

# Evaluating Family Mid-Upper Arm Circumference (MUAC) Delivery Strategies During the COVID-19 Pandemic in South Sudan

**Research Question: Which MUAC tapes used in a Family MUAC pilot project have the greatest performance and are the most acceptable (easiest to use) among caregivers living in Central Equatoria and Warrap States, South Sudan?**

## Study Rationale

One component of COVID-19 adaptations is Family MUAC, where in lieu of mass screenings mothers are trained on MUAC measurement and encouraged to do this routinely and self-refer if they identify their child as acutely malnourished. However, concerns have arisen among nutrition implementing partners with this approach in South Sudan that include inaccurate measurement, children presenting for care may not meet admissions criteria, and irregular measurement frequency, which can lead to late presentation, translating to increased risk of complications and longer recovery periods. There is also a gap in knowledge around which MUAC tapes have the best performance, and which tapes are the most acceptable and easiest to use correctly among mothers participating in a Family MUAC intervention.

## Study Aims

World Vision (WV) South Sudan, in partnership with Johns Hopkins University (JHU) and the Centers of Disease Prevention and Control (CDC) are conducting a study in South Sudan to evaluate WV's ongoing Family MUAC program to provide evidence to inform nutrition program delivery within the context of the COVID-19 pandemic in South Sudan. Specific objectives include:

- 1. Quantitative Component:** Evaluate family use of MUAC measurement tapes to determine if there are differences in performance within the context of the Family MUAC Intervention [where caregivers screen children for acute malnutrition] in South Sudan.
- 2. Qualitative Component:** Evaluate the acceptability and attributes of the different MUAC tapes, as well as care seeking behaviors among study participants

## Sample Size

Taking into account the minimum required samples sizes and the potential need for additional subjects due to coordination/communication delays and the need for replacement, a sample size of 700 households per group with a total sample of 2100 households was included in this study.

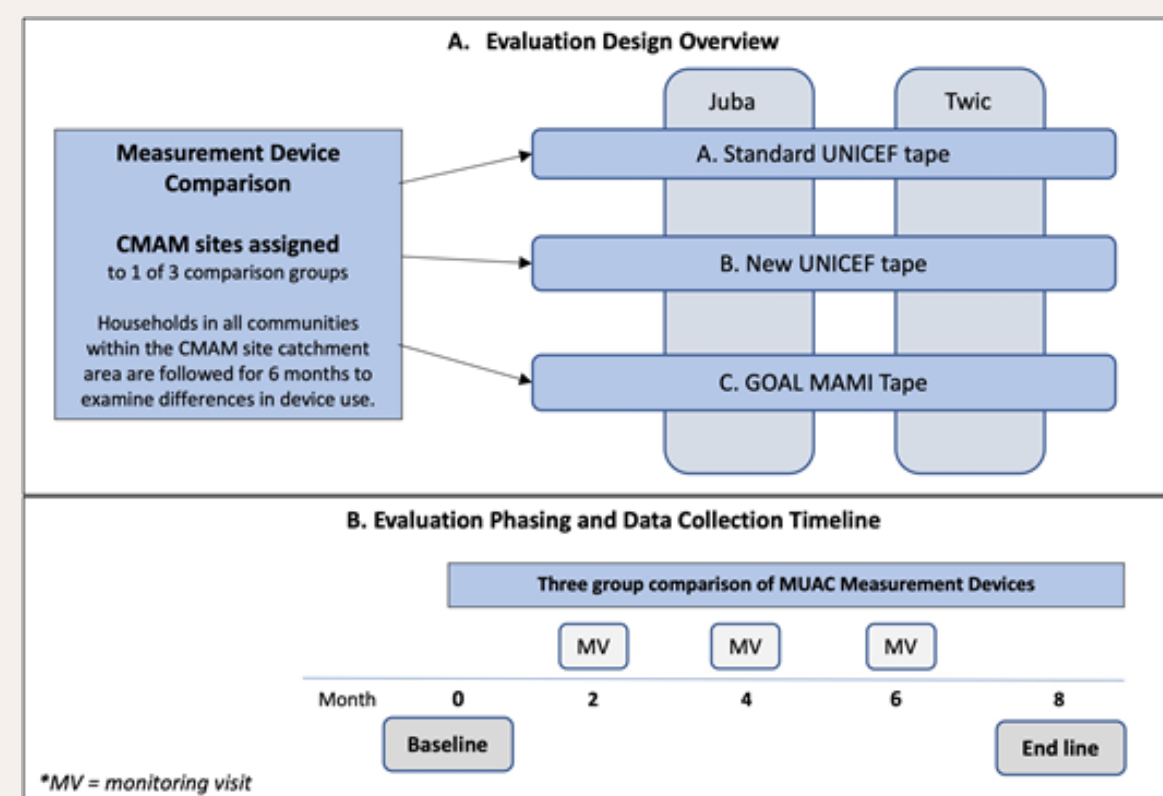


## Study Design

A three-group prospective non-randomized design will be used for the comparison of three MUAC tapes (2009 UNICEF tape, 2020 UNICEF tape, and the MAMI tape) considered for use in country. Accuracy in use of devices will be compared at different levels, including measurements by the family, CHWs or CNVs.

### Primary Outcome Measure

Proportion of children NOT identified as acutely malnourished



The three tapes are similar in function, but have slightly different design styles, and intended for non-invasive measurement of child arm circumference. The new UNICEF tape (2020 release) includes instructions on the back of the tape, but from our knowledge, this tape has not been evaluated in a field context. The findings from this project can inform best practices in Family MUAC programming, including governmental policies on use of MUAC tapes to improve the identification and referral of wasted children.



\*Note that: cutoffs for diagnosing acute malnutrition are the same on all tapes, but images are slightly different scales.

## FOCUS GROUP DISCUSSIONS (FGDS)

Twenty FGDs were conducted to evaluate the acceptability and different attributes of the tapes (10 FGDs in Twic County, Warrap State and 10 FGDs in Juba County, Central Equatoria State). The FGD questionnaires covered the following areas:

- Sufficiency of the Family MUAC caregiver training
- Caregiver care seeking behavior when a child is sick or malnourished
- Caregiver experiences at a nutrition treatment center
- MUAC tape attributes: portability, thickness, storage
- Ease of using the tapes: using the MUAC slits, reading and interpreting the numbers, keeping the tapes safe, interpretation of the colors
- Caregiver motivation for taking a child's MUAC measurement
- Postive and negative influencers when taking a MUAC measurement
- Barriers related to knowledge, skills, and support
- Self-efficacy: Caregiver confidence in taking a MUAC measurement correctly
- Cultural and social beliefs

## Stay tuned!

We are currently in the process of analyzing our quantitative and qualitative data and hope to share our preliminary findings in March. For more information regarding the study, please contact Shannon Doocy at doocy1@jhu.edu, Eva Leidman at wzu0@cdc.gov, or Sarah Bauler at sarah\_bauler@wvi.org.