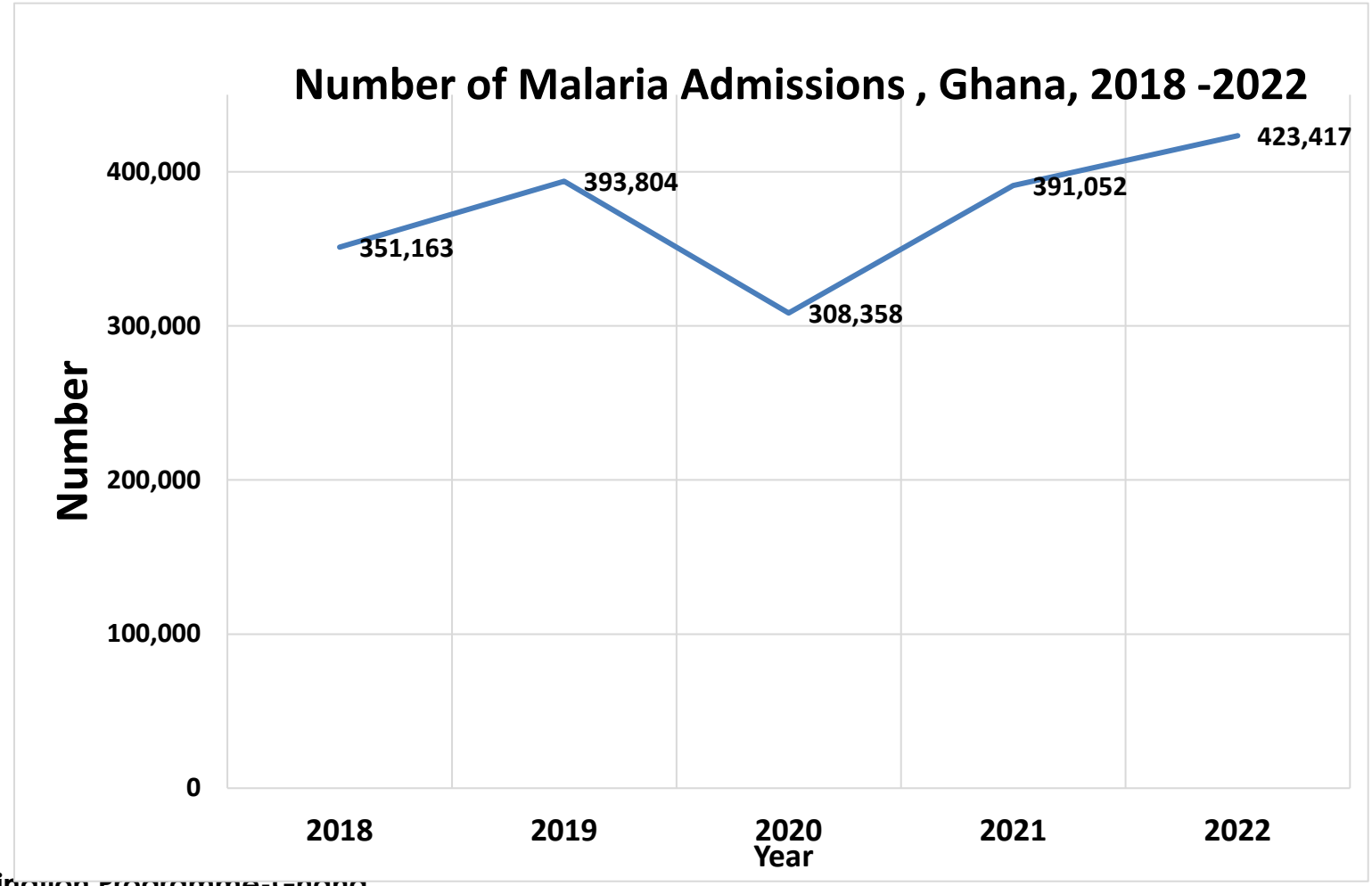
Ghana's Approach to Measuring Quality & Optimization Strategies (5)- OTSS

OTSS

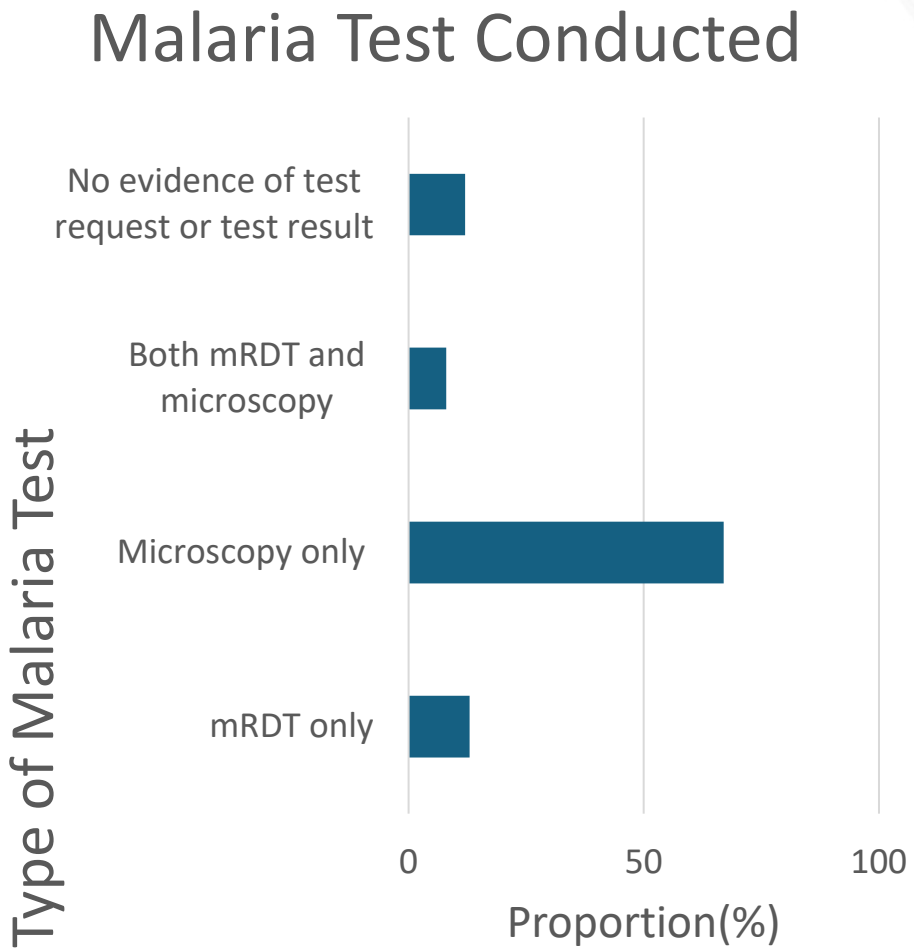
Current Optimization Strategies	Next Steps
- Data collection via **HQIS** App (real time) - Expand **thematic areas** - **Integrated** SS with other programmes (follow up to OTSS and Vice Versa)	- Regular **follow up (virtual follow up)**

Ghana's Approach to Measuring Quality & Optimization Strategies (6)

Other targeted Supportive Supervisory efforts (E.g. Admissions Audit)



Results- Malaria Admissions Audit/ Supervision GAR 2023



Test Results

- **74%** (284) of those tested (384) were positive.
  - mRDT: 78% (72/92) tested positive
  - Microscopy: 70% (233/332) were positive
- 99% due to *P. falciparum*

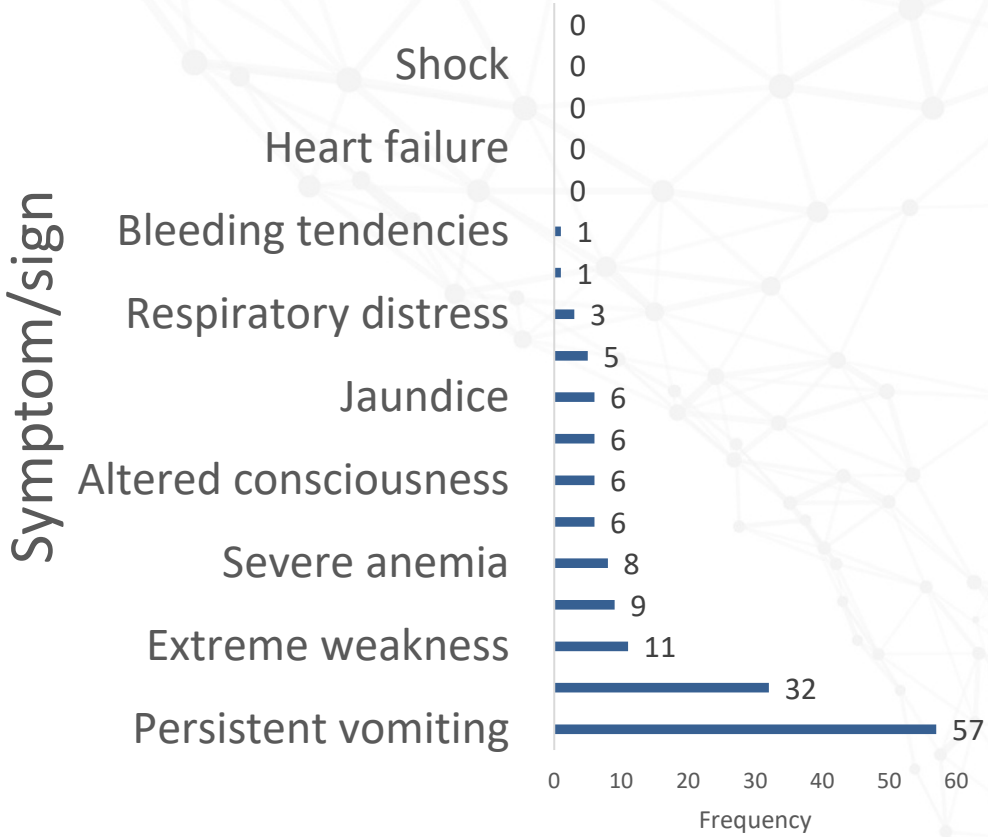
Results- Malaria Admissions Audit/ Supervision GAR 2023

MIM SOCIETY
Multilateral Initiative on Malaria
8th Pan-African Malaria Conference
21-27 April, 2024 • Kigali Convention Centre, Rwanda

Malaria Classification

- **36%** (160/444) severe malaria clinical/ lab features
- **24%** (108/444) met criteria for severe malaria
  - **28.7%** (31/108) had severe co-morbid illness (febrile/ chronic)
- **Out of all positive cases:**
  - **37%** (106/284) met criteria for severe malaria
  - 63% (178/284) for uncomplicated malaria
    - **29%** (51/178) severe co-morbid febrile illness
    - **2%** (3/178) required admission for chronic illness complications

Severe Malaria Clinical Features



Conclusion- Malaria Admissions Audit/ Supervision 2023

- Nearly half of the malaria admissions had co-morbid febrile illness
- Malaria admissions is not synonymous with severe malaria
  - Consistent with other in-country studies
- Quality of Care was sub-optimum

Ghana's Approach to Measuring Quality & Optimization Strategies (7)

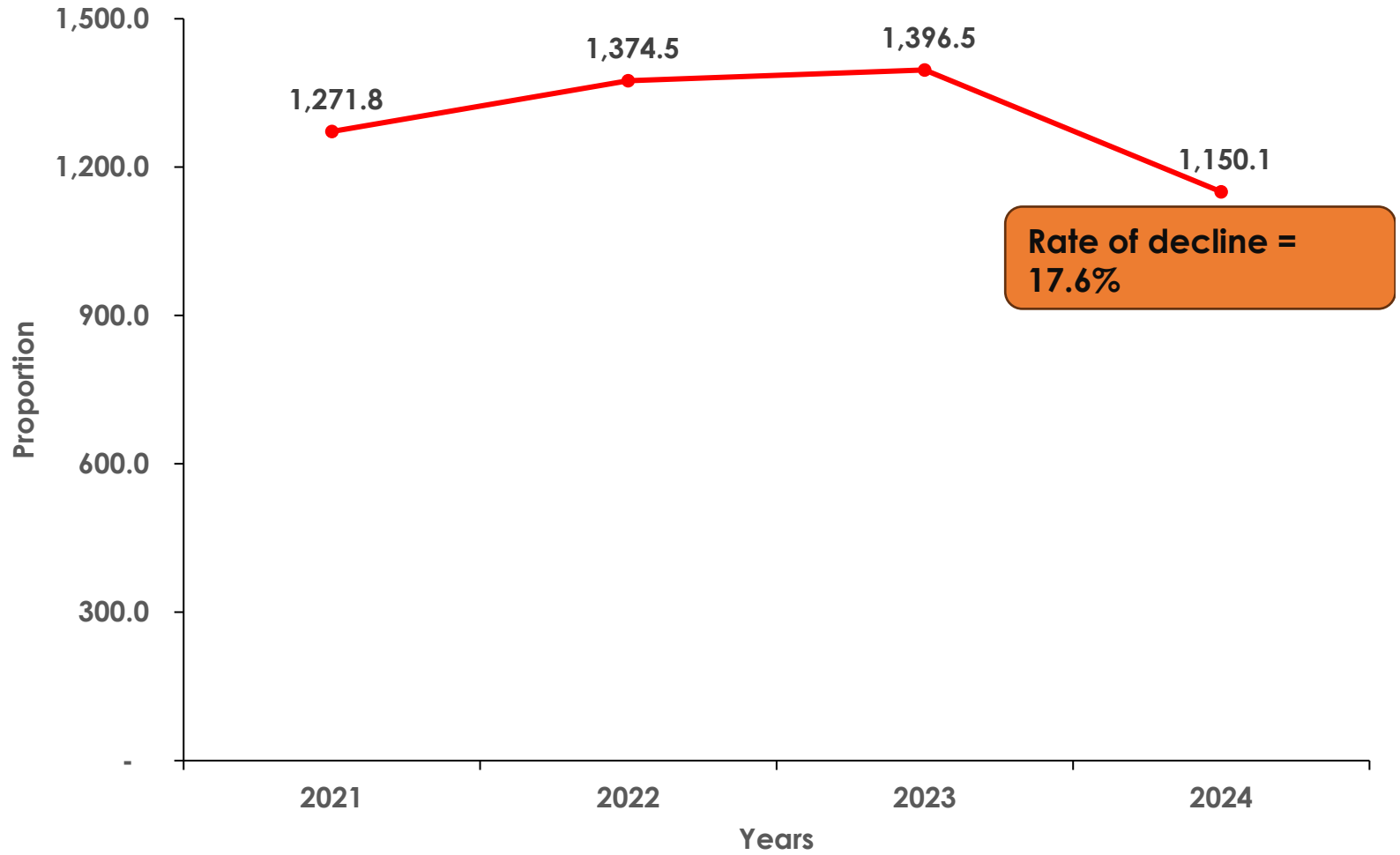
Malaria Admissions Audit 2024 – Data Findings

- Challenges with documentation and reporting

Facility	DHIMS	A&D REGISTER	Statement of In-Patient	Diff	% Diff
A1 Hospital	1624	683	1740	941	137.8
Abrefi Women and Children Hospital	1076	774	1159	302	39.0
Abuakwa Government Polyclinic	647	531	554	116	21.8
Adidome District Hospital	843	211	877	632	299.5
Ahmadiyyah (Techiman) Mission Hospital	1061	681	1375	380	55.8
Akropong Polyclinic	314	743	344	-429	-57.7
Anhwiaso Community Hospital	1109	875	1109	234	26.7
Anwiam Hospital Annex	2254	2046	2046	208	10.2
Arms Hospital	996	1111	996	-115	-10.4

Impact – Malaria Admissions Supervision

Malaria Admissions Per 100,000 Population, Ghana, 2021 - 2024

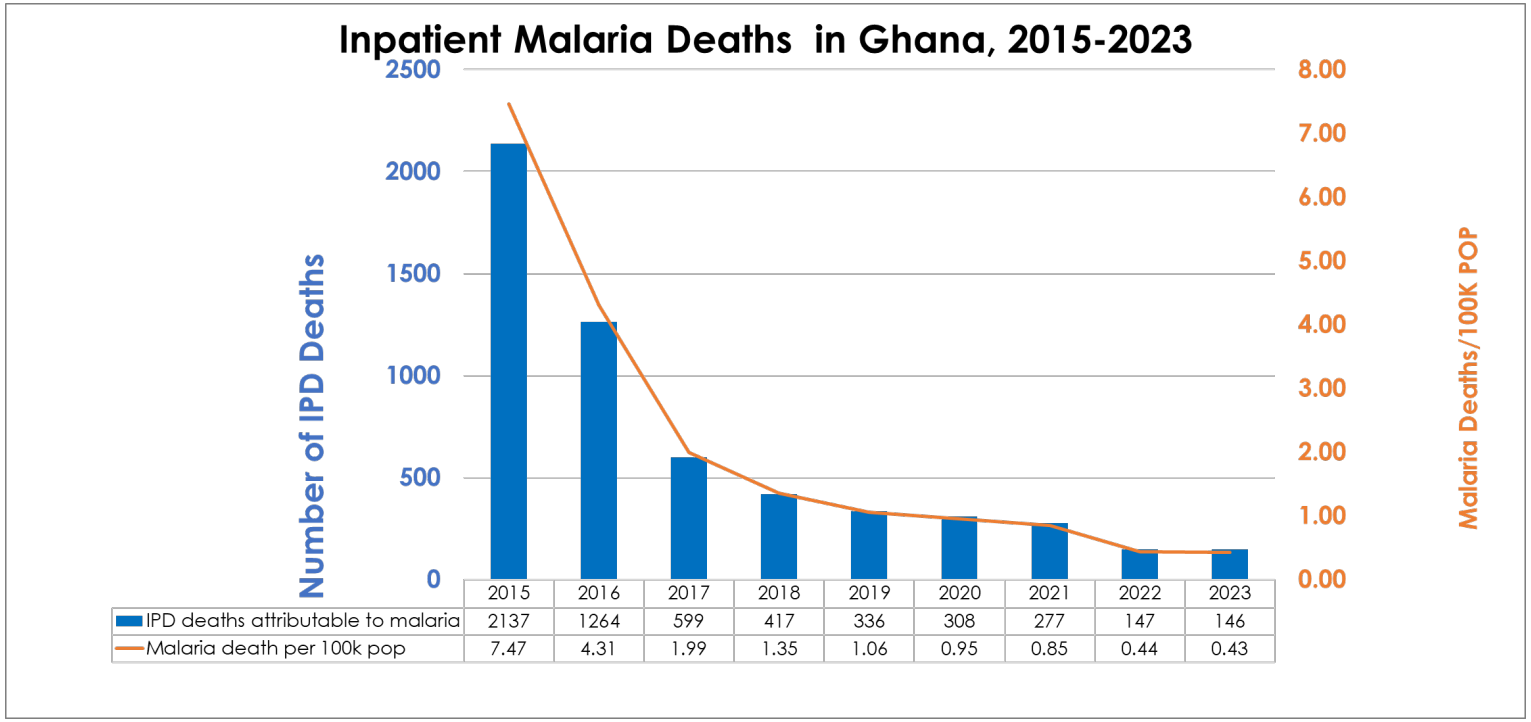


Ghana's Approach to Measuring Quality & Optimization Strategies (8)- Admission

Malaria Admissions

Current Optimization Strategies	Next Steps
- **Targeted** based on data - Collaborative efforts e.g. **NHIA** - **Feedback**	- **Review** data reporting forms (malaria admissions/ severe malaria) - Regular **follow up/ virtual**

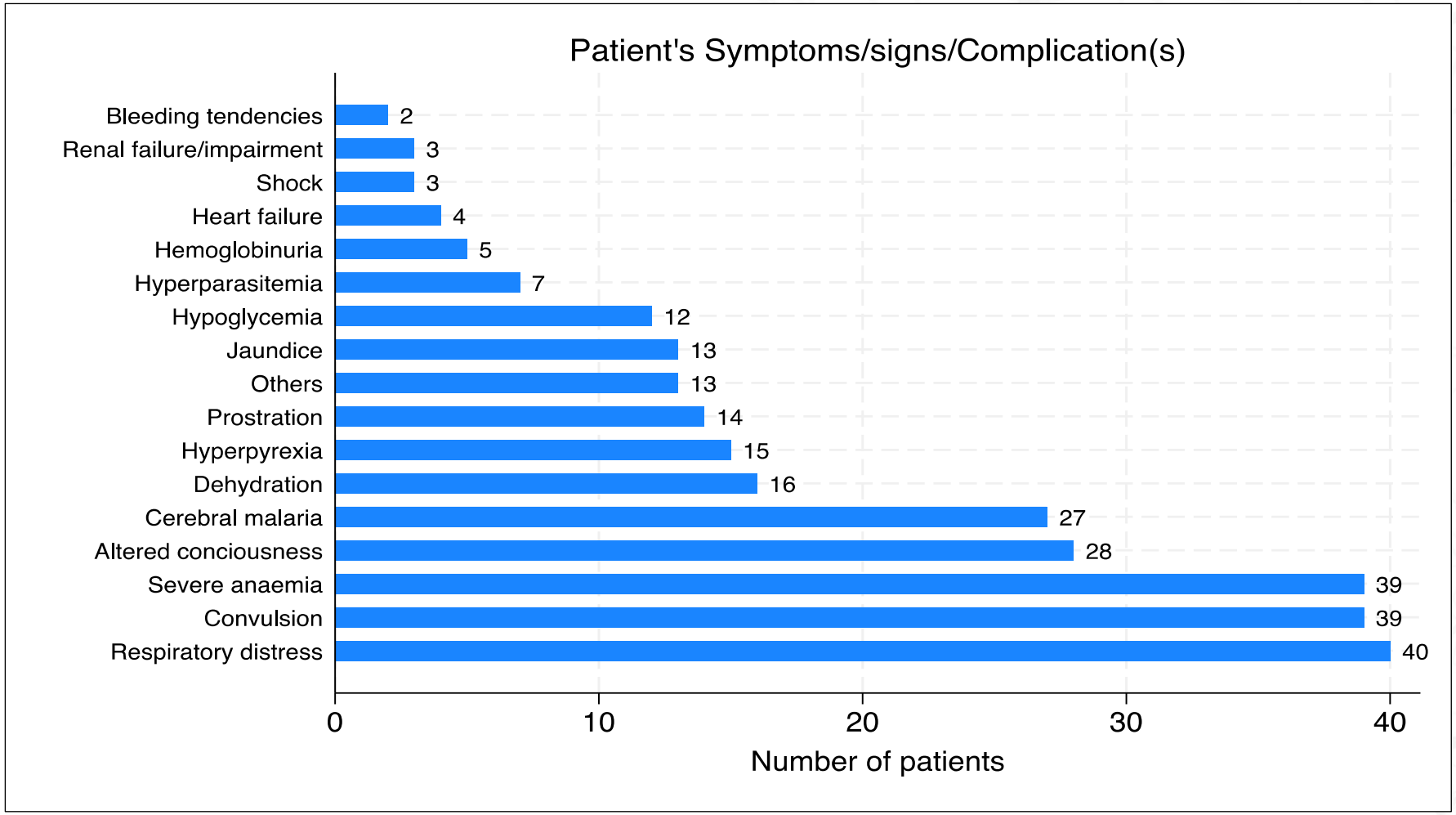
Ghana's Approach to Measuring Quality & Optimization Strategies (9)- Death Audit



Malaria Death Audit

- Monthly, online
- Driven by lack of local data on drivers of malaria death, and effort towards elimination

Results- Death Audit 2023

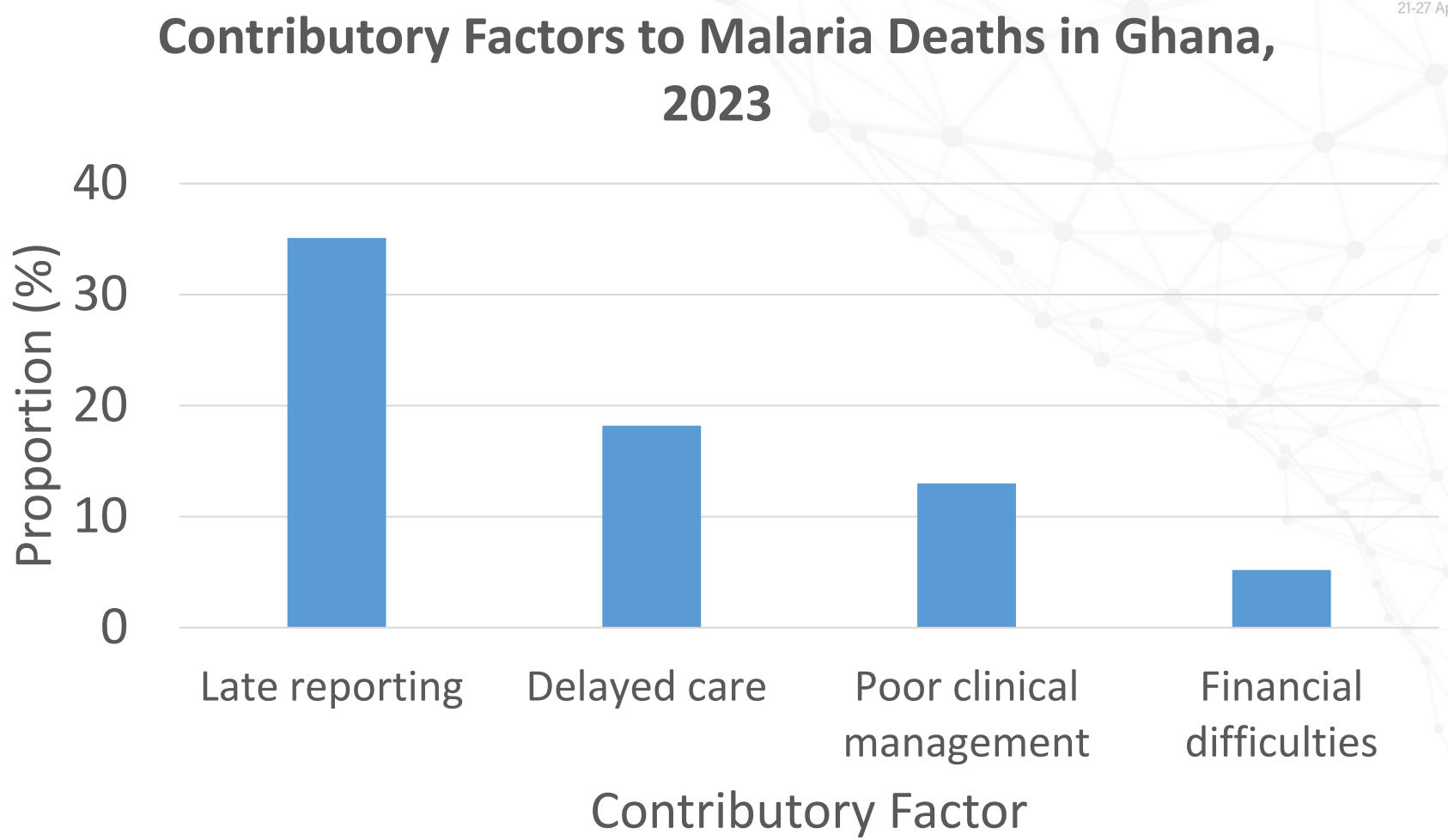


Results- Malaria Death Audit 2023

Gaps in Patient Clinical Management

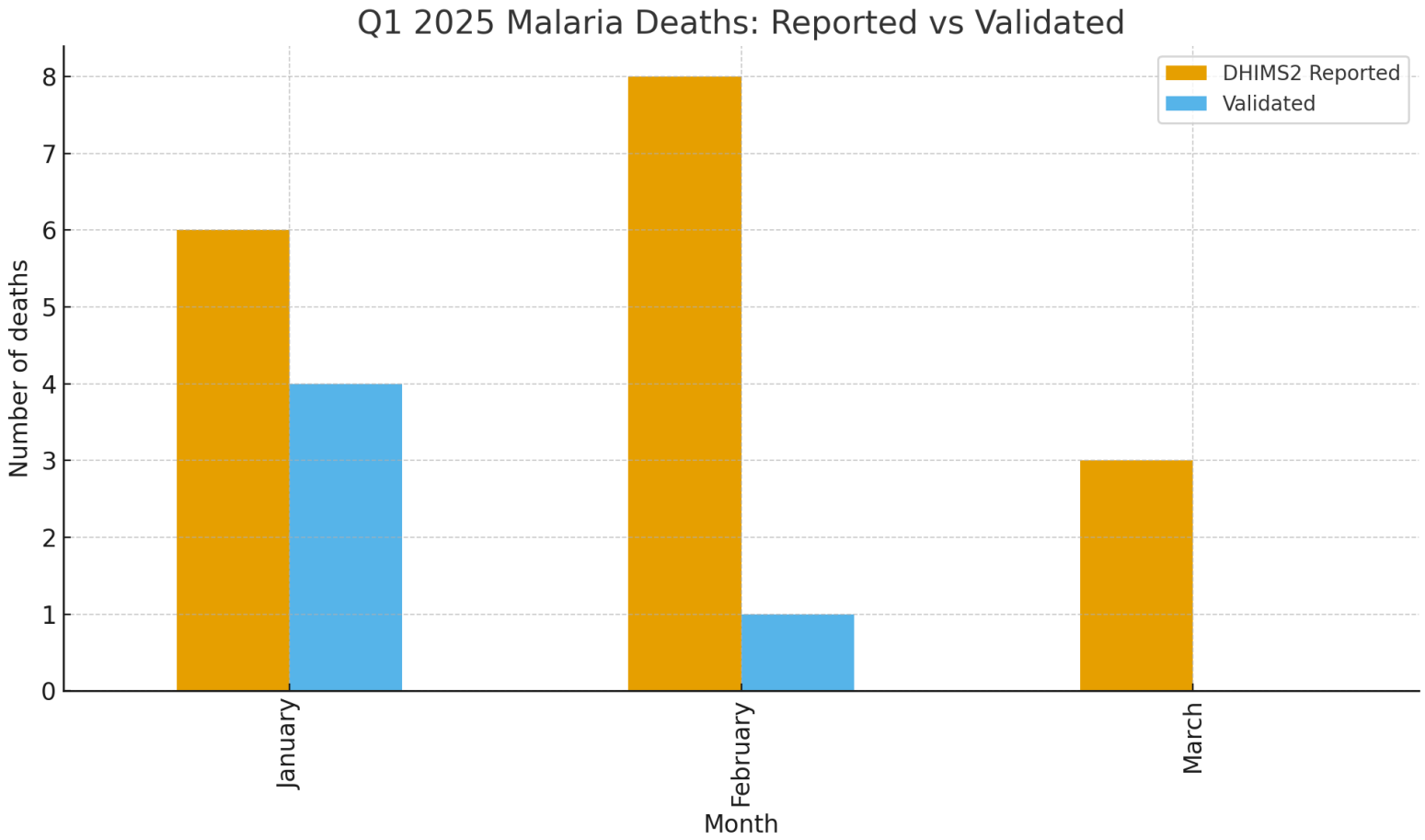
- Documentation gaps: 31.2%
- Sub-optimal management of malaria complications: 23.4%
- Non-comprehensive assessment: 18.2%
- Sub-optimum patient monitoring: 7.8%
- Sub-optimal supportive care: 7.8%
- Wrong dosing time: 6.5%
- Incorrect Inj. Artesunate dosing: 3.9%

Results- Malaria Death Audit 2023



Impact- Malaria Death Audit (1)

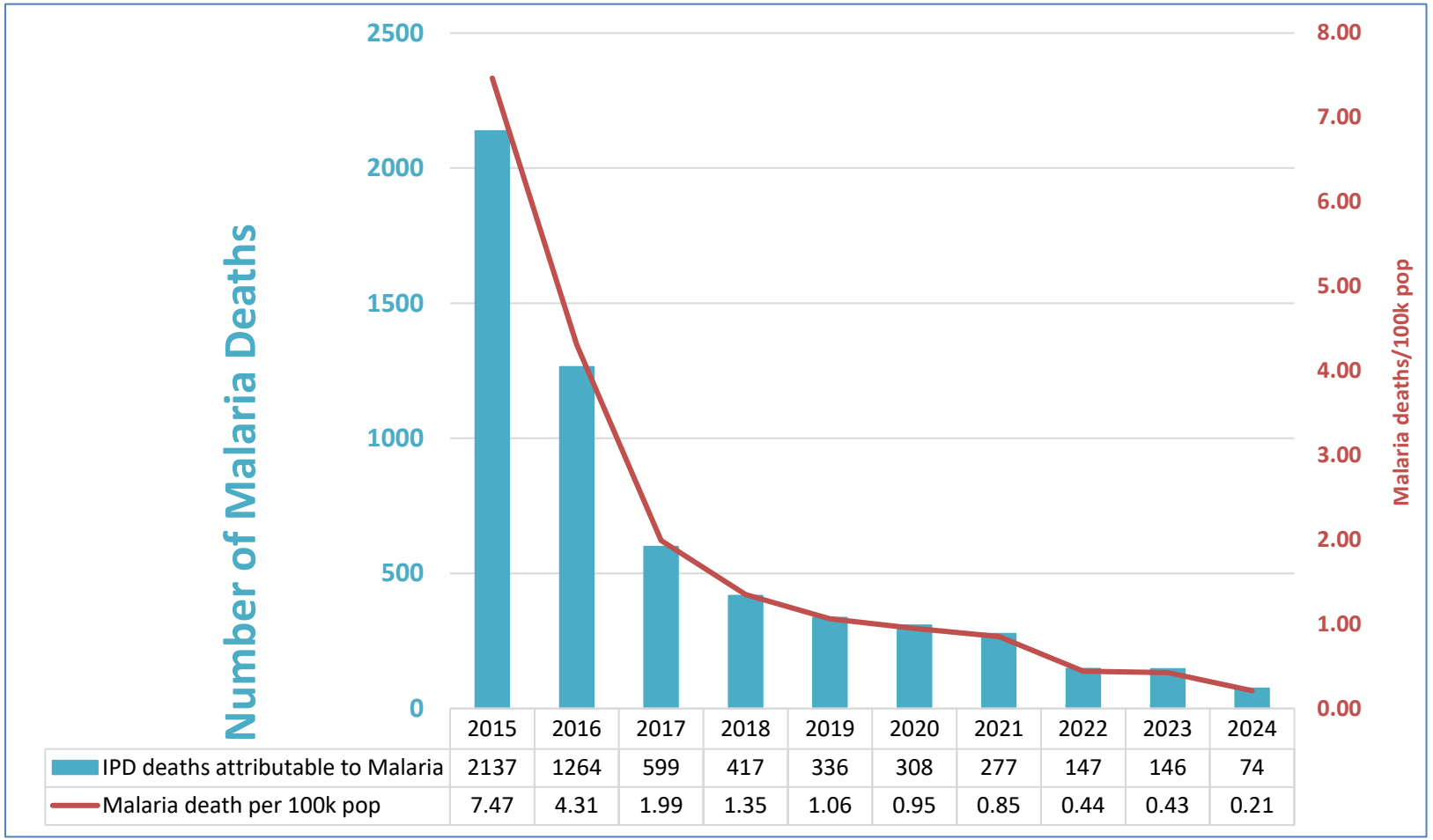
Institutional Malaria Deaths Ghana, Q1 2025



Source: DHIMS2/ Death audit tool (kobocollect)

Impact- Malaria Death Audit (2)

Institutional Malaria Deaths Ghana, 2011-2022



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
IPD deaths attributable to Malaria	2137	1264	599	417	336	308	277	147	146	74
Malaria death per 100k pop	7.47	4.31	1.99	1.35	1.06	0.95	0.85	0.44	0.43	0.21

Source: DHIMS2

National Malaria Elimination Programme-Ghana

Ghana's Approach to Measuring Quality & Optimization Strategies (10)- Death Audit

Death Audit Optimization Strategies

Current Optimization Strategies	Next Steps
- Low cost: online use **kobocollect** for data collection and analysis - **Facility-led**/ ownership- **Quality improvement** focused - **Capacity building** same time - **Feedback** - Explores **care continuum** - **Referring facilities** involved	- **Guideline** for enhanced surveillance develop - Timeliness- Immediate notification, audit in 7 days, response tracking - Develop/ update **data systems** - Adaptation of **training approach** (more practical/competency based)

Ghana's Approach to Measuring Quality & Optimization Strategies (11)

Case Management Training Pictures 2024





Ghana's Approach to Measuring Quality & Optimization Strategies (12)

External Competency Assessment in Malaria microscopy (ECAMM)
- 34 WHO certified Level I and II in Ghana (15 level 1, 19 level II)

Current Optimization Strategies	Next Steps
- Good **geographic coverage** of level I and II	- **One more region** to cover - **In-country EQA site** / regional hub

Ghana's Approach to Measuring Quality & Optimization Strategies (13)

Onsite Malaria Diagnostic Refresher Training (MDRT)

- Pre and Post Training Assessment (Practical)





Ghana's Approach to Measuring Quality & Optimization Strategies (14)

Onsite Malaria Diagnostic Refresher Training (MDRT)

Current Optimization Strategies	Next Steps
- **Onsite** • Higher numbers trained/ geographic coverage • All facility lab professional trained • Immediate Feedback to facility leadership • Clinician confidence in results - **Integrated Blinded Cross Checking** - **Feedback** and **facility certification**	- Improve **coverage** and frequency - Explore use of **digital microscopes** and **tools for assessment**











MDRT with Blinded Cross checking of Malaria slides

Ghana's Approach to Measuring Quality & Optimization Strategies (15)

Measuring Approach/ System	Current Optimization Strategies	Next Steps
National Competency Assessment(**NCAM M**)	- **All regions** involved (coverage)	- Explore integration
Supply chain systems	- **Last Mile Distribution** - **Digital** system (GhILMIS, LHIMS)	- Deploy **all functionalities** GhILMIS - **Interconnectivity**/ integration

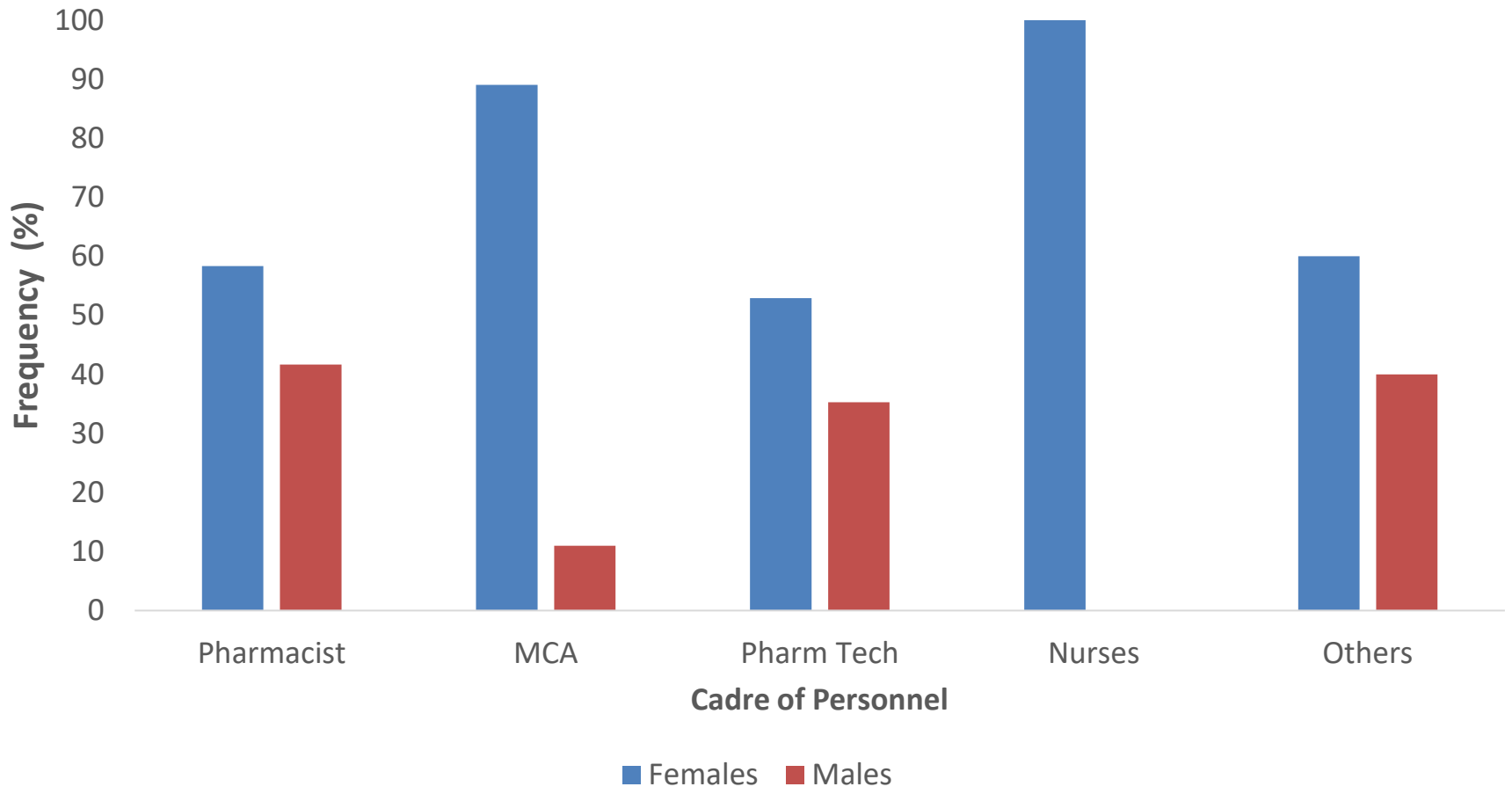
Ghana's Approach to Measuring Quality & Optimization Strategies (16)

RDT Quality Assurance (QA) for CHPS, Community Pharmacy, OTCMS
- To assess RDT quality measures





Personnel Involved in Pharmacy RDT QA Assessment, Greater Accra, 2024



Observation from CHPS RDT Assessment

A total of 392 facilities were visited

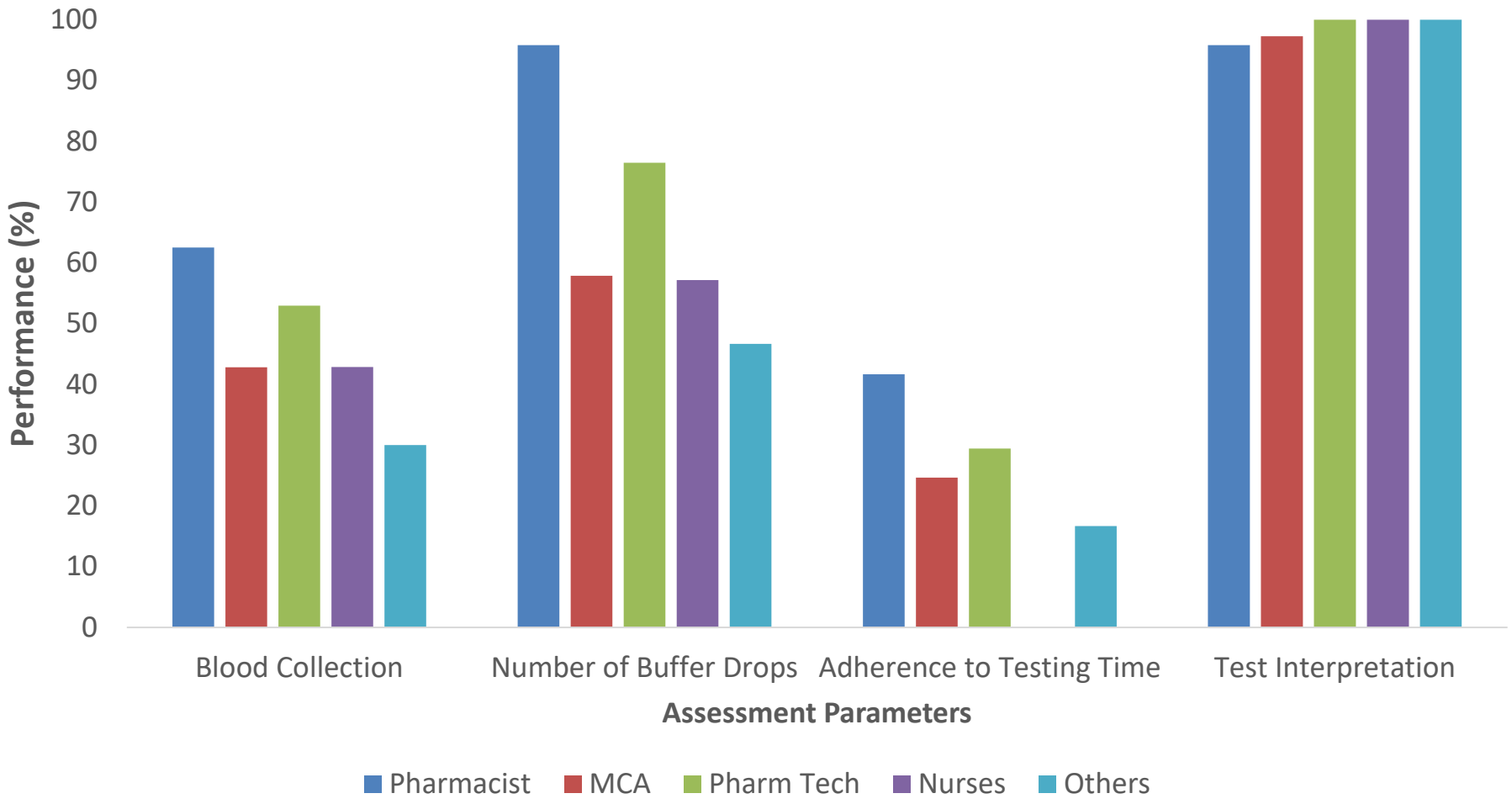
- Appropriate Quantity of blood collected
  - 71%(277/392)
- Recommended number of buffer drops
  - 56%(219/392)
- Recommended Testing Time adherence
  - 55%(216/392)
- Interpret test results accurately
  - 98%(385/392)

Observation from Pharmacy RDT Assessment

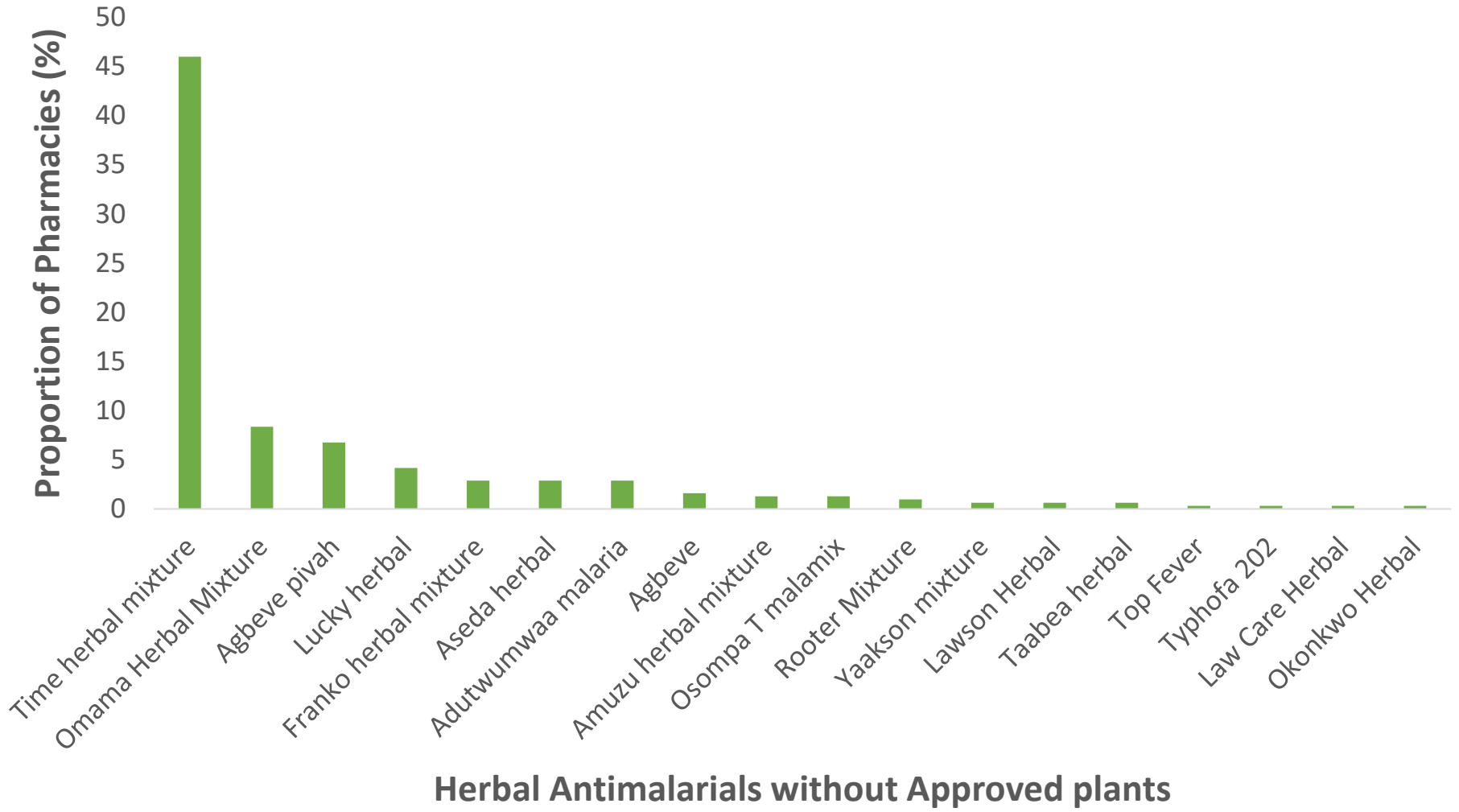
A total of 370 facilities were assessed

- Appropriate Quantity of blood collected
  - 44%(161/370)
- Recommended number of buffer drops
  - 60%(223/370)
- Recommended Testing Time adherence
  - 25%(92/370)
- Interpret test results accurately
  - 98%(361/370)

Performance of Personnel in Malaria RDT Testing Assessment in Pharmacies, Greater Accra Jan – Mar 2025



Pharmacies with herbal antimalarials without approved active plant ingredients, Greater Accra, Jan - Mar 2025



Ghana's Approach to Measuring Quality & Optimization Strategies (17)

RDT Quality Assurance (QA) for CHPS, Community Pharmacy, OTCMS

Current Optimization Strategies	Next Steps
- **Targeted** based on data - **Kobo collect** for data collection (cost expensive) - **Collaboration** with Pharmacy council/ Association - **Integration**- Medicines etc. - **Feedback**	- **Follow up** - Improve **coverage** - Explore **integration** into pharmacy council training etc.

Ghana's Approach to Measuring Quality & Optimization Strategies (18)

Measuring Approach/ System	Current Optimization Strategies	Next Steps
Didactic Training initiatives • Evaluate baseline knowledge and gain	- **Targeted** (previous training, performance) - Assess **training need, facility logistic etc.** prior - **Comprehensive, Adaptive,** and **practical** - **Integration**- MDC, ICD, Pharmacy council, Association AGM etc. - **Virtual** Training - **Private** & Public	- **Regional training hubs** for severe malaria - **Advocate** for logistics for facilities, esp. pediatrics

Pictures- Malaria Didactic Training









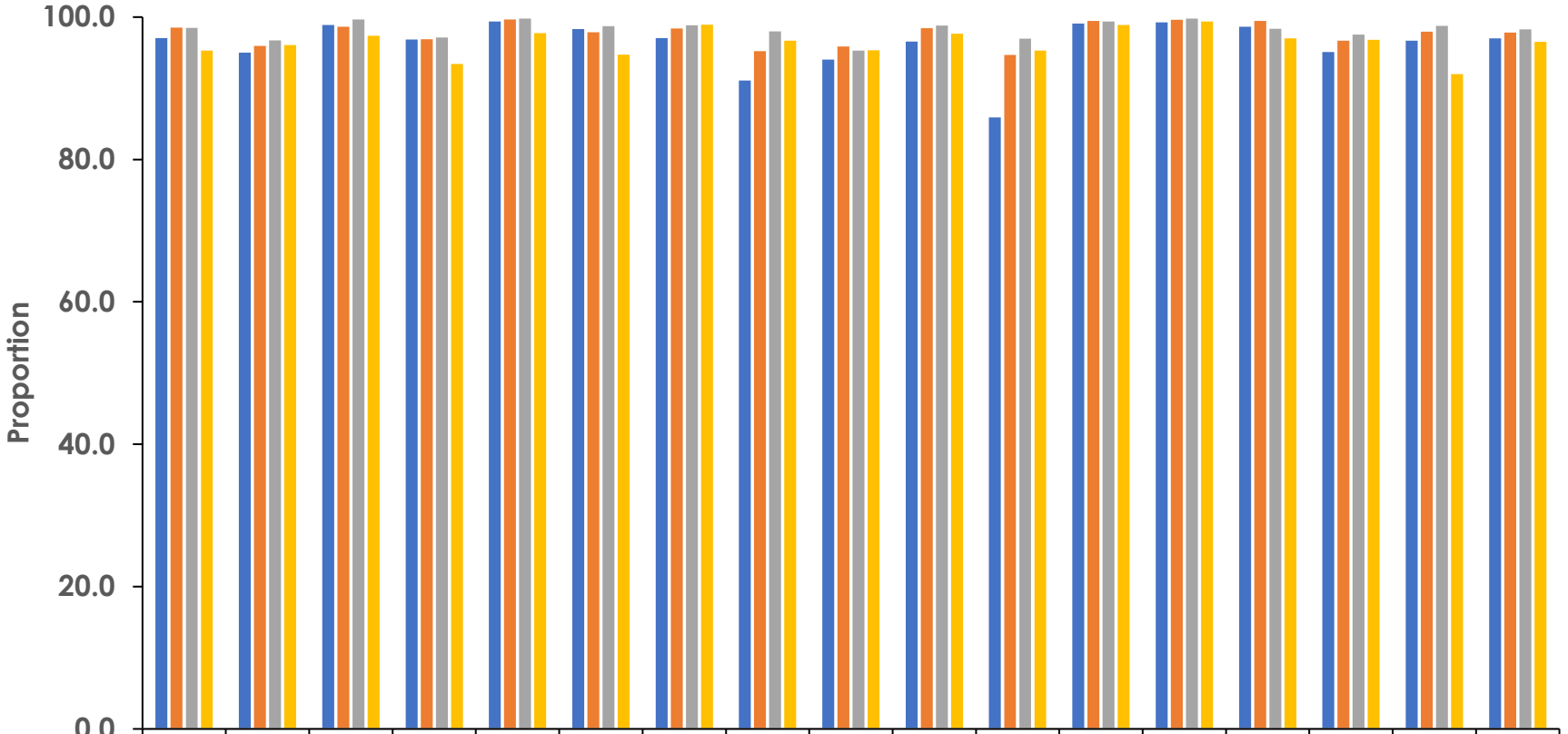


Ghana's Approach to Measuring Quality & Optimization Strategies (19)

- Sentinel Site Monitoring
- Proficiency Testing Scheme (PTS)
- Household surveys (e.g., MIS, DHS)
- Other surveys (mapping drivers of malaria deaths)
- Health facility assessments
- Therapeutic Efficacy Surveillance (TES)
- Pharmacovigilance systems incl. Post market surveillance etc.

Challenges- RDT Shortage and its Impact

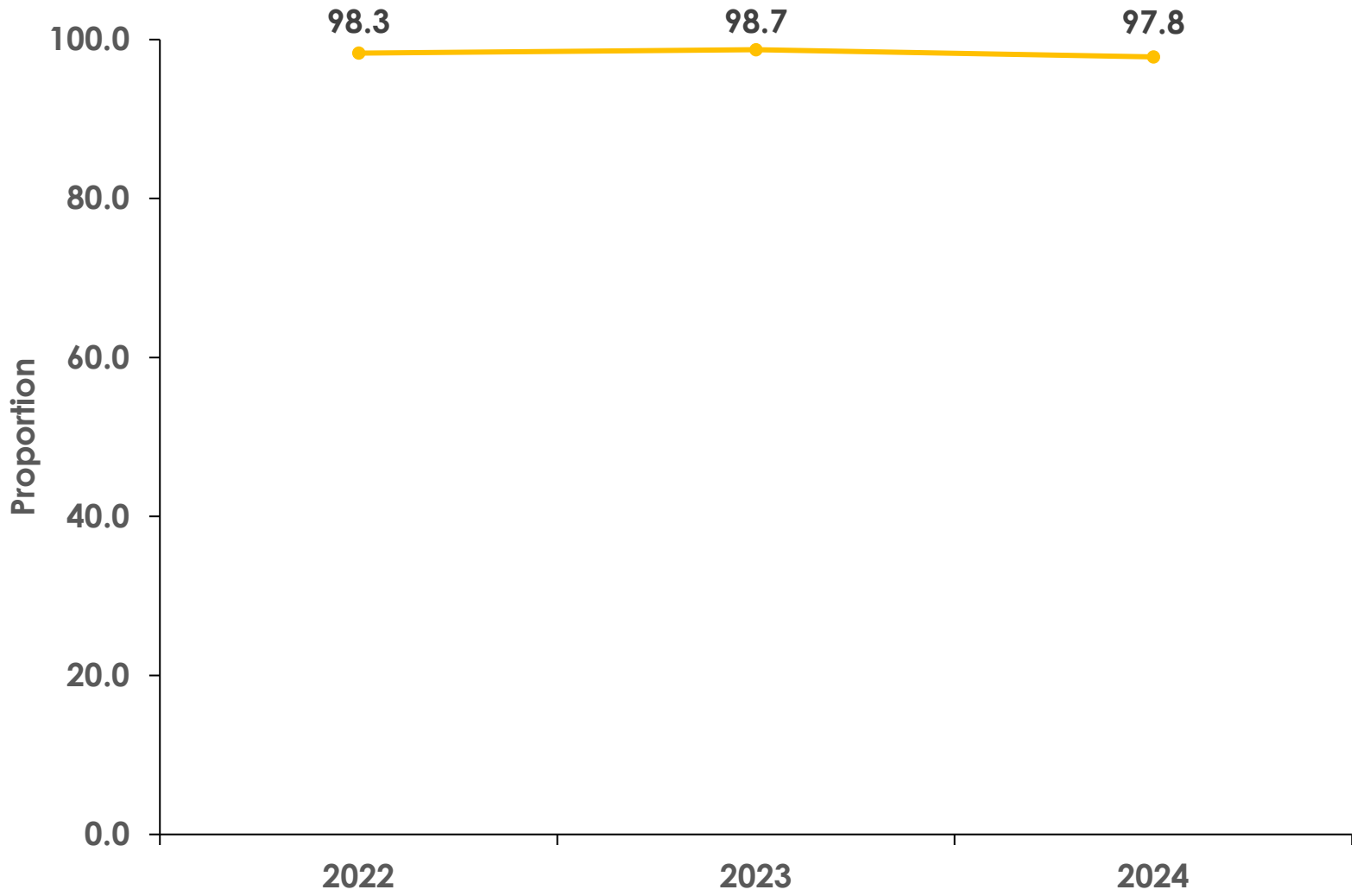
Proportion of suspected malaria cases tested, Region, 2021-2024



	Ahafo	Ashanti	Bono	Bono East	Central	Eastern	Greater Accra	North East	Northern	Oti	Savannah	Upper East	Upper West	Volta	Western	Western North	Ghana
2021	97.0	95.0	98.9	96.9	99.4	98.3	97.0	91.1	94.0	96.6	85.9	99.1	99.2	98.6	95.1	96.7	97.0
2022	98.5	96.0	98.7	96.9	99.7	97.9	98.4	95.2	95.9	98.4	94.7	99.5	99.6	99.5	96.7	98.0	97.8
2023	98.5	96.7	99.7	97.1	99.8	98.7	98.8	98.0	95.3	98.8	97.0	99.4	99.8	98.4	97.6	98.8	98.3
2024	95.3	96.1	97.4	93.4	97.8	94.7	99.0	96.7	95.3	97.7	95.3	98.9	99.4	97.0	96.8	92.0	96.5

Challenges- RDT Shortage and its Impact

Proportion of suspected malaria in pregnancy cases tested, 2022-2024



Challenges

- Occasional Supply chain interruptions (RDTs, ACTs)
- Quality of commodities- private sector
- Limited Provider refresher Training
- Inconsistent supervision and follow up
- Socio-cultural barriers (self-medication, traditional care-seeking)
- Data quality and under-reporting issues
  - Different HIMS, Lack on inter-operability e.g. LHIMS-DHIMS 2
  - Community pharmacy and OTCMS reporting
  - Update reporting systems (DHIMS 2) to accommodate herbals, MFT etc.
  - Relook/ establish other quality indicators e.g. referral timelines, inj artesunate administration timelines, across management of the different complications etc.
  - Data timelines- Monthly DHIMS a bit too late?

Conclusion

- Ghana has made **remarkable progress-** malaria control and quality measurement and improvement

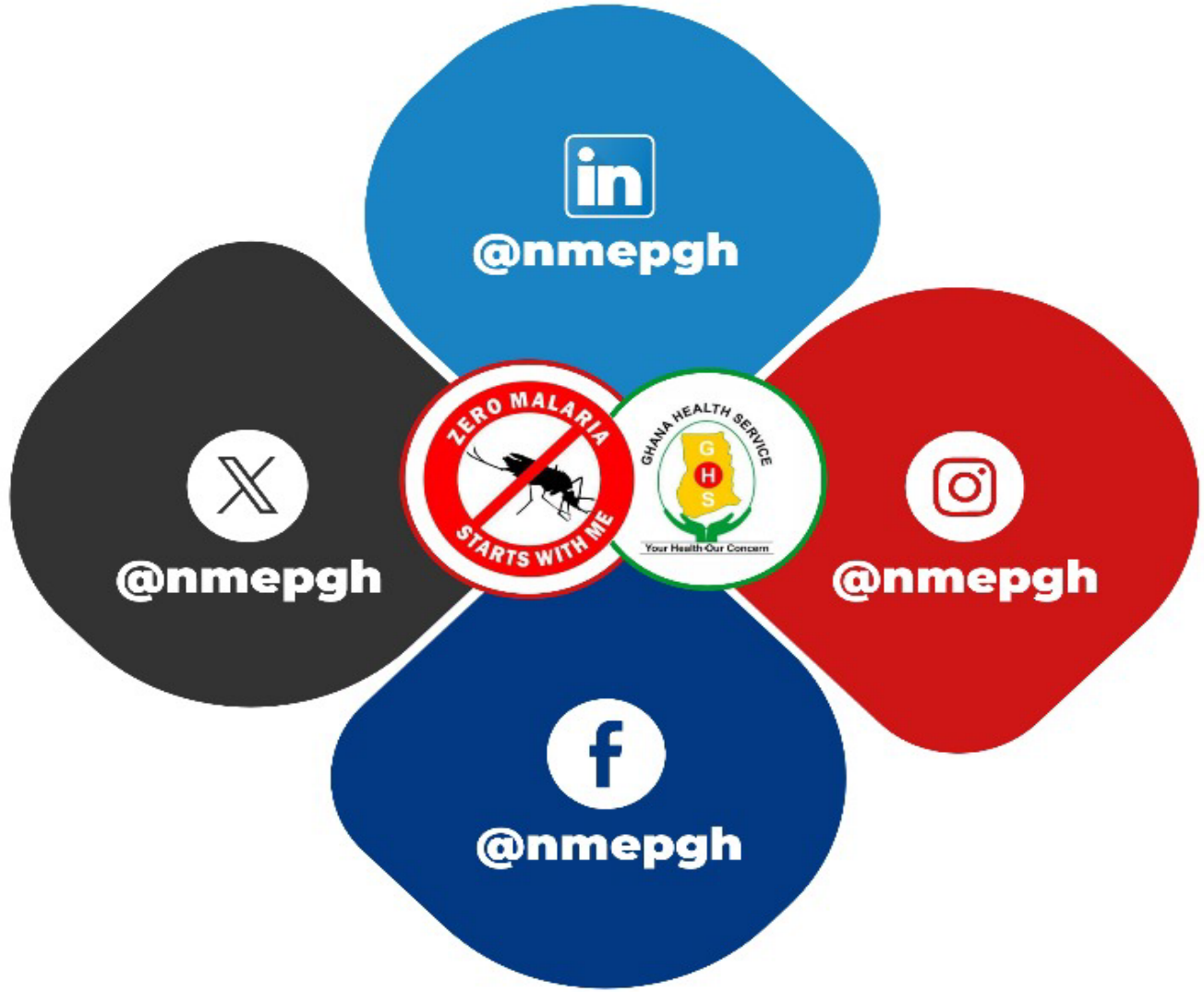
- Quality **gaps remain**

- Success requires **multifaceted approach** that addresses all key areas, including **system factors** and **data systems**
- Enhance **efficiency** in wake of dwindling funding

- **Continued investment** is required to sustain/ accelerate progress towards strategic plan goals

Follow us

NATIONAL MALARIA ELIMINATION PROGRAMME - GH (NMEP)



Acknowledgement

- RBM CMWG
- The Global Fund
- MOH Ghana
- Ghana Health Service (GHS) Leadership
- NMEP staff
- PMI REACH Project
- All other stakeholders involved in malaria quality management



Thank You/ Merci

Questions and Comments are Welcome

RBM Partnership
To End Malaria

Measuring and optimizing quality of case management

18 September 2025

2. Panel discussion Pharmacovigilance Strategies: Adapting to Financial Constraints for Effective Malaria Control

Aissata Barry, panel TBC

RBM Partnership
To End Malaria

18 September 2025

Vaccines & Chemoprevention

Moderator: Thierry Belinga Etogo

RBM Partnership
To End Malaria

Vaccines & Chemoprevention

18 September 2025

1. Perspectives from countries more recently introducing malaria vaccine including resource mobilization and prioritization of vaccine and vaccine-related activities

Countries: Perspectives from Cameroon, Burkina Faso, Sierra Leone

RBM Partnership
To End Malaria

Vaccines & Chemoprevention

18 September 2025

2. Perennial chemoprevention - Integrating the malaria vaccine and PMC, research findings and practical guidance

Jacques Kouakou, PMI

Lessons learned and practical guidance from the Unitaid Plus Project

Dr Jacques Kouakou, Deputy Project Director, PSI

RBM CMWG

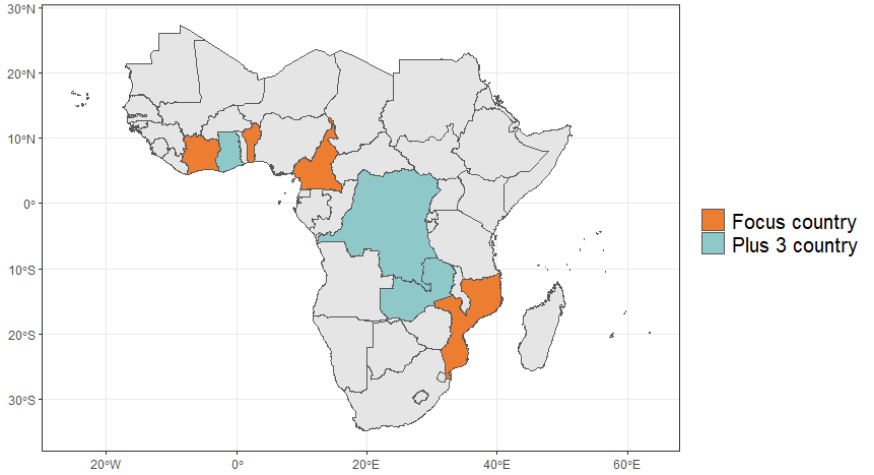
18 September 2025



Baby Souleymane receiving his first dose of SP for PMC in Abengourou, Côte d'Ivoire.
Photo credit: Unitaid Plus Project Côte d'Ivoire

The Unitaid Plus Project

- In Benin, Cameroon, Côte d'Ivoire, and Mozambique, **co-design, implement, and evaluate country-adapted models of PMC** integrated into existing health systems.



- Light-touch evaluations and policy adoption support in DRC, Ghana, and Zambia.
- Conduct a package of evaluations including policy adoption, impact, process, economic, and SP resistance mapping **to help countries decide where and how to scale PMC**.
- **Share learnings from implementation experience and research evidence broadly** to help other countries decide if and how to use PMC as part of their malaria chemoprevention strategies.
- August 2021 – March 2026; funded by Unitaid (www.unitaid.org).

Goal

Reduction in morbidity and mortality due to malaria and anemia in children under two in countries adopting PMC

Outcomes

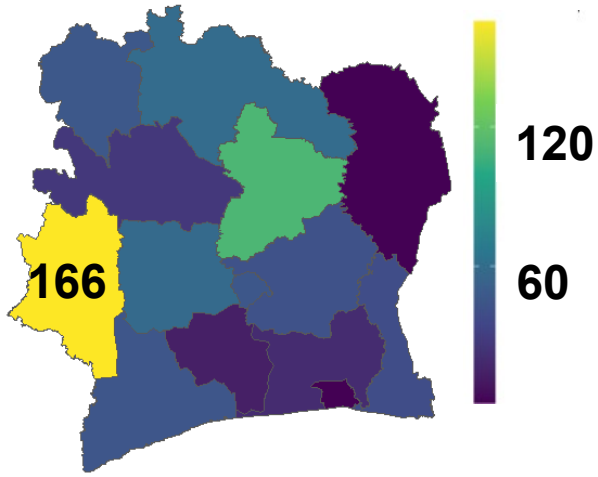
(1) Increased access to high-quality PMC among children under two in each focus country

(2) Evidence generated to catalyze sustained uptake of PMC in the focus countries and others in SSA

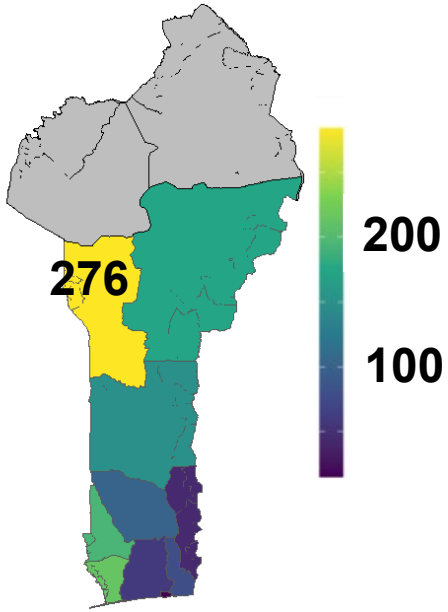
Reduction in malaria cases:
Country-specific PMC model vs. No PMC

PRELIMINARY RESULTS

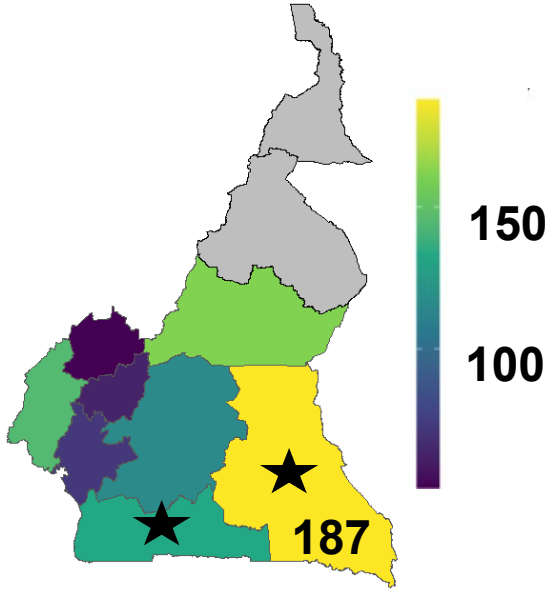
Clinical cases averted
(per 1000 children aged 0-2.5 years per year)



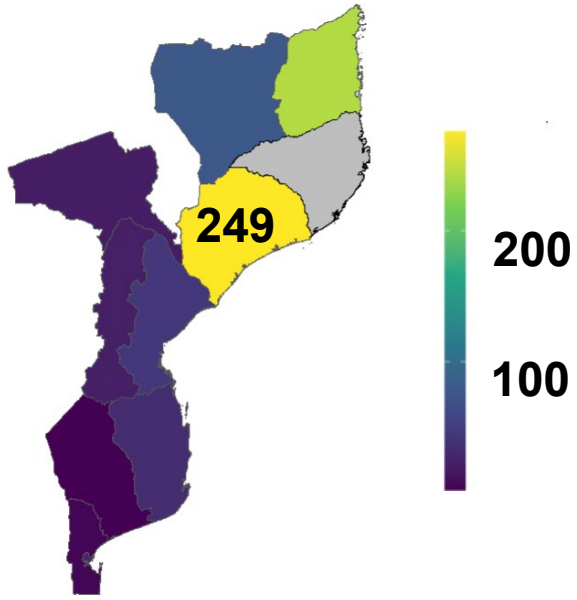
Côte d'Ivoire (5 course)



Benin (8 course)



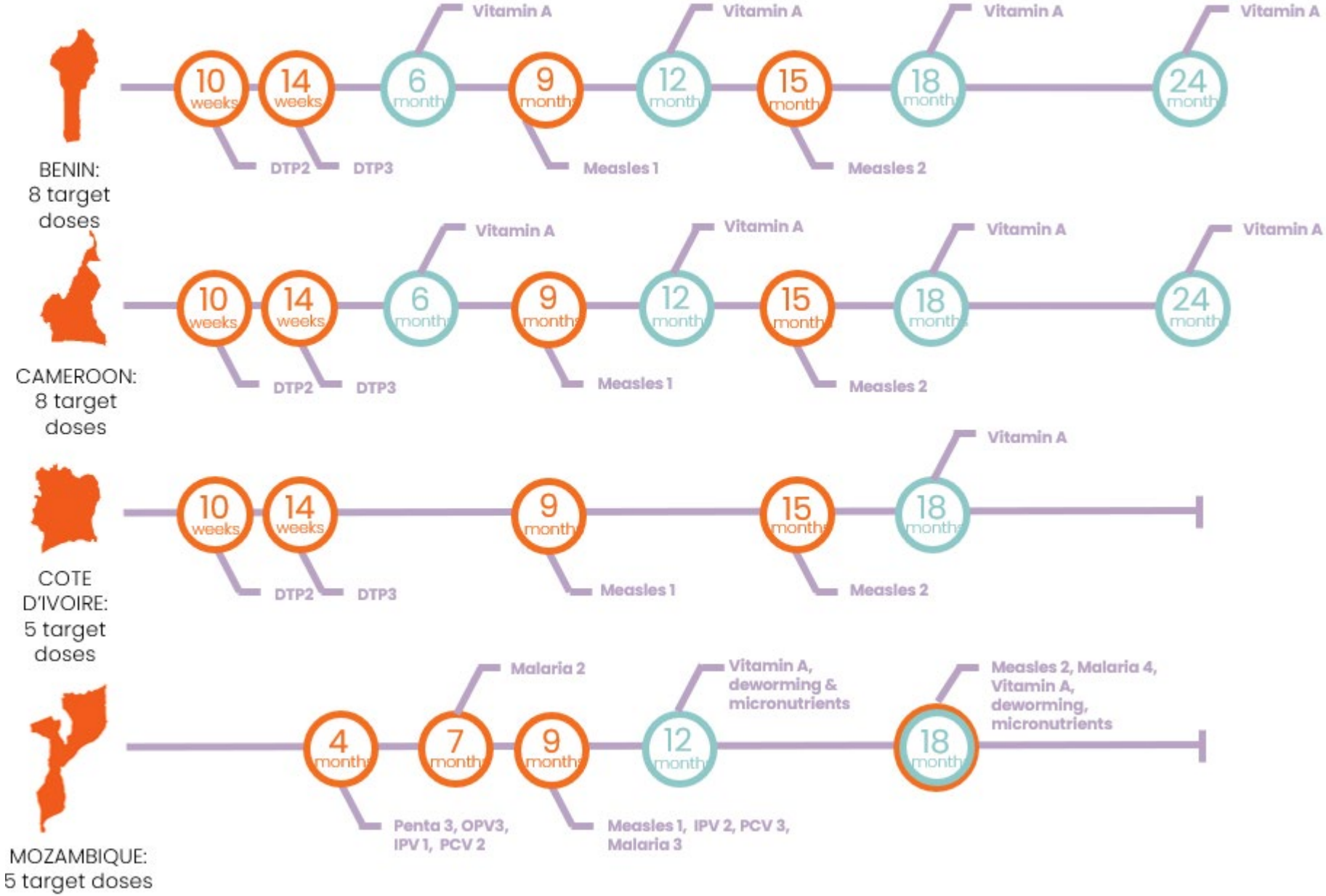
Cameroon (8 course)



Mozambique (5 course)

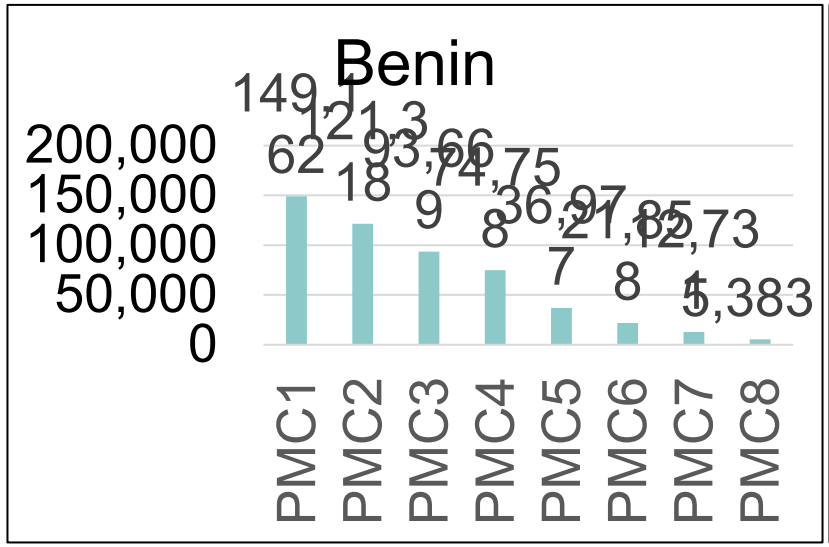
★ using modelled genotype frequency predictions due to small sample denominators (Foo & Flegg J R Soc Interface. 2024;21(210):20230570)

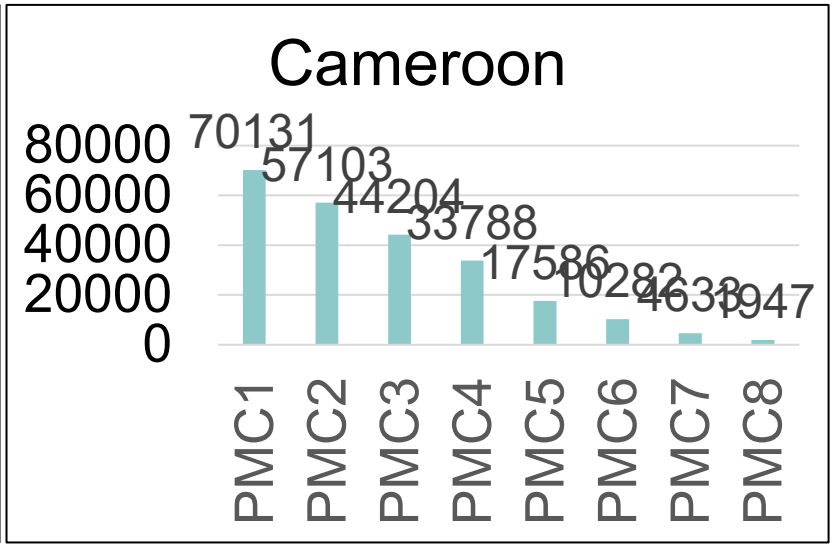
The 4 Focus Countries chose the following schedules

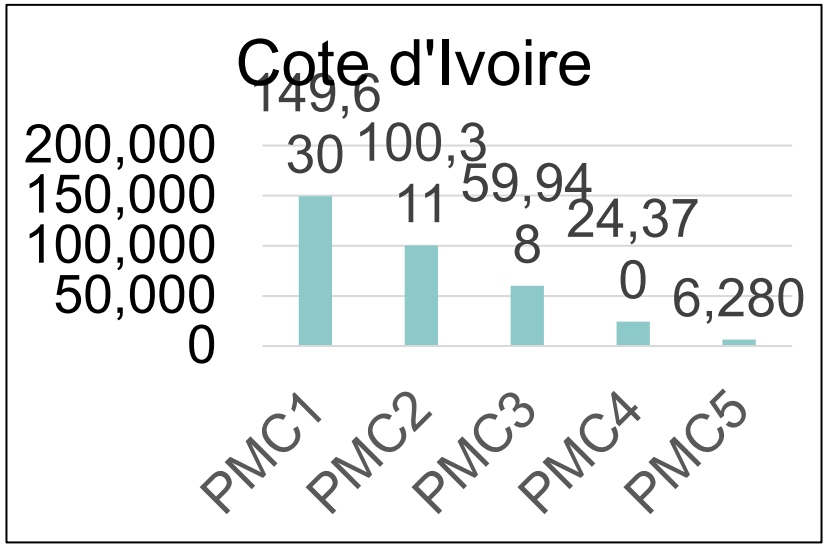


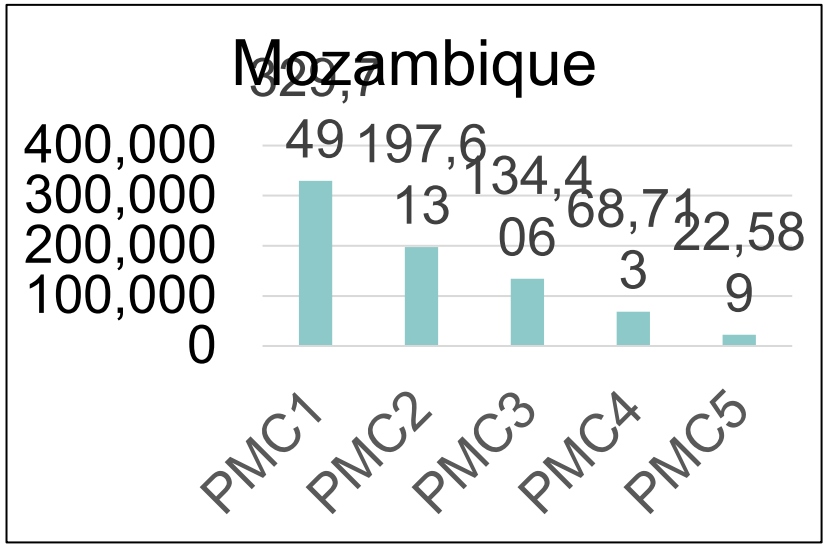
Every country *has* reached some children with all doses per their respective schedules…

PMC doses administered during life of project

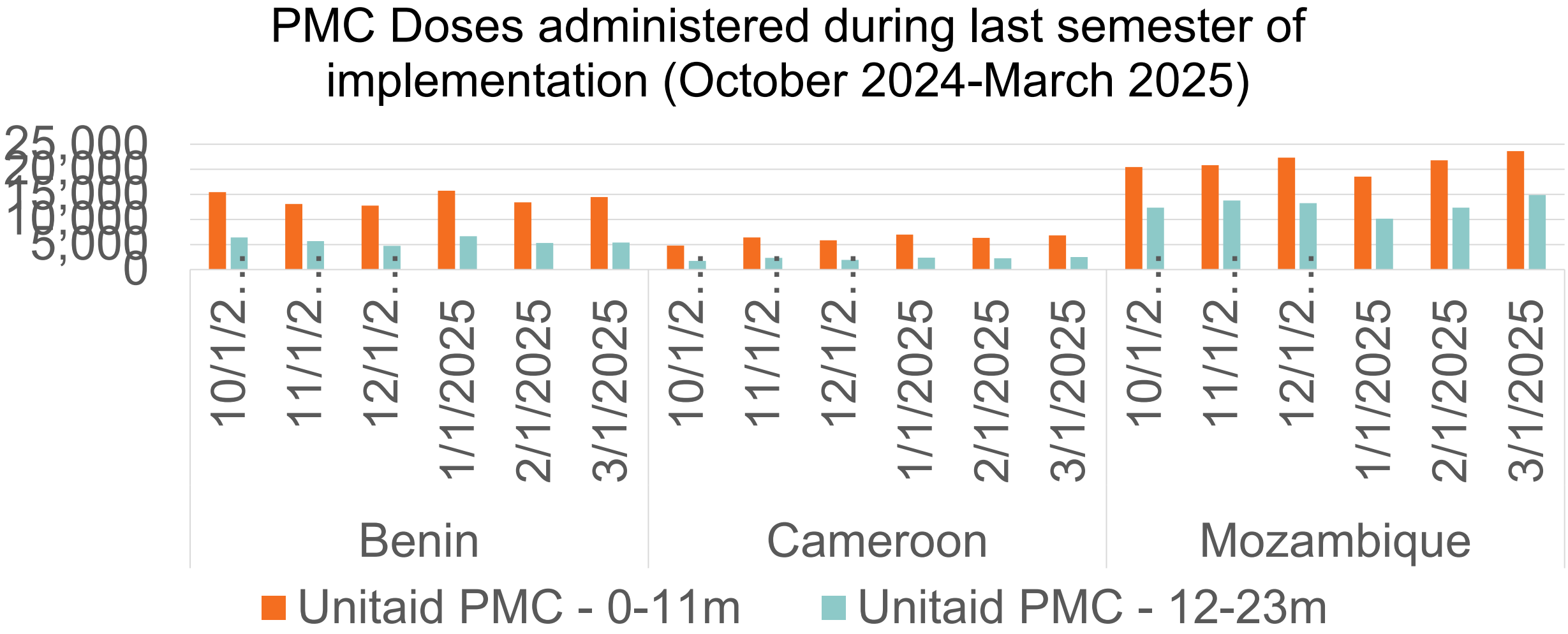






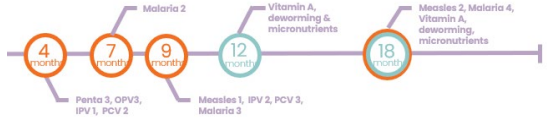


…but fewer children in the second year of life overall…

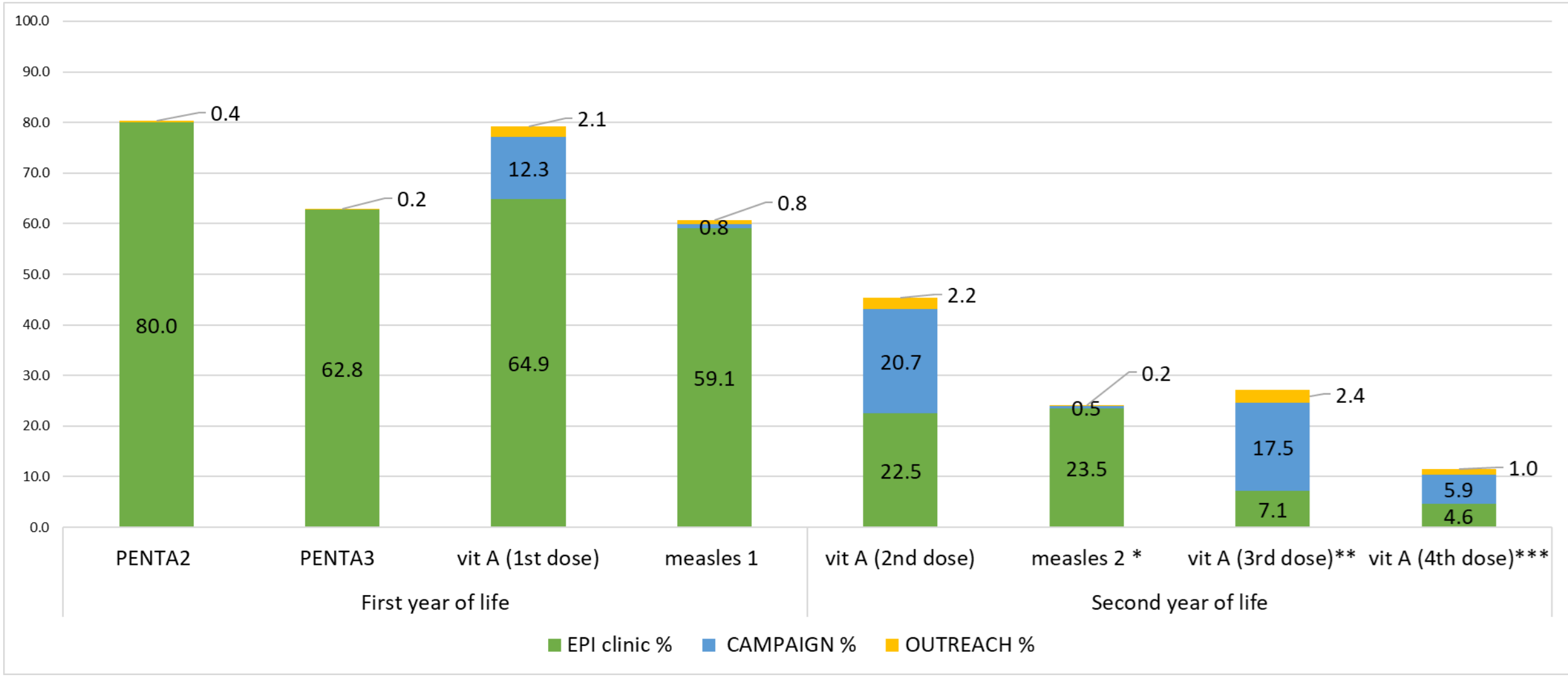








…as expected, because at baseline in Cameroon, this is what co-intervention coverage looked like



* Excluding the children younger than 15 months (denominator 1,049 instead of 1,199) ** Excluding the children younger than 18 months (denominator 898 instead of 1,199) *** excluding the children younger than 24 months (denominator 592 instead of 1,199)

PMC can only protect if it reaches children

- Coverage drives impact
  - Burden is equal in 1st , 2nd and 3rd year of life
  - We need to work to improve coverage/ attendance of EPI (and PMC) in the second year of life which is *beneficial for all child health programs*
  - Improving outreach and/ or community delivery channels will improve coverage but likely increase costs – though a dose in 2YL “worth” more than in the 1YL

- Lean into opportunistic approach, focusing less on delivery of n number of doses to taking every opportunity like we do for IPTp
  - Similarly to IPTp we offer PMC at every EPI visit
    - Programmatically easy to do
    - Maximize the opportunity that children are protected
    - Multiple doses of SP are safe (SMC delivers 3-5 doses 1 month apart from 3 months to 5 years old)

Components of the PMC delivery model in Cameroon

Co-interventions and schedule

PENTA-2 10 weeks	PENTA-3 14 weeks	VitA 6 m	MR 1 9 m	VitA 12 m *	MR 2 15 m	VitA 18 m *	VitA 24 m *

* Plus Project Only

Delivery channel, delivery point and health care provider

Community delivery of PMC

Delivered by CHWs to children >6 months who missed PMC dose, identified during home visits

EPI- fixed (health facility)

Delivered by health workers

EPI- outreach strategy

Fixed health post, areas >5km from HF, delivered by health workers

Mass campaign- MR vaccine

Every 5 years/outbreak/coverage response, delivered fixed point

Child health & nutrition weeks- Vitamin A

2 per year, fixed point and door-to-door by HWs and CHWs, alongside other interventions

Zero EPI dose children *are* receiving vitamin A in Cameroon

N children= 1,199	n	%
Vaccination dropout*		
Penta2 Dropout (children having only Penta 1 and not Penta 2&3)	74	6.17
Penta3 Dropout (children having only Penta 2 and not Penta 3)	213	17.74
Measles2 Dropout (children having Measles 1 and not Measles 2)	463	38.62
Unvaccinated children		
Children with zero Penta or Measles dose	138	11.51
Children with zero Penta or Measles or vitamin A dose	44	3.67

*the proportion of children who did not get the subsequent vaccine among those who received the first vaccine

Under vaccinated and unvaccinated/ zero dose children (defined as children who did not receive any dose of Penta)

- About 20% of our children had Penta2 but not Penta3 “les perdus de vue”
- About 40% of our children had measles 1 and not measles 2
- 11% didn’t have any of PMC co-interventions vaccine–in line with DHS 2018 results: zero dose children/ les enfants a dose zero- A lot of work to do to reach those children!
- Determinants of the dropout rate: Poor wealth quintile, advanced maternal age, and limited health prevention knowledge & behavior contributed to not receiving any vaccines

Key findings: Delivery channels

Where should we invest?

- Improving delivery in the second year of life (2YOL)
  - Co-benefits for malaria, measles and other vaccines targeting 2YOL
  - Will need extra investment in EPI as workload (more children) accessing care
  - Outreach programs need financing

- Community delivery platforms
  - Most equitable delivery
  - Expensive as an individual campaign but could be linked to others
  - Requires different thinking about PMC

Worth the Walk: Protecting Children from Malaria in Mozambique



A group of women in Sofala province, Mozambique walking four hours to the Healthy Child Consultation, including with children in the second year of life, November 2023. Photo credit: Mwangi Kirubi

WHO has recommended PMC for children since 2022

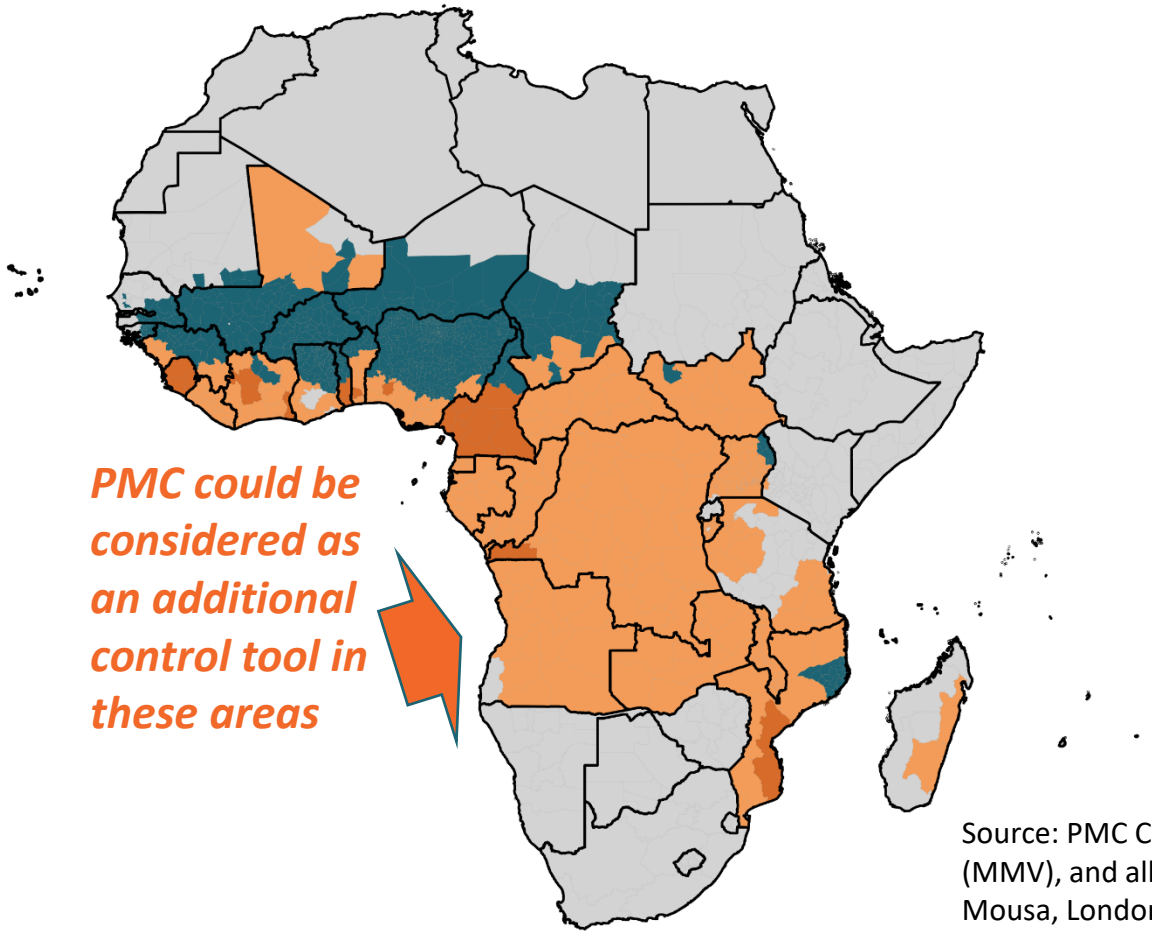
In areas of moderate to high perennial malaria transmission, children belonging to age groups at high risk of severe malaria can be given antimalarial medicines at predefined intervals to reduce disease burden.

- **PMC schedules** should be informed by the age pattern of severe malaria admissions, the duration of protection of the selected drug, and the feasibility and affordability of delivering each additional PMC course.
- **SP** has been widely used for chemoprevention in Africa, including for PMC. ACTs have been effective when used for PMC, but evidence is limited on their safety, efficacy, adherence to multi-day regimens, and cost-effectiveness in the context of PMC.
- **Previously, PMC was recommended in infants (<12 months of age) as IPTi. Since the initial recommendation, new data have documented the value of malaria chemoprevention in children aged 12 to 24 months.**
- **The EPI platform remains important for delivering PMC**. Other methods of delivery can be explored to optimize access to PMC and integration with other health interventions.
- **Moderate to high perennial malaria transmission settings are defined as areas with P. falciparum parasite prevalence greater than 10%** or an annual parasite incidence greater than 250 per 1000. These thresholds are indicative and should not be regarded as absolutes for determining applicability of the PMC recommendation.

World Health Organization

Source: WHO guidelines for malaria - 16 October 2023 (magicapp.org)

About 35 million children <2 years live in PMC eligible areas, less than 4 million got PMC in 2023 (vs 19 million children <2 years who got SMC in 2023)



SMC implemented in 2023

PMC/IPTi implemented in 2023

Moderate/High Transmission (≥0.10% $PfPR_{2-10}$) and no PMC in 2023

Low transmission (<0.10% $PfPR_{2-10}$)

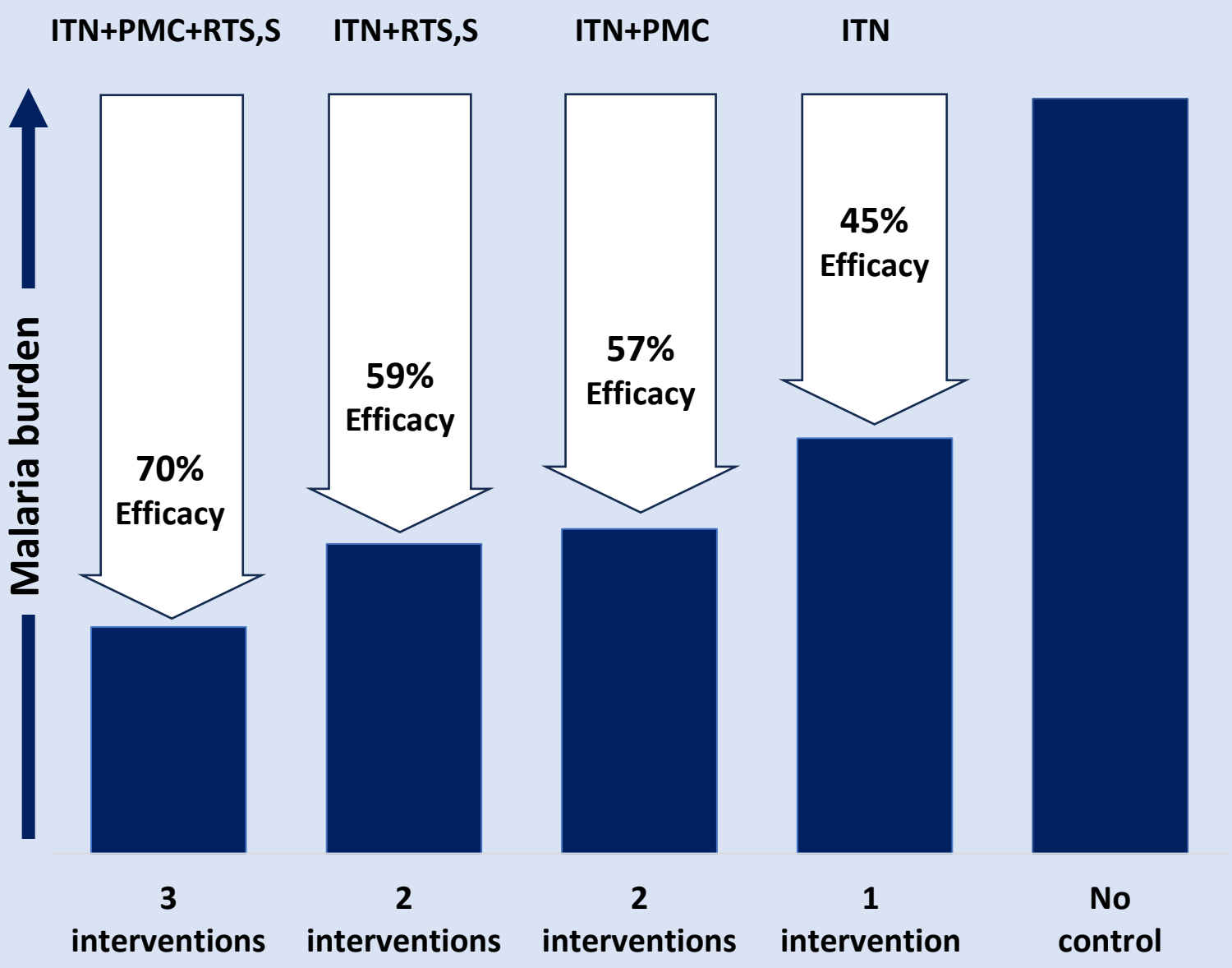
Source: PMC Community of Practice and the SMC Alliance, Andre Tchouatieu (MMV), and all the National Malaria Programs. Map created by Andria Mousa, London School of Hygiene and Tropical Medicine, Plus Project.

Incidence estimates produced using the Imperial College dynamic malaria transmission model.

Highest impact achieved when mix of malaria interventions used together

Will not reach goal of driving malaria illness and death down, without applying a mix of available interventions

- Case management
- Vector control (ITNs, IRS, LSM)
- Chemoprevention (SMC, IPTp, PMC, MDA)
- Vaccines (RTS,S, R21)



Assumptions: moderate to high transmission; children under 2 years; 7 PMC rounds (3 usual and 4 concurrent with RTS,S doses), 80% coverage of each PMC and RTS,S doses

Source:Dr. Nellie Westercamp, CDC

ITN efficacy:
https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000363.pub3/full

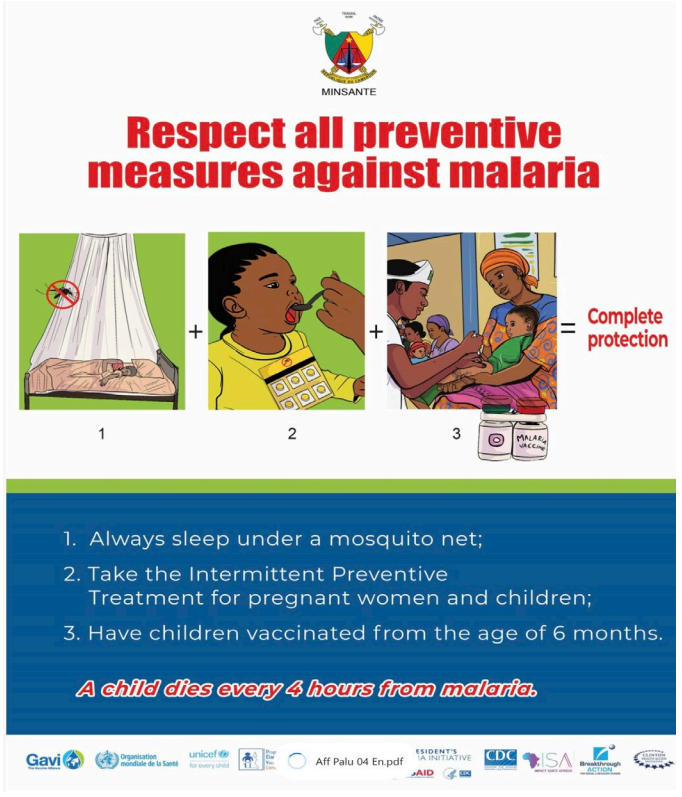
PMC+RTSS efficacy:
Perennial malaria chemoprevention with and without malaria vaccination to reduce malaria burden in young children: a modelling analysis | Malaria Journal | Full Text (biomedcentral.com)

So, amid a declining funding environment,…

- Consider scaling up PMC and malaria vaccine as a single EPI intervention?
  - Where both are being rolled out, we see great acceptability & feasibility
  - Targets similar age range of children and the same providers – you could update vaccination calendars, child health cards, data tools, community engagement tools, training modules etc once instead of twice

Cameroon's EPI Register integrates both interventions

1ere ANNEE/ *1st YEAR*																				
TROISIEME CONTACT/ *THIRD VISIT*					QUATRIEME CONTACT/ *FOURTH VISIT*						CINQUIEME CONTACT/ *FIFTH VISIT*				SIXIEME CONTACT/ *SIXTH VISIT*	SEPTIEME CONTACT/ *SEVENTH VISIT*					
DATE (JJ-MM/AA) /*DATE (DD-MM/YY)*					DATE (JJ-MM/AA) /*DATE (DD-MM/YY)*						DATE (JJ-MM/AA) /*DATE (DD-MM/YY)*				DATE (JJ-MM/AA) /*DATE (DD-MM/YY)*	DATE (JJ-MM/AA) /*DATE (DD-MM/YY)*					
PENTA-2	PNEUMO-2	VPO-2 *OPV-2*	ROTA-2	TPIn-1/ *IPTi-1*	PENTA-3	PNEUMO-3	VPO-3 *OPV-3*	ROTA 3	VPI-1/ *IPV-1*	TPIn-2/ *IPTi-2*	PB/MUAC*	TPIn-3/ *IPTi-3*	VAP-1/AMV-1**	Vit A	VAP-2/AMV-2	VPI -2	VAA / YF	RR-1 / MR-1	TPIn-4/ *IPTi-4*	VAP-3/AMV-3	MILDA reçu (OUI/NON) LLIN received (YES/NO)
P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK



PMC Community of Practice

For: NMPs, EPIs, implementing partners, researchers, WHO, MMV and other stakeholders.

Objectives:

- Share plans, lessons learned and good practices regarding PMC implementation
- Discuss research evidence on PMC implementation
- Share resources to support PMC implementation

Chair :

Dr. Junior Voundi Voundi, NMCP Cameroon

Bi-weekly meetings : Friday at 8 a.m. UTC

Secretariat Members:

To be added to the mailing list:

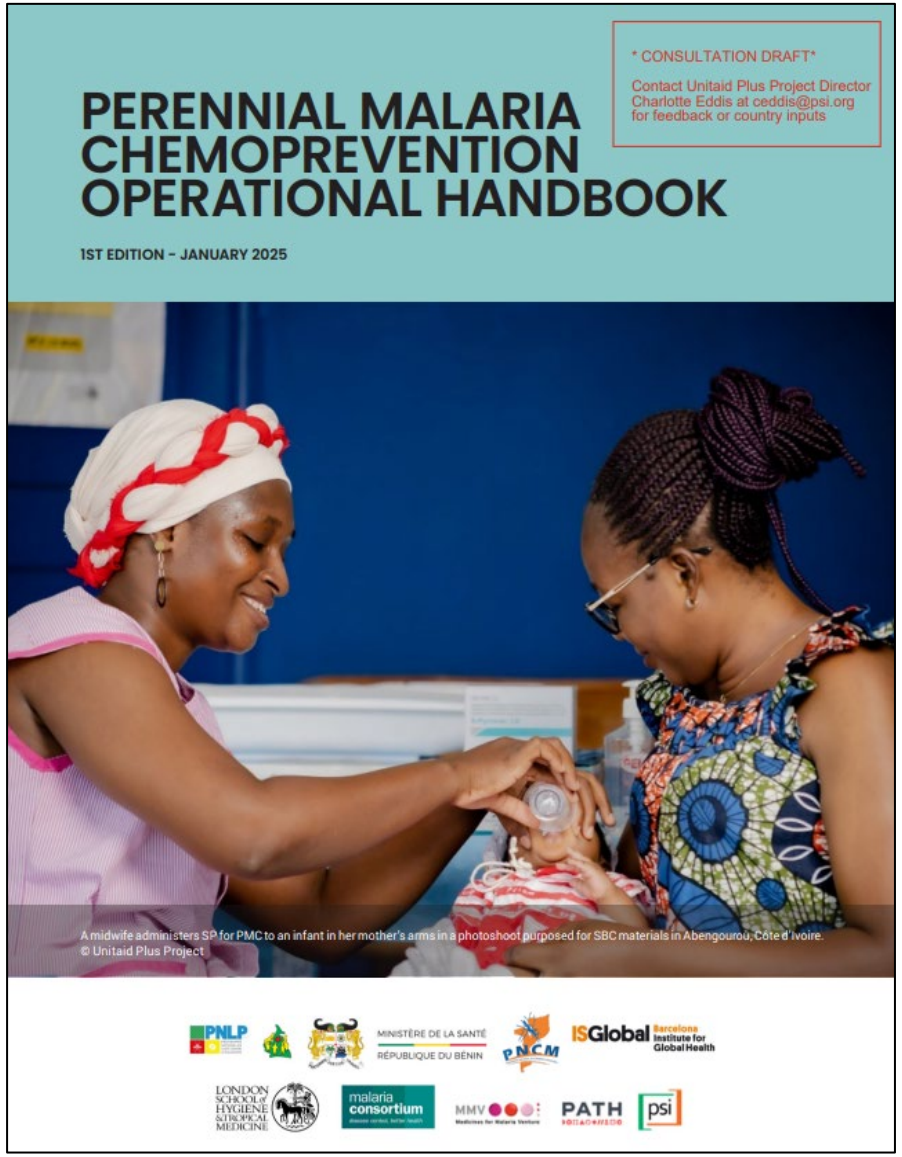
Jacques Kouakou jkouakou@psici.org

PMC COP Operational Handbook

A comprehensive operational guide for PMC planning, implementation, monitoring, and integration into national health programs

Based on experiences and lessons learned from ongoing PMC projects and programs across countries

Available in English, French and Portuguese



RBM Partnership
To End Malaria

Vaccines & Chemoprevention

18 September 2025

3. Panel discussion on scaling up malaria vaccination in a context of resource uncertainty

14 e réunion annuelle RBM (Roll Back Malaria) sur la prise en charge du paludisme

Partage d'expériences dans l'introduction du vaccin contre le paludisme dans le PEV de routine en Côte d'Ivoire

Dates : 16 – 18 septembre 2025 Lieu : Hôtel Azalaï, Abidjan, Côte d'Ivoire

Présenté par : DCPEV

Plan

- Contexte et justification
- But et objectifs de l'introduction
- Présentation du vaccin
- Stratégies de prestation vaccinale
- Introduction dans les 38 districts
- Phase de mise à échelle
- Calendrier vaccinal
- Couverture vaccinal
- Leçons apprises

Contexte et justification 1/4

- Le paludisme demeure endémique en CI, avec une recrudescence en saisons pluvieuses

- **Incidence élevée :** 233‰ dans la population générale, 709‰ chez les enfants de moins de 5 ans en 2023

- **Prévention actuelle**: utilisation des MILDA, pulvérisation intra domiciliaire, lutte anti larvaire, chimio prophylaxie

Contexte et justification$_{2/4}$

- L'OMS recommande depuis 2021, le vaccin comme outil complémentaire de prévention chez les enfants de 1 à 5 ans
- Deux vaccins pré-qualifiés : RTS,S/AS01 en juillet 2022 et R21/Matrix-M en décembre 2023
- **2022**:
  - Engagement politique du pays
  - Participation de 4 personnes ressources issues du PEV et du PNLP à un atelier sur le vaccin antipaludique à Nairobi (Kénya)
  - Recommandations du Comité National d'Experts Indépendants pour la Vaccination et les Vaccins de Côte d'Ivoire (CNEV-CI)

Contexte et justification 3/4

- **2023:**

– Mise en place d'un comité de pilotage restreint avec les parties prenantes, DCPEV, PNLP, partenaires techniques et autres Ministères

– Planification stratégique : Vaccin inclus dans les Plans stratégiques 2021-2025 du PEV, PNLP

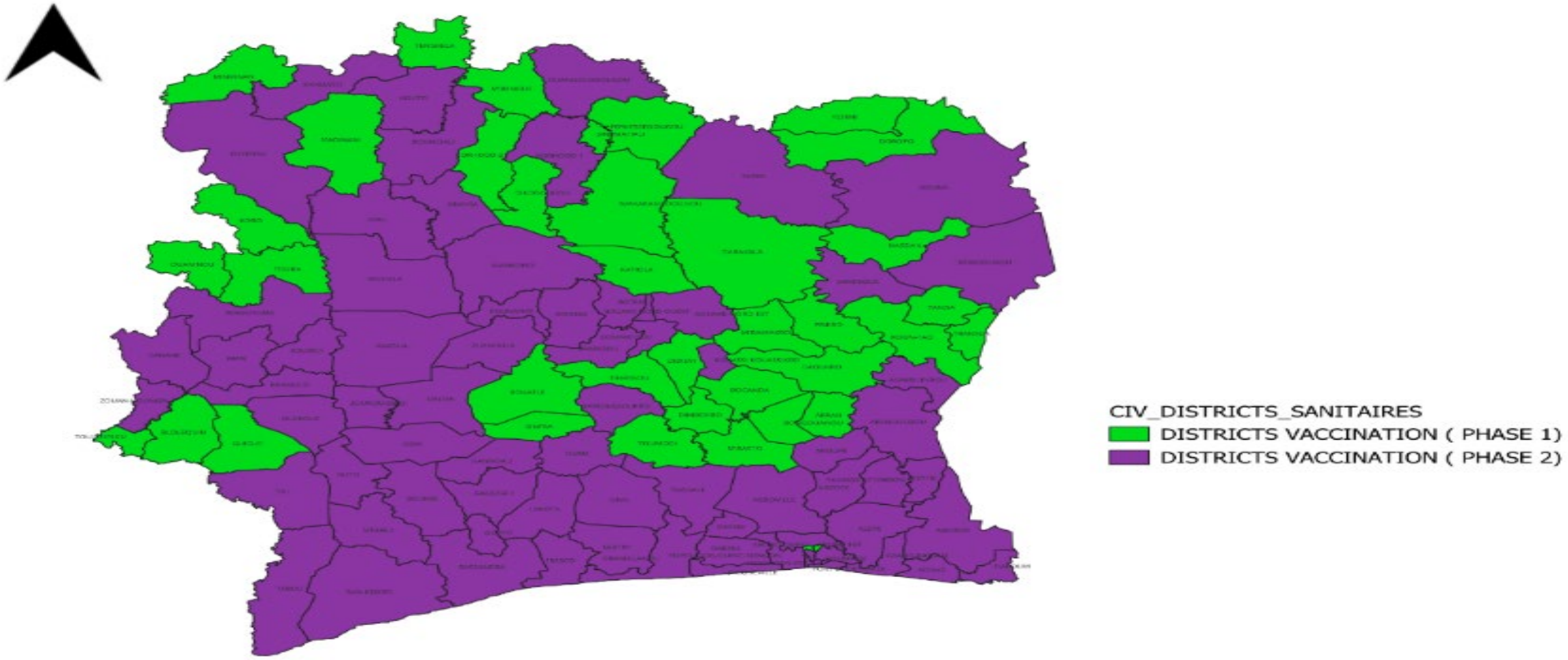
– Rédaction du plan d'introduction du VAP

– Soumission du plan à GAVI pour soutien au financement en juillet 2023

Contexte et justification 4/4

- **Choix du pays :** R21/Matrix-M
- **Demande d'appui du pays approuvée par Gavi le 20 Mars 2024 pour l'introduction du vaccin**
- **Approche progressive en deux phases** :
  - **Phase pilote (2024)** : introduction dans 38 districts à forte endémicité
  - **Phase d'extension (2025)** : mise à l'échelle dans 75 autres districts (113 au total): Disponibilité des vaccins

Stratégies de l'introduction 1/3



Carte du pays montrant les districts qui **introduiront le vaccin contre le paludisme dans les 2 phases**

But et objectif 1/2

- **But :** Contribuer à l'accélération de l'élimination du paludisme en Côte d'Ivoire.

- **Objectifs spécifiques**
  - Atteindre une couverture vaccinale d'au moins 81 % pour la 1ère dose dans tous les 113 districts en décembre 2025 ;
  - Atteindre une couverture vaccinale d'au moins 66 % pour la 2ème dose
  - Atteindre une couverture vaccinale d'au moins 58% pour la 3ème dose;

But et objectif 2/2

❑Objectifs spécifiques

- Atteindre une couverture vaccinale d'au moins 50 % pour la 4ème dose;
- Assurer la surveillance et la prise en charge des cas de MAPI chez les enfants de 0-23 mois ;
- Détruire 100 % des déchets générés par l'administration du vaccin antipaludique

Présentation du vaccin

- **Vaccin utilisé**: R21/Matrix-M
- **Caractéristique**: vaccin liquide
- **Voie d'administration**: IM (face latéro-externe)
- **Conditionnement**: flacon de 2 doses de 0,5ml/dose
- **Conservation**: +2° à +8° C
- **PCV**, placée sur la tête du flacon
- **Durée de vie**: 24 mois
- **Efficacité**: environ 80%



R21 Malaria Vaccine

Stratégies de prestation vaccinale 1/3

- **Stratégies classiques**
  - Fixe : dans un rayon ≤ 5 km autour des formations sanitaires.
  - Avancée : 5 à 15 km, avec moto.
  - Mobile : >15 km, organisées par les districts sanitaires.
- **Stratégies additionnelles**
  - Vaccination dans des postes avancés (zones de forte concentration d'enfants).
  - Porte-à-porte dans les zones de faible performance, avec l'appui des Agents de Santé Communautaires (ASC).
  - Vaccination dans les structures de protection de l'enfance (orphelinats, pouponnières, crèches, garderies).

Stratégies de prestation vaccinale 2/3

- **Stratégies additionnelles (suite)**
  - Orientation systématique lors des consultations curatives ou préventives vers les services de vaccination.
  - Mobilisation des acteurs communautaires (ASC, groupements féminins, OSC, praticiens de médecine traditionnelle, leaders religieux).
  - Couplage avec d'autres interventions : chimio-prévention saisonnière, distribution de vitamine A, campagnes de MILDA.
  - Intégration dans le secteur privé : pharmacies, cliniques avec **VACCIPHA**

Stratégies de prestation vaccinale 3/3

- **Stratégies additionnelles (suite)**
  - Campagnes d'intensification et initiative zéro-dose : dialogues communautaires, dénombrement, rattrapage et suivi des enfants manqués.
  - Innovation digitale : M-Vaccin : rappels par messages vocaux en français et langues locales, déployée progressivement dans 73 districts d'ici 2025

Introduction dans 38 districts à forte endémicité palustre 1/4

- **Avant l'introduction**
  - Mise en place de sous comités techniques (logistique, communication, mobilisation de ressources, surveillance et gestion des MAPI).
  - Réalisation de réunion de suivi hebdomadaire pour la MEO des interventions
  - Supervision pré-introduction dans les 38 districts ciblés.
  - Formation en cascade du personnel de santé (schéma vaccinal, enregistrement des données, gestion des MAPI.

Introduction dans 38 districts à forte endémicité palustre 2/4

- **Avant l'introduction**
  - Préparation logistique : renforcement de la chaîne du froid, mise à disposition de matériels roulants, pré-positionnement des vaccins.
  - Plaidoyer et mobilisation sociale : sensibilisation des autorités locales, leaders communautaires et religieux, OSC, sociétés savantes (pédiatres, gynécologues, etc.),
  - Communication : conception et diffusion des supports, engagement des journalistes et influenceurs pour informer et rassurer les communautés

Introduction dans 38 districts à forte endémicité palustre 3/4

- **Pendant l'introduction**
  - Cérémonie de lancement officiel à Abobo, sous la présidence du Premier Ministre.
  - Mise en œuvre de la vaccination.
  - Diffusion de messages de sensibilisation via radio, TV, presse, réseaux sociaux.
  - Supervision sur le terrain des activités et accompagnement des équipes de vaccination.
  - Surveillance des MAPI

Introduction dans 38 districts à forte endémicité palustre 4/4

- **Après l'introduction**
  - Supervision post-introduction dans 16 districts.
  - Évaluation post-introduction (PIE) (coûts, acceptabilité, enquête de couverture).
  - Retour d'expérience transmis aux districts et aux niveaux central et régional.

Phase de mise à l'échelle (extension à 75 nouveaux districts)

- **Avant l'introduction**
  - Réactivation des sous-comités techniques (logistique, communication, mobilisation de ressources, surveillance et gestion des MAPI).
  - Microplanification dans les 113 districts sanitaires.
  - Renforcement des capacités des équipes cadre de district, équipes régionales et acteurs communautaires.
  - Évaluation dans les 38 districts de la phase 1 pour capitaliser les leçons apprises.

Phase de mise à l'échelle (extension à 75 nouveaux districts)

- **Avant l'introduction**
  - Révision et diffusion des manuels et documents techniques.
  - Plaidoyer renforcé auprès des autorités politiques, administratives et chefs traditionnels (via la chambre des rois et chefs coutumiers).
  - Acquisition et distribution des vaccins et intrants à tous les niveaux.

Phase de mise à l'échelle (extension à 75 nouveaux districts)

- **Pendant l'introduction**
  - Lancement officiel national (district de Tiassalé), sous la présidence du Ministre de la Santé.
  - Mise en œuvre de la vaccination (intensification et couplée à la supplémentation en vitamine A et à la PEC du Paludisme)
  - Mobilisation sociale communautaire à grande échelle (leaders, associations, jeunes, femmes, ONG).
  - Intégration de la communication dans les programmes traditionnels et culturels.

Phase de mise à l'échelle (extension à 75 nouveaux districts)

- **Pendant l'introduction**
  - Réunions régulières de suivi et gestion rapide des éventuelles crises de confiance.
  - Supervision intensive des districts nouvellement couverts.
  - Surveillance et prise en charge des MAPI.
  - Gestion des déchets de vaccination selon les normes.

Phase de mise à l'échelle (extension à 75 nouveaux districts)

- **Après l'introduction**
  - Rétro-information régulière du niveau central vers les régions et districts.
  - Contrôle qualité des données collectées et analysées pour la prise de decision

Calendrier vaccinal

Age	Vaccins
Naissance	DN HépB, BCG, VPO 0
6 semaines	DTC-Hép B-Hib 1, VPO1, PCV13-1, Rota1, VPI 1
10 semaines	DTC-Hép B-Hib 2, VPO 2, PCV13-2, Rota 2
14 semaines	DTC-Hép B-Hib 3, VPO3, PCV13-3, VPI 2
6 mois	**VAP (VACCIN ANTIPALUDIQUE)1**
8 mois	**VAP (VACCIN ANTIPALUDIQUE) 2**
9 mois	RR1, VAA, Men A, **VAP (VACCIN ANTIPALUDIQUE) 3**
15 mois	RR2
15 mois	**VAP (VACCIN ANTIPALUDIQUE) 4**

Couverture Vaccinale VAP au 31 Juillet 2025 dans les 38 DDS

	VAP1	VAP2	VAP3	VAP4
Objectif	**81%**	**66%**	**58%**	**50%**
Cibles vaccinées	**236 084**	**150 277**	**105 530**	**36 533**
Couverture vaccinale	**80%**	**51%**	**36%**	**23%**

Leçons apprises

- Planifier en 2 phases : démarrer dans un nombre limité de districts à forte endémicité, puis élargir à l'échelle nationale en capitalisant les acquis.
- Associer les plus hautes autorités politiques (Premier Ministre, Ministre de la Santé) au lancement pour crédibiliser et médiatiser l'introduction.
- Renforcer la logistique et la formation en amont pour éviter les ruptures et garantir la qualité.

Leçons apprises

- Communiquer massivement avant, pendant et après pour rassurer, mobiliser et répondre aux rumeurs.
- Évaluer et superviser systématiquement à chaque étape pour corriger rapidement les insuffisances.
- Intégrer les communautés et leaders traditionnels dès la préparation pour une meilleure acceptabilité.
- Combiner vaccination avec autres interventions de santé publique (paludisme, nutrition, santé maternelle et infantile).


ENFIN, LE VACCIN CONTRE LE PALUDISME DÉSORMAIS DISPONIBLE
IL EST GRATUIT, SÛR ET EFFICACE !
VACCINATION GRATUITE
Vacciné, Protégé pour la Vie !
1ère Dose 6 MOIS
2ème Dose 8 MOIS
3ème Dose 9 MOIS
4ème Dose 15 MOIS

JE VOUS REMERCIE