Understanding the Environment of Malaria-Related Behaviors on Bioko Island, Equatorial Guinea

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Indoor Residual Spraying (IRS) and Long Lasting Insecticide Treated Nets (LLIN) are the two largest vector control interventions used by the Bioko Island Malaria Control Project (BIMCP) on Bioko Island, Equatorial Guinea. The BIMCP has been successful in achieving optimal coverage with IRS in targeted communities and completed a mass distribution of LLINs in 2015, with targeted top-off campaigns in 2016 and 2017. In 2016, the BIMCP conducted a malaria indicator survey (MIS) in a representative sample of households. The MIS collects data regarding malaria prevention methods practiced at home, socio-economic status, and general health, and LLINs observed in use in household sleeping spaces were recorded. Additionally, participants were asked a series of knowledge-based questions related to malaria transmission, symptoms, and treatment methods. Clustering, linear regression, and association techniques will be used to determine how malaria knowledge, socio-economic status, and geographical location correlate with behaviors at the household level. Dependent variables used in the analyses are: whether the survey participant slept under a net the night before, ratio of people to LLINs, whether a household desires to participate in upcoming IRS spray rounds, and if the household has participated in past rounds of IRS. Explanatory variables will be used to find data patterns to help better understand the household environment of the 38.4 % of individuals that slept under a net the night before versus the 55% who did not, the 38.5% of household that have sufficient bed nets for members versus 61.5% that did not, or the 81.9% of households that want to receive in IRS versus the 10.8% who do not. These explanatory variables will include a household malaria knowledge score, a socio-economic score, and geographical clusters. Scatter plots, classification tress and maps will be used to visually explain the correlation of the dependent and explanatory variables, and will shed light on which factors may be most influential in the uptake of key malaria control interventions.