

## **Qualitative assessment of long-lasting insecticidal nets to prevent malaria on Bioko Island, Equatorial Guinea**

*Abdin Noboa-Rios<sup>1</sup>, Marisabel Kubiak<sup>1</sup>, Linda Tawfik<sup>1</sup>, Julie Niemczura de Carvalho<sup>2</sup>, Kenneth Charles Murray<sup>3</sup>, Victor Mba Micha Avomo,<sup>2</sup> Wonder Phiri<sup>2</sup>, Matilde Riloha Rivas<sup>4</sup>*

*1=Links Global; 2=Medical Care Development International; 3=London School of Hygiene and Tropical Medicine; 4=Ministry of Health and Social Welfare of Equatorial Guinea.*

This qualitative study sought to examine incentives and barriers to LLIN use, care, and upkeep to inform social and behavior change communication strategies for integrated malaria control. What happened to Permanet 3.0 LLINs supplied via mass distributions, schools, and antenatal clinics? Why did household LLIN ownership decline rapidly after universal distributions? What factors influenced LLIN use, and what caused low rates of use of available LLINs? Restricted randomization was applied to households to find individuals who met inclusion criteria for gender, geography, reported LLIN use or non-use, and pregnancy status. Written informed consent was obtained, and focus groups were recorded. Trained Equatoguinean facilitators used a discussion guide in Spanish to facilitate 7 focus groups designed to maximize diversity across groups. Community-based participatory analysis was used to highlight new themes that emerged each day. Transcripts were prepared and discussion in local languages translated into Spanish, and the authors performed thematic analysis to identify barriers and incentives to LLIN use. Knowledge of LLINs was good and had little impact on use. For the 70% of participants who used LLINs, perceived benefits of LLIN use such as protection against malaria and other vector-borne diseases outweighed barriers. Risk perception was the main factor influencing use: malaria was perceived as a severe illness for pregnant women and children, but not for men. Despite having knowledge of malaria's severity, some participants did not internalize the risk to which they were exposed. Common barriers to use included dissatisfaction with the LLIN product due to design or color, heat, bad odor, pruritus from contact with the net, dirtiness, and discomfort. Non-users considered the relative benefit of LLIN use limited in the context of indoor residual spraying of insecticide and outdoor malaria transmission. Participants recommended strengthening community processes, especially having neighbors promote and reinforce acceptance, use, and proper care of LLINs, and providing regular follow-up of households that received LLINs.