

Malaria prevention in Chad

WORLD SUFFERING INDEX | RESEARCH PILOT v0.1 | 9 OCTOBER 2026

About 170 acute-malaria USU averted per \$1,000 of total program costs. This is a worked example using published program estimates and provisional WSI suffering profiles. The campaign is already funded. It is not a promise about the next donation.

Estimated benefit per \$1,000	Central calculation
Gross acute-malaria suffering prevented	173 USU
Malaria episodes prevented	28.3 episodes
Direct malaria deaths prevented	0.17 deaths
Full seasonal rounds delivered	111 child-seasons

What this calculation covers

Seasonal malaria chemoprevention (SMC) for children aged 3-59 months in the grant-supported Chad program for 2026-27. A child-season is one child receiving a full seasonal round, not a unique child across both years. Costs include other contributors, including government resources. [S1-S2]

The calculation

The published model supplies costs and expected illness reduction. WSI adds two average experience profiles. Fatal episodes replace ordinary episodes, so suffering before death is counted once.

Step	Calculation
Seasonal rounds	$\$1,000 / \$9.00494 = 111.05$
Episodes prevented	$111.05 \times 0.45928 \times 0.70 \times 0.793695 = 28.3366$
Direct deaths prevented	$111.05 \times 0.00293265 \times 0.94 \times 0.70 \times 0.793695 = 0.1701$
USU per course	Nonfatal: $4 \text{ days} \times 24 \times \text{intensity } 3 / 47.25 = 6.0952$ Fatal: $4 \text{ days} \times 24 \times \text{intensity } 5 / 47.25 = 10.1587$
Acute-malaria USU prevented	$(28.3366 - 0.1701) \times 6.0952 + 0.1701 \times 10.1587 = 173.41$

These are expected outcomes, not observed prevented events. The \$1,000 denominator is total program cost. It does not measure the marginal impact of \$1,000 donated today. Source inputs are frozen in the accompanying workbook.

Assumptions and sensitivity

The clinical evidence supports an illness lasting days, but it does not measure a malaria-to-USU conversion. The intensity and duration below are WSI choices for a proof of concept. They may be substantially wrong.

Mapping scenario	Nonfatal course	Fatal course	USU / \$1,000
Lower burden	2 days, intensity 2	2 days, intensity 3	58
Central	4 days, intensity 3	4 days, intensity 5	173
Higher burden	7 days, intensity 4	7 days, intensity 7	405

This is mapping sensitivity only, not a confidence interval or a full uncertainty range. Program incidence, effectiveness and costs remain fixed. Halving the modeled burden halves the benefits; increasing costs by 25% lowers benefits by 20%. The workbook makes these changes editable.

Why these starting profiles?

Nonfatal course. Fever, chills, headache and other symptoms establish a meaningful acute burden. A Nigerian trial in children under five reported fever clearance around 46-49 hours after treatment. We allow additional time before care and in early recovery to choose four days overall. This is a working assumption, not a measured Chad average. [S3-S4]

Fatal course. In a Malian hospital cohort of severe febrile illness presumed to be malaria, patients who died had averaged 3.7 days of illness before admission, and most deaths occurred within the next day. This supports testing a four-day course, with weak transferability to Chad and to deaths outside hospital. [S5]

Intensity. Values 3 and 5 represent our provisional ordering of ordinary versus fatal-course distress. They are time averages across the whole window, including periods of lower or absent awareness. They are not pediatric pain scores, observed ratings or an empirically calibrated ratio. A fatal label does not imply maximum conscious suffering.

Consistency with the WSI method

The reference remains 47.25 intensity-hours, the fixed six-hour renal-colic reference used in this project. The primary mapping is linear. Direct fatal episodes receive their full pre-death course instead of an ordinary course. Death itself, lost life-years and bereavement are not assigned USU. Death prevention remains a separate benefit.

For this prevention example, avoided direct deaths are assumed to correspond to avoided fatal episodes. A treatment that changes a fatal episode into a surviving episode would require the difference between those courses, rather than the full fatal-course value.

Scope limits

The result is **gross acute-malaria suffering prevented**. It excludes drug side effects, long-term consequences, caregiver effects, older-age spillovers and indirect deaths. Severe surviving cases are folded into one average nonfatal profile. Excluded effects are unquantified, not assumed absent. This is not a net-impact ranking.

Funding and publication

Nigeria nets: retain as a research lead. AMF reported an approximately \$200 million Nigeria funding gap in its August 2026 update. I did not establish a particular unfunded campaign, a matched current delivery budget and an incremental benefit estimate from the public sources reviewed. [S6]

An earlier grant already funds campaigns in Akwa Ibom, Bauchi, Benue and Plateau. Its analysis modeled part of the benefit as shortening the time between campaigns across a wider group of states. That historical counterfactual should be rechecked for any new funding opportunity. It cannot be replaced with an assumption of no future nets. [S7]

The concrete information still needed

For one named Nigerian campaign: location and planned date; remaining funding need after existing commitments; full delivery costs and co-funders; the later or smaller campaign expected without additional money; and expected extra protection, illness reduction and deaths prevented. A donation link alone does not establish these inputs.

How to use the first pilot on WSI

Publish this as a **worked example**, with the funding status next to the result and a link to the editable model. Keep it distinct from opportunities whose current additional funding needs have been verified. Use approximately 170 USU in public copy, with the mapping sensitivity visible. No website changes or external outreach were made in this step.

Source reconciliation

The linked CEA provides \$9.00494 in full costs and \$8.12470 in grantee costs per seasonal round. The grant narrative states \$8.80. This pilot consistently uses the CEA snapshot; the reason for the mismatch is unresolved. Its cost scope also differs from the broader country budget. The mortality model includes indirect deaths, which we remove for the direct-death result. It adjusts mortality for vaccination but not the illness calculation in the same way. [S1-S2]

Sources and verification

S1. GiveWell SMC CEA, 2025 version 3. Retrieved 9 Oct 2026.

S2. GiveWell Chad expansion grant. Published Sep 2025.

S3. WHO malaria fact sheet. Updated 4 Dec 2025.

S4. Pediatric treatment trial, Nigeria. BMC Infectious Diseases, 2025.

S5. Willcox et al., severe febrile illness. PLOS ONE, 2014.

S6. AMF funding update. 24 Aug 2026; checked 9 Oct.

S7. GiveWell net campaigns grant. Dec 2024 grant; checked 9 Oct.

The workbook retains source cell locations and exact inputs. Arithmetic reconciles to the published case total and the direct share of mortality. Input changes, zero budget and missing-input behavior were checked. Desktop Excel was not available for a native application check.