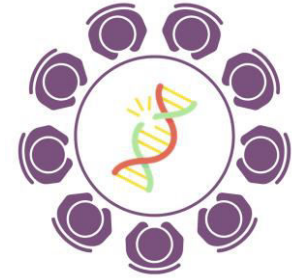




# Updates on the Community of Practice on *pfhrp2/3* gene deletions



**Deus S. Ishengoma**

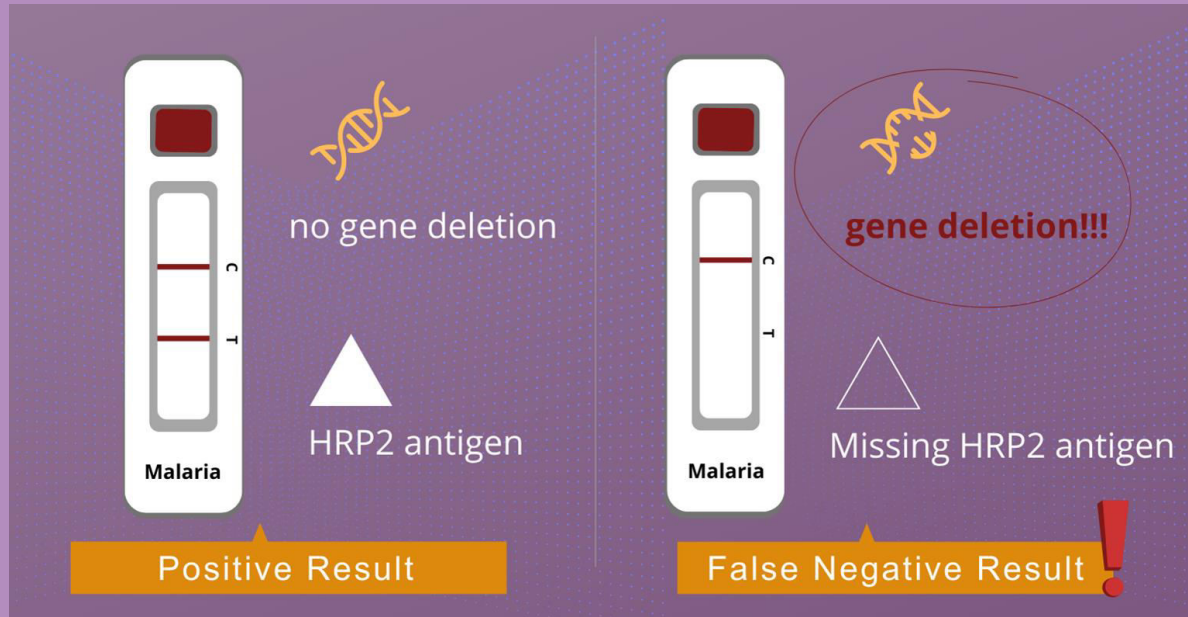
**National Institute of Medical Research (NIMR), Tanzania**

Chair of the MESA [CoP on \*pfhrp2/3\* gene deletions](#)

*[13th annual RBM CMWG meeting - Kigali, 26th September, 2024]*

## INTRODUCTION: need for action on *pfhrp2/3* gene deletions

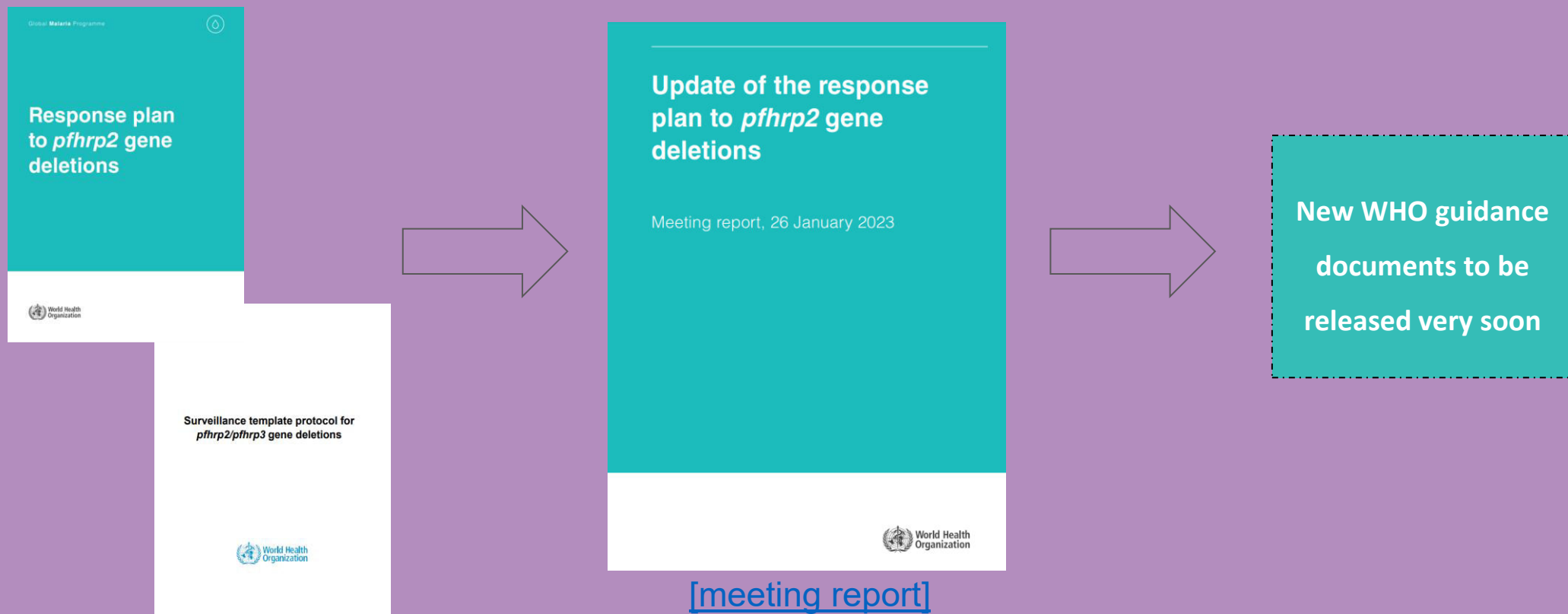
- Serious threat related to the emergence of **parasites not expressing the HRP2** protein i.e., ‘invisible’ to the most commonly used malaria Rapid Diagnostic Tests (RDTs)



source: [WHO Malaria Threat Map](#) (2024)

# INTRODUCTION: need for action on *pfhrp2/3* gene deletions

- WHO recommends to **investigate suspected false-negative RDT results**
- Guidance for countries is currently being updated



[\[meeting report\]](#)

**Community of Practice**  
***pfhrp2/3* gene deletions**

Mobilizing and providing peer and technical support



*[ launched in March 2023 ]*



## Purpose of the CoP

To mobilize and provide peer and technical support among  
**National Malaria Programs, researchers and partners**  
for the implementation of surveys  
to detect and monitor *pfhrp2/3* gene deletions

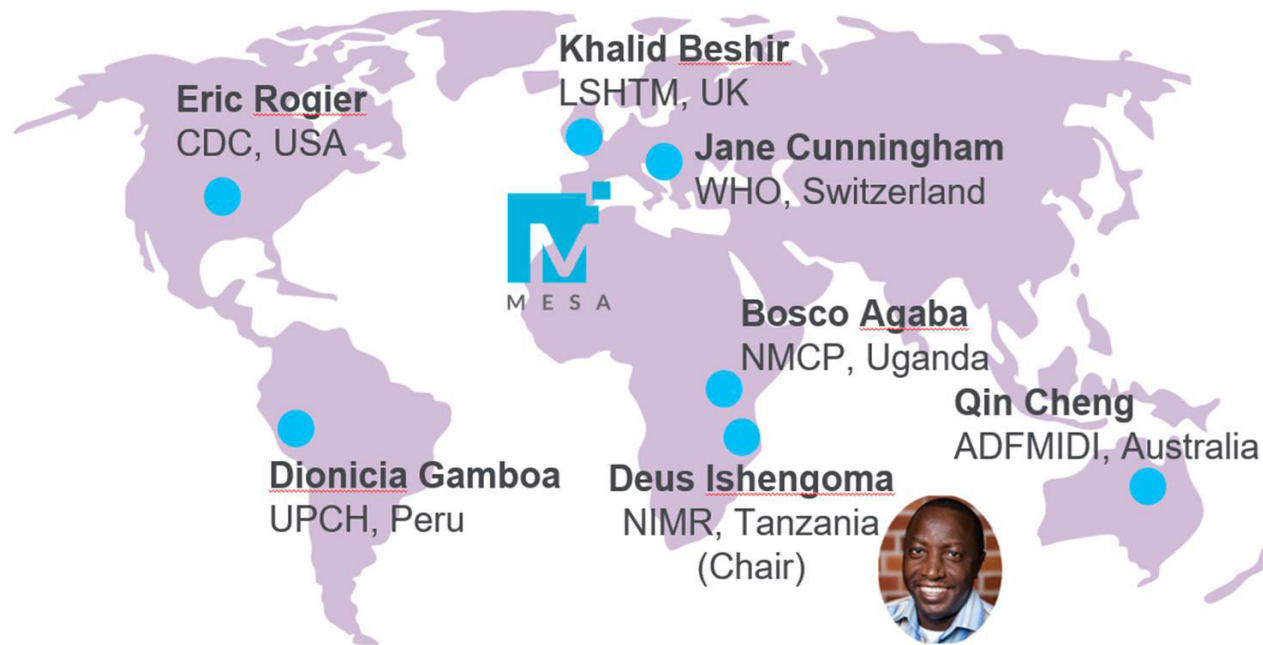


# Community of Practice on *pfhrp2/3* gene deletions



## Who is involved?

### Experts that contributed to the inception of the CoP:

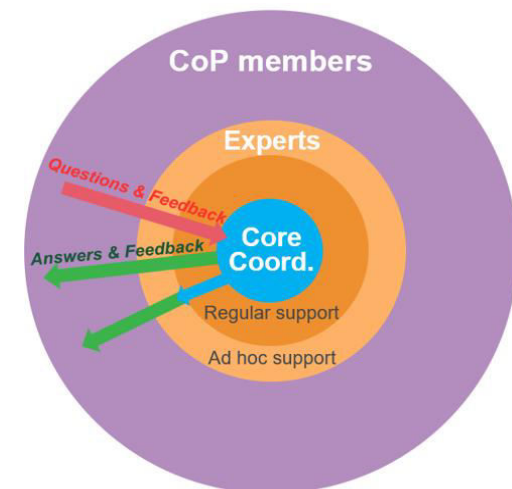


### Membership:

Open to all interested individuals, through online registration

### Organizational structure:

- Coordinated by MESA
- Chair: Deus S. Ishengoma (experienced in nationwide surveys)
- Core Group: Provides advice and support through regular meetings
- Pool of experts: Provide support on ad hoc basis



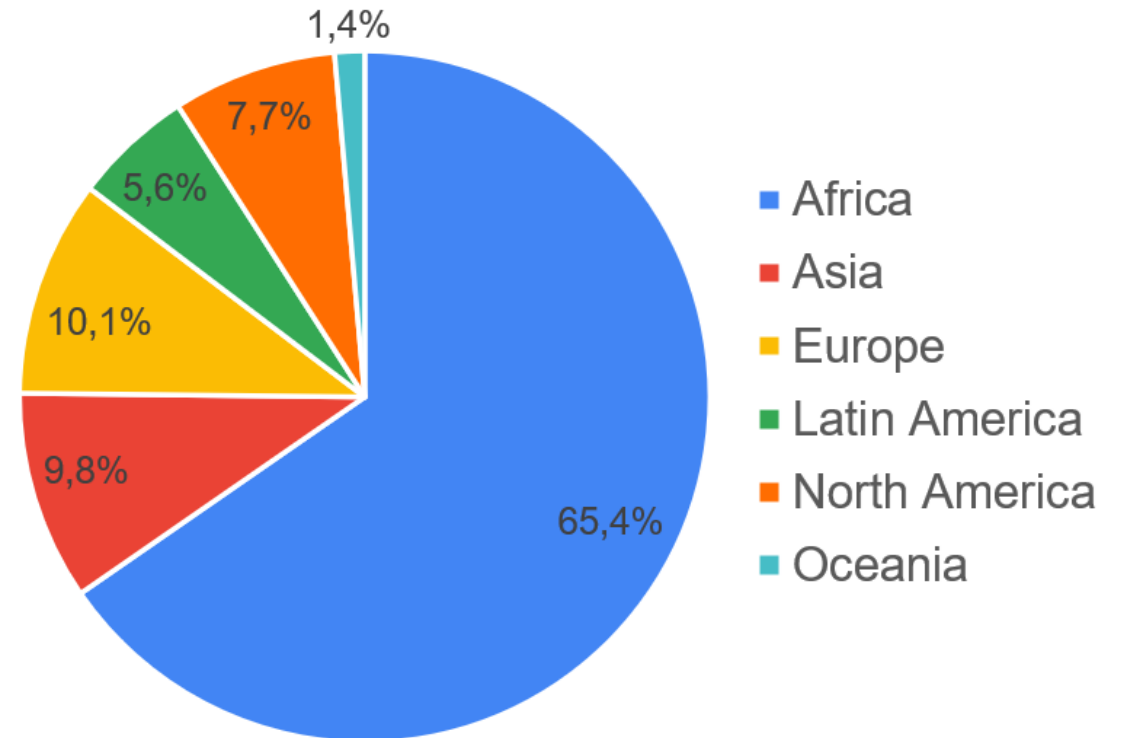


## Who is involved?



287 members

- *Academia / Research institutions*
- *Ministries of Health / Malaria Programs*
- *International organizations / NGOs*
- *Private sector*





# Community of Practice on *pfhrp2/3* gene deletions



## Activities (I)

### MESA Forum - 7 June 2023 (virtual)

367 registrants from 70 countries, primarily from malaria-endemic countries

### Presentations



**Deus Ishengoma [Chair] – NIMR, Tanzania**

Presented the CoP: rationale, planned activities, and key topics of interest



**Agaba Bosco – NMCP, Uganda**

Outlined implementation of national surveys and lessons learnt



**Qin Cheng – ADFMIDI, Australia**

Showcased the WHO international lab network supporting molecular analyses and listed collaborating labs



**Khalid Beshir – LSHTM, UK**

Described the techniques and approaches for *hrp2/3* molecular genotyping, including practical considerations

### Objectives

- Initiate experience/information-sharing among stakeholders
- Offer a platform for interactive discussions

### Related resources



[Slide deck](#)



[Video recording](#)



[Follow up Q&A with pending questions answered by experts](#)





## Activities (II)

### ASTMH side meeting - 18 October 2023 (Chicago, USA)

[Read the meeting report](#)

#### Opportunities and challenges to respond to the growing malaria diagnosis threat

75 participants from academia, national malaria programs, multilateral organizations, and RDT manufacturing companies

#### Meeting highlights



World Health Organization

- WHO tracking tools: Malaria Threats Map & Surveillance Tracker Dashboard
- Template protocol modification will integrate risk prediction and study design tools



SAVE LIVES FASTER

- Main challenges in the malaria RDT market, especially for PfLDH detection tests
- Potential solutions from both demand & supply side

**PATH**



- Novel PfLDH-based tests showed improvement in minimizing false negatives
- Combination RDTs (HRP2 and improved PfLDH assays) are the most effective strategy



Diagnosis for all

- Outlined their role in RDT field validations and supporting product developers for regulatory approvals



Abbott

Rapigen



- Showcased their advancements and updates in the development of alternative RDTs featuring HRP2 and PfLDH detection



- Presented preliminary results of in-country evaluations of new LDH-based RDTs.

#### Discussion: Funding challenges

Resource-intensive field evaluations, lack of standardized control panels, and difficult quest for new biomarkers.



## Activities (III)

### Workshop during MIM conference - 21 April 2024 (Kigali, Rwanda)

#### Practical demonstration: *Pfhrp2/3* Planner online tool

10 participants from research institutions, national malaria programs and ministries of health representing different survey implementation sites



#### Training to support stakeholders planning to:

- Start implementing a *pfhrp2/3* gene deletion survey
- Analyze the results of an ongoing or completed survey

#### Facilitators

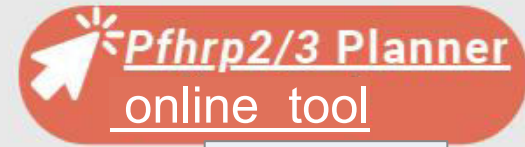
- Shazia Ruybal-Pesántez & Hillary Topazian (Imperial College, UK)
- Rebecca Thomson (WHO consultant, UK)

#### Topics addressed

- Overview of WHO protocol recommendations
- Presentation of the tool: Study design and analysis
- Case studies
- Practice by participants and Q&A

#### Next steps

- Adjust the tool based on feedback from attendees
- Plan additional demonstration sessions



Imperial College  
London





## Activities (IV)

### Responding to the threat of *pfhrp2/3* deletions

A curated list of valuable resources designed to assist the malaria community in addressing the challenges posed by this urgent threat to malaria diagnosis



WHO guidance,  
protocols and tracking



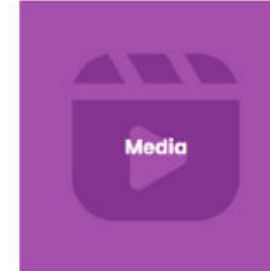
Online tools



MESA Community of  
Practice



Malaria RDT products



Media



Virtual Events and  
Conferences



Reviews

#### WHO materials:

- Response plan & guidance
- Template protocols
- Map & dashboard

#### Apps:

- *Pfhrp2/3* Planner
- Deletion Risk Explorer

- CoP updates
- Registration form

- Prequalified/eligible RDTs
- Procurement guidance

- Videos
- Interviews
- Articles

- MESA Forums
- Symposiums
- Webinars

#### Literature reviews:


- Sampling
- Laboratory methods
- Meta-analyses



→ [Resource COLLECTION](#)



## How to be involved?

- **Become a member of the community**   
*Fill this brief [registration form](#)*
- **Attend the CoP events** (virtual and/or in-person)  
*Follow the updates you will receive through the CoP Newsletters*
- **Provide feedback or suggest new initiatives**  
*Contact the CoP through: [hrp2.mesacop@isglobal.org](mailto:hrp2.mesacop@isglobal.org)*
- **Share your inputs on funding needs and gaps** in the response to the threat of *pfhrp2/3* gene deletions  
*Participate in this [online survey](#)*





## What's next?

### Next steps and upcoming events:

- MESA Forum to present the new WHO guidance and offer Q&A with experts
- Follow-up of the survey on funding gaps (ASTMH - Nov, 2024)
- Compile and share *pfhrp2/3* gene deletion survey materials (protocols, SOPs, etc.)

# THANK YOU for your attention



**Core group members and experts** who support the activities of the CoP: Khalid Beshir, Bosco Agaba, Qin Cheng, Dionicia Gamboa, Issiaka Soulama, Sònia Tomàs, Elisa Serra, Nana Aba Williams, Deus Ishengoma (Chair)



**MESA** is supported by a grant from the Bill & Melinda Gates Foundation



➤ Network of reference laboratories for surveillance activities

## WHO international lab network to support *pfhrp2/3* surveillance

- Set of **geographically diverse labs** with experience characterizing *pfhrp2/3* deletions, have lab resources and participate the WHO NAAT EQA (currently 7 labs, 2 under consideration)
- Engage in **tripartite agreements** between WHO-Lab-Survey country (MOH, research institute)
- WHO has some **funding** to support molecular and serological analysis and some of the labs also have own funding sources
- **Contact WHO** to be directed to a lab, preferably at planning stage
  - Dr Jane Cunningham ([cunninghamj@who.int](mailto:cunninghamj@who.int))

Institute		Country	Lead
London School of Hygiene and Tropical Medicine	LSHTM	UK	Khalid Beshir
University of North Carolina	UNC	USA	Jonathan Parr
Australian Defence Force Malaria and Infectious Disease Institute	ADFMIDI	Australia	Qin Cheng
Centres for Disease Control	CDC	USA	(To be updated)
Université Cheikh Anta Diop de Dakar	UCAD	Senegal	Daouda Ndiaye
Universidad Peruana Cayetano Heredia	UPCH	Peru	Dionicia Gamboa
National Institute of Malaria Research	NIMR	India	Praveen Bharti
Amauer Hansen Research Institute	AHRI	Ethiopia	Fitsum Girma
University of Notre Dame	UND	USA	Christian Koepfli