

MODERATE ACUTE MALNUTRITION: A DECISION TOOL FOR EMERGENCIES



MAM Task Force

Updated March 2017

Photo: WFP/Challiss McDonough

TABLE OF CONTENTS

I. Introduction to the MAM Decision Tool	1
A. Background and rationale for the decision tool:	1
B. Aims and approach of the decision tool:	1
C. Information required for using the decision tool:	2
D. Audience for the decision tool and guidance:	2
E. Timeline for using the tool:.....	3
F. Caveats for using the tool:	3
II. How to use the Decision Tool	4
A. Determine the appropriate programme type/objective	5
1. Situational Analysis	5
2. Risk of deterioration	6
3. Determine programme recommendation	8
B. Determining the programme modality and operation	10
1. Prevention of acute malnutrition	10
2. Treatment of moderate acute malnutrition	15
3. Both prevention of acute malnutrition and treatment of MAM	18
4. No additional intervention for MAM but further situation monitoring	18
C. Review and Revise	18
III. Specialised Nutritious Foods	19
IV. Programme Linkages for Prevention of Acute Malnutrition and Management of MAM in Emergencies	21
1. Severe acute malnutrition (SAM).....	22
2. Infant and Young Child Feeding (IYCF-E).....	22
3. Health and Water/Sanitation.....	22
4. Food Security and Livelihood Programmes	22
V. Evaluation of the MAM Decision Tool	23
VI. Appendices	24
APPENDIX A: RISK SCORING	24
APPENDIX B: DETERMINING PROGRAMME RECOMMENDATION	25
APPENDIX C: SPECIALISED NUTRITIOUS FOODS SHEET	26
APPENDIX D: OPTIONS FOR EXCEPTIONAL COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION PROGRAMMING IN EMERGENCIES	28

LIST OF ACRONYMS

AM	Acute Malnutrition
ARI	Acute Respiratory Infection
BSFP	Blanket Supplementary Feeding Programme
CMAM	Community based Management of Acute Malnutrition
CSB	Corn Soy Blend
FBF	Fortified Blended Foods
GAM	Global Acute Malnutrition
GFD	General Food Distribution
GNC	Global Nutrition Cluster
IASC	Interagency Standing Committee
IDP	Internally Displaced Person
IPF	In-patient Facility
IYCF-E	Infant and young child feeding
LBW	Low Birth Weight
LNS	Lipid-based Nutrient Supplement
MAM	Moderate Acute Malnutrition
MND	Micronutrient Deficiencies
MNP	Micronutrient Powder
NGO	Non-Governmental Organisation
OTP	Outpatient Therapeutic Program
PLW	Pregnant and Lactating Women
RUF	Ready-to-Use Food
RUSF	Ready-to-Use Supplementary Food
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SBCC	Social and Behaviour Change Communication
SFP	Supplementary Feeding Programme
TSFP	Targeted Supplementary Feeding Programme
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Child's Fund
WFH	Weight-for-Height
WFP	World Food Programme
WHO	World Health Organisation
WHZ	Weight-for-Height Z score

I. Introduction to the MAM Decision Tool

A. Background and rationale for the decision tool:

A review of targeted supplementary feeding programmes in emergencies found that there was very limited data on the effectiveness of these programmes. The WHO convened a meeting in 2008 to review dietary management of children with moderate acute malnutrition. As a result, over the past several years there have been significant changes to strengthen nutrition programming in emergencies including the development of new specialised nutritious foods and a shift to greater emphasis on preventing acute malnutrition.

Different programming approaches have been used for prevention of acute malnutrition and treatment of MAM¹ in recent emergencies (Haiti, Niger, Pakistan, etc.) based on the different situations in these countries. This variation in responses raised questions about how to best guide emergency nutrition responses to prevent acute malnutrition and to treat MAM. To address these concerns, the Global Nutrition Cluster convened a MAM Task Force under the leadership of WFP to develop a decision-making tool and guidance for prevention of acute malnutrition and treatment of MAM in emergencies. The Task Force considered current global thinking and available operational evidence in developing this guidance; however, it is intended as interim operational guidance while further normative guidance is under development.^{2,3} Revisions and updates to this document will be made as needed and noted below:

March 2015 – Addition of Appendix D: OPTIONS FOR EXCEPTIONAL COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION PROGRAMMING IN EMERGENCIES

B. Aims and approach of the decision tool:

The decision-making tool aims to:

- guide program managers to identify the most appropriate and feasible programme strategy to address MAM in a particular emergency setting
- harmonize nutrition programme decision-making to MAM in emergency situations
- explicitly incorporate a range of contextual situational factors into the decision-making process, in addition to population level nutrition status before and during the emergency

¹ For the purpose of this document the term ‘treatment’ is being used, however, treatment of MAM should always be seen as integral component of Community-Based Management of Acute Malnutrition i.e., should be linked to treatment of severe acute malnutrition, whenever possible.

² The WHO Nutrition Guidance Expert Advisory Group review of acute malnutrition is ongoing

³ Further information on MAM can be found in *The Harmonised Training Package (HTP): Resource Material for Training on Nutrition in Emergencies, Version 2 (2011)*. Nutrition Works, Emergency Nutrition Network, Global Nutrition Cluster. Module 12: Management of Moderate Acute Malnutrition.

The tool is designed to guide decision-making on the type of programme(s) to implement (e.g., prevention, treatment, both), the programme modality (e.g., food supplement, cash/voucher, social and behaviour change communication (SBCC⁴)), the risk groups to target, the specialised nutritious foods to use, the programme duration and the delivery mechanism for the programme(s). There are likely to be existing MAM programmes in the country affected by the emergency and this guide is intended to augment rather than supersede these programmes, as appropriate. The recommendations from this MAM decision-making tool will need to be further developed into an action plan for the emergency response. The tool was developed for addressing MAM in emergency settings and at this stage is not intended to guide decision-making on addressing MAM in non-emergency settings.

C. Information required for using the decision tool:

Different types of **information and data** are required to use this decision-making tool and process effectively, including data on

- prevalence of GAM in the affected area
- information on the nature and severity of the crisis
- baseline health data in the areas affected and expectations of the crisis impact on illness
- food security situation and expectations of crisis impact on food security
- estimates of displacement and population density

D. Audience for the decision tool and guidance:

The primary **audience** for the tool is nutrition staff from national governments and the key international and national organisations involved in nutrition emergencies addressing MAM. The government (or government body) should be the lead or a major partner in establishing the nutrition response in an emergency. In the immediate stages after onset of an emergency, the members of the IASC nutrition cluster at the country level (or a sector coordination structure, sub working group or other equivalent of this group if the cluster is not active) will also be key users of this decision tool as part of an exercise to develop a broader strategy for the overall nutrition response to the emergency. A quorum of key agencies should be at the table to make decisions about addressing MAM, including the national government and WFP as the lead UN agency for MAM, the national cluster coordination or other coordinating body, UNICEF as the nutrition cluster lead, WHO and key potential implementing partners. The decision tool is a guidance note and considerable discussion and interpretation of the context will be required in order to develop the MAM response strategy for the specific emergency.

⁴ SBCC is a term that reflects the understanding that behaviours are grounded in a particular socio-ecological context and change usually requires support from multiple levels of influence (Manoff Group). Activities that fall under the scope of SBCC are advocacy, social or community mobilization, and behaviour change communication (BCC). SBCC is sometimes referred to as nutrition communication or BCC although it should be noted that these terms are not necessarily interchangeable as their definition can depend on the organization.

E. Timeline for using the tool:

To move forward with a MAM response strategy, a consensus should be achieved within the nutrition stakeholder community (outlined above) and led by the national government. In effort to expedite the decision making process concerning MAM in emergencies, it is important that the tool is reviewed and program decisions in various scenarios are discussed as part of country level emergency preparedness and response planning. In exceptional circumstances that call for the use of a revised protocol (see Appendix D), the nutrition cluster or coordinating body led by government should agree in consultation with UNICEF and WFP on the circumstances that justify temporary activation of a revised protocol and circulate this criteria within the nutrition coordination body. Reaching consensus on the activation of a revised protocol is highly encouraged during the first meeting in which a case is presented in effort to allow immediate action during acute crises situations.

F. Caveats for using the tool:

For the purpose of this tool, the primary objective of MAM programming is to prevent mortality and morbidity, reduce the incidence of SAM, and the increase in acute malnutrition that often occurs in emergencies.

MAM cannot be addressed in isolation in emergencies; therefore, the decision-making process presented in this guidance note should be seen as part of a broader nutrition response and as part of a multi-sectoral response to nutrition in an emergency.⁵ For instance, treatment of SAM in emergencies is an essential component of an emergency response and this guidance follows the internationally recognized community based management of acute malnutrition (CMAM) approach⁶, which calls for integration of management of SAM and treatment of MAM. In contexts where the CMAM protocol cannot be applied, such as in the absence of an Outpatient Therapeutic Program (OTP), temporary options may be appropriate for these exceptional circumstances (see Appendix D).

Support for IYCF-E and SBCC is also an essential component of an emergency response. Finally, linkages to food security interventions, health and water/sanitation programming are also important in order to help ensure the multi-sectoral causes of nutrition are being addressed simultaneously. There should be strong advocacy and support where feasible for these other essential components of the MAM and broader nutrition response. Some of these potential linkages are briefly described in this guidance note (Section C).

⁵ As guided by the nutrition cluster or equivalent group in the particular country and through planning with other IASC clusters, particularly health, water sanitation and food security.

⁶ Community-based Management of Acute Malnutrition (CMAM) is an effective approach that builds on local capacity to address acute malnutrition in the community by treating the majority of children in their homes instead of treating them in therapeutic feeding centres (TFC). It composed of four main components; i) community outreach and mobilization, ii) outpatient therapeutic program, iii) inpatient care and, iv) supplementary feeding programme for MAM children. *Community management of Acute Malnutrition. World Vision Project Model.*

As the emergency situation evolves, the nutrition response may need to be adjusted. The decision-making tool can be used to re-evaluate the context and make programme adjustments accordingly. It can be used ultimately to provide direction for nutrition programming in the recovery phase. Plans for a clear exit strategy for MAM programming once the emergency is stabilised should also be developed as part of the response. For instance, if key nutrition problems prior to the emergency are stunting and micronutrient deficiencies, the response plan should help the national government to ultimately transition back to programmes that address these issues.

The decision-making tool can be used in different types of emergencies, including rapid or sudden onset, slow onset, protracted or acute emergencies within a chronic emergency situation. The tool can be equally applied to localised or very large-scale emergencies but the scale of the emergency is likely to influence where to implement (prioritisation) and other steps in the process (e.g., delivery). In emergencies that involve IDPs or refugees the decision-making process should be similar⁷ but there are some additional issues to consider in terms of coordination.⁸ For refugees inside and outside of camps, nutrition issues fall under the leadership and coordination of UNHCR and the host government. IDPs still remain legally under the protection of their own government and under the coordination of the Nutrition Cluster led by UNICEF. However, given its expertise on displacement, UNHCR (with IFRC), under the cluster approach has been designated the lead role in overseeing the protection and shelter needs of IDPs as well as coordination and management of camps (with IOM).

The guidance note is structured as follows: Section II described how to use the tool, Section III summarises some information on different new specialised nutritious foods (including a products sheet in Appendix C) and Section IV summarises information on parallel programming in health, water/sanitation and food security that is often needed to address the multi-sectoral causality of undernutrition. Appendices are provided in Section VI.

II. How to use the Decision Tool

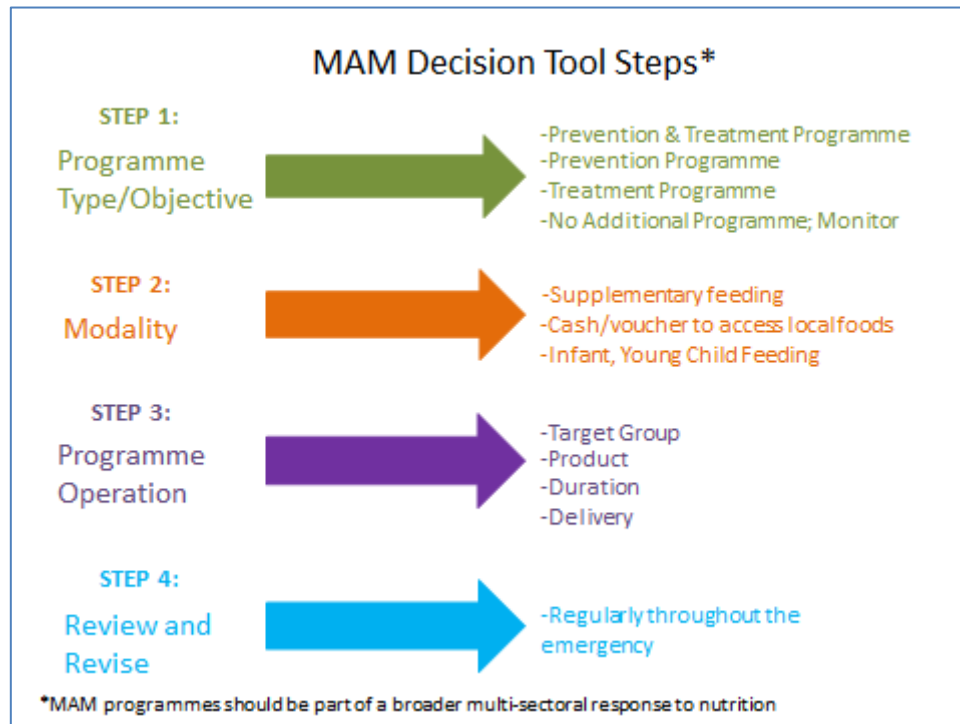
Four steps are described for making decisions to prevent acute malnutrition and address MAM in emergencies in Figure 1: 1) Programme type/objective; 2) Modality; 3) Programme Operation and 4) Review and Revise. Section A of this chapter describes how to decide on

⁷ In refugee emergency situations the MAM decision-making tool should be used in conjunction with the UNHCR Operational Guidance on the Use of Special Nutritional Products to Reduce Micronutrient Deficiencies and Malnutrition in Refugee Populations. UNHCR. Geneva. 2011, which also takes the indicators of stunting and anaemia into account in the decision making processes.

⁸ For further information, see the Global Nutrition Cluster Handbook (2012).

the programme type. In section B, the decision-making steps for modality and programme operation are presented for each programme type.

Figure 1: Steps for Decision-Making in Nutrition Emergencies for Preventing Acute Malnutrition and Addressing MAM⁹



A. Determine the appropriate programme type/objective

The decision tool (Figure 2 and Appendix B) leads to four different end points or interventions:

- Prevention and Treatment
- Prevention alone
- Treatment alone
- No additional intervention than strengthening IYCF-E and monitoring the situation¹⁰

To determine the most appropriate programme type/objective for MAM the decision tool presents two different levels of factors to consider: a) historical information and b) risk of deterioration. With this analysis, a programme recommendation can be obtained.

1. Situational Analysis

The first considerations are pre-crisis vulnerability or historical information. The current or historical prevalence of GAM in the affected population is a key indicator of vulnerability. For the decision making process, GAM prevalence (low weight-for-height) is considered high

⁹ In the absence of an SFP and/or OTP in an acute crisis, see Appendix D for **temporary** options

¹⁰ Ongoing preventive interventions

when prevalence is above 15%, medium when between 10 -15% and low when it is < 10 %. Trend analysis, including an understanding of seasonality of GAM in the emergency affected population, is also critical in classifying the GAM prevalence. GAM prevalence can also be corroborated by the number of children with MAM and SAM in treatment if we have a clear understanding of the coverage and therefore met need. If data is not available or data is not recent, older data and available screening data may be used to make a judgement on GAM prevalence. When these are not available, the decision-making process can start with information on risk of deterioration.

2. Risk of deterioration

Once the emergency has been characterised by historical GAM prevalence the risk of deterioration should be evaluated and a sum score for the emergency agreed upon.

a) Evaluate the risk of deterioration:

Four key factors that can predict a risk of deterioration of the situation (and thus suggest that an increase in GAM is likely) need to be considered. These include:

Increased morbidity: Diarrhoea, acute respiratory infection, malaria and measles in non-immune populations are the most common childhood illnesses that occur and the incidence is then expected to increase in emergencies. They can have a large impact on childhood mortality and undernutrition. Some emergency types (e.g., flooding, earthquake) are more likely to cause an increased risk of morbidity. The type of setting (e.g., vulnerability, capacity) where the emergency occurs (e.g., urban areas where the baseline sanitation conditions are already poor) can also increase the risk of morbidity. Baseline information on vaccination coverage¹¹ as well as vitamin A supplementation coverage can provide insight on whether increased risk of morbidity and impact on GAM is likely. An assessment of the population's access to water (quantity and quality), sanitation and hygiene services and crowding is also an important component in determining morbidity risks. Scoring for increased risk of morbidity should be based on an expected likelihood of increased incidence and/or outbreak of illnesses and an outbreak will have an important impact on GAM.

Three categories of expected/predicted risk are defined as:

- Epidemic: high score (3);
- Increasing incidence/ high levels: moderate score (2);
- Stable incidence/low levels: low score (1)

Decreased food security (disrupted food availability, access or utilization): A crisis that impacts food production such as a drought, one that causes damage to markets or one that

¹¹ For example, full immunization coverage among children 12-23 months, measles vaccination among children.

negatively impacts on household income or food prices can have a significant impact on GAM. The magnitude, extent, severity and duration of the crisis' impact on food insecurity should be estimated based on available household food security, consumption and market information and household coping strategies. The likely progression of the food security situation, including the proportion of households that are likely to be moderately or severely food insecure, should be considered.

Four categories of expected/predicted risk are defined as¹²:

- Extreme food consumption gaps, or extreme loss of livelihood assets that will lead to food consumption gaps, or worse; severely food insecure, high risk: score (4);
- Significant gap in food consumption, or marginally able to meet minimum food needs only with irreversible coping strategies; moderately food insecure, medium high risk: score (3);
- Minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures; marginally food insecure; medium low risk: score (2);
- Able to meet essential food and non-food needs without engaging in atypical coping strategies; food secure, low risk: score (1);

Significant population displacement: Population displacement patterns are another factor which may influence the type and frequency of programming. Displacement may be across borders (in the case of refugees) or within one country (in the case of internally displaced persons (IDPs)). Patterns of displacement and settlement are also diverse, ranging from dispersed settlements, mass shelter in collective centres such as schools, religious places (churches, mosques), and dormitories, reception and transit camps, self settled camps, and planned camps, which may or may not be officially recognised by the host government. There may also be situations of refugees or IDPs mixed with host population, which may or may not include relatives.

Two categories of expected/predicted risk are defined as:

- If displacement is increasing and concentrated: high score (1)
- If there is no displacement or no increase in displacement or it is a sparsely populated location: low score (0)

Population density: Population density is important for decision making because it can and often does influence risk of illness/disease outbreak. In addition, population density should be taken into consideration when designing the programme itself, particularly related to delivery. For instance, there are circumstances where despite a low prevalence of GAM there will be a large number of children in need of services and this influences the resources required and could be a high burden for the health system. In the Haiti emergency in 2010, the population density in Port au Prince was very high. Therefore despite the low

¹² Technical guidance for WFP's Consolidated Approach for Reporting Indicators of Food Security (CARI) , WFP 2014 (for further info see : <https://resources.vam.wfp.org/CARI>)

prevalence of GAM at the onset of the emergency, the numbers of children at risk and needing support was very high. Similarly during the political crisis in Kenya, the number of children needing nutrition support in poor urban areas was high despite the low prevalence.

Two categories are defined as:

- Urban areas, dense population concentration: high score (1)
- All other areas: low score (0)

Table 1 below (larger version in Appendix A) shows the different risk scoring. Each risk described above is evaluated independently and then a sum score of risk is developed.

Table 1: Risk of Deterioration Assessment

Risk of Deterioration	Analysis	Score	Sum Score	Risk Category
Increased morbidity (Acute watery diarrhea (AWD), measles, ARI)	High	3		Score 7-9: High Score 4-6: Medium Score ≤ 3: Low
	Medium	2		
	Low	1		
Food insecurity	High	4		
	Medium High	3		
	Medium Low	2		
	Low	1		
Significant population displacement	Yes	1		
	No	0		
Population density	Yes	1		
	No	0		

b) Sum Score of Risk of Deterioration:

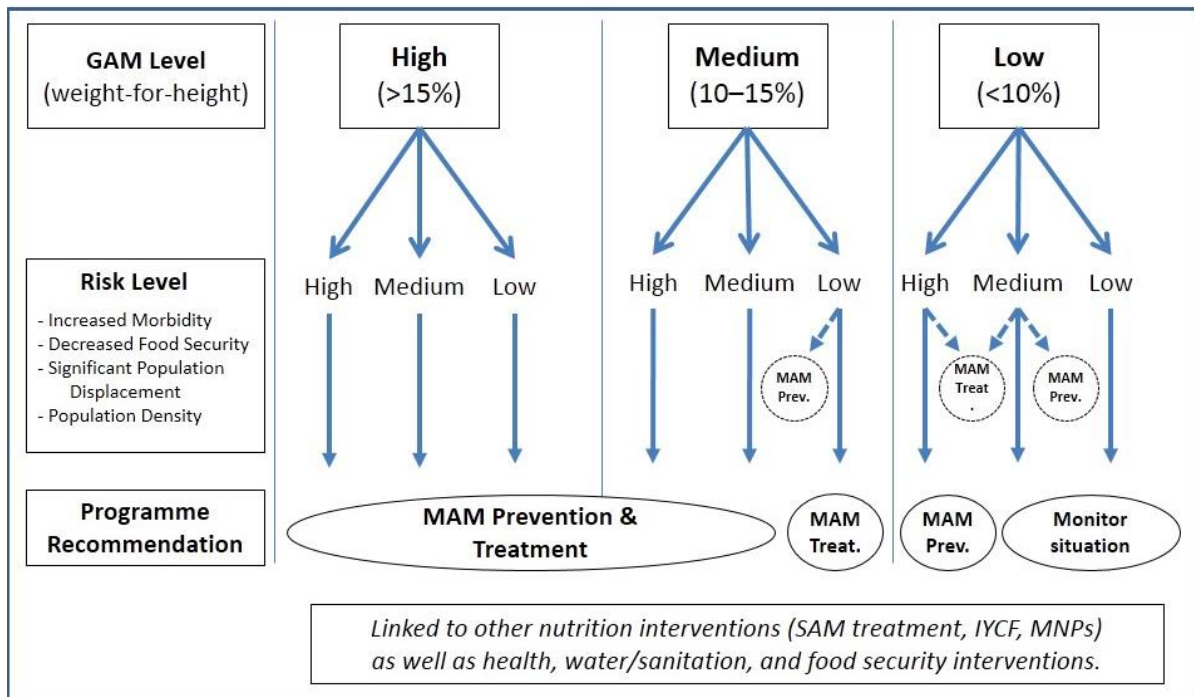
Once each of the risks has been determined, the total score is summed and an overall level of expected/predicted risk is set based on the following 3 categories (see above):

- 7-9: High risk
- 4-6: Medium risk
- ≤3: Low risk

3. Determine programme recommendation

The programme recommendation is based on the GAM prevalence (high, moderate, low) and the sum risk score (high, moderate, low) as shown in Figure 2. A table with this information is provided in Appendix B.

Figure 2: Programme recommendation for Prevention of Acute Malnutrition and Treatment of MAM^{13 14}



Additional note: Emergencies are not homogeneous. They may occur at the subnational, national, or regional level. The analysis must be clearly defined in relation to the specific geographic area and target population where and for whom the decision-making is taking place. In addition, analysis of information should take into account different vulnerabilities and therefore potential differences of impacts between women, girls, boys and men, as well as ethnic or livelihoods groups, which is then incorporated into programme design in terms of geographic targeting and defining appropriate target groups. Finally, certain contexts may warrant use of other criteria or additional risk factors (e.g., prevailing high micronutrient deficiencies or doubling of GAM rates in short period of time even if in terms of absolute number the prevalence remains “low”, e.g., below 10%). Appendix D outlines *temporary* options for programming in contexts where a SFP and/or OTP is not feasible due to service delivery constraints.

¹³ The tool may underestimate risk in slow onset emergencies. In emergencies with severe food insecurity or epidemics where GAM is classified as low it may be appropriate to launch blanket feeding rather than monitor the situation.

¹⁴ The dotted lines in the diagram indicate ‘additional option’ (relevant in certain circumstances)

B. Determining the programme modality and operation

1. Prevention of acute malnutrition

a) Modality

In the event that it is decided that prevention of MAM should be part of the emergency nutrition response, one of three programme modalities can be planned based on functioning markets, household income and available diet diversity. Each of the modalities is described briefly below and key questions to use to select the appropriate modality are presented.

Blanket supplementary feeding programming is the standard intervention to prevent acute malnutrition in young children in an emergency particularly in one where high MAM, high food insecurity (availability and/or access) or high prevalence of chronic undernutrition and micronutrient deficiencies (MNDs) exists prior to the emergency.¹⁵ Blanket supplementary feeding refers to provision of an improved supplementary food from as early on in the crisis as possible. In many situations blanket SFP for prevention can provide the backbone for the emergency response. It creates opportunities for community mobilization, participation and sensitization for accessing the target population through a census registration, community screening, referral for the management of SAM and MAM as well as for adding child survival interventions such as deworming, vitamin A supplementation, immunisation and/or measles vaccination campaigns.

Cash or voucher programmes are now considered standard programming options in emergency food security/livelihoods programs to increase household assets and flexibility in adapting to shocks. While there is evidence and considerable best practice documentation to demonstrate the effectiveness of conditional and unconditional cash transfers and vouchers, there is less evidence demonstrating the impact specifically on nutrition outcomes. While there is some evidence that conditional cash interventions designed to increase access and consumption of age-appropriate food for children often show an improvement of nutritional status, the amount of change that can be achieved and the conditions under which this approach is appropriate to improve nutrition outcomes requires further research. Several ongoing studies will provide further evidence about preventing acute malnutrition with cash only, cash and special foods or special foods only. Preliminary findings from one study suggest that the inclusion of specialised nutritious foods as part of the cash programme is more effective in addressing nutrition than cash alone¹⁶ and that cash at four times the value of special foods gives a similar nutritional impact (incidence of acute malnutrition and mortality) as a specialised food alone. In addition to the amount of

¹⁵ Different factors may contribute to MNDs and stunting are high, including inadequate sanitary practices, personal hygiene as well as inappropriate dietary intake. Likely, the diet is lacking in essential nutrients prior to the emergency, which is often due to limited availability of nutrients.

¹⁶ Epicentre/MSP/WFP : Evaluation of the various distribution strategies to prevent malnutrition in Niger, February 2013

change, appropriate foods for infants and young children (in addition to breastfeeding) must be available regularly in markets and shops for households to purchase. A new assessment tool, Opti-Food may be helpful in determining whether appropriate foods are available in the market and Cost of Diet can help to determine whether a nutritious diet is affordable. However, adaptations of these tools to emergency settings - when the time required to conduct a full study is limited – are not yet available. Finally, the range of contexts where cash or voucher programmes have been successful in preventing acute malnutrition does not fully extend to most of the emergency settings for which this tool is directed. Despite these constraints, cash/vouchers alone can be considered in situations where the food and nutrient availability is good, markets have not been interrupted and caring practices can be sufficiently maintained or improved.¹⁷

Strong SBCC/IYCF-E support is an important component of any emergency response. There may be some circumstances where SBCC/IYCF-E support alone is the appropriate response – for instance when markets are functioning, age-appropriate food is available and households have sufficient income to purchase the nutrients and nutrient density required by young children.¹⁸ However, it is rare that emergency situations offer the context of stable markets and food diversity and access to households. Therefore a response that includes provision of an improved nutritious supplementary food to all children (along with SBCC or IYCF-E) should remain the default response in most emergencies until further evidence and guidance is developed on these alternative modalities.

b) Programme operations

Once the programme type/objective and modality have been determined, the following programme elements must be decided¹⁹: i) target group, ii) specialised nutritious food, iii) programme duration, and iv) delivery mechanism. Decisions on these elements are discussed below and are influenced by the type of emergency and the context in the affected areas as has been presented earlier in this tool (i.e., historical information/pre-crisis vulnerability and risk of deterioration).

¹⁷ Bailey, S and Hedlund, K. The impact of cash transfers on nutrition in emergency and transitional contexts A review of evidence ODI/PHN, January 2012

¹⁸ A decision framework for population-based programmatic options for improving nutrient quality of complementary foods in non-emergency settings may provide some guidance - Programming Guide for IYCF-E, UNICEF New York, May 2011

¹⁹ Nutrition at the World Food Programme, Programming for Nutrition-Specific Interventions, WFP December 2012

i. Select target group for the intervention

Children under 5 years of age²⁰ are at increased risk of mortality associated with acute malnutrition, micronutrient deficiencies and stunting (Lancet). In emergencies this risk is likely exacerbated. Deciding on whom to target for nutrition prevention interventions should be based on several considerations:

- Mortality among and prevalence of acute malnutrition are both higher in the 6-23 month age group and they are more likely to deteriorate and deteriorate rapidly. They also have a greater infection burden, have higher nutrient requirements and are more vulnerable to developing stunting and cognitive deficiencies. Therefore this group should receive priority if there are any constraints (logistical or resource) to reaching the larger age group of 6-59 months.
- There is rationale for including children 6-59 months of age in blanket supplementary feeding for prevention of acute malnutrition if MAM and/or SAM treatment activities are not available or coverage of these programmes is low (i.e., < 20%).
- The evidence base for blanket supplementary feeding for prevention of acute malnutrition primarily focuses on children and there are currently no standard criteria or recommendations for **inclusion of PLWs** into programmes to prevent acute malnutrition. A number of issues should be considered including low birth weight rates, capacity and resources, how the crisis has impacted IYCF-E behaviours (i.e., the inclusion of PLW as an entry point to protect breastfeeding) and whether effective MAM treatment programmes exist for PLW in the affected area. If LBW rates are high, measures to protect BF are required and MAM treatment programmes are inadequate then all PLW could be included in prevention interventions. If a prioritisation needs to be made due to insufficient resources or capacity, children should be prioritised for blanket feeding. An alternative for PLW may be to target only breastfeeding women with a child 0-6 months of age. Including these breastfeeding women indirectly benefits children < 6 months of age and can also ensure that infants <6 months are included in the blanket supplementary feeding for prevention of acute malnutrition when they reach 6 months without re-registering new beneficiaries throughout the operation. Where treatment programmes for PLW exist, stringent monitoring needs to be implemented.
- Blanket supplementary feeding for the prevention of acute malnutrition should not generally extend beyond children 6-59 months of age or PLW except under very serious circumstances. A General Food Distribution (GFD) or equivalent household

²⁰ Where possible, it is recommended to rely on mother's recall to determine the age of 6 months. When exact age is unknown, children can be admitted based on height (60-80cm for 6-23 months and 60-110cm for 6-59 months).

food security intervention should provide the necessary food/nutrient requirements for these other household members.

ii. Select the right specialised nutritious food

Specialised food selection is intrinsically linked with the emergency and food security contexts and the risk group to be targeted with the programme. There are four main factors to consider in selecting the specialised food for prevention of acute malnutrition:

- 1) Objective of the intervention and target group
- 2) Household's ability to cook
- 3) Cultural practices and food preferences
- 4) Nutrient gap

A first factor to consider in the selection of the right specialised food is the *objective of the intervention and target group* – i.e., prevention or treatment, among which specific target group. The attached 'Specialised Nutritious Foods Sheet' in Appendix C presents the specialised foods that are appropriate for these different objectives.²¹ Also specialised foods need to be selected to match the target group for each programme objective. For instance, medium quantity LNS foods are typically used for children 6-23 months of age (or up to 35 months of age). Alternatively Super Cereal Plus could be used for children 6-59 months of age as it can provide more calories for older children in this age range. RUSF have been used in some emergency responses where it is believed that the supplementary food will be the sole source of calories and nutrients of the children (as opposed to being a 'supplement' as it is generally intended).

A second factor is the *household's ability to cook* which is essential for provision of improved fortified blended foods such as Super Cereal Plus. Therefore in the absence of cooking facilities or easy access to fuel or potable water, only ready-to-use foods are recommended for nutrition interventions in emergency settings.

A third factor is *cultural practices and food preferences*. Improved fortified blended foods are now available for wheat and maize, and rice-based blended foods will become available soon. Ready-to-use products are primarily still peanut-based, but a number of alternatives are being developed and are available in still limited quantities (e.g., chickpea based, milk based). As much as possible the taste preferences of communities affected by the crisis should be taken into account in planning the nutrition response (balanced with need for timely availability of foods).

A fourth factor is the *nutrient gap* (defined as the energy and micronutrient gaps needed) that is being filled. A judgement of whether to use a specialised food with higher or lower energy content (e.g., Super Cereal Plus versus a medium quantity LNS) must be made based on a number of different factors, including general household food insecurity and diet

²¹ Managing the Supply Chain of Specialized Nutritious Foods, World Food Programme 2013.

diversity levels, as well as available information on the baseline diets of children and levels of chronic malnutrition and micronutrient deficiencies in the emergency affected area.

Finally, several other factors can be considered in selecting the specialised nutritious food in an emergency nutrition response. Any information on household use of specialised foods or more specifically on sharing practices of different specialised foods can also inform product selection. In addition, it is essential to have government approval and acceptance of the improved specialised foods for prevention of acute malnutrition.

iii. Estimate the duration, timing and cessation of the intervention

Duration and timing of blanket SFP to prevent acute malnutrition should be based on the scale and severity of the emergency, the GAM prevalence and other factors such as food security, seasonality of food security and/or epidemic patterns of infectious diseases.

Blanket supplementary feeding generally operates from 3-6 months. For example in relation to an emergency that further aggravates a typical lean season, blanket supplementary feeding should start at least one month before the lean season starts and should continue until post-harvest. The overall situation should be assessed regularly to determine whether the prevention interventions can be re-oriented or scaled down or whether they need to be extended beyond the planned duration. New children should be regularly enrolled as they reach 6 months of age but any children enrolled should remain in the programme for the duration, regardless of their age.

iv. Determine the delivery mechanism

A number of factors are important to consider in planning the delivery of a prevention of acute malnutrition programme, such as access to the population, scale of the emergency (including total area affected, etc.), implementation capacity and population density. For instance, population density is an important consideration when determining the number of treatment or delivery sites to ensure access to the sites as well as reducing the time spent to reach the site and for waiting at the site. In densely populated areas, it may be necessary to have multiple days a week for programme delivery. They may be integrated with other distribution platforms or other services may be added to these platforms depending on the situation. In addition, the number and capacity of implementing partners can also influence the delivery of prevention of acute malnutrition and MAM programmes. When capacity is limited or security an issue, specialised food supplements may need to be added to GFD or other delivery mechanisms.

There are two primary ways that blanket SFPs for the prevention of acute malnutrition are delivered in large scale emergencies: 1) stand-alone delivery targeted directly to households with children or 2) integrated delivery as part of the food security intervention (e.g., food/cash/voucher distribution). If delivery capacity or access is limited, adding the children's supplementary food to the food/cash/voucher distribution may be the only delivery option. There can be significant inclusion and exclusion errors in using these delivery mechanisms. Therefore while this might be the only viable option in the immediate

aftermath of a major rapid onset emergency, a shift to parallel independent programme targeting to children should be considered as soon as access and/or capacity can allow it.

2. Treatment of moderate acute malnutrition

a) Modality

The WHO has recently issued a Technical Note on foods for children with moderate acute malnutrition. It provides the nutrient requirements for children with MAM that must be provided through the local diet or with the addition of specialised foods.

Household food security is often compromised in emergencies therefore it may not be conducive to manage MAM without the inclusion of a specialised supplementary food. Therefore, where the decision tool recommends treatment of MAM as part of the emergency nutrition response, a *targeted supplementary feeding* programme (TSFP) should be planned.^{22,23} A targeted SFP provides treatment for moderate acute malnutrition through the direct provision of nutritious food supplements and routine medical treatment. Admission and discharge criteria rely primarily on anthropometric assessment of nutrition status and current international criteria or the national guidelines should be followed. SBCC and support and promotion of IYCF-E should be provided in tandem with the targeted supplementary feeding programme.

More evidence is required to understand under what circumstances and what programme inputs (type of vouchers, amount and timing of cash, etc.) are needed before a recommendation can be made to use household cash transfers or vouchers to facilitate access of the recommended food requirements for treatment of MAM. Similarly only in circumstances where access and availability are not constrained should IYCF-E alone be recommended for treatment of MAM in emergency settings.

b) Programme operations

Once the programme type/objective and modality have been determined, the following programme elements must be decided: a) target group, b) specialised nutritious food, c) programme duration, and d) delivery mechanism. Decisions on these elements are discussed below and are influenced by the type of emergency and the context in the affected areas as has been presented earlier in this tool (i.e., historical information/pre-crisis vulnerability and risk of deterioration).

²² For more information, see the WFP/UNHCR (2011) Guidelines for Selective Feeding: The Management of Malnutrition in Emergencies.

²³ Alternative community based approaches, such as The Nutrition Impact and Positive Practice (NIPP) circle or Positive Deviance/Hearth models, are also used to address MAM in certain contexts. While inappropriate for acute emergencies where basic food security needs must also be met, they can be considered for protracted or chronic emergencies. However, the impact of these approaches, especially in large-scale emergencies, is unclear and requires more evidence before wide application can be considered.

i. Select target group for the intervention

The standard target groups are malnourished children 6-59 months of age (including those discharged from treatment of SAM), malnourished pregnant and lactating women 6 months postpartum (PLW) and malnourished people living with chronic illness (e.g., HIV, TB). There are some exceptions:

- 1) Malnourished infants less than 6 months are not admitted for treatment of MAM but will need strengthened IYCF-E support. If the infant under 6 months is identified with SAM, they will be referred to the hospital for strengthened IYCF-E support and/or inpatient care if necessary in line with the WHO 2013 recommendations²⁴. The mother, not the child, will be enrolled in the MAM programme for nutritional support.
- 2) If surveys, assessments, or clinic-based screening data suggests other population sub groups are nutritionally vulnerable with MAM (such as disabled children, children 5-10 years of age, older people) these other groups should be considered for treatment programmes.

ii. Select the right specialised nutritious food

Specialised food selection is intrinsically linked with the emergency and food security contexts and the risk group to be targeted with the programme. There are three main factors to consider in selecting the specialised foods for treatment of MAM:

- 1) Objective of the intervention and target group
- 2) Household's ability to cook
- 3) Cultural practices and food preferences

A first factor to consider in the selection of the right specialised food is the *objective of the intervention and target group* – i.e., prevention or treatment, among which specific target group. The attached 'Specialised Nutritious Foods Sheet' presents the specialised foods that are appropriate for these different objectives. Also specialised foods need to be selected to match the target group for each programme objective. For instance, medium quantity LNS products are currently not recommended for children above 2 years of age. Therefore Super Cereal Plus is the only appropriate specialised food for blanket supplementary feeding among children 6-59 months of age. RUSF have been used in some emergency responses where it is believed that the supplementary food will be the sole source of calories and nutrients of the children (as opposed to being a 'supplement' as it is generally intended).

A second factor is the *household's ability to cook* which is essential for provision of fortified blended foods such as Super Cereal Plus. Therefore in the absence of cooking facilities or

²⁴ http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf

easy access to fuel or potable water, only ready-to-use foods are recommended for nutrition interventions in emergency settings.

A third factor is *cultural practices and food preferences*. Improved fortified blended foods are now available for wheat and maize, and rice-based blended foods will become available soon. Ready-to-use specialised foods are primarily still peanut-based, but a number of alternatives are being developed and are available in still limited quantities (e.g., chickpea based, milk based). As much as possible the taste preferences of communities affected by the crisis should be taken into account in planning the nutrition response (balanced with need for timely availability of foods).

iii. Estimate the duration, timing and cessation of the intervention

The duration of treatment in a targeted SFP varies, with range from 1-4 months.²⁵ Scale-down of programmes to treat MAM is generally considered when GAM rates fall below 5% and no aggravating factors exist. Also, very low numbers of beneficiaries in MAM treatment as well as in SAM treatment can be considered for making a decision to phase out treatment of MAM in emergencies.

iv. Determine the delivery mechanism

A number of factors are important to consider in planning the delivery of MAM treatment programmes, such as access to the population, scale of the emergency (including total area affected, etc.), implementation capacity and population density. For instance, population density is an important consideration when determining the number of treatment or delivery sites to ensure access to the sites as well as reducing the time spent to reach the site and for waiting at the site. In densely populated areas, it may be necessary to have multiple days a week for programme delivery. They may be integrated with other distribution platforms or other services may be added to these platforms depending on the situation. In addition, the number and capacity of implementing partners can also influence the delivery of prevention of acute malnutrition and MAM programmes. When capacity is limited or security an issue, specialised food supplements may need to be added to GFD or other delivery mechanisms.

The programme for treatment of MAM should be delivered closely linked to the SAM component, as part of CMAM. Both active and passive screening for acute malnutrition can be done jointly with the SAM programme under CMAM. Targeted supplementary feeding (TSFP) sites can be established adjacent to the outpatient treatment centres (OTPs) and health facilities where referrals can be supported easily without overburdening the existing health care system. As much as possible management of MAM should not drain the existing health system. It is important to keep in mind that sites for management of MAM require large areas for waiting, measuring, monitoring and providing the food supplement and it

²⁵ Admission and discharge criteria should follow either national or international protocols. Additional considerations for those that do not respond during the expected treatment time frame are often incorporated into treatment guidelines.

does not require health care staff for implementation. However, an adjacent referral point for accessing routine health services is needed. If the MAM programme is not located adjacent to a health centre, basic health interventions should be provided through mobile programmes or other delivery mechanism. The existing health service coverage and level of decentralisation, the national guidelines for targeted SFP for MAM, the type of existing SAM/MAM operations of the Ministry of Health and NGOs and, as well as their capacity for scale-up, are all important considerations in reviewing delivery modalities of management of MAM. In some acute emergencies, it may not be immediately feasible to implement a SFP and/or OTP because of impediments to service delivery. In these exceptional circumstances, temporary options may be necessary to ensure that SAM treatment is not compromised. Appendix D outlines recommendations based on the following three contexts: a) there is an OTP but not an SFP; b) there is an SFP but not an OTP; and c) there is neither an OTP nor SFP in place.

3. Both prevention of acute malnutrition and treatment of MAM

In many circumstances both prevention of acute malnutrition and treatment of MAM will be the recommended nutrition response. The steps described above in sections a and b should be followed to determine the most appropriate modality and programme operation. Where possible, children should not be enrolled simultaneously in both treatment and prevention programmes (i.e., where children enrolled in prevention become malnourished and become eligible for MAM treatment). However, the risks associated with non-participation are greater than the costs of dual participation therefore in some large scale complex emergencies children should always be enrolled in prevention and they may go in and out of treatment.

4. No additional intervention for MAM but further situation monitoring

In the event that it is decided that no intervention is needed at that time based on the low vulnerability before the crisis and the low risk of deterioration as outlined in Table 1, it does not mean that prevention of acute malnutrition and/or treatment of MAM may not become an issue that will need to be addressed in a later stage. On-going assessments of the situation and repeated analysis of updated information using the decision-making tool should be built into the food security and nutrition strategic response to the emergency. Strengthened support for IYCF-E or micronutrient interventions may still be warranted in these situations as well. At the same time, assessment of the need for acute malnutrition and MAM programming in the emergency should remain on the agenda of the nutrition coordination mechanism.

C. Review and Revise

The decisions made with this tool may require adaptation after certain time intervals, be it because the emergency has expanded, new risk factors have emerged, the time horizon

needs to be extended, because new nutrition interventions are included in the nutrition response, etc.

Efforts to evaluate impact and to standardize monitoring and evaluation of blanket SFP is on-going, supported by a number of different organisations. In addition, the Minimum Reporting Package (MRP) is being used now by several organizations and based on experiences can be expanded in use in the near future.

III. Specialised Nutritious Foods

For decades fortified blended foods (e.g., corn soya blend) have been the primary foods available for supplementary feeding programmes in emergencies. Over the past few years there has been development of new specialised foods for prevention of malnutrition (stunting and wasting) and for treatment of MAM including WFP's improved formulation of fortified blended foods (i.e., Super Cereal Plus). Descriptions of the key nutritious foods are:

Ready to use foods (RUF): is an umbrella term that refers to foods that do not need to be prepared, cooked, or mixed with water. RUFs are generally made with peanuts, sugar, milk powder, vegetable oils, and vitamins and minerals, though they may be made with chickpeas or other commodities. The package can be opened and the food can be eaten directly. RUF have low moisture content and do not require water or cooking, so the risk of contamination is low.

- **Ready to Use Therapeutic Foods (RUTF)** is an energy-dense mineral/vitamin-enriched food, specifically designed to treat SAM without medical complications at the community level. RUTF is given over a period of six to eight weeks, and the child will need no other foods during treatment other than breastmilk.
- **Ready-to-Use Supplementary Food (RUSF)** is a type of RUF that is specifically designed for the treatment of moderate acute malnutrition in children 6-59 months of age in TSFPs. RUSFs are fortified with micronutrients and contain essential fatty acids and quality protein to ensure a child's nutritional needs are met.
- **Lipid nutrient spread (LNS)** is a term used to describe a type of specialised nutritious food, i.e., a lipid-based paste. It has different formulations and dosages and can be used for different purposes. They can generally be grouped into three categories which are based on dosage and each category has their own purpose. Some specific examples are provided in Appendix C. LNS are described as LNS Small quantity, LNS Medium quantity, and LNS Large quantity in order to indicate the amount of product that is used.

Fortified blended foods (FBFs)²⁶ are a mixture of cereals and other ingredients (such as soya beans or pulses) that have been milled, blended, pre-cooked by extrusion or roasting, and fortified with a premix of adequate amount and with a wide range of vitamins and minerals (UNHCR/WFP 2011 guidelines). In order to overcome constraints with earlier formulations (bulky, poor absorption, incomplete range of vitamins and minerals), **improved FBFs** now include milk, oil, sugar and a more comprehensive vitamin and mineral profile and some ingredients are specially processed to decrease the anti-nutrient properties.

Micronutrient powders (MNPs) are small sachets containing a micronutrient mix that are added to solid or semi-solid foods after preparation and prior to consumption. They are tasteless, odourless and easily dissolvable in most hot foods. MNPs do not provide energy, but do provide 1 RNI (the FAO/WHO recommended daily intake) of each micronutrient per dose. Most countries use the 15 micronutrient formulation.

Detailed descriptions and proposed uses for a number of different specialised foods are provided in the Specialised Nutritious Foods Sheet in Appendix C. The number of manufacturers producing these improved specialised foods is growing therefore not all the current products or manufacturers are included in the Specialised Nutritious Foods Sheet.

Specialised foods used in treatment and prevention programmes are intended to meet the nutrient gap (the difference between what is required and what is currently consumed in nutrient contents and energy) required for catch-up growth and repair (in the case of treatment programmes) or the nutrient gap required for normal growth (in the case of prevention programmes). They are supplementary and are not intended to replace normal food intake or undermine household practice of optimal infant and young child feeding patterns and breastfeeding. However in some special, extreme emergency situations supplementary foods may need to be replacement diets, particularly in the early stages of an emergency.

Some specialised foods can be used for more than one type of programme (e.g., Super Cereal Plus), however the ration size for prevention and treatment protocols have been standardized for the different programme aims. Adjustments to the ration sizes are not recommended. SBCC to beneficiaries, including community sensitization, should accompany provision of all specialised nutritious foods to help ensure targeted communities are aware of purpose of and any difference in ration size – particularly if specialised foods are used for multiple programs. Take-home rations should be provided for both prevention and treatment unless there is a clear rationale for on-site (wet) feeding (i.e., extreme security issues or lack of access to cooking materials).

²⁶ WFP has renamed its fortified blended foods as follows: CSB+=CSB Super Cereal; CSB++=CSB Super Cereal Plus; WSB+=WSB Super Cereal; WSB++=WSB Super Cereal Plus, RSB+=RSB Super Cereal; RSB++=RSB Super Cereal Plus

While specialised foods may be selected appropriately for target groups and programme objectives, in practice there may be issues related to production/availability and pipeline for specialised nutrition foods, particularly in large-scale emergencies. As a result, secondary recommendations for specialised foods (e.g., ½ sachet of RUSF instead of a medium quantity LNS) or use of multiple specialised foods (e.g., using Super Cereal Plus and RUSF for treatment) may be necessary. For recommendations on modified dosages in exceptional circumstances (i.e. in the absence of an SFP and/or OTP) see Appendix D.

Table 2: Recommended Specialised Nutritious Foods and Alternatives

TARGET GROUPS	PRIMARY RECOMMENDATION	INTERIM / ALTERNATIVE*
<i>Treatment of MAM</i>		
6-59 months	RUSF or Super Cereal Plus	Super Cereal/oil/sugar**
PLW	Super Cereal/oil/sugar	Super Cereal Plus
Older Children***	Super Cereal/oil/sugar	RUSF or Super Cereal Plus
<i>Prevention of MAM</i>		
6-23 or 59 months	Super Cereal Plus LNS medium quantity RUSF†	Super Cereal/oil/sugar or ½ sachets RUSF (i.e. same as medium quantity but packaged as large quantity)
PLW	Super Cereal/oil/sugar	LNS medium quantity

*These specialised foods should only be used on an interim basis if the primary option is not immediately available or if distribution of different specialised foods for different target groups is not possible due to programme delivery constraints.

**Assumes Super Cereal is premixed with oil and sugar

***Not included in Specialised Nutritious Foods Sheet, Appendix C

†Only in situations where supplement is the primary source of available food

IV. Programme Linkages for Prevention of Acute Malnutrition and Management of MAM in Emergencies

This decision tool and guidance are specific to programming for the prevention of acute malnutrition and treatment of MAM. At the same time, it is recognised that preventing and addressing undernutrition requires multi-sectoral action and that there are other programme linkages for acute malnutrition and MAM in emergencies, including interventions to manage SAM, strengthen IYCF-E, address health, water, sanitation and hygiene and food insecurity. Illness, food insecurity and suboptimal feeding practices influence the effectiveness of SAM and MAM interventions and therefore any emergency nutrition response should be coordinated with these other programmes when appropriate and advocate for them when necessary. Broad outlines for minimum standards in each of these areas are found in the Sphere Handbook (2011).

1. Severe acute malnutrition (SAM)

In line with the internationally accepted recommendation to implement CMAM, the management of MAM should be linked with the management of SAM wherever possible in emergencies.^{27,28} Linkages at the health service and at the community levels are essential in emergencies to take care of the increased numbers of acutely malnourished children. Community sensitisation and mobilisation, community screening and referral systems should be established jointly between MAM and SAM programming. Where possible, training and other programme aspects should be undertaken jointly. Referral mechanisms between acute malnutrition prevention and management of MAM and SAM activities are also very important and should be established as part of the nutrition response. This link is especially critical when it is not possible to have both OTP to treat SAM and TSFP to treat MAM at community level in an emergency. Under exceptional circumstances, and in order to avoid preventable mortality, expanded admission criteria that would enable the admittance of children classified with MAM in an OTP or children classified with SAM into an SFP. Appendix D outlines temporary options for treating acute malnutrition in the absence of a TSFP and/or OTP.

2. Infant and Young Child Feeding (IYCF-E)

It is important to address IYCF-E as part of the prevention of acute malnutrition and treatment of MAM intervention, particularly to emphasize exclusive and continued breastfeeding and optimal complementary feeding in children 6-23 months of age. There are a number of different contact points within CMAM for meeting with mothers/caregivers to discuss and support recommended infant and young child feeding practices. It is also important to include basic information on infant and young child feeding in an HIV context as well as routine testing for HIV in SAM and MAM programmes in countries with a high HIV prevalence.²⁹

3. Health and Water/Sanitation

Childhood illness is a contributing cause to acute malnutrition. Early and accelerated management of sanitation, hygiene, water sources, and health programs for common childhood illness (e.g., diarrhoea, measles) should augment the management of acute malnutrition during an emergency. Feeding centers and distribution sites should include access to safe water for drinking and for hand-washing.

4. Food Security and Livelihood Programmes

Household food insecurity has a significant impact on the effectiveness of prevention of acute malnutrition and treatment of MAM programmes. In the absence of household food security or livelihood interventions, there is little likelihood to prevent nutritional

²⁷ Community Management of Severe Acute Malnutrition, WHO, WFP, UNS/SCN, UNICEF Joint Statement, 2007

²⁸ CTC Manual, Valid International, 2006

²⁹ UNICEF Programme Guidance, 2011

deterioration over the course of the emergency. Therefore where food insecurity is a result of an emergency or exists prior to the emergency, resources should be spent on nutrition interventions for prevention of acute malnutrition or treatment of MAM only when a GFD or equivalent transfer in cash or voucher is in place.³⁰

A number of different options to improve food security and to prevent livelihood erosion exist such as:

- market-based interventions can be implemented to ensure food remains affordable
- cash transfers and vouchers can be provided to ensure families have sufficient incomes to purchase or to access food, or
- GFD can be provided where food is unavailable or unaffordable in emergencies.

Algorithms have been developed to identify the appropriate modality in different settings.³¹ When the GFD is not available or insufficient, advocacy for effectively addressing food insecurity will be a crucial part of the emergency nutrition response. However, changes to the nutrition response based on an unsatisfactory food insecurity response are not recommended.

V. Evaluation of the MAM Decision Tool

This is the second version of the MAM Decision Tool and Guidance. As appropriate, revisions and updates will be made to the tool on an as needed basis. An evaluation template is provided in Appendix 4. Please provide comments on the use of the tool to the GNC at gnc@unicef.org.

Current Task Force Members:

Erin Boyd, USAID/OFDA
Sarah Butler, Save the Children
Anne-Dominique Israel, ACF
Lynnda Kiess, WFP
Mark Phelan, GOAL US
Diane Holland, UNICEF
Leisel Talley, CDC
Caroline Wilkinson, UNHCR
Britta Schumacher, WFP

Contributors to the document included: Margot van der Velden (WFP), Karin Lapping (Save US), Elisa Dominguez (ACF), Dolores Rio (UNICEF)

Reviewers of the document included: Mary Arimond (UC Davis), Hedwig Deconnick (FANTA), Nicky Dent (Valid), Juliane Friedrich (ECHO), Josephine Ippe (GNC), Julia Krasevec (UNICEF) and Noel Zagre (UNICEF)

³⁰ UNHCR Guidance 2011

³¹ Alpha value, WFP, 2011

Annex D is based on a guidance note entitled 'Options for Exceptional Community Based Management of Acute Malnutrition Programming in Emergencies' which was prepared by the following agencies after a meeting in Washington DC in June 2014: International Rescue Committee (IRC), Action Against Hunger (ACF-USA), UNICEF, USAID/Office of Foreign Disaster Assistance (OFDA), Center for Disease Control (CDC), International Medical Corps (IMC), Save the Children.

VI. Appendices















APPENDIX A: RISK SCORING

Risk of Deterioration	Analysis	Score	Sum Score	Risk Category
Increased morbidity (Acute watery diarrhea (AWD), measles, ARI)	High	3		Score 7-9: High Score 4-6: Medium Score ≤ 3: Low
	Medium	2		
	Low	1		
Food insecurity	High	4		
	Medium High	3		
	Medium Low	2		
	Low	1		
Significant population displacement	Yes	1		
	No	0		
Population density	Yes	1		
	No	0		

APPENDIX B: DETERMINING PROGRAMME RECOMMENDATION

GAM prevalence (pre-existing vulnerability)	Risk level		Programme recommendation
High	High	—————▶	Prevention and Treatment
	Medium	—————▶	Prevention and Treatment
	Low	—————▶	Prevention and Treatment
Medium	High	—————▶	Prevention and Treatment
	Medium	—————▶	Prevention and Treatment
	Low	—————▶	Treatment ; and prevention, if appropriate
Low	High	—————▶	Prevention; and treatment, if appropriate
	Medium	—————▶	Monitor situation; treat and prevent, if appropriate
	Low	—————▶	Monitor situation

APPENDIX C: SPECIALISED NUTRITIOUS FOODS SHEET (The list of products is not exhaustive as new products and producers exist and are emerging rapidly)

Objective	Treatment of Severe Acute Malnutrition	Treatment of Moderate Acute Malnutrition	Prevention of Malnutrition				Other	
			Acute malnutrition		Micronutrient and chronic malnutrition			
Generic Term	Ready-to-Use Therapeutic Foods (RUTF)	Ready-to-use Supplementary Foods (RUSF) <i>Large quantity*</i>	Fortified Blended Foods	Lipid-based Nutrient Supplements (LNS) <i>Medium quantity*</i>	Fortified Blended Food	Lipid-based Nutrient Supplements (LNS) <i>Small quantity*</i>	Vitamin & Mineral Powder	High Energy Biscuit (HEB)
Products*	 <p>RUTF Ready to Use Therapeutic Food Aliment Thérapeutique Prêt à l'Emploi (ATPE) For children >6months, with Severe Acute Malnutrition Pour les enfants atteints de Malnutrition Aiguë Sévère</p> <p>1 sachet = 500 kcal</p> <p>USAID RUTF Ready-to-Use Therapeutic Food</p>	 <p>RUSF Ready-to-Use Supplementary Food Supplément nutritionnel prêt à l'emploi</p> <p>plumpy'sup</p> <p>eeZeeRUSF</p>	 <p>Super Cereal (SC)/oil/sugar</p>  <p>Super Cereal Plus (SC+)</p>	 <p>LNS-MQ Lipid-based Nutrient Supplement - Medium Quantity Supplément nutritionnel à base de lipides - quantité moyenne</p> <p>eeZee50 LNS-MQ</p>	 <p>Super Cereal (SC)/oil/sugar</p>  <p>Super Cereal Plus (SC+)</p>	 <p>eeZee20</p>  <p>nutributter</p>	 <p>SPRINKLES</p> 	 <p>BP-5</p>  <p>NRG-5</p>  <p>Unicef High Protein Biscuits 400g</p>
Purpose	Treatment of uncomplicated severe acute malnutrition with continued breastfeeding	Supplement to treat moderate acute malnutrition with continued breastfeeding	Supplement to treat moderate acute malnutrition with continued breastfeeding	Supplement to the local diet for prevention of acute malnutrition with continued breastfeeding; prevention of micronutrient deficiency and stunting	Supplement to the local diet for prevention of acute malnutrition with continued breastfeeding; prevention of micronutrient deficiency and stunting	Supplement to the local diet with continued breastfeeding to prevent micronutrient deficiency and stunting	Fortification of home prepared foods, just before consumption, with continued breastfeeding to prevent micronutrient deficiencies	Temporary meal replacement; prevention for acute malnutrition and micronutrient deficiencies for vulnerable groups

Target Group	6-59 months <i>Older children and adults including HIV+</i>	6-59 months <i>Others including PLW, HIV+ adults</i>	6-59 months: SC+ <i>Others including PLW, HIV+ adults: SC</i>	6-23 (or 6-36) months ³²	6-23 (or 6-59) months ³³ : SC+ <i>PLW: SC</i>	6-23 months	6-59 months	General population, vulnerable groups
Energy & Nutrient/ Ration or Dose	500 kcal 12.5g protein 31.9 g fat	535 kcal 13g protein 31 g fat	787kcal 33gprotein 20g fat	265kcal 6g protein 16g fat	787kcal 33gprotein 20g fat	110kcal 2.6g protein 7g fat	<u>Daily supplement: RDI:</u> A-400ug, C-30ug, D-5ug, E-5ug, B1-0.5, B2-0.5ug, niacin-6ug, B6-0.5ug, B12-0.9ug, folic acid-150ug, Iron-10ug, zinc-4.1, copper-0.56, iodine-90ug, selenium-17ug	1,800 kcal/400g (biscuits) 2,300kcal/500g (BP-5, NRG-5)
Packaging	Sachet = 92g	Sachet = 100g	SC: 25 kg bag SC+: 1.5kg bag	Sachet = 50g	SC: 25 kg bag SC+: 1.5kg bag	Sachet = 20g	Sachet = 1g	400g pks: HEB 500g pks: NRG-5, BP-5
Shelf Life	24 months	24 months	SC: 12 months SC+: 18 months	24 months	SC: 12 months SC+: 18 months	24 months	24 months	5 years
Ration or Dose	According to weight: 6-59m: 200kcal/kg/day	1 sachet/day 100g/day	200g/day	1 sachet/day 50g/day	200g/day	1 sachet/day 20g/day	1 sachet/day 1g/day or 5g/day	Adults: 400g/day (HEB), 500g/day (NRG-5, BP-5)
Approx. Duration of Intervention	6-8 weeks	1-3 months	3-6 months	3-6 months	3-6 months	Up to 18 months	Up to 59 months	1 week as full diet 1 month for children
Cost/Dose/Day (USD)	0.36/sachet	0.29/day	SC: 0.11-16 / day SC+: 0.24/day	0.18/day	SC: 0.11-16 / day SC+: 0.24/day		0.028/day	2.84/day
Example Producers	Nutriset (Fr); Vitaset (DR); JB (Mad); Nutivita (I), Edesia (US); Diva (SA); Compact (N, I); Tabatchnick (US); Challenge (US), Mana (US), Insta (Ke); local producers	Nutriset (Fr); Edesia (US); Compact (I, N); Nutrivita (I); Four producers in Pakistan	Michiels fabrieken (B); CerFar (It); ProRata, Somill, J&C (SA); Export Trading, Rab(Mal)	Nutriset (Fr); Edesia (US); Compact (I, N); Nutrivita (I)	Michiels fabrieken (B); CerFar (It); ProRata, Somill, J&C (SA); Export Trading, Rab(Mal)	Nutriset (Fr); Edesia (US)	Global Health Initiative; DSM (Ch); Heinz (I); Hexagon (I); Piramal (I); Renata (Ban)	NRG-5/BP-5: MSI (D), Compact (N), Biscuits: Nuova Biscotti (I);

Abbreviations: B=Belgium, Ban=Bangladesh, Ch=Switzerland, D=Germany, DR=Dominican Republic, Fr=France, I=India, It=Italy, Ke=Kenya, Mad=Madagascar, Mal=Malawi, N=Norway, SA=South Africa, US=United States of America

Note: Refer to the decision tool and guidance note in using this product sheet and following the decisions made on what type of products to use

* Quantity is referring to kcals in most cases

GNC MAM Taskforce PRODUCT SHEET, updated March 2017

³² The default target group for prevention of acute malnutrition with LNS is children 6-23 months of age, but this may be expanded to children 6-36 months of age.

³³ The default target group for prevention of acute malnutrition with Super Cereal Plus is children 6-23 months of age, but this may be expanded to children 6-59 months of age.

APPENDIX D: OPTIONS FOR EXCEPTIONAL COMMUNITY BASED MANAGEMENT OF ACUTE MALNUTRITION PROGRAMMING IN EMERGENCIES

These options are meant to be explored in the context of strengthening quality and outreach of SAM and MAM treatment programmes, interventions to prevent malnutrition, and health system strengthening. They describe minimum options to deliver services, with the intent to work towards implementation of the full package of treatment services in line with national and global standards.

These measures provide temporary options for treating acute malnutrition in the absence of an SFP and/or OTP, and are meant for acute crises only (rapid onset or protracted crisis with a significant unexpected spike in caseload). It is intentionally flexible in order to allow for context modifications, and is meant to be

Key messages and summary of recommendations for children 6-59 months

- In the absence of a Supplementary Feeding Program (SFP) or an adequate supply of Ready-to-Use Supplementary Food (RUSF), children with Moderate Acute Malnutrition (MAM) can temporarily be treated with Ready-to-Use Therapeutic Food (RUTF) in the Out-Patient Therapeutic Program (OTP) provided that there are sufficient and qualified staff and supplies to handle the extra patient load (see Recommendation A).
 - Admission criteria into the OTP is expanded to $<125\text{mm}$.
 - Discharge criteria from the OTP is $\geq 125\text{mm}$ and no oedema on two consecutive visits, with a 3 week minimum stay.
 - Children $<115\text{mm}$ are treated with 2 RUTF sachets/day, and children $115\text{-}<125\text{mm}$ are treated with 1 RUTF sachet/day.
- In the absence of an OTP or an adequate supply of RUTF, RUSF can be used temporarily at the dosage recommended for RUTF as a lifesaving measure for SAM children (see Recommendation B).
 - Admission criteria into the SFP is expanded to include $<115\text{mm}$.
 - Discharge criteria from the SFP is $\geq 125\text{mm}$ and no oedema on two consecutive visits, with a 3 week minimum stay.
 - Children $<115\text{mm}$ are treated with 2 RUSF sachets/day, and children $115\text{-}<125\text{mm}$ are treated with 1 RUSF sachet/day.
- In the absence of OTP and targeted SFPs, children with a Mid-Upper Arm Circumference (MUAC) of $<125\text{mm}$ can be treated with RUTF or RUSF, according to the above guidelines, until additional staff and essential supplies are in place to set up the programs (see Recommendation C).
 - Admission can be based on MUAC alone ($< 115\text{ mm}$ for SAM, $\geq 115\text{ mm}$ and $< 125\text{ mm}$ for MAM), often used at community level, and with increasing capacity and in health posts, screening can be based also on Weight-for-Height ($< -3\text{ z-scores}$ for SAM, ≥ -3 and $< -2\text{ z-scores}$ for MAM)

adapted at country level through the coordination mechanism of the nutrition cluster. These options provided may not reflect all the possible configurations that may possible in different contexts, these

options are resource-dependent, to be used only when the RUTF/RUSF pipeline or buffer stock is sufficient, to ensure that SAM treatment is not compromised. The options mainly focus on outpatient treatment, as in-patients require residential care that is normally provided at health facility level. In emergency, specialised structure may be established (e.g., tent, school classroom, etc.) either to accommodate the additional case-load or to replace health posts, if not available or accessible. **Ultimately, the recommendations provide options for agencies operating in emergencies when the risk of mortality from inaction is higher than the risk from action.**

The alternative measures should only be applied in very specific contexts where there are very high needs, high mortality, with a significant increase in rates of acute malnutrition.

Experience demonstrates that time-bound, flexible provision of services, alternative use of specific nutrition products and the shifting of basic admission/discharge criteria may be appropriate and necessary in certain situations. This is particularly so when barriers to providing the full continuum of care for acutely malnourished children, such as supply or capacity constraints, can be addressed through these temporary measures. Please see section 4 for examples on practical use of a modified approach to CMAM programming.

1. Recommendations

The recommendation is to use expanded admissions criteria to admit children 6-59 months classified with MAM into the OTP (MUAC <125mm), or SAM into SFP (<125mm without lower limit), as a temporary measure in emergency situations when either SFP or OTP are not available (e.g., in communities where there are health services that could be built upon or through Rapid Response Mechanisms). The dosage of RUTF/RUSF recommended in this document is supported by data from the ComPAS Stage 1 study³⁴.

The rationale³⁵ for expanding the admissions criteria include:

- RUTF: nutrient content of RUTF is very similar to RUSF, and RUTF can therefore be provided, in an amount of 500 kcal/d (or 90-100g/d), to MAM children.
- RUSF: at similar dose of RUTF, RUSF has the potential to avert deaths in SAM children when RUTF is not available.³⁶
- Expand admission criteria for OTP allows identify and treat patients before malnutrition become life-threatening.
- In contexts with high morbidity or food insecurity, there is a high risk of relapse if children are sent home in the absence of a SFP, i.e. when they may still suffer from MAM.

³⁴ ComPAS analysed the growth trends and energy requirements of 8,000 acutely malnourished children in 5 countries and determined that 2 sachets of RUTF meets total energy needs for children < 115 mm, and 1 sachet of RUTF meets half the energy needs for children 115-125 mm. *Bailey J., Chase R., Kerac M., Briend A., Manary M., Opondo C., Gallagher M., and Kim A.* Combined protocol for SAM/MAM treatment: the ComPAS study.

³⁵ Rationales are operationally driven and not yet based on systematic evidence reviews.

³⁶ Based on the Harmonization of lipid-based products (<http://nutritioncluster.net/wp-content/uploads/sites/4/2016/10/Harmonization-of-lipid-based-products-UNICEF-WFP-USAID.pdf>), two sachets of LNS-MQ are equivalent to one sachet of RUSF (LNS-LQ).

- The following recommendations each apply to a different scenario – please see section 4 for field experiences in different countries in applying expanded admission criteria.

Note: Acknowledging that children with complicated SAM need to be linked to appropriate medical care, which is normally delivered at health facility level, it is recognised that some of the suggested approaches are not necessary ideal and efforts should be made to link up to health services. However, in the event that this referral is not possible (e.g., health system is not functional and/or does not have reach) these are triage options.

Recommendation A: In the context where there is an OTP but not a SFP

Admission criteria	Children with MUAC < 115mm* and/or grade + or grade ++ oedema without medical complications	Children with MUAC 115mm -<125mm* without medical complications	Grade +++ oedema and/or children with other medical complications Infants <6 months and infants >6 months <4 kg
Organisation	Seen at the OTP and given priority treatment.	Can be added if sufficient extra staff and RUTF supplies assured and logistics (adequate warehousing, transport) are in place).	If no in-patient facility (IPF) is available treat at OTP but make sure that OTP staff/community health workers visit children on daily basis to ensure that care is provided – do not expose to transport trauma if IPF is a long distance away or the staff of the IPF have not been trained. Refer to stabilization center. ³⁷
RUTF Ration	If no supply limitation: Standard dosage (as per national protocol) In case of supply limitation: RUTF: 14 sachets/per child/week (2 per day).	RUTF: 7 sachets/per child/week (1 per day).	
Systematic treatment	Follow national guidelines for OTP: Deworming Amoxicillin Vaccinations Malaria treatment.	Follow national guidelines for SFP.	
Discharge criteria	-MUAC ≥125mm for two consecutive measurements -Clinically well -Minimum stay of 3 weeks -No oedema for 2 weeks.	-MUAC ≥125mm for two consecutive measurements -Clinically well -Minimum stay of 3 weeks.	

³⁷ In patient facility can provide the whole treatment for SAM cases or just the stabilization.

*Admissions can also be based on Weight-for-Height (< -3 z-scores for SAM, < -2 z-scores for MAM) wherever this is already being done. The use of MUAC alone is for simplification when the use of WFH is not feasible.

† Where possible, follow up visits should be done weekly

Recommendation B: In the context where there is a SFP but no OTP

Admission Criteria	Children < 115mm* and/or grade + or grade ++ oedema and without medical complications	Children 115mm - < 125mm* without medical complications	Grade +++ oedema and/or children with other medical complications Infants <6 months and infants >6 months <4 kg
Organisation†	Seen at the SFP site and given priority treatment.	Regular SFP continues.	If no IPF available treat at SFP but make provisions that OTP staff/community health workers visit children on daily basis provisions for DAILY to ensure that care is provided care – do not expose to transport trauma if IPF is a long distance away or the staff of the IPF have not been trained.
*RUSF Ration	RUSF: 14 sachets/per child/week (2 per day).	RUSF: 7 sachets/per child/week (1 per day).	Refer to stabilization centre. If no IPF available, refer to nearest paediatric ward.
Systematic treatment	Follow national guidelines for OTP: if technical capacity and supplies (staff) are available / if health services are available. Deworming Amoxicillin Vaccinations Malaria treatment.	Follow national guidelines for SFP.	
Discharge criteria	-MUAC \geq 125mm for two consecutive measurements -Clinically well -Minimum stay of 3 weeks -No oedema for 2 weeks.	-MUAC \geq 125mm for two consecutive measurements -Clinically well -Minimum stay of 3 weeks.	

*Admissions can also be based on Weight-for-height (< -3 z-scores for SAM, < -2 z-scores for MAM) wherever this is already being done. The use of MUAC alone is for simplification when the use of WFH is not feasible.

† Where possible, follow up visits should be done weekly

Recommendation C: In the context where there is no OTP or SFP

Where there is no OTP or SFP, which programme to implement will depend on whichever organization has first access to the locations – these could be agencies seeking to establish long term programs or deployed on a rapid response mission. In these situations, effort should be made to ensure appropriate nutritious products are available for treatment of SAM and MAM respectively, however, if both cannot be obtained, the commodity (either RUTF or RUSF) available should be considered for treatment of both SAM and MAM, if available in sufficient quantities. Efforts should be made to incorporate SAM and MAM treatment into existing functional health services to ensure sustainability as for national protocol. If the programme is being run through the health facility or mobile teams with sustained access, routine medications should be supplied as the likelihood of completing the routine medication schedule is higher. In case where there is not sustained access to the population and the services are being delivered on a one off rapid response mechanism and there is no technical capacity for the administration of routine medication, the staff involved should be trained at least on the provision of therapeutic/supplementary foods. When logistics, supplies and staff capacity improve then the full treatment services should be provided based on national protocol.

Admission Criteria	Children < 115mm and/or grade + or grade ++ oedema and without medical complications	Children 115mm - < 125mm without medical complications	Grade +++ oedema and/or children with other medical complications Infants <6 months and infants >6 months <4 kg
Organisation	Schedule weekly follow up.	Schedule weekly follow up.	If no IPF available treat at SFP but make provisions that OTP staff/community health workers visit children on daily basis provisions for DAILY to ensure that care is provided - do not expose to transport trauma if IPF is a long distance away or the staff of the IPF have not been trained.
*RUTF or RUSF Ration	RUTF or RUSF: 14 sachets/per child/week (2 per day).	RUTF or RUSF: 7 sachets/per child/week (1 per day).	Refer to stabilization centre. If no IPF available, refer to nearest paediatric ward.
Systematic treatment	None (until CMAM services are set up and implemented as per national protocols).	None (until CMAM services are set-up and implemented as per national protocols).	
Discharge criteria	-MUAC \geq 125mm for two consecutive measurements -Clinically well	-MUAC \geq 125mm for two consecutive measurements -Clinically well -Minimum stay of 3 weeks.	

	-Minimum stay of 3 weeks -No oedema for 2 weeks.		
--	---	--	--

*depends on what is available

These recommendations for alternative measures for treatment of either SAM or MAM are temporary. These recommendations are not intended to undermine national guidelines or emergency guidance notes from the nutrition cluster, and are to be adapted in situations when targeted SFPs (for treatment of MAM) or in-patient treatment/OTP for treatment of SAM are temporarily unavailable or not yet set up. **The Government with the nutrition stakeholders have to agree through the nutrition cluster on 1) the circumstances that allow for activation of a revised protocol at a significant scale, 2) the maximum timeframe during which these alternative measures are to be applied and 3) how the transition to the national protocol will be ensured.** The alternative measures should only be applied in very specific contexts where there are very high needs, high mortality, with high number of MAM cases deteriorating into SAM cases and where it is not immediately possible to set up full CMAM programs, however, there is an opportunity to intervene with one intervention/product in the interim. All efforts should be made to ensure that both SAM and MAM services are put in place and to transition back to normal programming in line with national guidelines. Reaching consensus on the activation of a revised protocol is highly encouraged during the first meeting in which a case is presented in effort to support immediate action- to be accompanied by clear contingency/scenario planning on how the need to apply the expanded criteria may evolve in relation to the emergency. The potential use of this interim operational guidance should also be discussed as part of nutrition cluster/sector preparedness.

The potential need to implement the expanded criteria needs to be weighed against the feasibility of implementing it. Consideration needs to be given to availability of supplies, the human resources available (both the technical capacity as well as the total number of staff), logistic implications and patient flow at treatment sites in order to adequately serve the increased caseloads. Involved agencies have to be aware of the types of specialized nutritious products that are available and can be used for treatment of SAM and MAM respectively. Reporting mechanisms should be established in order to properly analyse the data from the sites using the expanded criteria in order to account for supplies (of either RUTF or RUSF) vis-a-vis the number of children admitted. Reporting for those treated using the expanded criteria should be separate from regular reporting as recovery of individuals treated through this interim operational guidance will be different from those treated as per CMAM protocols. The reporting tools should also allow for analysis of performance (cure rate, death rate, defaulter rate) disaggregated for children admitted with MUAC <115mm and MUAC of 115mm - < 125mm, where and when feasible.

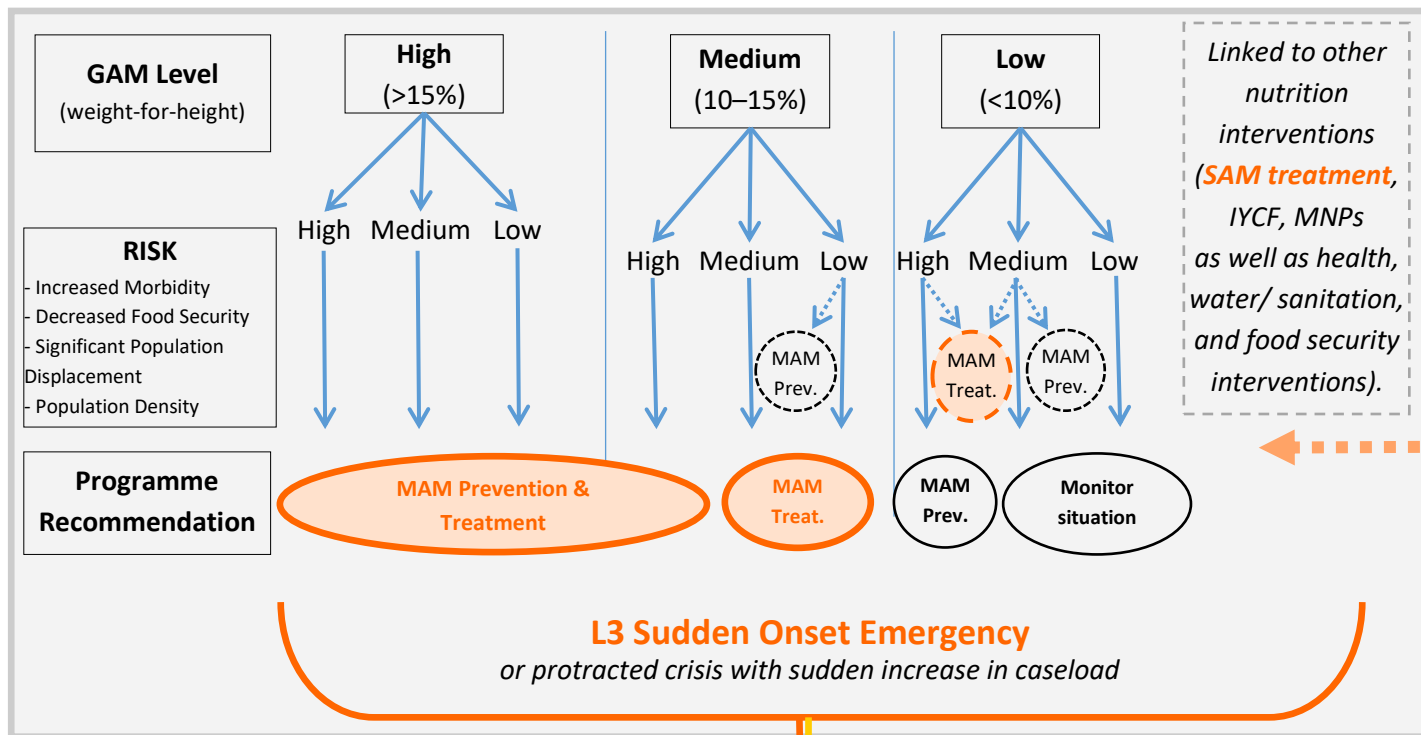
Caretakers should be informed on the condition of SAM and MAM and the appropriate use of products to treat SAM and MAM, particularly when there is a transition from one product to another under this interim operational guidance. It is imperative that interventions are put in place for the prevention of acute malnutrition along with these temporary measures to treat malnutrition. Nutrition specific interventions such as promotion of infant and young child feeding, blanket supplementary feeding for children 6-23 months and pregnant and lactating women, when indicated, as well as nutrition sensitive

measures such as WASH, health and programs addressing household food insecurity (e.g. general food distribution) need to be given priority in the emergency response- in particular where access is limited.

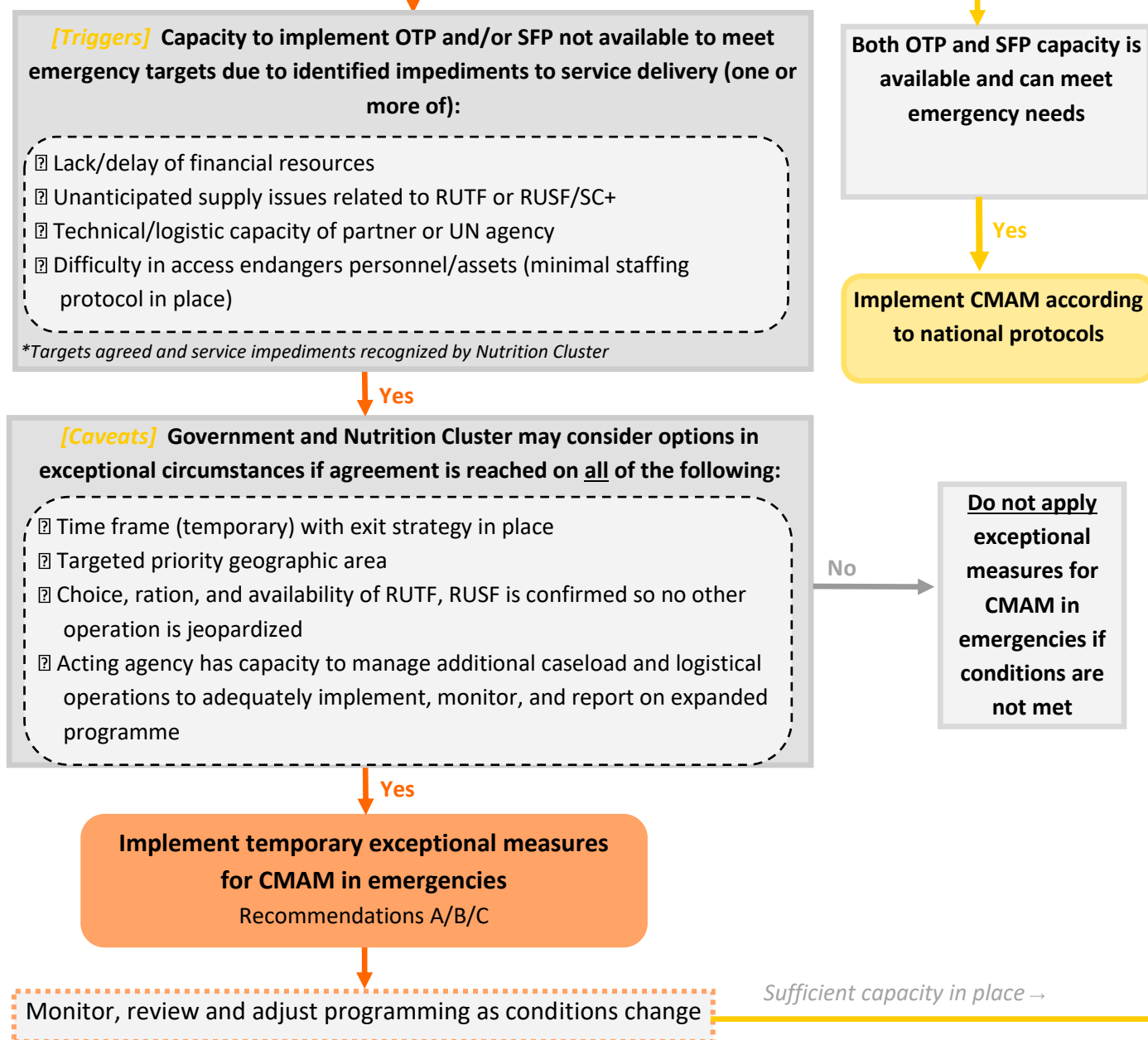
2. Steps to decide on exceptional programming options in emergencies

The following flow chart illustrates the decision making process nutrition clusters/sectors should undertake in order to obtain a consensus on adopting the exceptional CMAM programming options. It should be linked to the general process of identifying the most appropriate and feasible programme strategy to address acute malnutrition in a particular emergency setting, as illustrated in *Figure 2 of the MAM decision tool for emergencies*.

Steps to decide on exceptional CMAM programming options in emergencies



*Source: "Moderate Acute Malnutrition: A Decision Tool for Emergencies" (Fig 2, Pg 9)



3. Summary of Scenarios and Options

Scenario	Recommendation	Exit Criteria
SAM + MAM treatment available	Continue with national protocols	
SAM treatment available, but no MAM treatment	Use expanded admissions criteria guidelines above, with RUTF* as nutritional treatment and both SAM and MAM treated in the OTP – treat at different times or places, if feasible *In case of no RUSF, use RUTF See Recommendation A	Transition to regular protocol when targeted SFP becomes available
MAM treatment available, but no SAM treatment	Use expanded admissions criteria guidelines above, with RUSF as nutritional treatment, with both SAM and MAM treated in the SFP *In case of no RUTF, use RUSF See Recommendation B	Transition to regular protocol when OTP becomes available
Neither SAM or MAM treatment available	As short-term measure, implement Recommendation C until the necessary health staff and essential medicines are in place to operate the full program of CMAM See Recommendation C	Transition to regular protocol when both OTP and SFP become available

The recommendations made are based on available information and ongoing efforts to document operational experiences will further build the evidence base. The guidance note and recommendations will be updated and further refined based on new findings.

4. Country Experiences with Expanded Admission Criteria

The use of RUTF has been tested for the treatment of MAM in several contexts (e.g. Niger 2006, Pakistan 2010, Sierra Leone 2013, South Sudan 2014) with successful results. Ready-to-use therapeutic food (RUTF) for the treatment of children with SAM includes milk protein (whey and dried skimmed milk). Treating MAM with a ready-to-use supplementary food (RUSF) that contains whey has been shown to have better outcomes (sustained recovery) than soy-based RUSF or Super Cereal Plus³⁸

Sierra Leone, 2013: Washington University initiated a clinical trial to test the efficacy of an integrated protocol for the treatment of SAM and MAM using one product (RUTF) at different doses for SAM (175 kcal/kg/day) and MAM (75 kcal/kg/day), against the standard protocol of OTP with RUTF and SFP with CSB++. Children were discharged at a MUAC of 125mm with a package of preventive health care and Infant and Young Child Feeding (IYCF) support. Preliminary results from the trial indicate the integrated program had a reduced caseload of SAM, due to earlier treatment as MAM, with a higher overall recovery rate (85% vs. 80%, $p=0.002$) and a higher coverage (75% vs. 65%). The integrated program was also less costly and mothers were more likely to report being very satisfied.

Niger, 2006: MSF treated SAM and MAM cases together in a large-scale therapeutic feeding program in Maradi³⁹. Moderately malnourished children were treated with the same medical and nutritional protocols as SAM children, except no systematic antibiotic was given at admission to MAM patients. No distinction was made between the treatment of SAM and MAM, only between complicated and uncomplicated acute malnutrition.

Guidelines used by MSF in Niger:

- Admission: weight-for-height ratio <80% of the NCHS median, and/or MUAC <110mm, and/or bilateral pitting oedema
- Dosage: 2 RUTF/day (no distinction between SAM and MAM)
- Discharge: >80% of the NCHS median for two consecutive visits
- Results: Cured (96.4%), Death (0.1%), Default (3.4%), Non-respondent (0.1%)

Pakistan, 2010: OFDA issued a recommendation to all its partners to adopt expanded admissions criteria and when RUSF was not available, to treat MAM with RUTF, in order to rapidly expand selective feeding programs in response to the flood emergency.

Guidelines used by OFDA in Pakistan:

- Admission: MUAC <125mm
- Dosage: <115mm- 2 RUTF/day, between 115mm - <125mm- 1 sachet of RUSF (or RUTF until the NGO receives RUSF)
- Additional guidance:

³⁸ Chang, C, Trehan I, Wang R, Thakwalakwa C, Maleta K, Deitchler M, Manary M. *Children successfully treated for moderate acute malnutrition remain at risk for malnutrition and death in the subsequent year after recovery.* Journal of Nutrition. 2013.

³⁹ Defourny I, Seroux G, Abdelkader I, Harczi G. *Management of moderate acute malnutrition with RUTF in Niger.* Field Exchange 31, September 2007.

- If there is no register book, use a simple one from the local market and just record the child's name, mother's name, contact information, (see the national guidelines for registration information)
- If there are no medical staff hired yet, do this exercise in the interim and once you have the required staff and essential medicines in place, you can then treat the children with the full OTP protocol
- Severely malnourished children with medical complications should be referred immediately to a stabilization centre or paediatric ward.

South Sudan, 2014: MSF is using expanded admissions criteria and treating all children MUAC <125mm with RUTF under a simplified (MUAC-only) protocol. MSF has experience implementing simplified protocols in acute crises like Somalia (2011), Yida, South Sudan (2012), and Timbuktu, Mali (2012) as well as in more chronic emergencies like Bihar, India (2009-present) and Burkina Faso (2007-2011).

Guidelines recommended by MSF:

- Admission: MUAC <125mm or presence of bilateral oedema (+)
- Dosage: <115mm- 2 RUTF/day, between 115mm - <125mm- 1 RUTF or RUSF/day
- Discharge: MUAC ≥125 mm for 2 consecutive measurements, clinically well, no oedema for 1 week, minimum 3 weeks in the program

MSF retrospective analysis (2012) in Bentiu, South Sudan found that using MUAC <125mm detects 81.1% of total (MUAC + WHZ) SAM caseload.

Nigeria (Borno State), 2016: Since 2015, MSF has opened both inpatient and ambulatory therapeutic feeding centres in the different part of the country. In 2016, nutritional screening in Borno State revealed acute malnutrition levels of up to 50 percent among children aged below 5 years. Given the immense needs and complex environment, MSF have had to simplify the CMAM approach. This approach build on prior experience from other countries, but have never used in such a large-scale emergency. For instance, the admission criteria was expanded in order to identify and treat patients before malnutrition become life threatening. In addition, considering the high insecurity situation, 1-month supply of RUTF was provided, instead of the standard 1 to 2 week dose⁴⁰.

⁴⁰ Hanson K. Treating undernutrition in Borno State, Nigeria: Adapting strategy in Emergency.
<http://globalhealth.thelancet.com/2017/01/06/treating-undernutrition-borno-state-nigeria-adapting-strategy-emergencies>