

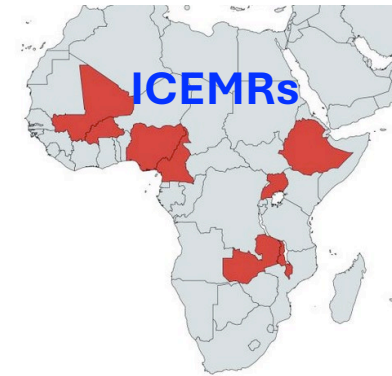
# Strengthening implementation research capacity in francophone Africa

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Emeritus Dean of The Faculty of Medicine,  
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Bamako, Mali

# Support from TDR for my career development

- Recipient of PhD scholarship from TDR to study epidemiology at Tulane University, New Orleans, USA (1995-2002)
- Awarded TDR research training grant on bioinformatics and genomics (2004-2007): trained 50 junior researchers across Africa, leading to the creation of African Center of Excellence in Bioinformatics and Data Sciences at USTTB in Mali (> 30 Msc & PhD students trained, 2015-present)
- First implementation research grant awarded by TDR in 2009 to improve integrated malaria vector control strategies in East, Central and West Africa. This shaped my career in implementation research and established the basis for the International Centre of Excellence for Malaria Research (ICEMR) in Mali.



# TDR's contribution to building sustainable research and training capacity in Mali

Malaria Research  
Training Center with  
TDR and US-NIH  
(1992)

Mali-ICER expansion  
of research program  
to HIV/TB (SEREFO)  
(2003)

TDR African Center on  
Bioinformatics and  
Genomics of insect  
vector of disease  
(2004)

Creation of the  
Master Training in  
Public Health (2010)

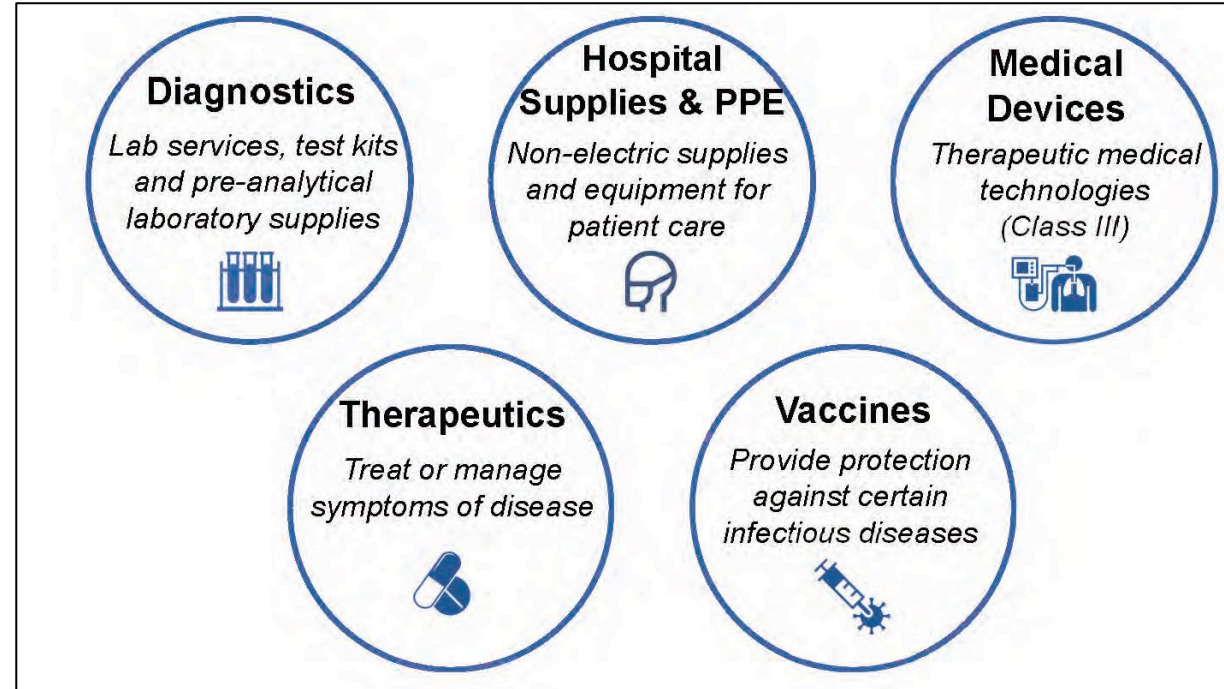
Creation of University  
Clinical Research  
Center  
(2015)

Creation of African  
Center of Excellence  
in Bioinformatics  
(2015)



# Rationale for strengthening implementation research capacity in LMICs

- New health technologies or interventions proven to be efficacious in controlled clinical trial settings may not be as effective when used in '**real life**' health system contexts, particularly in low resource-limited settings.
- If not used, or not fully used, this results in a waste of time, expertise, resources and billions of \$



# The case of malaria

Malaria control and prevention tools have been proven to reduce the burden of malaria, especially when they are combined.

**And yet** malaria continues to be stubborn in sub-Saharan Africa.



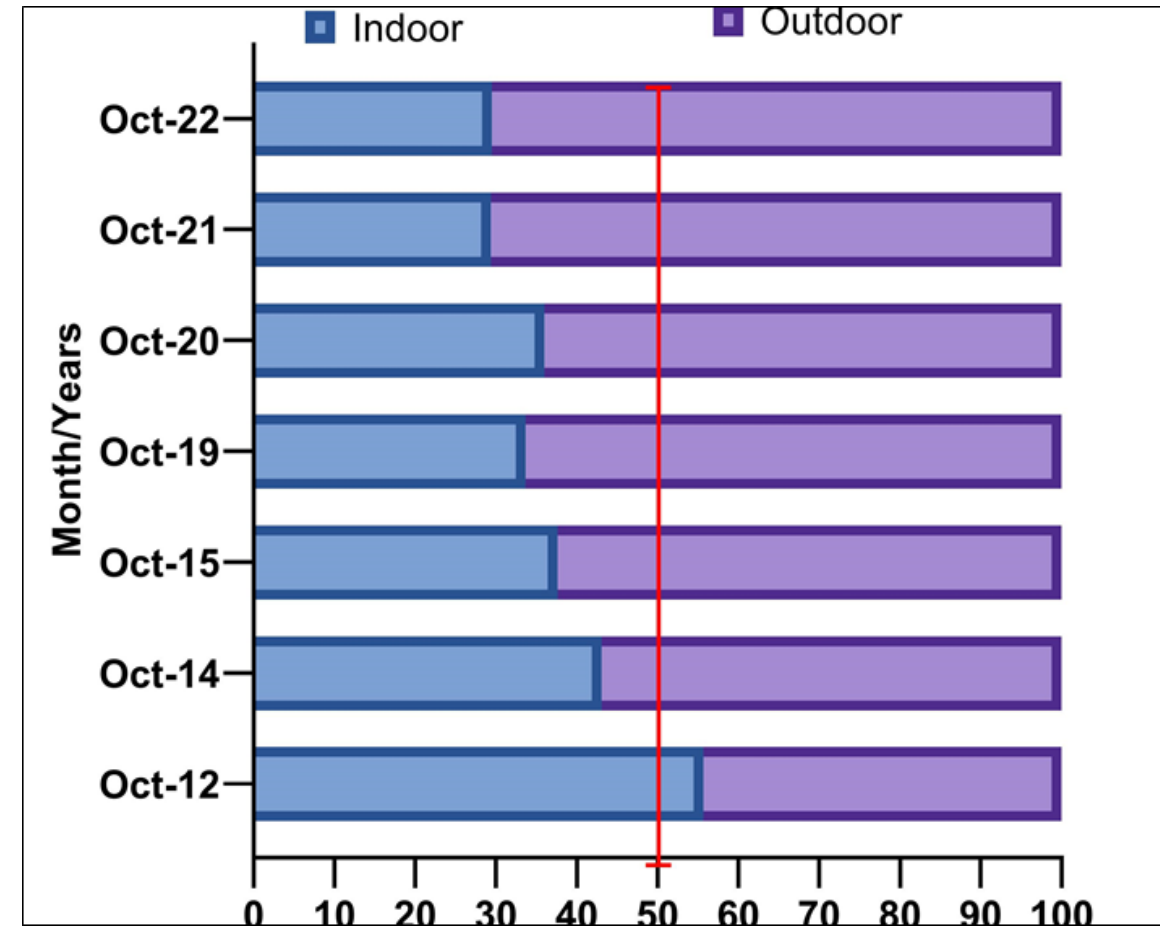
# Example: Challenges with use of mosquito nets

## Mosquito bites taking place outdoors at night



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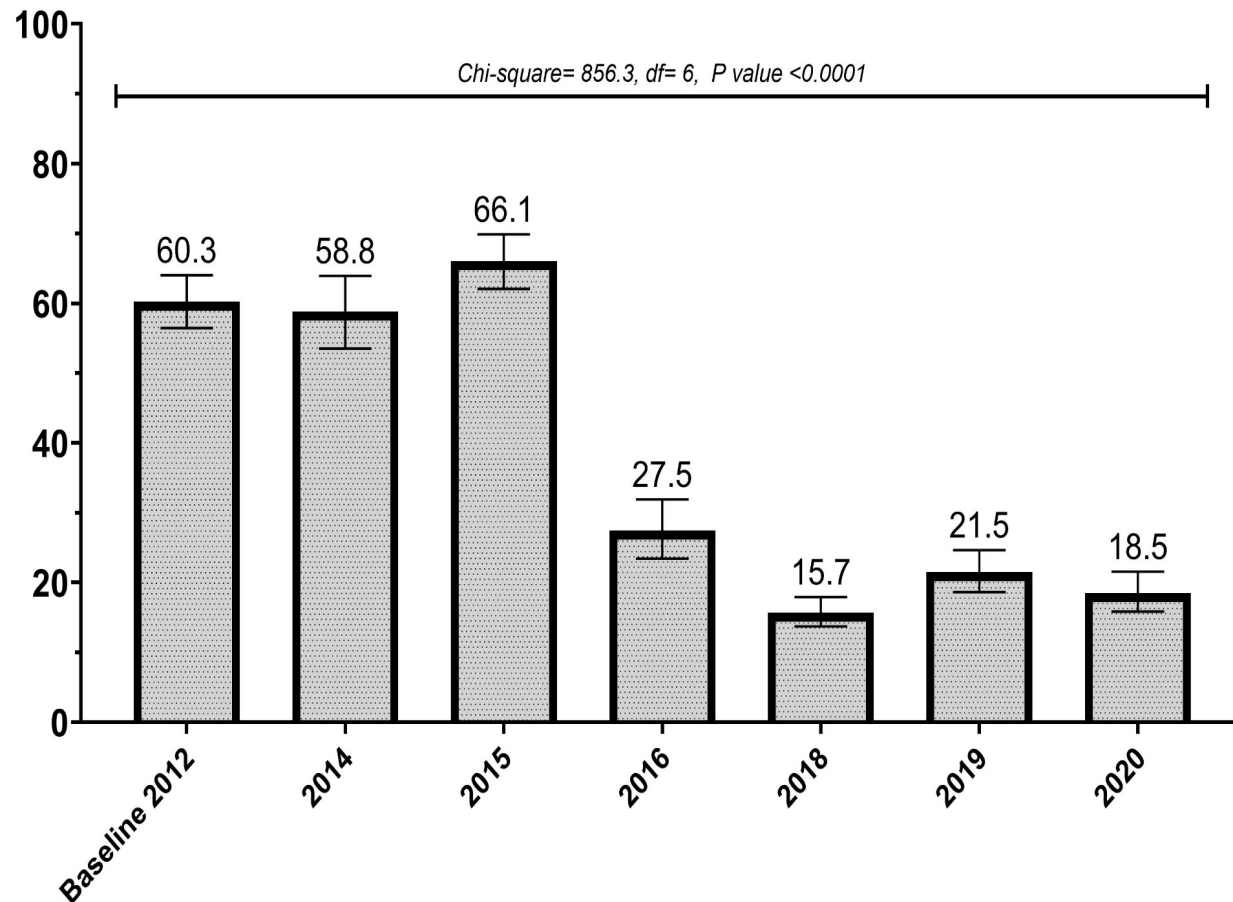
Mosquito bites





# Example: Challenges with use of seasonal malaria chemoprevention (SMC)

Even after implementation of SMC, malaria continues to persist among children



Why? Issues with compliance to treatment

Sanogo et al. *Malaria Journal* (2025) 24:102  
<https://doi.org/10.1186/s12936-025-05283-z>

Malaria Journal

RESEARCH

Open Access

High incidence of clinical malaria among asymptomatic *Plasmodium falciparum* infected children receiving SMC with sulfadoxine-pyrimethamine and amodiaquine (SP + AQ) in Koulikoro, Mali



# Personal story related to malaria treatment compliance

## Chloroquine



In a small village in Mali, I was fortunate to provide malaria treatment for free, giving the first dose under Directly Observed Treatment (DOT) and second/third doses given by the parent at home.

At the end of my residency, in recognition of the programme improving community health, many families brought me a chicken to thank me



While I was grateful for this gesture, I was also surprised that some mothers brought back some of the chloroquine I gave them.



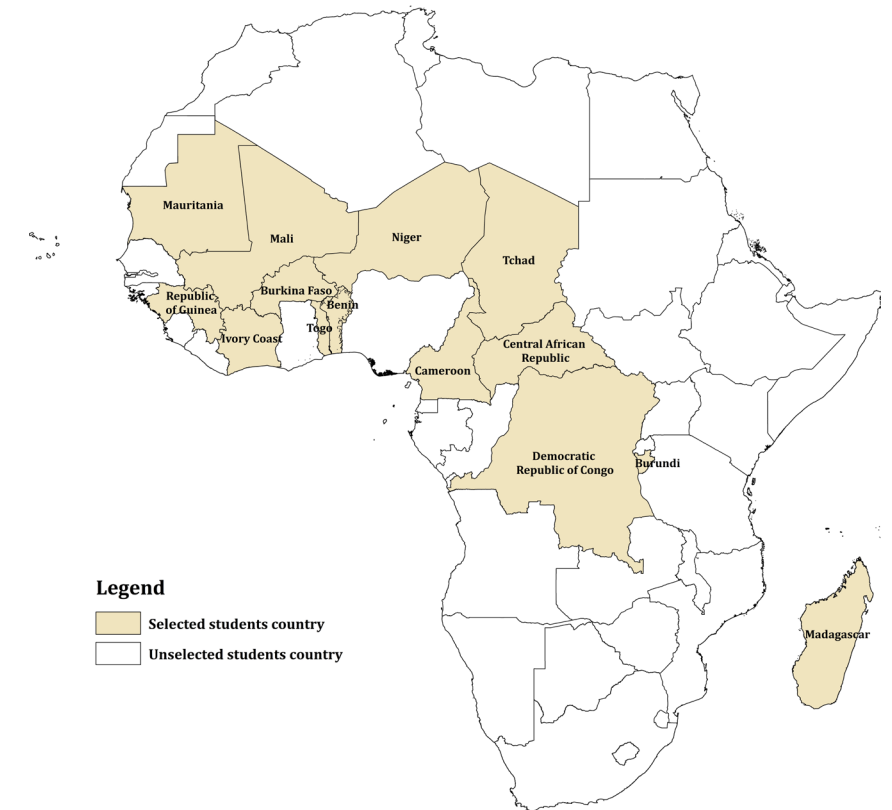
**Why?** Because they thought it wasn't necessary to continue the treatment if the child had recovered after day 1, and they thought the drug could harm the child if they no longer had symptoms.



# Need for implementation research (IR) training to address challenges: TDR's postgraduate IR training filling the gap



## Admitted students coming from across Francophone Africa:



- Postgraduate training: IR master's and leadership programmes for researchers and implementers
- Since 2015, total of **539** students (including **273** women) from across 84 countries in LMICs have been trained.
- In Mali, we started with 19 students (including 9 women)

# Master of Science in Implementation Research: a collaborative training model

## Concentration

Epidemiology

Health System Planning and  
Management

Nutrition

Sexual and Reproductive Health

Ethics & Research

Informatics & Health Information  
Systems

**Implementation Research**

Disaster Risk Management



Milken Institute School  
of Public Health  
THE GEORGE WASHINGTON UNIVERSITY



## Course Title

1. Principles of Implementation Sciences
2. Design of the implementation research study
3. Internal and external validity in IR
4. Qualitative and quantitative research
5. Theories, models, theoretical frameworks
6. Ethics in implementation research
7. Evaluation of Interventions in IR and Decision Making
8. Community and Stakeholder Engagement
9. One Health
10. Epidemiology of neglected tropical diseases
11. Advanced Biostatistics (regression)
12. Internship and dissertation work



# Examples of trainees' research topics

Research topics	Research findings
Low coverage of the optimal dose of intermittent preventive treatment among pregnant women (IPTp)	Use of optimal dose: 28.9% in Madagascar, 45.1% in Guinea <b>Barriers</b> included poor knowledge of recommended dose/interval between doses, side effects
Factors influencing acceptability of malaria vaccine (RTS,S/as01)	Acceptability: 74.6% in Burundi <b>Facilitators</b> included visits from community health workers, good understanding of malaria transmission
Antibiotic prescription in primary health care facilities	Inappropriate prescription of antibiotics: 84.4% of prescriptions in Togo and 71.9% in Mali

Manuscripts from thesis research submitted to peer-reviewed journals (14/19)

# Successful integration of trainees in national health systems

## **Dr Botovola Miraimila (Madagascar)**

Faculty at Mahajanga School of Medicine and now assigned to the National Public Health Institute. Awarded research grant to study barriers and facilitators in the Expanded Programme on Immunization in childhood



## **Dr Fred Armand Kirinendji (Central African Republic)**

Appointed to the Public Health Emergency Operations Center, Faculty at Univ, IR grant on NTDs in collaboration with his thesis co-supervisor at the Ministry of Health.



## **Dr Rolande Hadidi Nsimire (Democratic Republic of Congo)**

Will be appointed to the University of Bukavu, working on IR with neglected tropical diseases programme



## **Dr Youssouf Goni, Chad**

Appointed by the Ministry of Health (epidemiological surveillance / public health emergency operations center).

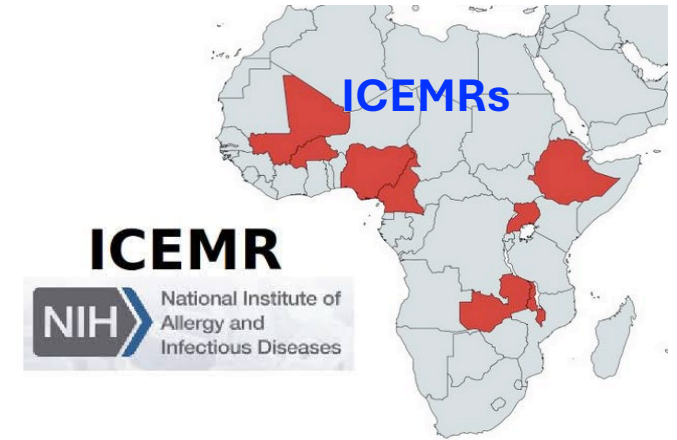


# Key achievements and perspectives on IR capacity building

- 19 graduates (10 men and 9 women) from 14 countries now affiliated with **ministry of health** or national research institution
- More than 20 faculty and researchers contributed to development of TDR's **IR core competencies curriculum**
- Strengthening IR research capacity with a **Core Research Unit on IR at USTTB**
- **Engaging stakeholders and advocating for use of IR** (e.g. WHO African Regional Immunization Technical Advisory Group on vaccine implementation science)

# Collaboration with TDR has led to other funding opportunities for strengthening IR capacity

- NIH funding to establish International Centre of Excellence for Malaria Research (ICEMR): conducting multidisciplinary IR for malaria control and elimination in West Africa
- Science for Africa Foundation grant for African Leishmaniases Consortium (ALC): Developing a paradigm for eliminating neglected diseases in Africa
- NIH/Fogarty International Center grant to establish Ph.D. training in IR: focus on malaria and NTDs (6 Ph.D. students enrolled in Mali and Guinea)
- EDCTP grant for project on integrating malaria vaccine with seasonal malaria chemoprevention in West Africa
- EDCTP grant for project on increasing the uptake of IPTp through SMC delivery channel
- Faculty collaborating with UNICEF on implementation research on immunization



EDCTP





# Thank you

