

## COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

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### ABSTRACT

Community-based management of acute malnutrition is an evidenced-based model, currently implemented in more than 70 countries worldwide. It is the globally endorsed standard for management of acute malnutrition in development and humanitarian contexts to reduce mortality and morbidity results by providing timely diagnosis and effective treatment of acute malnutrition through building local capacity. Acute malnutrition remains a significant challenge to child survival and development. Malnutrition is a condition that results from deficiencies, excesses, or imbalances in a person's intake of energy or nutrients. The management of acute malnutrition is critical for child survival and is a key cost-effective component of the scaling up nutrition framework for addressing undernutrition. Because the rapid expansion of community-based treatment programmes worldwide, every year millions of children are treated for acute malnutrition.

**KEYWORDS:** Community-based management, acute malnutrition, children.

### INTRODUCTION

The management of acute malnutrition is critical for child survival and is a key cost-effective component of the scaling up nutrition framework for addressing undernutrition (UNICEF, 2015a). Because the rapid expansion of community-based treatment programmes worldwide, every year millions of children are treated for acute malnutrition (Briend & Berkley, 2016). Until recently, the management of acute malnutrition has been delivered solely at hospitals with limited coverage and accessibility to the cases (Gebremedhin et al., 2020), and since twenty years ago, increased coverage of programs addressing SAM was made possible especially when the advent of a Ready-to-use Therapeutic Food (RUTF) and an innovative community-based approach made it possible to treat the majority of children at homes. The community-based approach, now widely known as community-based management of acute malnutrition (CMAM), has gained widespread acceptance in the humanitarian sector and is now the preferred model for selective feeding in emergency and non-emergency contexts (Tadesse et al., 2018; UNICEF, 2012). A new management approach CMAM programme such as outpatient therapeutic programme (OTP) was started to make services accessible and available to the community in most developing countries (Gebremedhin et al., 2020).

It provides effective treatment for acute malnutrition, reducing morbidity and mortality, it was officially endorsed by the United Nations (UN) in 2007 (UNICEF, 2015a). The goals of management of acute malnutrition are to prevent short-term mortality, achieve sustained nutritional recovery to reduce susceptibility to life-threatening infections and to support neurocognitive development (Bhutta et al., 2017). CU5 are very responsive to nutrition interventions, making this a critical period to act (Cashin & Oot, 2018).

### Definition of acute malnutrition

The term of acute malnutrition has been defined in various ways and names with partially overlapping definitions; including protein-energy malnutrition, wasting, marasmus and kwashiorkor, with different clinical and pathological characteristics. Marasmus or wasting and kwashiorkor are common terms historically used to differentiate between types of acute malnutrition that defined using anthropometric cutoffs and clinical signs (Lenters et al., 2016; Trehan & Manary, 2015).

Acute malnutrition results from acute food shortages or an insufficient intake of energy, protein or other nutrients (Fanzo et al., 2019; Shanka et al., 2015). According to UNICEF definition, acute malnutrition is characterized by a rapid deterioration in nutritional status over a short

period of time. Among children, it can be identified using the weight for height nutritional index or with mid upper arm circumference (MUAC), or identified based on the presence of bilateral pitting oedema (UNICEF, 2015a).

### Classification of acute malnutrition

In children less than five years of age, acute malnutrition can be classified for individual as either moderate or severe based on level of wasting, and according to specific cut offs and reference standards. At the population level, acute malnutrition is categorized in three levels as the following (UNICEF, 2015a; WFP, 2012; WFP et al., 2017):

**Moderate acute malnutrition (MAM):** MAM in children 6–59 months is defined as a weight for height Z-score (WHZ)  $< -2$  and  $\geq -3$  standard deviations of the WHO standards, and/or MUAC from 115 mm to less than 125 mm (UNICEF, 2015a; WFP, 2012).

**Severe acute malnutrition (SAM):** SAM is the most extreme and visible form of acute malnutrition that requires urgent treatment to survive (UNICEF, 2015a). It results from sudden reductions in food intake or diet quality and is often combined with pathological causes, and is associated with loss of body fat and wasting of skeletal muscle, develops as a result of recent rapid weight loss or a failure to gain weight (Lenters et al., 2016; Picot et al., 2012; WFP et al., 2017). SAM in children 6–59 months of age defined as a weight for height/length  $< -3$  Z-score of the WHO growth standard, and/or MUAC of less than 115 mm, or the presence of bilateral pitting oedema (nutritional oedema) (UNICEF, 2015a; WFP, 2012; WHO, 2013a).

**Global acute malnutrition (GAM):** It refers to MAM and SAM together; it used as a measurement of nutritional status at a population level and as an indicator of the severity of an emergency situation (Force, 2012; Lenters et al., 2016; WFP, 2012).

### Community-based management of acute malnutrition:

CMAM is an evidenced-based model, currently implemented in more than 70 countries worldwide. It is the globally endorsed standard for management of acute malnutrition in development and humanitarian contexts to reduce mortality and morbidity results by providing timely diagnosis and effective treatment of acute malnutrition through building local capacity (community and health system) (WVI, 2017). The model integrates treatment with various other interventions designed to reduce the incidence of acute malnutrition and improve public health and food security. CMAM design attempts to take into account the socioeconomic factors, particularly poverty, high workloads for women, and the exclusion from health and education services that contribute to the late presentation of cases of acute malnutrition. CMAM must be decentralized to minimize

geographical barriers to access and include intensive community consultation and mobilization to maximize understanding and participation. This design minimizes the costs to families and maximizes access to treatment (Okello, 2016). The CMAM approach is also the launching point for scaling-up access to treatment of acute malnutrition during humanitarian emergencies. (Bahwere et al., 2016; Ireen et al., 2018; Tull, 2018).

Globally, acute malnutrition has gained international attention since the United Nations (UN) endorsement of CMAM in 2007. Since then, increased attention has been given to service quality as well as the need to scale up interventions. It has achieved recovery rates of almost 80% and CFRs of less than 5% (Lenters et al., 2016; UNICEF, 2015b). A systematic review conducted by O'Sullivan et al. (2018), demonstrated that CMAM model of care is cost-effective, allows for increased caseloads, and lower mortality rates from SAM. CMAM is based on four key principles, such as achieving the greatest possible programme coverage, beginning case finding and treatment before the prevalence of malnutrition escalates, providing effective and simple outpatient care where possible and rehabilitating children in the programme until they recover (WVI, 2017).

### History of CMAM

The first pilot project tested the CMAM approach in 2000 during humanitarian emergencies (USAID, 2014). In 2007, the UN endorsed the community based treatment of acute malnutrition. In 2013, 67 countries reported that they implemented the community-based approach to some degree, increasingly outside of emergency contexts, and many are working towards its integration within national health systems (UNICEF, 2015a). Prior to CMAM, children with SAM were treated at inpatient facilities with therapeutic milks, commercially called F75 and F100. The inpatient model posed many challenges to effective treatment for both health systems, patients and caregivers such as long recovery periods, overcrowding and cross-infection, high opportunity costs for families to access and remain in treatment, costly and resource intensive services for health systems to sustain, concerns about safe preparation and storage of therapeutic milks, and low coverage of services. Therefore, in the mid-1990s, RUTF was developed as an alternative to therapeutic milk (F100) that could be safely consumed at home. This innovative product allowed treatment for uncomplicated cases of SAM to be shifted to the home, paving the way for CMAM. It is now considered the standard of care for managing acute malnutrition in emergency and development contexts (USAID, 2014; WHO, 2013b).

### Components of CMAM

In many countries, CMAM implemented within the context of the health system, in accordance with national protocols for the management of acute malnutrition (WVI, 2017). Additionally, CMAM provides a continuum of care including services for promotion of

good nutrition and prevention of acute malnutrition such as promotion of maternal, infant and young child nutrition (MIYCN), food security and livelihood interventions (FSL), water, sanitation and hygiene (WASH), micronutrient supplementation and linkages to accelerated child survival interventions (WFP *et al.*, 2017). The CMAM approach comprises of four components as the following (UNICEF, 2015a; USAID, 2014; WVI, 2017):

### 1- Community mobilization (Community outreach)

Community mobilization is an ongoing community awareness creating process, which is an essential component of CMAM that involves early and active case finding, identification, referral for treatment, care, follow-up of children with acute malnutrition on treatment as well as education and sensitization on prevention of acute malnutrition (UNICEF, 2012; WFP *et al.*, 2017; WVI, 2017). It is conducted by screening of children by assessment of MUAC and nutritional oedema (JMoH, 2013).

### 2- Supplementary feeding programme (SFP)

SFPs are not meant to replace the diet but to complement it. It is key to design programmes as part of a multi-sectorial approach with complementary services such as IYCF, WASH, health and general food distribution (Sphere, 2018). SFP provides dry take-home rations such as ready to use foods (RUFs) and routine basic treatment for children with MAM without medical complications. It seeks to prevent deterioration to SAM and prevent declining maternal nutritional status (WVI, 2017). RUFs are specially formulated bars, pastes or biscuits that provide varying ranges of high quality protein, energy and micronutrients. It is generally made with peanuts, sugar, milk powder, vegetable oils and vitamins and minerals, though they may be made with chickpeas or other commodities. These products are more nutrient dense than available home foods and do not require preparation, it is typically has very low moisture content and are resistant to microbes. With use of each of these products, continued breastfeeding is recommended. It includes; Ready to use supplementary foods (RUSFs), such as Plumpy'Sup, are designed as supplement to treat MAM, and Lipid based nutrient supplements (LNSs), such as Plumpy'Doz, are designed as a supplement to prevent MAM. (Lenters *et al.*, 2016; UNICEF, 2015c; WFP, 2012). Also, SFP provides a continuum of care to cases discharged from the OTP or ITP. SFP includes two types of nutrition interventions as the following (WFP *et al.*, 2017):

### Blanket supplementary feeding programme (BSFP):

BSFP is the standard intervention to prevent acute malnutrition in children in an emergency particularly in one where high MAM and food insecurity. It refers to provision of an improved supplementary food from as early on in the crisis as possible (Force, 2012; Sphere, 2018). The BSFP involves the distribution of supplementary foods to all target vulnerable groups in

food insecure situations through the provision of energy and nutrient dense supplementary food rations, micronutrient supplements and a prevention package to all members of the at-risk groups (WFP *et al.*, 2017). This approach has been used to address MAM when prevalence rates exceed 20% (Annan *et al.*, 2015). A blanket approach generally requires less staff expertise but more specialized food resources (Sphere, 2018).

### Targeted supplementary feeding programme (TSFP):

TSFP is implemented in food insecure situations and emergencies, in order to treat MAM and to prevent children with MAM from becoming severely malnourished. It is usually implemented when MAM and SAM prevalence rates are between 10-14% and 5-9% respectively (Annan *et al.*, 2015). It aims to treat MAM cases without medical complications through the provision of outpatient treatment, consisting of high energy and nutrient dense supplementary food rations, routine medications, and a prevention package (WFP *et al.*, 2017). It generally requires more time and effort to screen and monitor individuals with acute malnutrition, but it also requires fewer specialized food resources (Sphere, 2018).

### 3- Outpatient therapeutic programme (OTP)

OTP is one of the approaches of CMAM, that includes community engagement and mobilization for outpatient management of uncomplicated SAM children 6–59 months with good appetite, by providing them by home-based treatment as RUTF (e.g. Plumpy'Nut sachets) and routine medical treatment (UNICEF, 2015a; WFP *et al.*, 2017). Around 85-90% of children with SAM are successfully treated at home in OTP, by attending regular intervals (usually once a week) until they recover (usually a two month period). The programme implemented as standalone by mobile teams or in health centers by weekly or biweekly distributions of RUTFs and routine medicines, and medical and nutritional monitoring. After recovery and discharge, treated children can be admitted in SFP to prevent relapse through supplementary food (JMoH, 2013).

### 4- Inpatient therapeutic programme (ITP)/Stabilization center (SC)

ITP provides inpatient treatment for complicated SAM children and/or without appetite, in primarily health facility based with 24-hr inpatient care services. These children are at high risk of death and will receive treatment for their medical complications until their condition is stabilized, usually a 5 to 7 day period. Children under 6 months of age with acute malnutrition or children with a disability that prevents safe consumption of RUTF are treated in SC (WVI, 2017).

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