

FAMILY MUAC: A SPIR II CORE NUTRITION INTERVENTION MODEL

This information sheet explains how the SPIR II project used Family Mid Upper Arm Circumference (FMUAC) interventions to empower caregivers in the early detection, referral, treatment, and rapid recovery of malnourished children across the project areas.

WHAT IS FAMILY MUAC?

FMUAC is a simple method of malnutrition screening in which caregivers use colour-coded MUAC tapes to measure the mid-upper arm circumference of children aged 6–59 months, usually every two weeks. This approach allows caregivers to detect acute malnutrition early at home, categorising children as red for severe acute malnutrition, yellow for moderate acute malnutrition, and green for normal nutritional status. Unlike traditional screening, which relies solely on health workers, FMUAC empowers caregivers to actively monitor their children's nutritional status and take timely action. Its key strengths include ease of use, the ability to be performed frequently, and a significant improvement in the early detection of malnutrition at household level.

WHAT PROBLEMS DOES FMUAC ADDRESS?

Globally, an estimated 51 million children under five suffer from acute malnutrition, including 16 million with severe acute malnutrition (SAM). In Ethiopia, SAM is a leading cause of under-five mortality, accounting for approximately 20% of paediatric hospital admissions and ranking as the third leading cause of death in this age group.

Within the SPIR II programme areas, the burden of SAM is substantial. Of the 14 targeted woredas, 82% are classified as Priority 1 for malnutrition. Children with SAM face a nine-fold higher risk of death compared to well-nourished children of the same age. Even with strong Community-based Management of Acute Malnutrition (CMAM) programmes, two key challenges persist:

- Late identification: Many children present with a median MUAC of 116 mm at admission, reflecting low caregiver awareness and delayed care-seeking behaviour. This leads to lower cure rates, higher default rates, and more than half of affected children not accessing treatment.
- Limited access to facilities: Rural and remote communities face significant barriers to timely care, further worsening outcomes.

To address these gaps, SPIR II introduced Family MUAC (FMUAC). Using simple, colour-coded tapes, caregivers, particularly mothers, measure the mid-upper arm circumference of children aged 6–59 months at home. This caregiver-led screening enables earlier detection of wasting, timely referral, and improved child survival, while strengthening the overall effectiveness of nutrition programmes.



ABOUT SPIR II

Strengthen PSNP Institutions and Resilience (SPIR II) is a five-year Resilience Food Security Activity (RFSA) implemented by a consortium of partners led by World Vision that includes CARE, ORDA Ethiopia, and learning partner IFPRI. It is powered by funding from the U.S. government, which focuses on enhancing livelihoods and resilience to shocks and improving food security and nutrition for rural households in Ethiopia's Amhara, Oromia, and Tigray regions through interventions aligned with the government's Productive Safety Net Programme (PSNP).



HOW SPIR II USED FMUAC TO IMPROVE HEALTH AND NUTRITION

FMUAC is a low-cost, high-impact innovation that improves early detection, reduces severe cases, and builds community capacity, offering a scalable model for national nutrition programmes in Ethiopia and beyond. It became a key strategy for empowering caregivers to take an active role in monitoring their children's nutritional status.

Capacity building: Health workers registered children and were trained to guide caregivers in the effective use of MUAC tapes. Caregivers received practical training on how to measure their children's mid-upper arm circumference (MUAC) and interpret the colour codes:

- Green = healthy
- Yellow = moderate malnutrition
- Red = severe malnutrition

Strengthening the self-referral system: Caregivers were encouraged to act immediately when malnutrition was detected.

- Children with a red MUAC were referred directly to health posts or treatment centres.
- Children with a yellow MUAC were referred to Community-based Nutrition Programmes (CPNP).

This approach reduced delays and improved timely access to treatment.

Strengthened recovery: Caregivers received nutrition counselling, feeding guidance, and follow-up monitoring to ensure children achieved full recovery.

Sustainability: By placing responsibility in the hands of caregivers, FMUAC reduced reliance on external health workers and built lasting community capacity for nutrition monitoring and response.

Reach and Impact of FMUAC under SPIR II

By the end of Year 5 (2026), the FMUAC intervention had been implemented in three districts across Oromia and Amhara, reaching more than 3,000 children aged 6–59 months.

Key Findings from the FMUAC Evaluation

- Increased coverage of the FMUAC intervention.
- Improved caregiver skills in MUAC measurement and oedema detection.
- Enhanced early detection and self-referral of acute malnutrition.
- Increased identification of moderate acute malnutrition (MAM) cases before progression to severe malnutrition.
- Strong household–facility linkages ensured timely treatment.
- Improved caregiver practices related to child feeding, hygiene, and care-seeking behaviour.
- Accuracy: Agreement between caregiver MUAC measurements and those of Health Extension Workers (HEWs) increased significantly.
- Oedema detection: Improved from 38.9% to 99.5% among trained caregivers at midline.

Impact: FMUAC successfully reduced the number of severe acute malnutrition (SAM) cases at admission. Evidence shows that out of 152 self-referred cases in one year, only three were identified with SAM at admission.

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