

Evaluating the feasibility, acceptability and protective effectiveness of seasonal malaria chemoprevention in Karamoja, Uganda

Background

In 2019, Uganda contributed to five percent of malaria cases and three percent of malaria deaths globally.^[1] During this period, Karamoja in northeast Uganda registered the highest malaria incidence in the country: 250–450 cases per 1000,^[2] compared to the national incidence of 30 per 1000. The Uganda Malaria Reduction and Elimination Strategic Plan 2021–2025 proposes innovative approaches, such as seasonal malaria chemoprevention (SMC), to combat malaria — particularly in areas with high seasonal malaria transmission, such as Karamoja.^[3]

SMC entails the administration of monthly courses of sulfadoxine-pyrimethamine (SP) and amodiaquine (AQ), or 'SPAQ', to children under five during the peak transmission season to prevent malarial illness. SMC has been shown to prevent 75 percent of uncomplicated and severe malaria episodes in children under five, as well as prevent malaria deaths.^[4] In areas of west and central Africa where resistance to SP and AQ is low, SMC has proved to be cost-effective and safe, with high coverage achievable at scale.^[5] However, the feasibility, acceptability and impact of

SMC in areas with high resistance is unknown. This study aims to address this knowledge gap.

Objectives

We are supporting Uganda's National Malaria Control Division (NMCD) to conduct a hybrid effectiveness and implementation research study in three districts of Karamoja. It aims to document the adaptation and implementation of SMC in the region and evaluate its feasibility, acceptability and protective effectiveness as a complementary malaria control intervention.

Specific objectives are to:

- assess the coverage and quality of SMC implementation
- assess the acceptability of SMC among policy makers, implementers and communities
- determine the effect of SMC on malaria incidence and prevalence among children under five and estimate the protective effectiveness of SPAQ
- analyse the cost of delivery to eligible children
- monitor the safety of SPAQ administration among eligible children.

Methods

The study will be conducted in three districts in Karamoja: Kotido and Moroto (intervention districts) and Nabilatuk (control district) (See Figure 1).

Village health teams (VHTs) will serve as community distributors to deliver SMC door-to-door to eligible children in the intervention districts over three days each month, from May to September 2021. The control district will continue to use existing, standard malaria interventions.

During SMC implementation, we will:

- procure and deliver SMC medicines and supplies, including hand sanitiser and face masks for community distributors and supervisors, to prevent and control COVID-19 infection
- engage stakeholders and hold advocacy meetings at district, sub-county and parish/village level in intervention districts
- train national and district trainers, health workers and VHTs in intervention districts
- support supervision, monitoring and evaluation in all three districts.

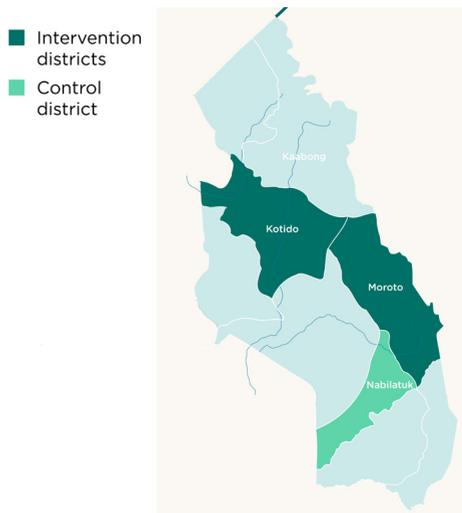
To assess the feasibility, acceptability and effectiveness of SMC in Karamoja, we will conduct malariometric and molecular resistance marker surveys (at baseline and endline) in intervention and control districts; end-of-

cycle and end-of-round household surveys in intervention districts; qualitative studies on the intervention's acceptability; a cohort study to assess protective effectiveness; and a cost analysis of implementing SMC.

Results

The results of this study will be available in late 2021. These could inform malaria decision-making and policy change in Uganda, and strengthen existing interventions to further reduce malaria morbidity and mortality in children under five.

Figure 1: Map of study sites in Karamoja region, Uganda



References

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