

Evaluating intermittent preventive treatment of malaria in school-aged children in Burkina Faso

Reducing the malaria burden through innovative preventive approaches

Background

In Burkina Faso, progress has been made in improving malaria outcomes among pregnant women and children under five. However, malaria control interventions do not specifically target older children and adolescents. Between 2013 and 2021, based on data from Ministry of Health statistical yearbooks, the incidence of malaria increased throughout Burkina Faso, and the disease contributed significantly to mortality among children 5–14 years.^[1] In 2021 alone, 27 percent of malaria cases and 18 percent of deaths due to malaria occurred among this age group.^[1]

The World Health Organization (WHO) recently issued new recommendations for the use of intermittent preventive treatment of malaria in school-aged children (IPTsc) in settings with moderate-to-high seasonal malaria transmission.^[2] IPTsc is the administration of a full course of antimalarial medicines to school children at pre-determined periods to treat and prevent malaria infection.

To further develop the evidence base on which the WHO recommendations were made, additional studies are needed to inform the guidelines for implementation and distribution at the country level — specifically around when and how to administer IPTsc, and which antimalarials to use.

Country

Burkina Faso

Donor

Malaria Consortium US

Length of project

June 2023 – December 2023 and
June 2024 – December 2024

Partners

Clinical Research Unit of Nanoro

Ministry of Health and Public Hygiene, Burkina Faso

Ministry of National Education, Literacy and the Promotion of National Languages, Burkina Faso

Strategic objective

Accelerating burden reduction to elimination

Project outline and objectives

Malaria Consortium's new study seeks to address existing gaps and provide the evidence needed to inform IPTsc implementation — i.e. which antimalarials are most effective, and when to administer medicines considering transmission dynamics — and distribution, informed by feasibility and acceptability studies. In collaboration with project partners, we will conduct the study in Bousse health district located in Plateau-Central region. This study seeks to determine the malaria burden and document transmission dynamics among a target population 55,290 school children aged 5–15 years. It further seeks to evaluate two potential antimalarial medications for IPTsc.

The specific objectives are to:

- determine the seasonal prevalence of symptomatic and asymptomatic malaria over a year
- evaluate the impact of IPTsc on malaria prevalence using sulfadoxine-pyrimethamine plus amodiaquine (SPAQ) and dihydroartemisinin-piperaquine plus ivermectin (DP+IVM)
- understand the feasibility of implementing IPTsc using SPAQ and DP+IVM, and identify the most socially acceptable and sustainable way of achieving and maintaining high coverage
- determine the immunological and molecular epidemiological changes that occur in a nested population following IPTsc.

Activities

To achieve these objectives, we will conduct the study in two phases, and additionally carry out a qualitative study.

In phase 1, to determine the malaria burden and document transmission dynamics in a selected health district, we will:

- conduct a cross-sectional baseline survey among 1200 children 5–15 years, using structured questionnaires to collect data on demographic characteristics, use of

insecticide-treated nets (ITNs), reasons for non-use and history of malaria in the preceding two weeks

- conduct a second survey in selected villages in the peak transmission season to better understand transmission dynamics and temporal changes in parasite prevalence during the season
- collect blood samples from selected participants and use a combination of diagnostic methods for malaria diagnosis, haemoglobin estimation, immunological assessments and baseline resistance profiles.

In phase 2, to evaluate the efficacy, safety, feasibility and cost-effectiveness of SPAQ and DP+IVM, we will:

- conduct a cluster randomised controlled trial with two active interventions (receiving IPTsc with SPAQ, and with DP+IVM, respectively) and one control arm (receiving standard malaria control measures, e.g. case management and vector control)
- conduct a follow-up evaluation of the study using passive case detection (i.e. malaria cases recorded at health facilities)
- evaluate children for adverse effects or illness during and after implementation
- track standard malaria control interventions (e.g. quality of case management practices, availability of diagnostics and antimalarial drug stock levels) and coverage and use rates of ITNs and indoor residual spraying
- collect mosquitoes using CDC light traps to determine mosquito densities in households.

In the qualitative study, using key informant interviews, in-depth interviews, focus group discussions and ethnographic observations, we will investigate the acceptability of IPTsc and the feasibility of integrating it into routine health services and school or community systems.

References

1. Conseil National de la Statistique. *Annuaire statistique Santé 2001–2021* (Health statistical yearbooks 2013–2021). Ministère de la Santé et de l'Hygiène publique, Burkina Faso.
2. World Health Organization. *Consolidated guidelines for malaria. Version updates to the WHO guidelines for malaria*. Geneva: WHO, 2023. Available from: https://cdn.who.int/media/docs/default-source/malaria/version-updates-to-the-who-guidelines-for-malaria.pdf?sfvrsn=8a667008_14.

© Malaria Consortium / November 2023

Unless indicated otherwise, this publication may be reproduced in whole or in part for non-profit or educational purposes without permission from the copyright holder. Please clearly acknowledge the source and send a copy or link of the reprinted material to Malaria Consortium. No images from this publication may be used without prior permission from Malaria Consortium.

UK Registered Charity No: 1099776

Contact: info@malariaconsortium.org

Cover image: School-aged child, Burkina Faso

 **FightingMalaria**
 **MalariaConsortium**
www.malariaconsortium.org



**malaria
consortium**
disease control, better health