

#MESAWebinars

September 7, 2021

8:00 AM EDT | 2:00 PM CAT | 8:00 PM SGT

Speakers:

**ALFRED AMAMBUA-NGWA**  
MRC Unit in The Gambia at LSHTM, Gambia

**NATHALIE AMVONGO ADJIA**  
Centre for Research in Infectious Diseases, Cameroon

Moderator:

**ABDOULAYE DJIMDÉ**  
University of Science, Techniques and Technology of Bamako, Mali

**How to Tackle the Challenge of Insecticide and Drug Resistance with Innovative Approaches**

The Global Fund / Andrew Esiebo

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Pending Questions from the

## MESA Webinar 4 - How to Tackle the Challenge of Insecticide and Drug Resistance with Innovative Approaches

### Questions for Alfred Amambua-Ngwa

- 1. Please, would you mind explaining which group of insecticides were used in the region for mosquito vector control?**

Long Lasting bednets treated with pyrethroids are the most common anti-vector interventions used across the continent. Some countries apply Indoor Residual Spraying (IRS) with carbamates and organophosphates.

- 2. Could the uniqueness of the parasite population in the various blocs be influenced by the vector dominance?**

This is possible given that the dominant vector varies between sites. Hence the vector could be contributing to the substructure upon other environmental and human factors.

### Question for Nathalie Amvongo Adjia

- 1. Having known the distribution of the alleles in a population, what are the next steps?**

Based on observations that the speed of spread of these two molecular mechanisms seems to be influenced by the presence of the Mount Cameroon barrier which contrasts the resistance and patterns of genetic diversity of *GSTe2* and *Rdl* between *Anopheles funestus* vector populations, investigations of more vector populations from both sides of

the mountain are needed to validate these hypotheses. Also, studies on anopheline bionomics in Cameroonian mountainous landscapes have shown the presence of other malaria dominant vector species including *Anopheles coluzzii* and *Anopheles gambiae* which have been identified as carriers of the knock-down (*kdr*) insecticide resistance mechanism in other parts of the country. Extending molecular studies to other vector populations across mountainous landscapes is important to fully elucidate the role of environmental changes on the acquisition of insecticide resistance in *Anopheles* vector populations and to mitigate against further spread of resistance through the development of new vector management strategies.

Notwithstanding the variations associated with the altitude, the spread of resistance alleles suggest that control strategies could be implemented against malaria vectors across mountainous landscapes.