**Equity in long lasting insecticidal nets and indoor residual spraying for malaria prevention in a rural South Central Ethiopia.**

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**Abstract**

**Background:** While recognizing the recent achievement in the global fight against malaria, the disease remains a grand challenge to health systems in low income countries. Beyond widespread consensuses about prioritizing malaria prevention, little is known about the prevailing distribution of long lasting insecticidal nets (LLINs) and indoor residual spraying (IRS) across different levels of wealth strata. The aim of this study was to evaluate the socioeconomic related dimension of inequalities in malaria prevention interventions.

**Methods:** We conduct this study in July-August 2014 in Adami Tullu district in the South-central Ethiopia, among 6,069 households. A cross-sectional data were collected on household characteristics, LLIN ownership and IRS coverage. We used principal component analysis technique for ranking households based on socioeconomic position. The inequality was measured using concentration indices and concentration curve. Decomposition method was employed in order to quantify the percentage contribution of each socioeconomic related variable on the overall inequality.

**Results:** We found that the proportion of households with at least one LLIN was 11.6% and IRS coverage was 72.5%. The Erreygers normalised concentration index was 0.0627 for LLIN and - 0.03834 for IRS. The main causes of inequality in LLIN ownership were difference in housing situation, household size and access to mass-media and telecommunication service.

**Conclusion:** Coverage of LLIN was low and distributed pro-rich, whereas houses were sprayed equitably. Sole emphasis on the mass distribution of LLIN is not sufficient to ensure neither the ownership nor the equity. A priority should be given to the poor in both scale-up and replacement distribution.