

## Project PROMOTE: Novel Strategies to Prevent Malaria and Improve HIV Outcomes in Africa - Data and Statistics Core

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### Project Description

The overarching goal of this program project (P01) is to evaluate novel and strategic interventions to reduce the burden of malaria and improve HIV outcomes among children and pregnant women, the populations most affected by the overlap of these diseases.

We hypothesize that treatment with HIV protease inhibitors (PIs) will lower the incidence of malaria and consequent morbidity in HIV+ children and pregnant women compared to those treated with standard antiretroviral treatment. This hypothesis is based on the appreciation that malaria parasites and HIV express biochemically similar proteases and the observation that HIV PIs exert potent in vitro antimalarial activity. We hypothesize that in HIV- children, chemopreventive therapy will offer strong protection against malaria without increased malarial morbidity after discontinuation of the intervention. We hypothesize that intermittent or chronic antimalarial and PI-based antiretroviral therapy will select for drug resistant parasites, and that different drugs will offer different selective pressures.

Four interlinked studies to test these three hypotheses comprise our P01 projects:

1. Protease inhibitors for the prevention of malaria in HIV-infected children
2. Protease inhibitors to reduce malaria morbidity in HIV-infected pregnant women
3. Chemopreventive therapy for malaria in HIV-uninfected infants and children
4. Selection of drug resistant malaria parasites by antimalarial and HIV therapies

The projects will enroll a total of 1600 participants and be implemented by a multidisciplinary, multinational team in Tororo, Uganda, a site of high malaria transmission. The Administrative and Data and Statistics Cores will support the four projects. CAPS will spearhead the Data and Statistics Core for this P01.