



Health & Nutrition Technical Brief

# Community Management of Acute Malnutrition (CMAM) Project Model

## THE ISSUES

Acute Malnutrition, also referred to as wasting, is a life-threatening condition, increasing the risk of death and serious illness. Children with severe forms are nearly 12 times more likely to die than well-nourished children.<sup>1</sup> Most of the world's wasted children live in Asia. Wasting occurs as a result of recent rapid weight loss or a failure to gain weight, most often caused by insufficient food intake and/or disease.

Although there is an effective treatment for wasting, access to such services remains inadequate. Globally, only 1 in 3 severely wasted children to treatment.<sup>2</sup> More effort is needed to scale-up wasting treatment to reach all children who require care.

## WHAT IS THE CMAM PROJECT MODEL?

Community Management of Acute Malnutrition (CMAM) is the globally endorsed approach for treatment of wasting for infants and children (0-59 months of age). This approach empowers families to treat wasting at home, with the majority of children receiving care in their community, with weekly visits to a local health clinic. More than 70 countries have national protocols for CMAM. In some countries it is referred to as Integrated Management of Acute Malnutrition (IMAM).

The CMAM approach is based on four principles:

1. Maximizing access to treatment and coverage of treatment services. Through CMAM, treatment for wasting is available within or nearby to the communities where wasted children live.

2. **Timeliness.** This principle refers to identifying cases of wasting early, before it becomes severe and before complications arise. By doing so, most children with wasting can be treated at home.
3. **Appropriate care.** Using CMAM, the medical and nutrition care is matched to the needs to the child, meaning that most children can receive treatment while at home, and only the most severe and complicated cases will require in-patient care at the hospital. In the past, all cases of severe wasting received inpatient care.
4. **Care for as long as needed.** By building local capacity and integrating CMAM services within the health system the aim is to ensure that treatment services are routinely available for as long as wasting is a problem within the population.

## ALIGNMENT WITH OUR PROMISE AND THE SDGS

The project model contributes directly to the CWB aspiration ‘Girls and Boys enjoy good health’, specifically, increase in children who are well-nourished (ages 0-5), and to the ‘increase in children protected from infection and diseases (ages 0–5).

The CMAM model contributes to the following SDGs:

- **SDG #2** (end hunger, achieve food security and improved nutrition and promote sustainable agriculture); specifically:
  - » Target#2.2- “By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons”
- **SDG #3** (ensure healthy lives and promote well-being for all) by promoting desired nutrition and health behaviours, specifically
  - » Target 3.2: “By 2030, end preventable deaths of

newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.”

The CMAM approaches aligns with Nurturing Care Framework (NCF) through the ‘Adequate Nutrition’ and ‘Good Health’ components of the framework. Seeking care and appropriate treatment is a component of ‘Good Health’ of which CMAM services are considered as appropriate treatment for children with wasting.



## CORE COMPONENTS OF THE CMAM PROJECT MODEL

In terms of implementation, CMAM consists of four components.

**Community Outreach** refers to a range of activities designed to foster community participation in the program, and to develop community systems for early detection of wasting and timely referral of those cases to treatment.

**Outpatient Care** (also known as Outpatient Therapeutic Program – OTP), provides treatment of severe wasting for infants under 6 months of age and children 6-59 months without medical complications. Infants and children visit the local health centre for an initial medical assessment and enrollment and for weekly follow-up visits. For children 6-59 months of age, a ration of Ready-to-Use Therapeutic Food (RUTF) is provided and is consumed daily at home.

For infants under 6 months of age, counselling and skilled support for infant feeding is provided with weekly follow-up visits at the health clinic.

**Inpatient Care** (also known as Stabilization Care – SC) is provided for infants and children who have wasting with medical complications. Inpatient care is usually provided in a hospital. Once the medical complications are resolved the child is released from hospital and will continue treatment for wasting in outpatient care.

**Management of Moderate Acute Malnutrition** refers to treatment of moderate wasting in children 6-59 months in supplementary feeding programs (SFP).

Not all components are implemented in every context. Most Government-led programs provide inpatient and outpatient care as part of routine health services; whereas supplementary feeding is typically established as a temporary measure in contexts of food insecurity or as part of emergency response.

## HOW WILL CMAM ALIGN TO OUR NEW SECTOR APPROACH ?

The CMAM PM has been updated in the following areas to align with the HNSA, and to reflect recent global developments in the field of wasting:

- Expanding the age group for CMAM to include infants under 6 months of age, to align to World Health Organization SAM management guidelines.
- Inclusion of maternal mental health, for mothers with infants under 6 months of age, with use of community management of mothers and infants at risk (C-MAMI) tool
- Use of Family MUAC (middle-upper arm circumference measuring bands) for community case-finding of wasting
- Updates on ‘simplified approaches’ for management of wasting. This includes provision of wasting treatment by community health workers, integrated protocols for moderate and severe wasting, and tools for low literacy community health workers.
- Use of mhealth in CMAM programs to improve quality of care and data management.
- Incorporation of ECD into CMAM programming (using Go Baby Go model)
- CMAM Surge approach to support Government scale up of services during periods of increased demand for wasting treatment.

## GOALS, OUTCOMES AND EXPECTED IMPACT

**Goal:** To improve nutrition status of children 0 to 59 months in the community.

The outcome of a CMAM program is to provide effective treatment for infants and children with acute malnutrition. Effective treatment is assessed by looking at treatment outcomes, meaning what proportion of children who received treatment for wasting recovered, died, defaulted (left the program before recovery), or did not recover.

The expected impact of a CMAM program is a reduction in the morbidity and mortality related to wasting.

Secondary impacts of CMAM include:

- health system strengthening – through improved capacity for the management of wasting within the health system – e.g. improved staff capacity for treatment of wasting, improved supply chain management,
- increased access to treatment services for wasting e.g. treatment for wasting is more accessible to families that require care
- increased ability of caregivers, community members and local partners to identify malnutrition and to make referrals for treatment.



## THE EVIDENCE BASE

CMAM is an evidenced-based model, currently implemented in more than 70 countries worldwide, and is the globally endorsed standard for management of wasting. CMAM is listed among the top 10 highest impact nutrition interventions to reduce child mortality.<sup>3</sup> Children receiving treatment for wasting through CMAM were 51% more likely to achieve nutritional recovery than the standard care group.<sup>4</sup> CMAM is highly cost-effective (20-50 USD/DALY), comparable with other child survival interventions.<sup>5,6</sup> (Disability Adjusted Life Years – is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death).

World Vision has implemented CMAM programming since 2005, reaching 27 countries, with programs outcomes consistently exceeding global thresholds.<sup>7</sup>

Recommendation for scale-up from the project model summary 2017: The CMAM project model was found to have strong design and evidence base and is ready for immediate scale up. National Offices can use the project model in new designs but the Partnership should provide support to ensure respective evidence gap recommendations are met.

While there is strong evidence of the effectiveness for CMAM in the treatment of wasting, the following areas are evidence gaps:

- Effective approaches to detect, diagnose, and treat wasting in the community
- Appropriate entry and discharge criteria for treatment of wasting to ensure optimal outcomes
- Long-term effective community mobilisation strategies, including the role of faith actors
- Optimum dosage of ready-to-use food for treatment of wasting
- Rates and causal factors of post-treatment relapse
- Identification and management of at risk mothers and infants under 6 months of age
- Integration of early child development interventions with wasting treatment
- Health workforce requirements for management of wasting

## COST PER BENEFICIARY

The estimated costs of treating a child in CMAM (as an outpatient) range from 80-160 USD/child, this includes the cost of the Ready to Use Therapeutic Food (which generally makes up about 1/2 of the total costs). World Bank uses a figure of 200 USD/Severe acute malnutrition case which includes both inpatient and outpatient costs

**Table 5. Overall cost of CMAM programmes**

COUNTRY	DURATION OF PROJECT	NUMBER OF BENEFICIARIES ADMITTED	COST PER BENEFICIARY (US\$)
South Sudan (Non-WV)	4 months	3,144	\$160
Malawi (Non-WV)	12 months	8,164	\$208
Ethiopia (Non-WV)	7 months	7,635	\$87
Ethiopia (WV ADP area)	12 months	4,370	\$41
Niger (ADP areas)		20,761	\$63

## IMPLEMENTATION AND SCALE

World Vision has been implementing CMAM programming since 2005. Twenty-seven World Vision offices have implemented CMAM at some point in time.

» Afghanistan	» DRC	» Mauritania	» Somalia
» Angola	» Ethiopia	» Mozambique	» South Sudan
» Bangladesh	» India	» Niger	» Sudan
» Burundi	» Haiti	» Pakistan	» Syria
» Central African Republic (CAR)	» Kenya	» Rwanda	» Tanzania
» Chad	» Malawi	» Senegal	» Zambia
	» Mali	» Sierra Leone	» Zimbabwe

## RESULTS, KEY ACHIEVEMENTS, SUCCESSSES

From FY15 to FY19 (October 1, 2014 to September 30, 2019), a total of 207,208 children were admitted for treatment of SAM; of whom 199,857 received outpatient therapeutic care, and 7,351 received in-patient care for medical complications at stabilisation centres. Among those who were discharged over that five-year period, 88.3% fully recovered. In addition, 439,408 moderate acutely malnourished children and 227,663 pregnant and breastfeeding women received care through supplementary food programmes. Since 2010, more than

million women and children under the age of five have been treated through World Vision's CMAM programmes. The average recovery rate (for SAM) from October 1 2009 to September 30 2019 is 89.3%

Admissions and treatment outcomes of World Vision CMAM programs are monitored using the World Vision online CMAM database: <https://cmam.wvncoe.org/>

## INNOVATIONS AND TECHNOLOGY

1. Provision of treatment for wasting by community health workers expands the reach of CMAM programs: <https://www.enonline.net/fex/49/angola>
2. Use of mhealth in CMAM programming improves quality of care: <https://www.enonline.net/fex/54/mobilehealthapp>
3. Simple job aids for provision of care by low literacy community health workers: <https://www.acutemalnutrition.org/en/Simplified-Approaches-Tools>
4. Use of Family MUAC empowers caregivers to detect malnutrition in their own children: <https://www.wvi.org/nutrition/article/mother-led-muac> and <https://www.acutemalnutrition.org/en/Family-MUAC>
5. Integration of ECD with CMAM shows promise, with improved treatment outcomes – [https://www.wvcentral.org/community/health/Documents/GNC\\_GBGAM\\_final.pdf?Web=1](https://www.wvcentral.org/community/health/Documents/GNC_GBGAM_final.pdf?Web=1)



## KEY DOCUMENTS

- CMAM Project Model - <https://www.wvcentral.org/community/health/Documents/CMAM%20Project%20Model%20Document%202017.aspx>
- CMAM Implementation Quality Assurance Tool- <https://www.wvcentral.org/community/health/Documents/CMAM%20May%202020.xlsx?Web=I>
- Family MUAC tools - [presentation](#), French [tools](#), English [tools](#)
- Family MUAC Programming Guidance - [Family MUAC Training guide \(ALIMA\)](#)
- FANTA - [CMAM Training Guide](#)
- Save the Children - CMAM toolkit <https://sites.google.com/site/stcehn/documents/iycf-e-toolkit>
- MAMI tool - [C-MAMI Tool Version 2](#)

## REFERENCES

1. Bhutta ZA, Berkley JA, Bandsma RHJ, Kerac M, Trehan I, Briend A. Severe childhood malnutrition. *Nat Rev Dis Primer.* 2017;3(1):1-18. doi:10.1038/nrdp.2017.67
2. Global action plan on child wasting: a framework for action to accelerate progress in preventing and managing child wasting and the achievement of the Sustainable Development Goals. Accessed May 28, 2020. <https://www.who.int/who-documents-detail/global-action-plan-on-child-wasting-a-framework-for-action>
3. Bhutta ZA, Das JK, Rizvi A, et al. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet.* 2013;382(9890):452-477. doi:10.1016/S0140-6736(13)60996-4
4. Lenters LM, Wazny K, Webb P, Ahmed T, Bhutta ZA. Treatment of severe and moderate acute malnutrition in low- and middle-income settings: a systematic review, meta-analysis and Delphi process. *BMC Public Health.* 2013;13(Suppl 3):S23. doi:10.1186/1471-2458-13-S3-S23
5. Puett C, Sadler K, Alderman H, Coates J, Fiedler JL, Myatt M. Cost-effectiveness of the community-based management of severe acute malnutrition by community health workers in southern Bangladesh. *Health Policy Plan.* 2013;28(4):386-399. doi:10.1093/heapol/czs070
6. Wilford R, Golden K, Walker DG. Cost-effectiveness of community-based management of acute malnutrition in Malawi. *Health Policy Plan.* 2012;27(2):127-137. doi:10.1093/heapol/czr017
7. The Sphere Handbook 2018. Sphere. Accessed May 27, 2020. <https://spherestandards.org/handbook-2018/>

## ENDNOTES

[Bhutta et al. Severe Childhood Malnutrition. Nature. 2017.](#)  
[Global Action Plan on Wasting 2020](#)



World Vision is a Christian relief, development and advocacy organisation dedicated to working with children, families and communities to overcome poverty and injustice. Inspired by our Christian values, we are dedicated to working with the world's most vulnerable people. We serve all people regardless of religion, race, ethnicity or gender.

We believe a world without violence against children is possible, and World Vision's global campaign It takes a world to end violence against children is igniting movements of people committed to making this happen. No one person, group or organisation can solve this problem alone, it will take the world to end violence against children.