ICEMR Quarterly Report
2025-Q1

Summary

This quarterly report highlights malaria surveillance findings from the Southern Africa International Center of Excellence for Malaria Research (ICEMR), a collaboration between Macha Research Trust, the National Health Research and Training Institute (formerly TDRC), and the Johns Hopkins Bloomberg School of Public Health. The report is divided in two parts: 1) ICEMR studies in Nchelenge District, and 2) ICEMR studies in Choma District.
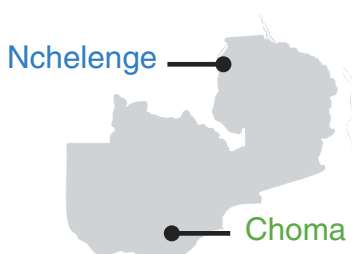
In Nchelenge District, the ICEMR is conducting a longitudinal cohort study of malaria. Household participation remained high in the longitudinal cohort study, with 61-70 households visited monthly. Insecticide treated net (ITN) use exceeded 90% each month in 2024. Monthly malaria prevalence (measured by positive rapid diagnostic tests [RDT]) was consistent with prior years, with most clinical cases occurring in children 5-15 years of age. The average age of patients receiving artesunate and blood transfusion was higher in 2024 than previous years. Additionally, while there has been an increase in inpatient malaria in Nchelenge, outpatient cases and deaths are lower than in previous years. As expected, Choma District has lower case numbers overall compared to Nchelenge District.

Longitudinal Cohort Study
October 2023 - April 2025

Nchelenge

Fig 1. Monthly household (HH) and participant (ppt) summaries from longitudinal cohort study

Month	HHs visited	Ppts visited	ITN use	% ITN use	Malaria cases*			
					MiP	Other tx	RHC mal	Hosp mal
Apr	38	241		99.4	0	0	5	0
Mar	61	367		93.5	0	0	10	1
Feb	64	385		91.6	0	2	11	0
Jan '25	64	384		93	0	6	7	1
Dec	66	372		95.5	0	1	7	1
Nov	65	372		95.8	0	0	15	1
Oct	70	370		94.3	0	0	10	1
Sep	65	364		94.7	0	0	9	0
Aug	67	362		95.5	0	0	9	2
Jul	68	366		97.7	0	0	15	0
Jun	67	358		94.9	0	0	26	0
May	68	376		95.6	1	1	20	2
Apr	62	320		96.6	0	5	9	0
Mar	61	364		93.7	1	1	21	0
Feb	62	367		94.5	3	1	8	0
Jan '24	61	358		95.3	2	2	13	0
Dec	61	363		92.8	1	1	14	0
Nov	66	381		73.5	1	0	6	0
Oct '23	65	327		46.6	2	0	0	0

■ Yes ■ No ■ Not available

* **Malaria cases include: MiP:** Malaria in pregnancy; **Other tx:** Received treatment elsewhere (other than field team); **RHC mal:** Received malaria treatment at Health Center or Health Post in the past month; and **Hosp mal:** Admitted to hospital for malaria in past month
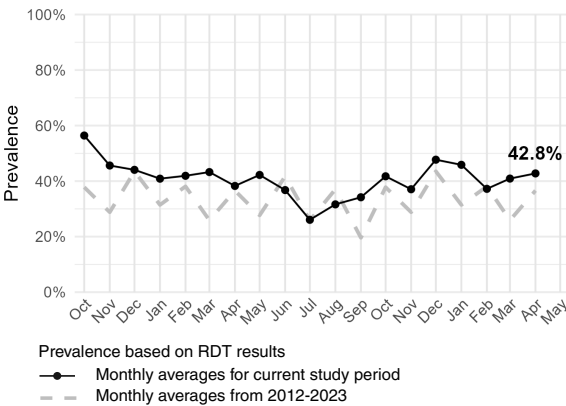
Fig 2. Monthly malaria prevalence

Prevalence based on RDT results
— ● — Monthly averages for current study period
--- Monthly averages from 2012-2023

42.8%

Fig 3. Monthly clinical malaria cases by age

Age groups
■ <5 years ■ 1-4 years ■ 5-14 years ■ ≥15 years
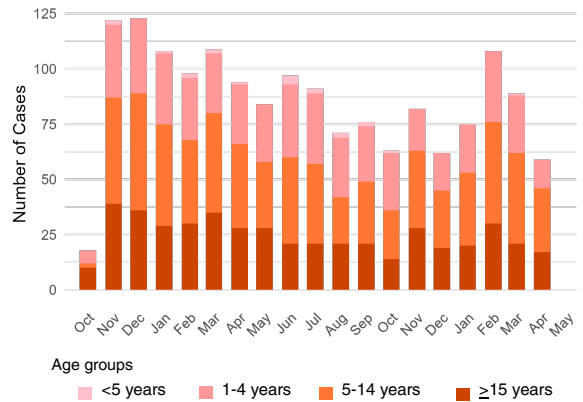
Fig 4. Avg. monthly female anopheline per HH

4.53

Based on household mosquito collections. Count on $\log_{10}$-scale.
— ● — Monthly averages for current study period
Monthly averages and ranges from 2012-2023
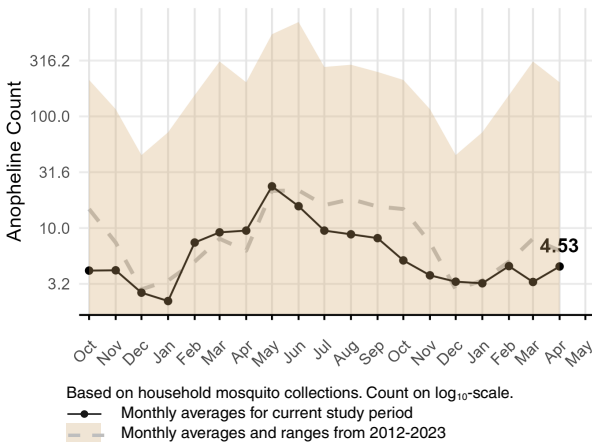
Fig 5. Proportion blooded female anopheline

0.13

Based on household mosquito collections.
— ● — Monthly proportions for current study period
--- Monthly averages and ranges from 2012-2023
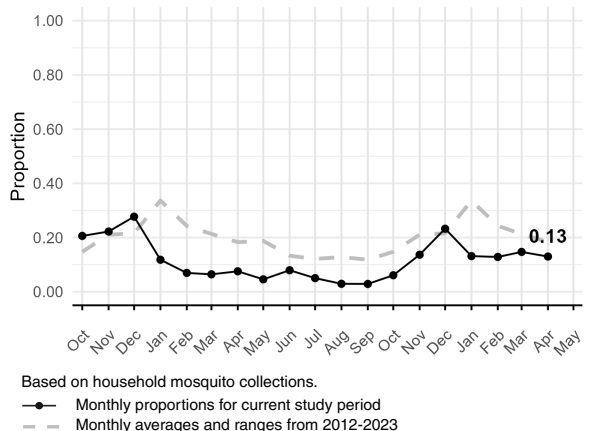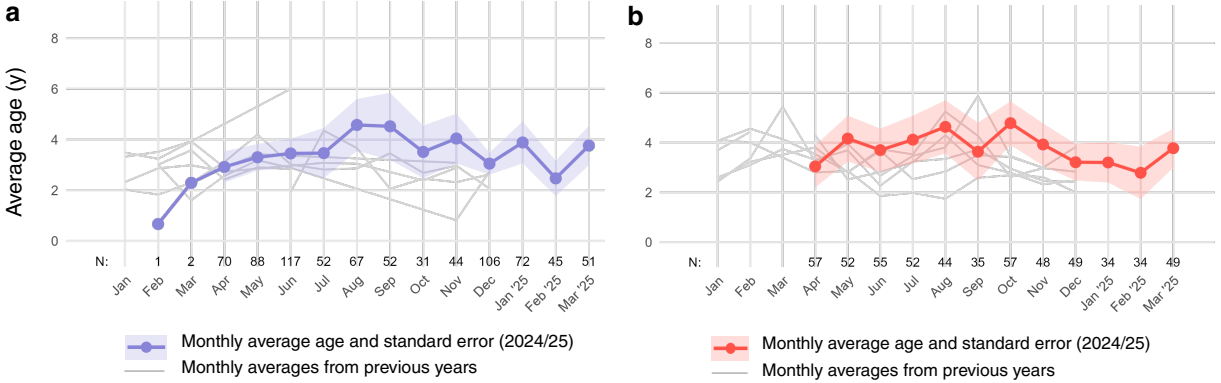
Severe Malaria Surveillance
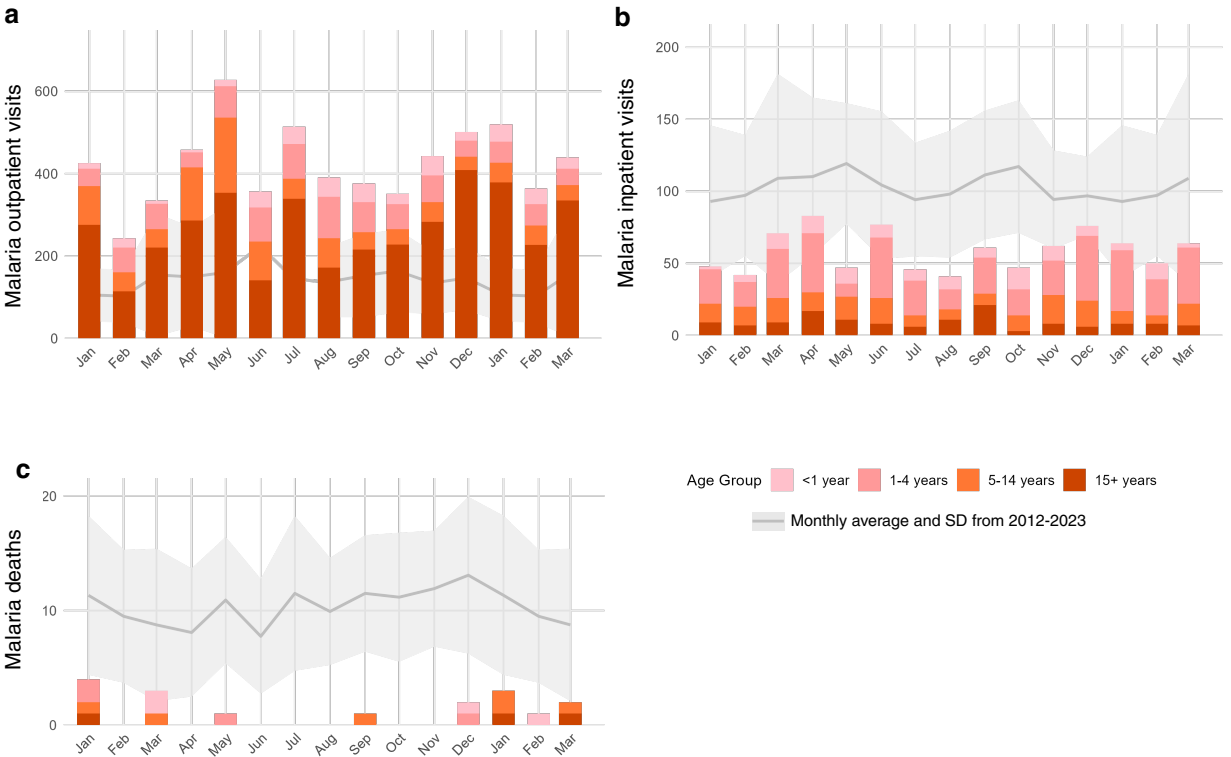April 2024 - March 2025

Fig 6. Average age of children receiving (a) artesunate and (b) blood transfusion

HMIS
January 2024 - March 2025

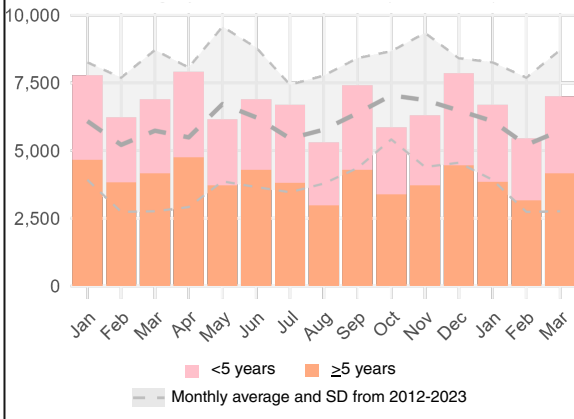**Fig 7.** Monthly malaria (a) outpatient visits, (b) inpatient visits, and (c) deaths
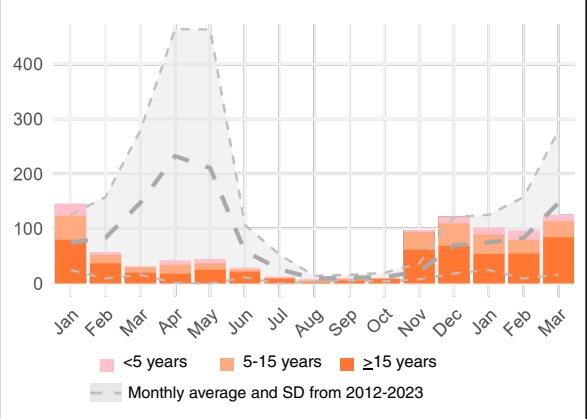
SMS Surveillance
January 2024 - March 2025

Nchelenge

Fig 8. Monthly malaria cases by age group

Legend: <5 years, ≥5 years, Monthly average and SD from 2012-2023

Choma

Fig 9. Monthly malaria cases by age group

Legend: <5 years, 5-15 years, ≥15 years, Monthly average and SD from 2012-2023

HLC
February 2024 - March 2025

Nchelenge

Fig 10. Average number of anopheline catches

Month

Location: Indoor, Outdoor

Fig 12. Anopheline hourly biting rates

Mean # Anopheles/hour vs Hour

Sites/Nearest Health Centers: Kafutuma, Kashikishi, Nchelenge
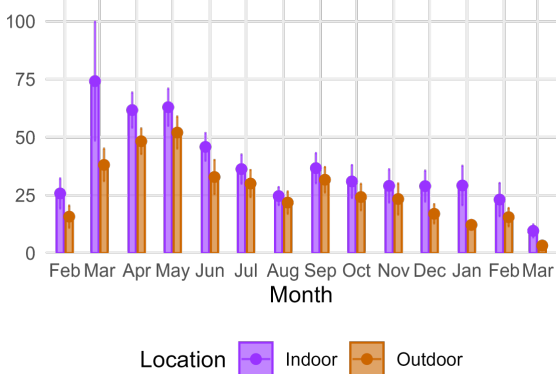
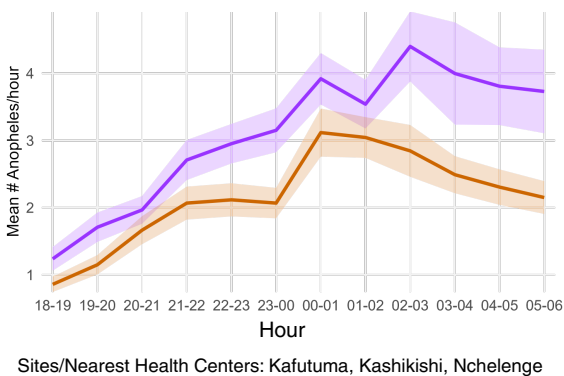## Choma

Fig 11. Average number of anopheline catches

Month

Location: Indoor, Outdoor

Fig 13. Anopheline hourly biting rates

Mean # Anopheles/hour vs Hour

Sites/Nearest Health Centers: Macha, Mapanza, Simaubi