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Last update: 04.11.11

ABBREVIATIONS

CFR: Case Fatality Rate

CHW: Community Health Worker

CMAM: Community-based Management of Acute Malnutrition

CSB: Corn-Soya Blend

CSB+: CSB with micronutrient mix, aka Supercereal

CSB++: CSB+ with dry skim milk, aka Supercereal +.

CSAS: Centric Systematic

INTRODUCTION

Until recently management of severe acute malnutrition has been restricted to facility-based care through inpatient Therapeutic Feeding Centres (TFC), administered by trained health care professionals based upon intensive medical and nutritional regimes. Whilst this inpatient mode of treatment has proved to be effective in reducing the case-fatality rate (CFR) of those completing the programme, the centralised and long in-patient stay (30 days) results in: a) late presentation of malnourished children, b) serious risk of cross-infection for the immuno-suppressed malnourished children due to crowding during the prolonged treatment duration, c) high programme default rate, d) high opportunity cost for carers; contributing to high malnutrition-related mortality rates, and poor coverage of services¹ during large scale nutritional emergencies.

Recent evidence suggests that the community-based model commonly known as the Community-based Management of acute Malnutrition (CMAM) can be used to treat large numbers of severely malnourished children as outpatients. This model has been proved to reduce mortality of those accessing treatment to <5% and significantly improving coverage to >50%ⁱ.

The community-based approach has gained significant momentum following endorsement through a UN joint statement in 2007ⁱⁱ. This endorsement was preceded by multi-annual evidence-based operational research on the community-based therapeutic care (CTC).ⁱⁱⁱ The joint UN statement was instrumental in triggering policy development and scale up for the treatment of acute malnutrition at the country level (see Annex 1). As a consequence, by mid 2010, major relief agencies and approximately 55 National governments had formally adopted the CMAM model and approximately 1 million cases of SAM were treated annually^{iv}.

This TIP provides an overview of the CMAM approach from the operational perspective.

What is Community-based Management of Acute Malnutrition (CMAM)?

CMAM evolved from the Community-based Therapeutic Care (CTC) approach. The CTC approach emerged from extensive operational research on outpatient management of severe acute malnutrition in emergencies by Valid International in different countries within sub-Saharan Africa (see Annex 2). This research demonstrated that the decentralised approach implemented through the outpatient health and/or outreach posts was effective in treating large numbers of severely and moderately malnourished populations during large scale emergencies by ensuring optimal access to quality health and nutritional treatment to the community level.

The CMAM approach involves:

- ❖ Early detection of acute malnutrition at the community level through intensive case finding
- ❖ Provision of treatment for severely and moderately malnourished without medical complications. The caseload of severely malnourished children without complications is estimated at 80-90% of the total SAM presentations^v. Operationally, the proportion of children treated exclusively as outpatients has so far ranged between 60-90%.
- ❖ Facility-based treatment of those with medical complications (estimated at 10-20% of total SAM presentations)

When properly combined with intensive community outreach and implemented on a large scale, the community-based approach can prevent deaths amongst a significant caseload of acutely malnourished children.

In the recent past, specific efforts have been initiated at the both country and global level to integrate

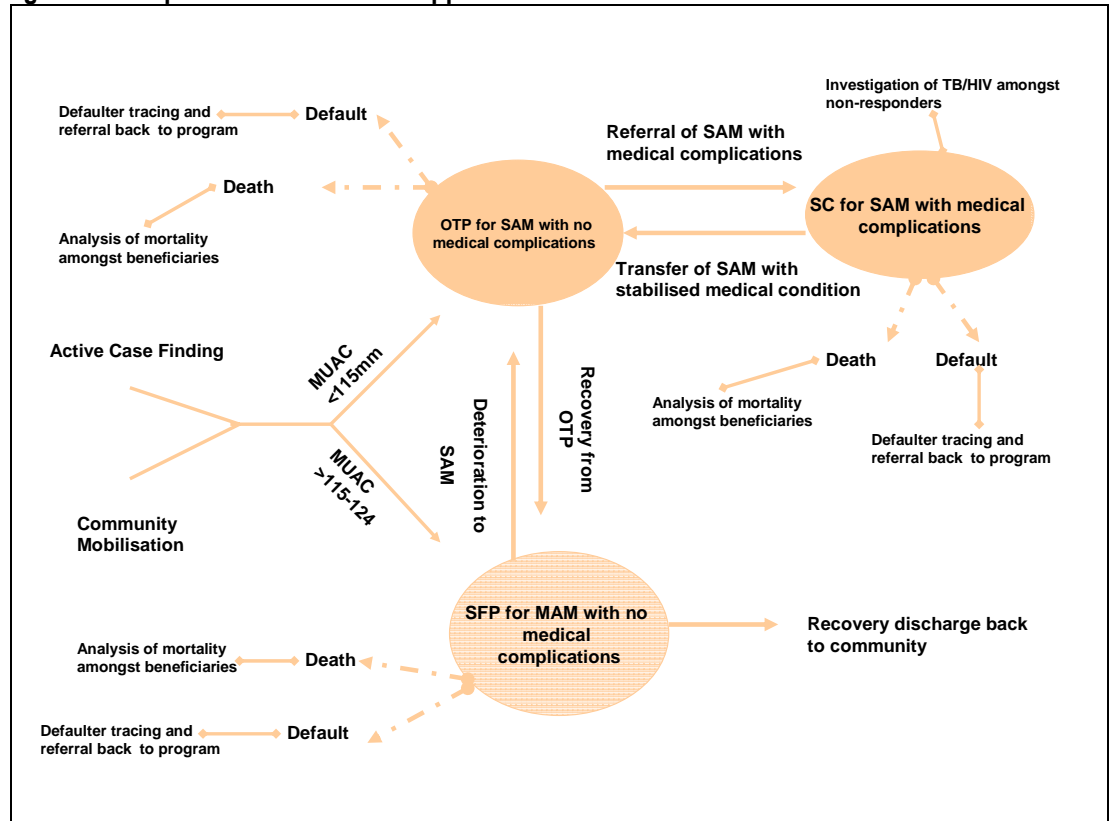
¹ Treatment period using the old model is estimated at an average of 30 days.

<p>Area Sampling</p> <p>CTC: Community-based Therapeutic Care</p> <p>IMCI: Integrated Management of Childhood Illnesses.</p> <p>IYCF: Infant and Young Child Feeding</p> <p>LQAS: Lot Quality Assurance Sampling</p> <p>MAM: Moderate Acute Malnutrition</p> <p>MAMI: Management of Acute Malnutrition in Infants</p> <p>MRP: Minimum Reporting package</p> <p>MUAC: Mid-Upper-Arm-Circumference</p> <p>NCHS: National Centre for Health Statistics</p> <p>OTP: Outpatient Therapeutic Program</p> <p>RUSF: Ready-to-Use-Supplementary Food.</p> <p>RUTF: Ready-to-Use-Therapeutic Food.</p> <p>SAM: Severe Acute Malnutrition</p> <p>SC: Stabilisation Centre</p> <p>SFP: Supplementary Feeding Program</p> <p>SLEAC: Simplified LQAS Evaluation of Access and Coverage</p> <p>SQUEAC: Semi-Quantitative Evaluation of Access and Coverage.</p> <p>TFC/TFP: Therapeutic Feeding Centre/Program.</p> <p>WFH: Weight for Height</p> <p>WSB: Wheat-Soy Blend</p> <p>ANNEXES:</p> <p>Recommendations from the UN-Joint Statement on Community-based Management of Acute Malnutrition.</p> <p>History of the CMAM approach.</p>	<p>this approach with actions geared towards strengthening Infant and Young Child Feeding (IYCF) practices such as the Management of Acute Malnutrition in Infants (MAMI).</p> <p>Core principles of CMAM^{vi}</p> <p>The CMAM approach is based on the basic humanitarian principles which stipulate that; “<i>support to vulnerable persons should be impartial and solely targeted on the basis of need</i>”. The fundamental principle of this approach is that people whose lives are at risk of malnutrition should receive appropriate care and assistance.</p> <p><u>The core operating principles of CMAM are:</u></p> <ul style="list-style-type: none"> - Maximum coverage and access: Programmes should be designed to achieve the greatest coverage and make services accessible to the highest possible proportion of the population in need. The aim should be to reach the entire acutely malnourished population. - Timeliness: CMAM aims to intensify timely case findings and treatment before the prevalence of malnutrition escalates and additional medical complications occur. - Appropriate care: Programmes should provide simple, effective outpatient care for those who can be treated at home and clinical care for those who need inpatient treatment. - Care for as long as needed: Programmes should be designed to ensure that people can stay in the programme until recovery. By building local capacity and integrating the programme within existing structures and health services it also aims to ensure that effective treatment remains available for as long as malnutrition is present in the population. <p><u>Components of the CMAM approach:</u></p> <ul style="list-style-type: none"> - <i>Community mobilisation and active case finding:</i> this aims to stimulate the understanding, engagement and participation of the target population. This process is also aimed at optimising programme coverage within the target geographical area. - <i>Supplementary Feeding Programme (SFP):</i> dry take-home ration for children with moderate acute malnutrition <u>without medical</u> complications. It is complemented with a preventative health package which ideally includes: Vitamin A, anti-helminthes, measles vaccination, iron and folic acid. - <i>Outpatient Therapeutic Care (OTP):</i> OTP is implemented through a large number of decentralised outpatient sites preferably using existing health infrastructure. Dry take-home ration for children with severe malnutrition, using RUTF, usually on a weekly basis, enable adequate medical follow up. Simple medical and nutrition protocols are employed in the OTP. - <i>Stabilisation Centre (SC):</i> inpatient treatment (<i>for a period of 3-10days</i>) for acutely malnourished children with medical complications and/or no appetite using standard WHO/IMCI protocols^{vii} followed by discharge to OTP after stabilisation.
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² For details see TIP on WHO growth standards

³ The WHO guidelines for management of severe acute malnutrition with medical complications are currently under revision.

Figure 1: Components of the CMAM approach:



Comparison between the classical TFC/SFP approach and the CMAM approach:

	Classical TFP/SFP Approach	CMAM approach
Admission criteria	<u>NCHS standards employed</u> Severe acute malnutrition (SAM): <70% WFH median, and/or bilateral oedema Moderate acute malnutrition (MAM): <80% WFH median	a) With the introduction of the 2006 WHO growth charts, WFH z-scores is gradually in use in different countries. However, both NCHS and WHO growth standards ² are currently in use b) See the figure below on CMAM admission criteria c) Introduction and use of MUAC as an admission tool. The new MUAC admission cut-off for SAM is <115mm and MAM is $\geq 115\text{mm}$ to <125mm
Mode of treatment	SAM: inpatient management in TFCs for an average period of 30 days MAM: outpatient management through SFP for an average period of 90 days	SAM and MAM with medical complications: inpatient management for 3-10 days SAM and MAM without medical complications: outpatient management via OTP and SFP for <60 days
Program design and level of coverage	Centralised or Facility based: Limited coverage of malnourished cases in crisis situations	Decentralised through outpatient health and/or outreach posts: Probability of better coverage due to improved access to malnourished in both crisis and non-crisis situations.

	<p>Nutritional Products and accompanying medical protocols*</p>	<p>TFC: Phase 1 F-75 milk Phase 2 F-100 milk Resomal for management of dehydration SFP: fortified blended foods such as Corn-Soya Blend (CSB)</p>	<p>Stabilisation Centre: F-75 Resomal for management of dehydration Transition phase: F-100 and RUTF OTP: Ready-to-use-Therapeutic-Food e.g. Plumpy Nut™ SFP: fortified blended foods (CSB, CSB+, CSB++) and RUSF</p>
	<p>Other components</p>	<p>a) Health and nutrition education b) Measles vaccination, de-worming and vitamin A supplementation as per international or agency specific guidelines c) systematic medical protocol d) Implementation of nutrition activities could be integrated with interventions from other sectors in an endeavour to address the underlying causes of acute malnutrition</p>	<p>a) community sensitisation and mobilisation b) intensified active case-finding and defaulter tracing through outreach workers (CHWs or community volunteers) c) Health and nutrition education d) Expansion of coverage through outreach sites to improve program uptake e) measles vaccination, de-worming vitamin A and iron and folic acid supplementation as per national or international guidelines f) systematic medical protocol g) Referral for investigation of TB, HIV, Kalaazar and other medical complications amongst program non-respondents. h) Implementation of nutrition activities could be integrated with interventions from other sectors in an endeavour to address the underlying causes of acute malnutrition</p>
	<p>Specific program indicators</p>	<p>Program Entry criteria at individual level: a) Direct program admissions (to TFC or SFP) b) Re-admission after discharge Program Exits: Cured: >75% Defaulters: <15% Deaths: <10% TFC and <3% SFP Transfer to TFP or SFP Non-responders Others: Mean length of stay TFC <30 days Mean length of stay SFP <90 days Mean weight gain TFC >8g/kg/d Mean weight gain SFC >3g/kg/d Program coverage according to SPHERE: Camp population: >90% Urban population: >70% Rural population: >50%</p>	<p>Program Entry criteria at individual level. a) Direct program admissions (to SC, OTP or SFP) b) Re-admission after discharge c) Transfers from SC to OTP, OTP to SFP or SFP/OTP to SC Program Exits: Cured: >75% Defaulters: <15% Deaths: <10% SC and OTP, and <3% SFP Transfers from SC to OTP, OTP to SFP or SFP/OTP to SC Non-responders Others: Mean length of stay 3-10 days SC <60 days OTP <90 days SFP Mean weight gain: OTP >5g/kg/d SFP >3g/kg/d Program coverage according to SPHERE: Camp population: >90% Urban population: >70% Rural population: >50%</p>

Guidelines	A myriad of guidelines in use: ACF, MSF, SCF, WHO, WFP-UNHCR. Hence program standards are based on individual agency guidelines with an endeavour to adhere to the minimum standards stipulated in the SPHERE	National guidelines: adopted from Valid International CTC guidelines, or FANTA CMAM guidelines and WHO guidelines ³ for management of severe malnutrition with medical complications. The use of standardised national guidelines is gradually reinforcing harmonisation in program implementation and reporting but with mixed results.
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* For each treatment phase there is systematic medical treatment in accordance to the specific national and/or international protocols.

Classification of Acute Malnutrition according to the CMAM approach

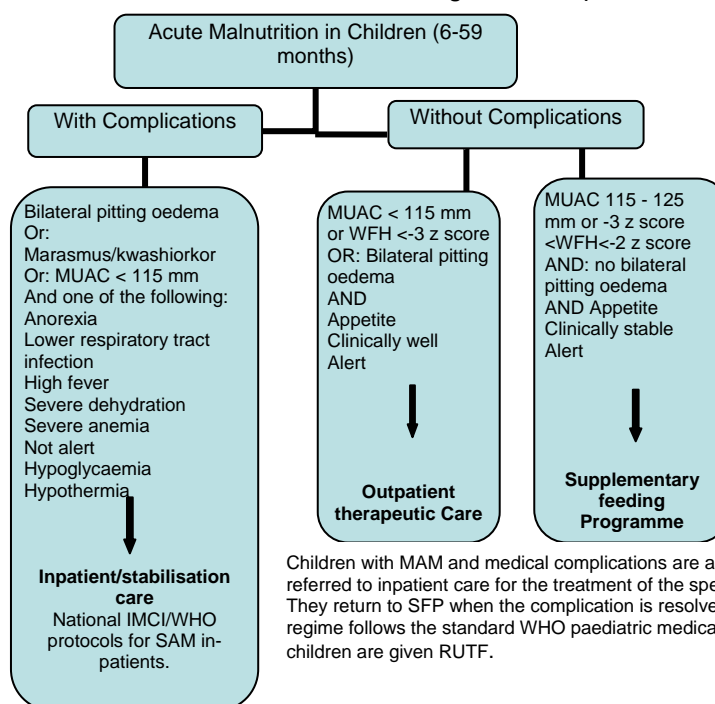
The following classification is for children 6-59 months.

With regard to children below 6 months admission for nutritional rehabilitation is largely dependent on weight measurements, clinical presentation of the child and the presence or absence of appetite. This is because the other anthropometric measurements such MUAC and height are extremely difficult to undertake. The focus for nutrition rehabilitation in this age group is the management of underlying medical complications and the *intensive promotion of exclusive breastfeeding* for the first 6 months of life.

Malnourished children below 6 months are treated as follows:

- Malnourished children with underlying medical complications with no appetite are admitted together with the nursing mother to the stabilisation centre. Support to exclusive breastfeeding is recommended.
- Malnourished children without medical complications are admitted to the existing outpatient facilities where the mother is provided with the supplemental rations and encouraged to exclusively breastfeed the children. Medical treatment is usually provided on a case by case basis.

Figure 2: Classification of acute malnutrition according to CMAM (children 6-59months)



Children with MAM and medical complications are admitted to SFP but referred to inpatient care for the treatment of the specific complication. They return to SFP when the complication is resolved. The treatment regime follows the standard WHO paediatric medical protocol and children are given RUTF.

Techniques for coverage estimation and programme monitoring:

Historically, the two-stage cluster sampled anthropometric nutrition surveys were used to estimate the nutrition programme (SFP/TFP) coverage; this methodology has been found erroneous for the population-based programme coverage estimation. There are three new methodologies currently in use on a limited scale with technical support and guidance from Valid International. These methods include: the **Centric Systematic Area Sampling (CSAS)**, **Simplified LQAS Evaluation of Access and Coverage (SLEAC)** and the **Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)**^{viii}. The latter has the comparative advantage of being able to estimate coverage as well as be used to assess programme quality and barriers for access. Specific details on the methodologies and application of these surveys can be obtained from the respective Regional Nutrition persons and the SST Nutrition expert.

Nutritional Products:

The development and effective use of Ready-to-Use-Therapeutic-Food (e.g. Plumpy-Nut™) have been instrumental for the effectiveness of treatment and expanded programme coverage that targets severe acute malnutrition during emergencies.

The documented evidence-based success in the treatment of severe acute malnutrition using Plumpy-Nut has triggered an increase in initiatives aimed at RUTF local production in several countries with mixed results. These initiatives have faced different challenges ranging from the import of powder milk to problems with production capacity and safety of the product. On the other hand, there have been experiments to combine RUTF with other types of ingredients that are more in line with local diets.

The efficacy and effectiveness of Plumpy-Nut™ in the treatment of severe acute malnutrition has also created an increasing urge amongst nutrition actors (the UN and NGOs) to shift from using blended foods (CSB, WSB) to using ready-to-use lipid-based foods – RUFs (e.g. Supplementary plumpy, plumpy doz), for the treatment and prevention of moderate acute malnutrition (MAM). In parallel, it has also been acknowledgement that CSB/WSB do not provide the required nutrient mix (and possibly lack animal protein) and, therefore, traditional recipes of blended food have been improved to formulations such as CSB+ and CSB++. However, measures for improving the quality and effectiveness of programmes targeted at the management of moderate acute malnutrition remain undefined.

Specific issues include:

- a) Finalisation of the nutritional and safety specifications for MAM products through the ongoing work by WHO – this has been developed so far only for RUTF.
- b) Measures to ensure programme quality and the overall effectiveness of approaches focusing on the management of moderate acute malnutrition, with emphasis on better monitoring and reporting.
- c) Development and documentation of evidence based on the effectiveness and cost efficiency of the specialised nutritional products.
- d) Impact of the RUFs on IYCF actions. There is an underlying risk of sending the wrong message that RUFs are the solution to malnutrition with a possible negative impact on breastfeeding^{ix}.
- e) The quality of the supplemental food that needs to be addressed for the management of moderate acute malnutrition.
- f) The high cost of RUFs vs. the sustainable uptake of costs by national governments in the transition to the development phase of the response.

The ongoing debate and operational research on nutritional products is crucial, as it relates to issues of sustainability, safety, logistical capacity, cost reduction and local empowerment.

Documented cost of CMAM programmes focused on the management of severe acute malnutrition:

Standardised costs for the management of moderate acute malnutrition are currently unavailable. This section will focus on costs for the management of severe acute malnutrition.

The cost of a CMAM project for the treatment of SAM varies according to the operational context. Initial estimates from two emergency CMAM programmes implemented by Concern in Ethiopia and Malawi ranged between **84€ -159€ per admission**^x. The exact figure is dependent on the prevalence of severe acute malnutrition, the numbers of acutely malnourished children treated, existing infrastructure, accessibility and estimation of the case fatality rate in untreated SAM. A recent study on cost of CTC in Zambia^{xi} revealed a programme cost of 164€ (**CI 112 – 221€**) **per child treated**. As shown in the following table, approximately 70% of the costs cited in the Zambia study were RUTF and technical support costs.

Cost Item	Unit cost €	Mean number of Items per child	Mean cost per child €	% of total
RUTF (kg) PPN	5	11.7	58.50	35.8
Technical support	55.47	1	55.47	33.9
Hospital per day	33.39	0.83	27.71	16.9
Health centre visits	3.42	6.16	21.07	12.9
Community mobilisation	0.53	1	0.53	0.5
Total			163.28	100

Integration of the CMAM programme into the health infrastructure

The integration of CMAM into the national health system is perceived within the 2007 UN joint statement for the scale up of CMAM as a potential measure to ensure a minimum level availability of the in-country capacity to address existing nutritional needs. Ideally, the availability of nutritional competences or the strengthening of existing capacities within the health system should enable actors to address immediate needs at the very onset of a nutritional emergency.

Prerequisite for a well functioning CMAM strategy:

- a) Commitment to developing a national CMAM specific roll-out strategy should be concurrent with an enabling government policy and leadership.
- b) Adequate access by beneficiaries to services should include access boosters, facilitation and/or promotion of free access to health services^{xii} amongst others.
- c) Sufficient availability of associated medical and nutritional supplies and logistics.
- d) Commitment for ensuring programme quality through developing capacity building measures for health personnel and consideration for the development and implementation of country-specific monitoring and evaluation frameworks.

However, in most resource-limited settings in developing countries, the Ministry of Health remains extremely under-resourced at the policy, financial and operational levels. Furthermore, in most instances, nutrition is rarely integrated within the minimum health service delivery package nor is it recognised as an integral part of the health sector or even included as part of the performance-based indicators. As a result, nutrition remains hugely underfunded within the national budgets. Therefore in times of crisis, the health facility capacity is insufficient to deal with high caseloads of acutely malnourished children. The challenge, therefore, is to manage an emergency response that meets the quality requirement, while maintaining and, at best, strengthening the national capacities.

A number of key issues should be taken into perspective for an effective integration of the approach. These issues range from punctual to longer-term support, depending on each context, as well as the degree of emergency. A strong liaison of emergency and development actors to coordinate support in the best possible way is recommended.

- a) How strong or weak is the health system? The WHO health system framework which consists of six important pillars required for the delivery of essential health services^{xiii}, needs to be assessed prior to and during the integration process. The pillars include: governance (leadership/coordination), human resources, drugs and medical supplies, health financing, health information management and service delivery.

- b) What is the policy for access to health care?
- c) Is nutrition integrated within the health system and what is the national nutrition strategy? Is the CMAM approach incorporated within this strategy?
- d) Are there national level guidelines or protocols along with accompanying tools for service delivery? Do these protocols need simplification to meet the demands at the health facility level?
- e) What capacity strengthening measures can be undertaken for CMAM to be implemented within the existing limitations of staff competences?
- f) In contexts where development actions and financing exists, which specific aspects of this approach should be addressed by development actions?
- g) How can an effective contingency planning for emergency response be established at the national level? Can emergency response be implemented in a manner that would not undermine the efforts of the government, while continuing to meet quality requirements?

Conclusion

The community-based management of acute malnutrition has proved to be an effective approach for the management of large caseloads of acute malnutrition in crisis situations. Outstanding issues in the scale up of the CMAM approach remain; although there is significant momentum at the international level (e.g. Global Nutrition Cluster) to discuss and develop a strategic way forward that would further provide guidance to national level actions. Some of the pending issues to be tackled in the on-going international and national consultations include:

1. How to address the limited capacity of the routine health system to implement and sustain the approach during and beyond an emergency.
2. The need to identify models for financing scale up and integration of CMAM during pre-emergency, emergency and post emergency periods.
3. How to effectively integrate the management of acute malnutrition with interventions geared towards tackling the underlying causes of malnutrition.
4. More knowledge needs to be gained on the long-term outcomes of programmes which have been scaled up and integrated within existing systems.
5. Whether SPHERE standards would still apply for the large-scale CMAM programming at the national level?

Recommendations to DGECHO

- DG-ECHO should support the adoption and implementation of the CMAM approach as the preferred approach for the treatment of acute malnutrition, including funding of associated supplies while responding to nutritional emergencies.
- Engage in the on-going dialogue at the national and international levels on the integration of CMAM into the health infrastructure and strategy.
- As a measure of ensuring coherence in CMAM implementation DG-ECHO through its partners should advocate for the development of a national level CMAM strategy.
- Support to the development of national guidelines and accompanying tools should be only considered in instances where DG-ECHO's comparative advantage would facilitate an effective response to emergencies.
- Contribute to building the knowledge and discussions on the comparative effectiveness of specialised nutritional products proposed for use in the management of acute malnutrition.
- In protracted crises, it is important for DG-ECHO to engage with development actors in order to strengthen the link between nutrition emergency and development actions.
- Promote the use of standard indicators to monitor the result of projects funded by DG-ECHO; once finalised the application/use of the Minimum Reporting Package (MRP) is strongly recommended.

Annex 1

Recommendations from the joint UN statement on Community-Based Management of Acute Malnutrition:

What countries can do?

Countries can save children's lives by:

1. Adopting and promoting national policies and programmes that:

- Ensure that national protocols for the management of severe acute malnutrition (based if necessary, on the provision of RUTF) have strong community based component that complements facility-based activities.
- Achieve high coverage on interventions aimed at identifying and treating children in all parts of the country and at all times of the year through effective community mobilisation and active case finding.
- Provide training and support for community health workers to identify children with severe acute malnutrition who need urgent treatment and to recognise those children with associated complications who need urgent referral.
- Establish adequate referral arrangements for children suffering from complicated forms of severe acute malnutrition so they can receive adequate inpatient treatment.
- Provide training for improved management of severe acute malnutrition at all levels, involving an integrated approach that includes community – and facility-based components.

2. Providing the resources need for management of severe acute malnutrition including:

- Making RUTF available to families of children with severe acute malnutrition through a network of community health workers or community-level health facilities, preferably by encouraging local industry to produce RUTF in settings where families do not have access to appropriate local foods.
- Ensuring funding to provide free treatment of severe acute malnutrition because affected families are always amongst the poorest.

3. Integrating the management of severe acute malnutrition with other health activities such as:

- Preventive nutrition initiatives, including promotion of breastfeeding and appropriate complementary feeding, and provision of relevant information, education and communication (IEC) materials
- Activities related to the Integrated Management of Childhood Illness at first level health facilities and at the referral level, and initiating such activities where they do not exist.

WHO, WFP, SCN (Standing Committee on Nutrition), UNICEF and other partners will support these actions by:

- Mobilising resources to support implementation of these recommendations
- Facilitating the local production or procurement of RUTF for countries with a high prevalence of severe acute malnutrition in communities where access to nutrient-dense food is limited.
- Supporting the development and evaluation of nutrition rehabilitation protocols based on local foods in countries where poor families have access to nutrient-dense foods.
- Working with governments and the private sector, including non-governmental organisations to rapidly disseminate these recommendations and build capacity for their implementation.
- Conduct operations research to refine protocols for community-based management of severe acute malnutrition.
- Jointly implementing expanded community-based programmes to combat severe acute malnutrition in major emergency situations.

Annex 2: History of the CMAM approach^{xiv}

- **1998:** Evaluation of TFC in south Sudan shows that a centre-based treatment of severe malnutrition cannot address the problem in large scale food emergencies and famine.
- **2000:** First CTC programmes undertaken by Valid International in partnership with Concern and Oxfam during the 2000 famine when the Ethiopian authorities forbade implementation of TFCs.
- **2001:** CTC programmes implemented by Valid International and SCUK in Darfur
- **2002:** CTC research and development programmes begin; Valid International forms partnerships with Concern Worldwide and academic institutions. Commencement of in-depth operational research in Malawi and Ethiopia
- **2003:** Increasing number of agencies start to implement CTC with technical support from Valid. Interagency conference in Dublin to disseminate research data
- **2003-4:** Valid International local production of RUTF in Malawi and Ethiopia
- **2004:** More focused investigations on the feasibility of CTC in development contexts and for HIV patients. Interagency CTC develops in Darfur – agencies specialise in delivering different parts of the CTC package to enable better implementation.
- **2005:** CTC becomes a well accepted emergency nutrition intervention. Work focuses on trying to integrate the programme into national protocols
- **2005:** Valid Nutrition expands local production of RUTF in Malawi and commences production in Zambia. Lower cost Chickpea, Sesame, Maize recipe for RUTF proved to be successful in treating severe acute malnutrition secondary to HIV in adults.
- **2005:** WHO expert committee endorse the community-based management of SAM as their preferred approach to treatment and triggers integration of CMAM into the health infrastructure.
- **2006:** Valid International in collaboration with Concern Worldwide and other partners publish a step by step CTC field manual
- **2007:** UN joint statement (WHO, WFP, UN-SCN, UNICEF) recommending the CMAM strategy as key in management of high caseloads of severe acute malnutrition is published.
- **2008:** International workshop on the Integration of Community-based Management of acute Malnutrition in Washington DC
- **2008:** Valid International in collaboration with FANTA, UNICEF, Concern publish training guidelines for Community-based Management of Acute malnutrition

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- ^{vi} Community-based Therapeutic Care: A field manual Valid International 2006: <http://www.validinternational.org>.
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- ^{xiii} SPHERE Handbook 2011: www.sphereproject.org.
- ^{xiv} Source: ENN report of an Inter-agency Workshop Washington DC 2005 with additional contributions from Steve Collins – Valid International