

Increased treatment coverage, reduced incidence of severe acute malnutrition with the OptiMA protocol: a prospective observational cohort in rural Chad



K. Phelan¹, I. Sana², R. Alitanou², M. Daures³, W. Coulibaly², M.L. Nouhou², Fadiala Keita³, A.A.M. Aly², C. Tehoua², A. Bing⁴, M.D. Saha⁴, I. Golnodji⁴, D. Zidouemba⁴, H. Boubacar⁴, M. Ngaradoun⁴, M. Béchir^{5,6}, M. Madissem⁵, S. Shepherd²

¹ALIMA (The Alliance for International Action), Paris, France; ²ALIMA, Dakar, Senegal; ³University of Bordeaux, Bordeaux, France; ⁴ALIMA, N'Djamena, Chad; ⁵Ministry of Health, N'Djamena, Chad; ⁶University of N'Djamena, N'Djamena, Chad

Introduction

Treatment coverage for severe and moderate acute malnutrition (AM) is globally low, in part because different protocols and products are used in separate programs. The OptiMA (Optimizing Malnutrition treatment) simplified protocol admits children with mid-upper arm circumference (MUAC) <125mm or oedema and gradually reduces the dosage of ready-to-use therapeutic food (RUTF) to treat both severe and moderate cases in one program. While clinical trials have demonstrated the effectiveness of this approach, more evidence at population-level is needed. This study evaluates whether OptiMA increases treatment coverage while achieving performance benchmarks established in Chad's national protocol.

Methods

A prospective observational cohort was followed in all 34 health areas of rural Ngouri district, Chad for children 6–59 months with MUAC <125mm or oedema treated with OptiMA to evaluate its effectiveness in a routine setting at-scale. A two-stage cluster sampling survey was conducted at baseline and annually for two years to measure treatment coverage. Data was collected in an individual, anonymized database. Parents or caretakers of children provided written informed consent before treatment with OptiMA began. Chad's National Bioethics Committee approved the study (N°020/PCMT/PMT/MESRSI/SE/DG M/CNBT/2021.)

Results 1/2

From January 2022 to February 2024, 33,682 episodes of AM were treated with OptiMA among 25,766 children. The percentage of admissions at MUAC <115mm or oedema was 30.4% in 2022 and 18.8% in 2023, an 11.6% decrease. Overall recovery, default, and mortality rates were 83.4% [CI95% 83.0-83.8], 3.3% [3.0-3.7], and 0.6% [0.2-1.0], respectively. Fully 96.2% [96.0-96.6] of moderate cases were in the WHO's new high-risk MAM category by MUAC 115-119mm, age <2 years, or weight-for-age <-3, showing that MUAC <125mm is not capturing lower-risk moderate cases.

Conclusions

After two years of treating malnutrition with OptiMA, the dynamic of increased coverage, fewer severe cases, and more efficient use of RUTF can significantly benefit families and health systems in resource-limited countries like Chad.

Increase in treatment coverage

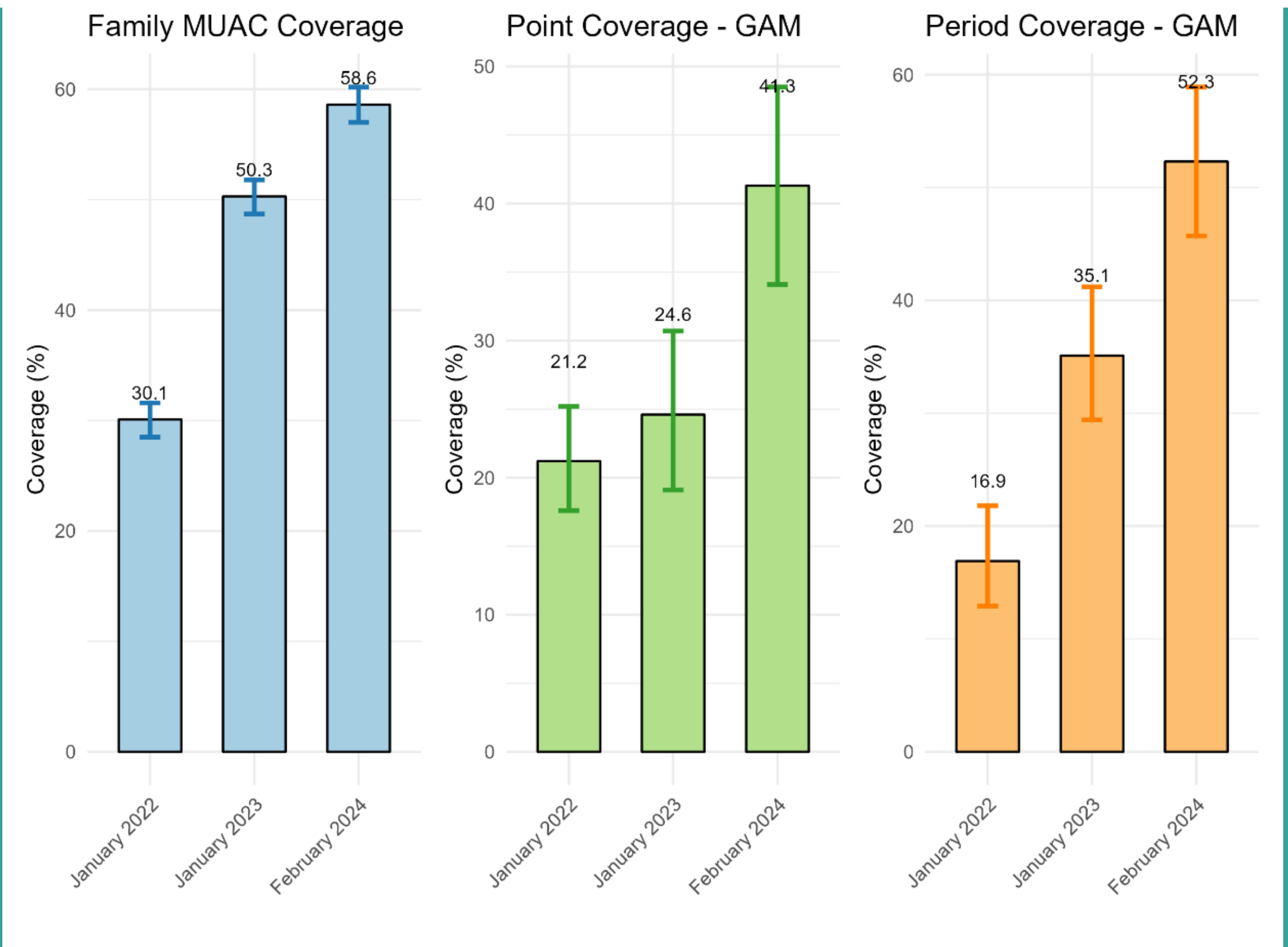


Figure 1: Coverage of acute malnutrition indicators (Family MUAC, Point Coverage GAM, and Period Coverage GAM) across survey dates, OptiMA-Ngouri 2022-2024.

Results 2/2

Over two years, 13,489 cartons of RUTF were distributed for 33,682 treatments, with a median of 53 RUTF sachets per recovered child in 2022 and 45 sachets in 2023. Point coverage for AM treatment increased from 21.2% [17.6-25.2] at baseline in January 2022 to 41.3% [34.1-48.5] in January 2024. Period coverage for AM treatment increased from 16.9% [12.9-21.8] at baseline to 52.3% [44.3-57.9] in January 2024.

13,489 cartons of RUTF used for 33,682 treatments... Median 53 RUTF sachets per recovery in 2022 and 45 sachets in 2023.

Decrease in severe cases

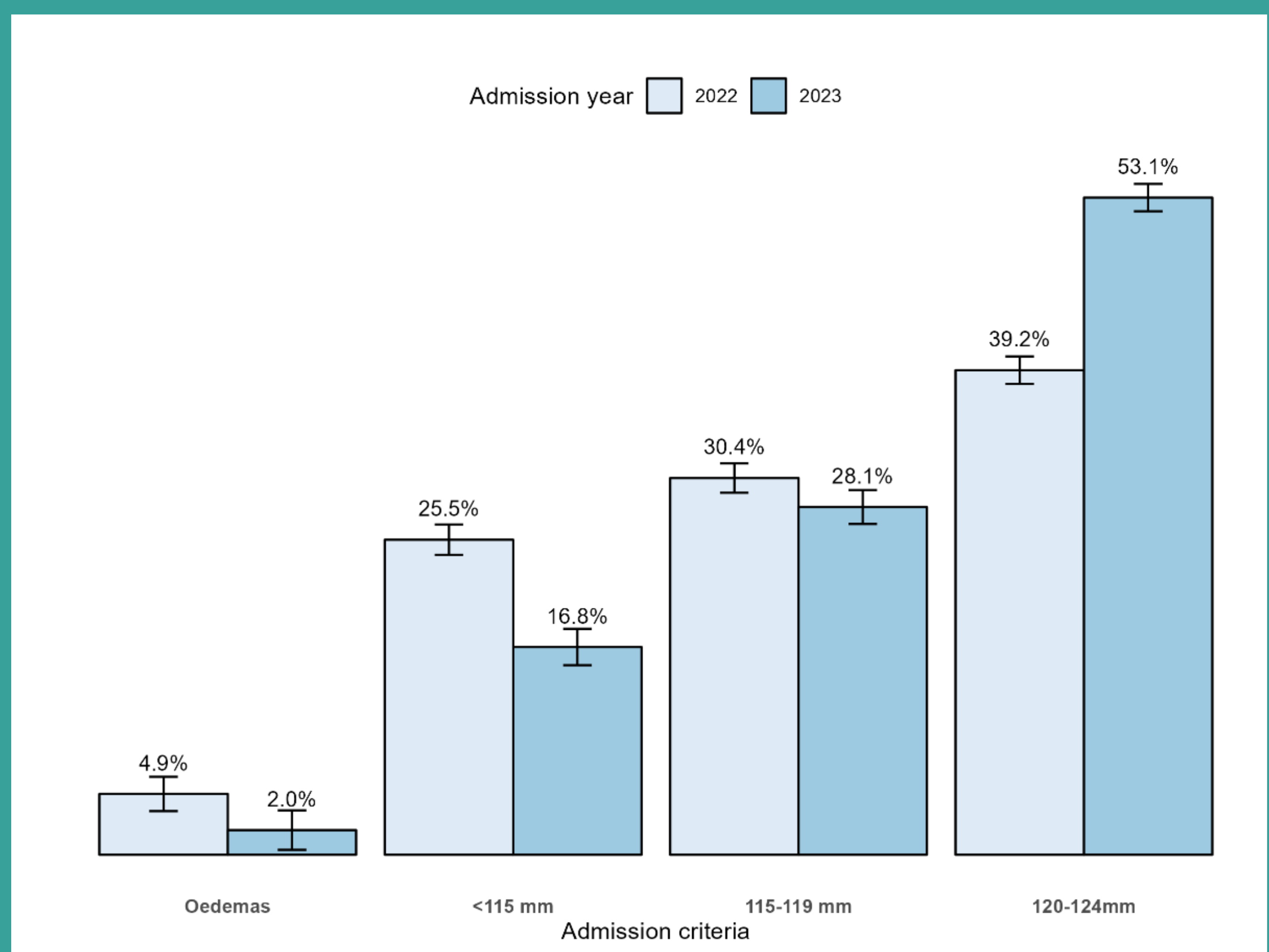


Figure 2: Trend in admissions by category of MUAC or edema OptiMA-Ngouri, Chad 2022 to 2023

MUAC <125mm is not capturing lower-risk moderate cases.

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All the moms who participated in the study
For questions or comments contact: kevin.phelan@alima.ngo

Conclusions

After two years of OptiMA in Ngouri, Chad, the percentage of severe cases decreased markedly while measured treatment coverage significantly increased. Outcomes were acceptable and RUTF distribution more efficient compared to the Chadian reference. The dynamic of increased coverage, fewer severe cases, and more efficient use of RUTF can significantly benefit families and health systems in resource-limited countries like Chad.

