



CUREMA

Vers l'élimination du paludisme dans une population mobile et éloignée des soins

Alice Sanna, Thi Thuan Nguyen, Martha Suárez-Mutis, Lorraine Plessis,
Teddy Bardon, Marion Petit-Sinturel, Raphaëlle Le Querriou, Stephen
Vreden, Yann Lambert, Maylis Douine



Déclaration d'intérêt de 2014 à 2025

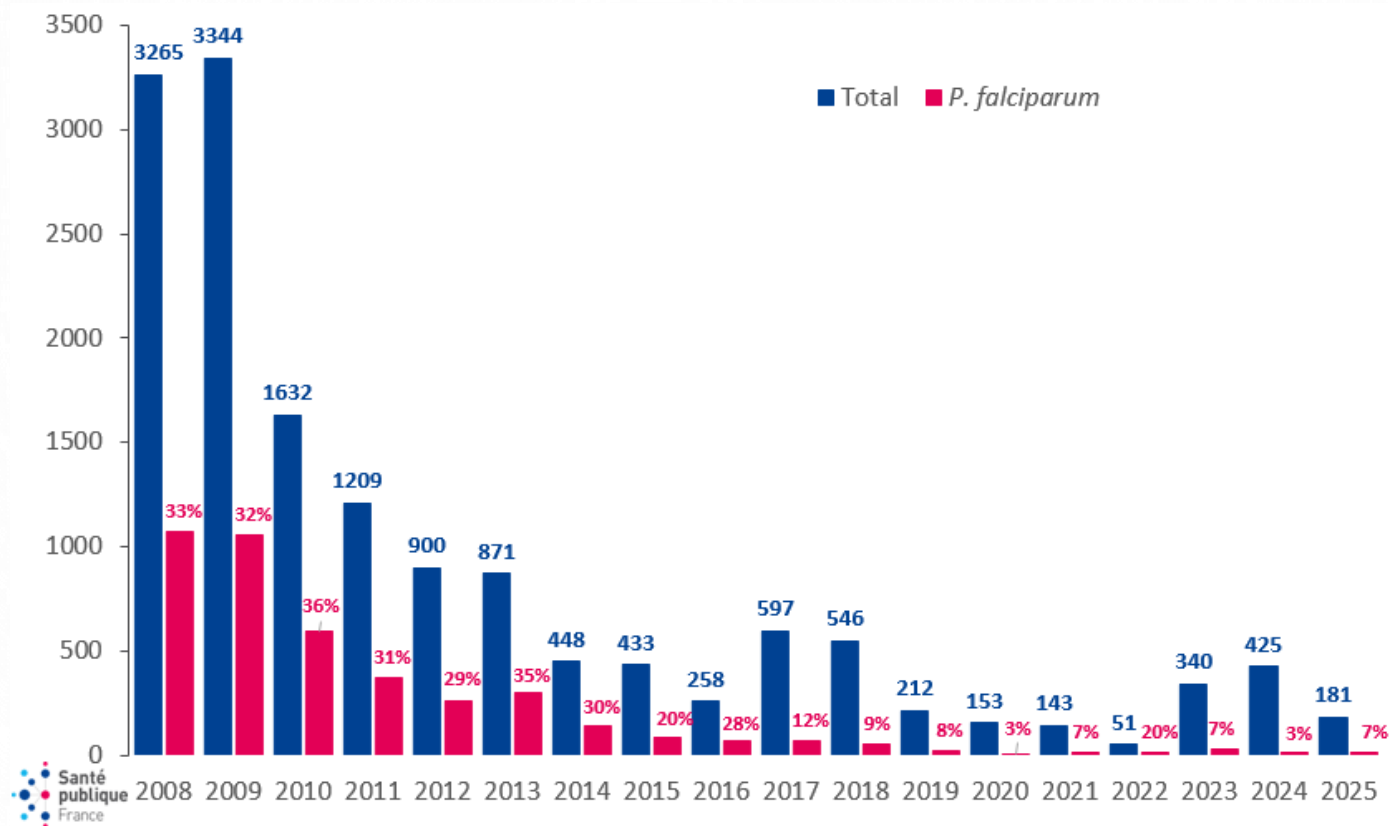
- Intérêts financiers : aucun
- Liens durables ou permanents : aucun
- Interventions ponctuelles : aucunes
- Intérêts indirects : aucuns

PLAN RÉGIONAL D'ÉLIMINATION DU PALUDISME EN GUYANE

2026-2030



Données SpF



Personnes travaillant dans l'orpaillage



2015

ORPAL : 421 orpailleurs

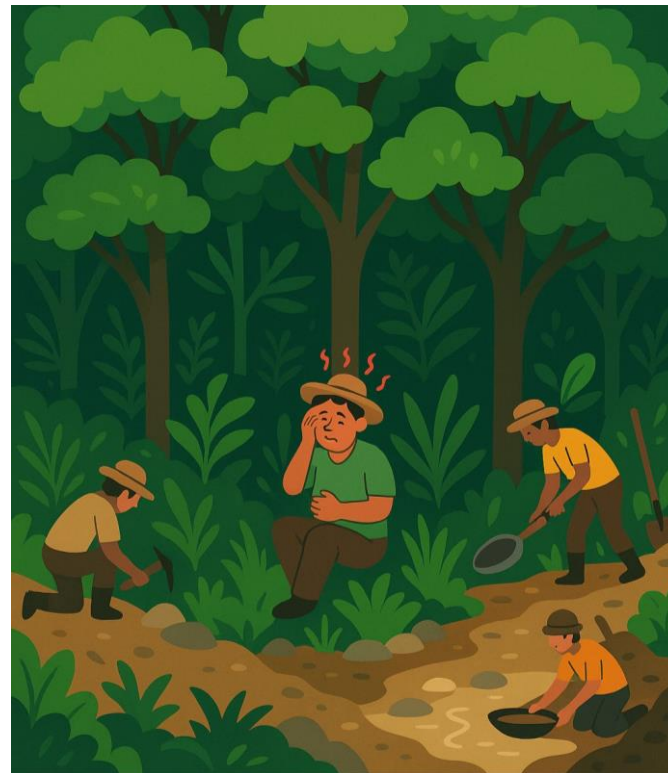
Prévalence PCR 22.4 % (18.4-26.4)



**Risque d'émergence
de *P. falciparum*
résistant**



**Risque de propagation
du paludisme
dans la région**



MALAKIT 2018-2020

POCHETTE DIAGNOSTIC



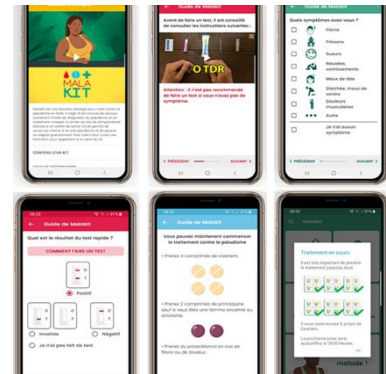
3 tests rapides

POCHETTE TRAITEMENT



Artemether-lumefantrine
+ Paracetamol





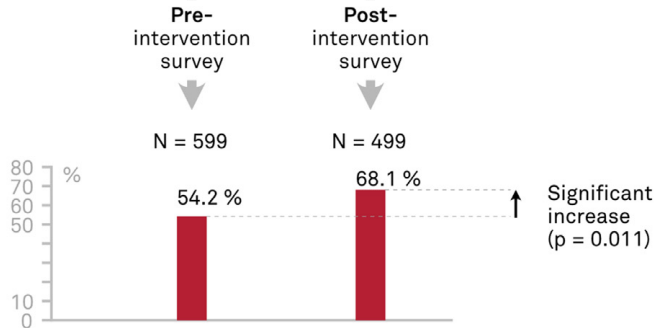
IMPACT OF MALAKIT

4760 kits à 3760 participants

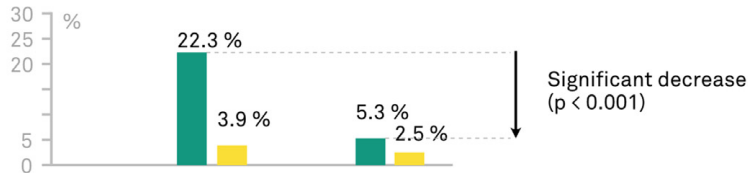
Increase of appropriate behavior
OR=1.8 [1.1-3.0]

Prevalence and proportion of *P. falciparum* decrease

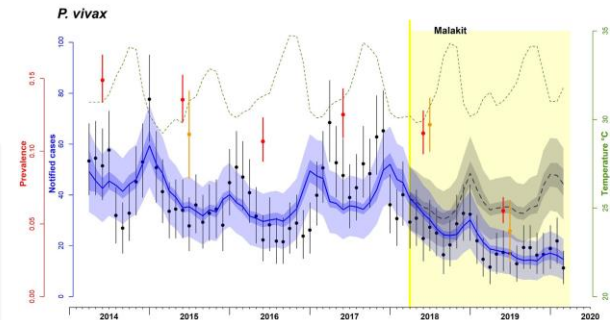
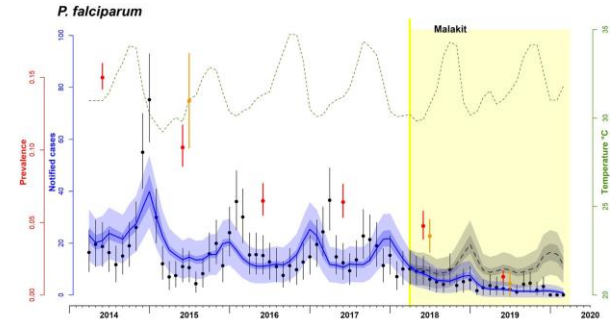
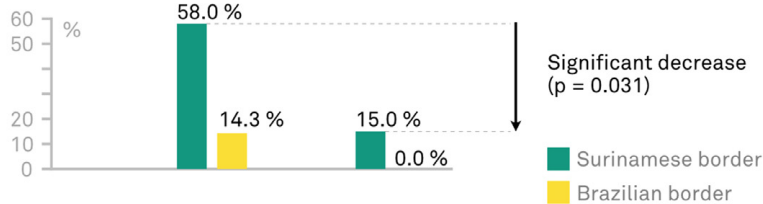
Testing before treatment with certified ACT



Prevalence of Malaria (PCR)



Proportion of *P. falciparum* among positives



Malakit helped prevent an estimated 43% of the cases of malaria imported from French Guiana in Brazil and Suriname between April 2018 and March 2020.



Contents lists available at ScienceDirect

The Lancet Regional Health - Americas

journal homepage: www.elsevier.com/locate/ana

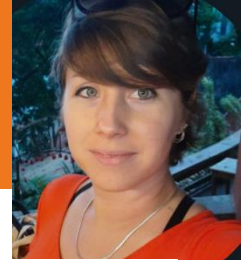
Research paper

Self-diagnosis and self-treatment of malaria in hard-to-reach and mobile populations of the Amazon: results of Malakit, an international multicentric intervention research project.

Evaluating the impact of the Malakit intervention on malaria transmission in the Guiana Shield: a mathematical modelling study

Yann Lambert,^{a,b,*} Raphaëlle Mitras,^{a,b} Alice Sanna,^{a,b} Muril Galindo,^{a,b} Hélène Hwaat,^a Paola Marchesini,^c Yasmine Lazrak,^{a,f} Lise Musset,^{a,f} Stephen Vreden,^g Martha Cecilia Sudra-Mutis,^h Oscar Mesones Lapouble,^{a,b} Antoine Adenis,^{a,b} Mathieu Nacher,^{a,b} Pierre-Yves Boelle,^a Chiara Poletto,^{i,j} and Maylis Douine,^{a,b,k}

CUREMA 2023-2025: cibler le P. vivax



MALAKIT

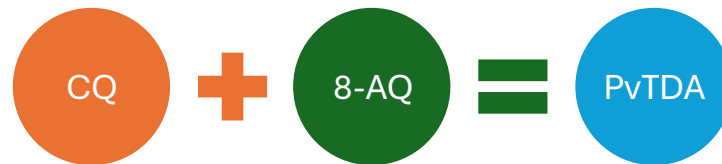
Training + self-diagnosis/self-treatment



et/ou

TTT RADICAL

TT chloroquine 3d +
primaquine 7d or
tafenoquine



Eligibility :

- Epidemiological criteria
- No contraindications to 8AQ
- Agreement to 14-day follow-up

METHODOLOGY

Open Access

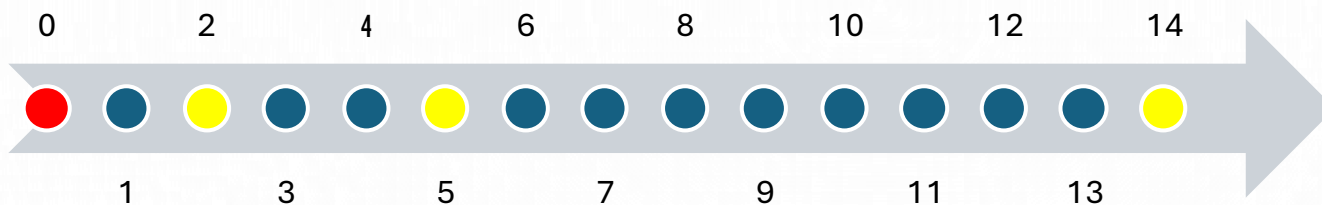


CUREMA project: a further
step towards malaria elimination
among hard-to-reach and mobile populations

Alice Sanna^{1*}, Yann Lambert¹, Irene Jimeno Maroto¹, Muriel Suzanne Galindo¹, Lorraine Plessis¹, Teddy Bardon¹, Carlotta Carboni¹, Jane Bordalo², Helene Hiwat³, Hedley Cairo³, Lise Musset⁴, Yasmine Lazrek⁴, Stéphane Pelleau⁵, Michael White⁵, Martha Suárez Mutis⁶, Stephen Vreden⁷ and Maylis Douine¹

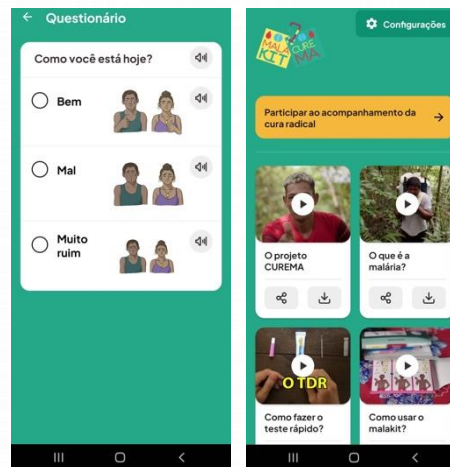


Follow-up



Safety

Observance



Design

Pragmatic >> explanatory research approach

Hybrid design

Effectiveness focus

Epidemiological
impact

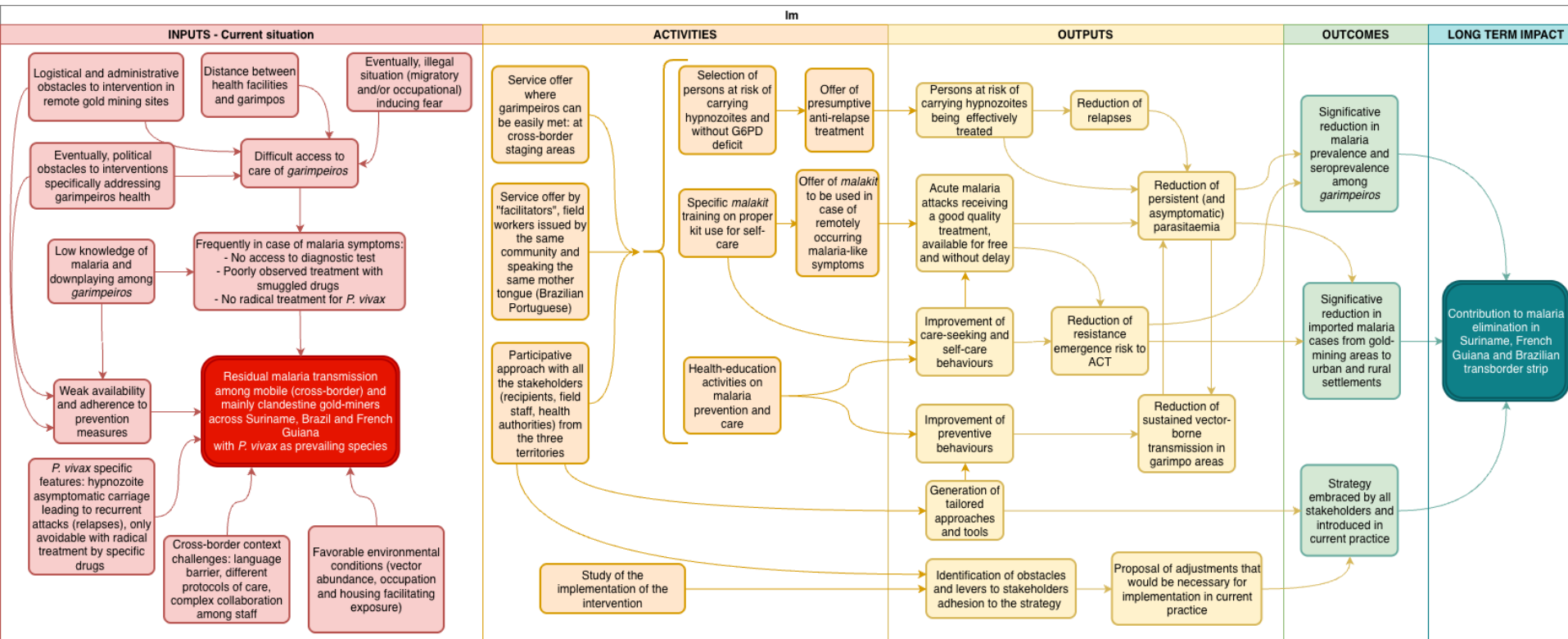
Implementation focus

Reach
Safety
Acceptability, Feasibility
Obstacles & Levers



Modèle logique

Recherche interventionnelle en santé des populations RISP



Facteurs influençant la participation

Données à l'inclusion



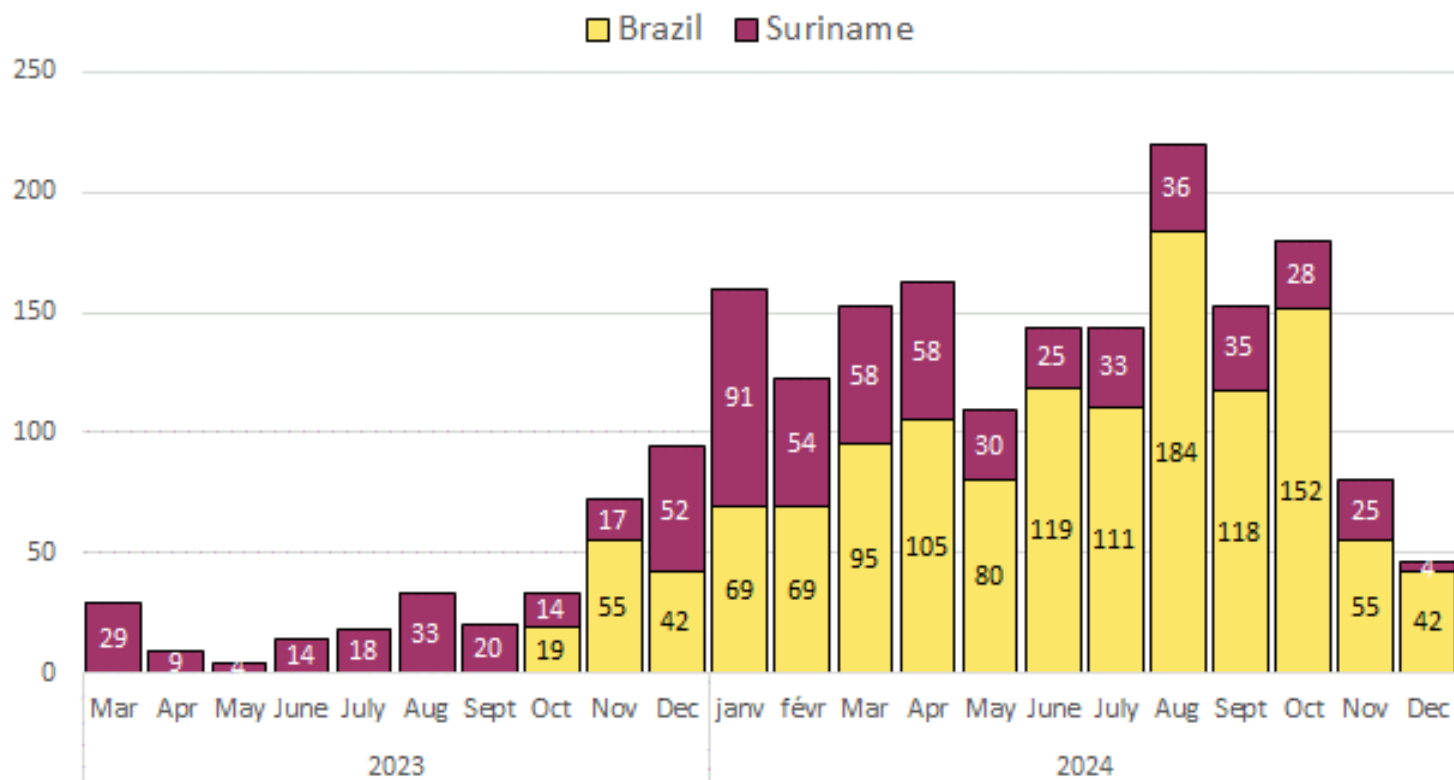
Données étude qualitative



Données pré/post intervention



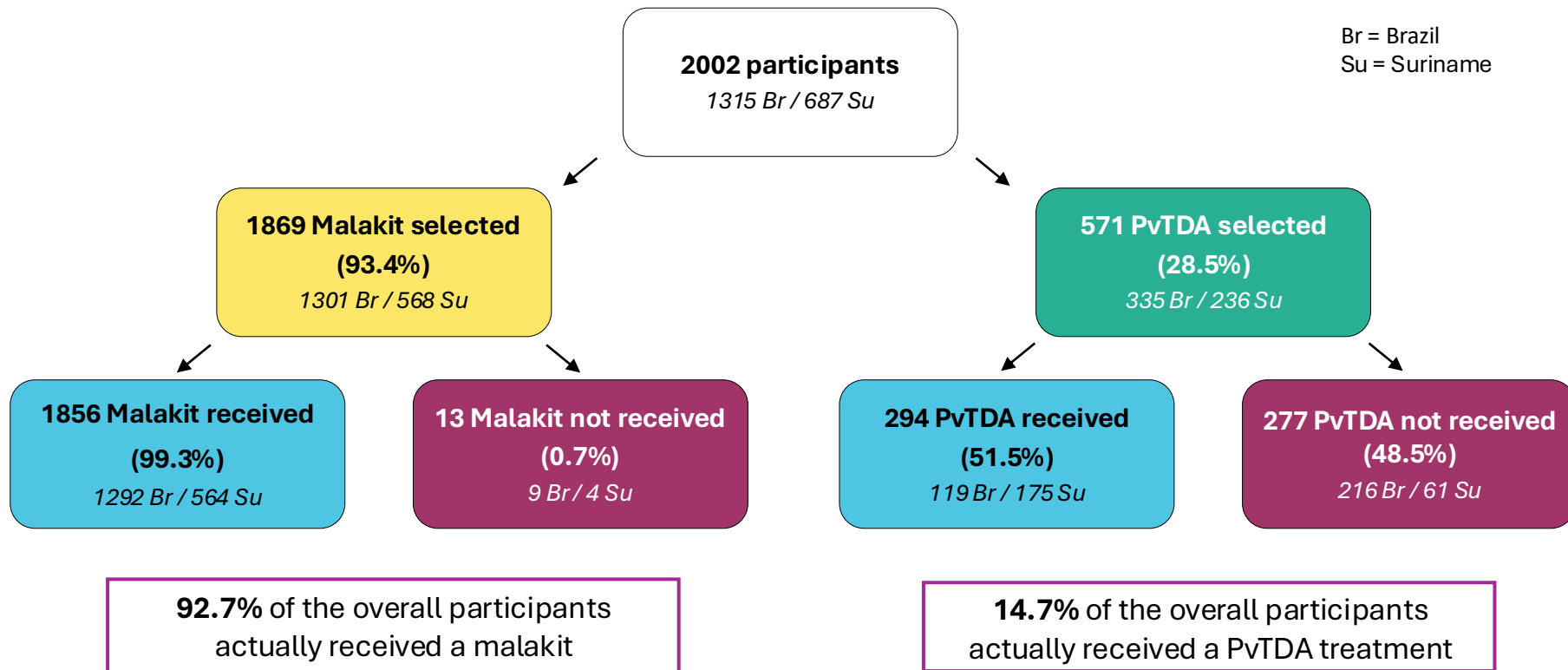
Monthly inclusions in the CUREMA intervention



Inclusions in the CUREMA intervention

March 2023 – December 2024

Br = Brazil
Su = Suriname





Intervention's reach (post-intervention survey estimations)



	Nb	Coverage	95% CI
Participation in the intervention (inclusion)			
Brazilian border	85/197	43.1%	[36.4 – 50.1]
Surinamese border	29/290	10.0%	[7.1 – 14.0]
PvTDA coverage			
Brazilian border	9/197	4.6%	[2.4 – 8.5]
Surinamese border	4/290	1.4%	[0.5 – 3.5]
Malakit coverage			
Brazilian border	84/197	42.6%	[35.9 – 49.6]
Surinamese border	28/290	9.7%	[6.8 – 13.6]

Modèle binomial-participation

	Coef [95 CI]	P-value
Conditional model		
Malakit available	1.89 [1.44:2.25]	<0.001
Tafenoquine available	0.46 [0.07:0.86]	0.02
Malakit expanded to Amapá	0.47 [0.11:0.82]	0.009
Weekly rain (mm)	-0.004 [-0.007:-0.001]	0.004
Drought	-0.22 [-0.43:-0.008]	0.04
Days since site opening	-0.003 [-0.004:-0.002]	<0.001
Quality of facility	0.72 [0.42:1.01]	<0.001
Mobile activity	0.86 [0.47:1.27]	<0.001
Dedication exclusive	0.82 [0.41:1.24]	<0.001
Supervision weak	1	
Supervision intermediate	-0.55 [-0.96:-0.15]	0.007
Supervision strong	-1.33 [-1.81:-0.86]	<0.001
Zero-inflated model		
Number of facilitators	-5.34 [-6.97:-3.71]	<0.001
Dédication exclusive	-3.67 [-6.69:-0.65]	0.02

Modèle logistique - PvTDA

Variable	OR [CI 95%]	P value
No formal education	1	
Primary school	2.13 [1.26:3.59]	<0.01
Secondary school or university	1.71 [0.98:3.01]	0.06
No symptoms of malaria in 12 previous months	1	
1 symptoms of malaria	2.14 [1.13:4.05]	0.02
2-3 symptoms of malaria	2.98 [1.64:5.4]	<0.01
>3 symptoms of malaria	9.64 [3.66:25.4]	<0.01
Primaquine proposed	1	
Tafenoquine proposed	0.43 [0.27:0.71]	<0.01
No personal reason for staying in inclusion site	1	
Staying in inclusion site for resting and/or visiting relatives	0.4 [0.24:0.69]	<0.01
No medical reason for staying in inclusion site	1	
Having a medical reason for staying in inclusion site	4.09 [0.86:19.53]	0.08

Critical “outer setting” events influencing inclusions



AP tem 7 municípios em situação de emergência após aumento de 89,8% nos casos de malária

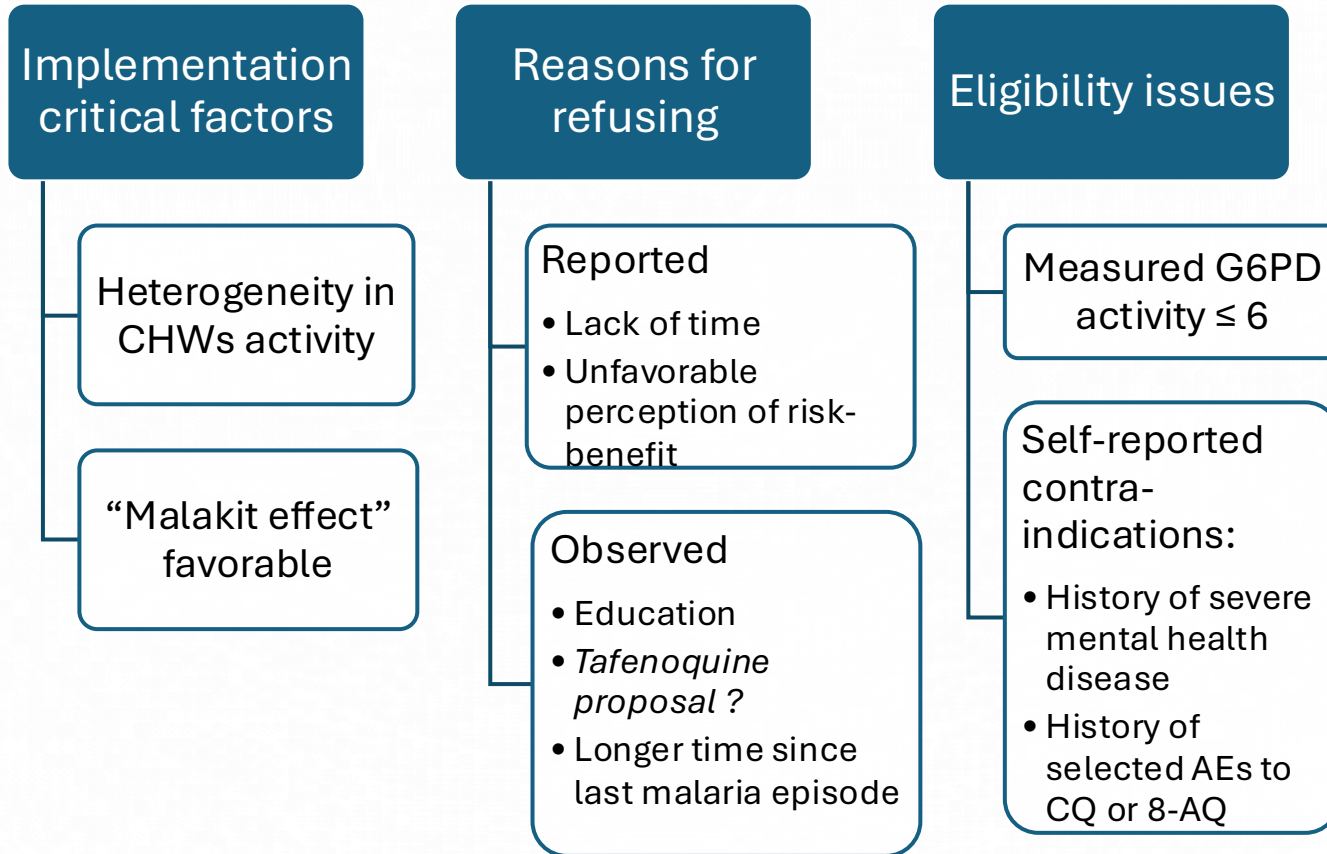
Dados são referentes ao período de 1º de janeiro a 8 de novembro deste ano, em comparação com o mesmo período de 2022. Governo do Estado publicou um novo decreto e novas medidas para conter doença.

Por Rafael Aleixo, g1 AP — Macapá

18/11/2023 15h27 · Atualizado há um ano



Main determinants of PvTDA up-take



MALAKIT

TRANSFERRING PROCESS

A step-by-step approach to replicating, adapting and evaluating the Malakit strategy for other populations in other contexts

ANALYSING

THE SITUATION

Identify the target population, pattern of mobility, care access, *Plasmodium* species...

1

DEFINING THE FRAMEWORK

Research study or public health project?

2

IDENTIFYING STAKEHOLDERS

Institutions, scientists, communities, civil organizations

3

ADAPTATING THE STRATEGY

Kit design and content, training strategy, IEC tools...

4

IMPLEMENTING KIT DISTRIBUTION

Distribution site, CHWs training and supervision

5

EVALUATING

Data collection and monitoring (feasibility, acceptability, safety, effectiveness)

6

ANTICIPATING SCALE-UP

Implication of health institution, sustainable deployment

7

Malakit transferability

- under consideration
- pilot study completed
- ongoing



croix-rouge française



Recherche et action publique en Guyane : entre innovation et contraintes

- ❖ **Une recherche porteuse d'innovation et de visibilité internationale**
- ❖ **Des programmes de santé publique contraints**
 - Cadre réglementaire rigide
 - Besoin de dérogations et d'adaptations locales
- ❖ **Des priorités politiques parfois divergentes**
 - *Ministère de la Santé* : élimination du paludisme (objectif Guyane 2030)
 - *Préfecture* : lutte contre l'orpaillage illégal



Sans engagement institutionnel fort, pas d'innovation durable



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