

NEPAL Integrated Management of Acute Malnutrition (IMAM) Guideline Draft 7: 8 February 2016

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Foreword

In 2008, inspired by the global progress made on community-based management of acute malnutrition (CMAM) and the issuance of the WHO/UNICEF/WFP Standing Committee on Nutrition (SCN) joint statement in 2007, UNICEF and the Ministry of Health and Population (MoHP) Nepal conducted a feasibility study of the approach. The recommendations from the study led to a five district pilot of CMAM in districts with high prevalence in a cross section of eco-geographical zones. Implementation was conducted in collaboration with the national, regional and district health authorities, working through the existing health structures and with the health staff (hospital and health facilities' staff and FCHVs) as well as the local NGOs and the community-based organisations (e.g. women's groups).

The aim of the pilot was to test different implementation strategies, evaluate outcomes and generate lessons learned for future expansion of the CMAM approach. Until this time, the treatment of acute malnutrition in Nepal was carried out mainly on an inpatient basis in Nutrition Rehabilitation Homes (NRHs) supported by the Nepal Youth Opportunity Foundation (NYOF). Assistance to families of malnourished children focused mainly on household counselling on hygiene, feeding practices and balanced diet, as well as on treatment with a mix of therapeutic milk (WHO recipe) and food. The NRH approach required the child and his/her caretaker to stay in the NRH for a minimum of four weeks, which posed difficulties for caretakers with other children as well as work responsibilities, and thus led to a high default rate. In addition, the NRHs could not address malnutrition on a large scale due to their limited number and low capacity at each unit. The outcomes of the CMAM pilot were evaluated in 2011¹ and found to be very positive. The evaluation indicated that the CMAM approach offered:

- Ability to reach more children with services for the management of acute malnutrition;
- Effective treatment outcomes; and
- A service that could be sustained within the regular health service with existing human resources and facilities.

As a result, the MoHP Nepal has incorporated community-based management of severe acute malnutrition (SAM) into the National Health Sector Program II (NHSP II) that runs until 2017, and into the Multi-sector Nutrition Plan (MSNP) 2013-17², which was developed in 2011 and approved by the cabinet. Scale-up plans for community-based management of SAM are now under development and piloting of effective interventions to address MAM have also been included in the MSNP. The CMAM evaluation recommended that the approach improve links across the sectors and with malnutrition prevention strategies and programmes as part of a comprehensive approach. At the same time, both

¹ UNICEF 2011. Evaluation of Community Management of Acute Malnutrition (CMAM). Nepal country case study. UNICEF Evaluations Office, July 2011.

² Government of Nepal, National Planning Commission. Multi-Sector Nutrition Plan: For Accelerating the Reduction of Maternal and Child Undernutrition in Nepal 2013-2017 (2023).

the UNICEF CMAM pilot evaluation in 2011 and a joint review of the Mother and Child Health Care (MCHC) programme conducted by the MoHP, the Ministry of Education (MoE), and WFP in 2011 highlighted gaps in the management of moderate acute malnutrition (MAM) and recommended the development of national MAM guidelines. Thus, Integrated Management of Acute Malnutrition (IMAM) in Nepal was born.

The Government of Nepal (GoN) has strengthened its efforts to fight hunger since 2009, conscious of the role nutrition plays in national development outcomes. The Nutrition Assessment and Gap Analysis (NAGA) represented a first step in this direction and led the GoN to develop the MSNP 2012 to sustain improvements in the nutrition field. The plan represents a robust framework for the development of a healthy society with a competitive human capital, and it will contribute to break the vicious circle of poverty in the future. The MoHP/GoN is also a member of the lead group of the Global Scaling Up Nutrition (SUN) movement, with the MSNP representing the Government's commitment to that movement. A 'Declaration of Commitment for an Accelerated Improvement in Maternal and Child Nutrition' was also signed in 2012 by the GoN, UN, development partners, civil society and the private sector. Furthermore, a drafted Strategy for Infant and Young Child Feeding (2013-2017) calls for accelerated reduction of under nutrition in women and children as a high priority for the Health Nutrition and Population Sectoral Programme of Nepal. The scale-up of IMAM is one of the actions identified in the strategy for achieving this goal.

The IMAM guideline has been developed to meet the objectives of the MSNP 2012 and to reflect Nepal's commitment to accelerated improvements in maternal and child nutrition and the drafted strategy for Infant and Young Child Feeding. It incorporates the lessons from the CMAM pilot and MCHC review and is intended to be used by health and nutrition care providers (doctors, nurses and programme staff) working at all facility levels of health and nutrition service provision in Nepal, as well as by policy makers, academic and NGO staff. The technical protocols are based on the WHO protocols for inpatient management of SAM, standard CMAM protocols, WHO technical information on supplementary foods for the management of MAM and UN and Global Nutrition Cluster guidelines for the management of MAM. The guideline primarily covers the age group from 6-59 months (the most common age group affected by acute malnutrition) and infants. It aims to reflect a shift to a more integrated approach in which the services for SAM and MAM management sit clearly within and link to the existing structures and services. Hence the shift to the term Integrated Management of Acute malnutrition (IMAM). The guideline will be complemented by training materials that give more explanation, exercises and examples of the management of acute malnutrition using the IMAM approach.

The guideline is structured to give a basic introduction and principles of the IMAM approach. This is followed by a general section on assessment and classification of acute malnutrition. The guideline is then split into the major components of the IMAM approach: Community Mobilisation, Management of SAM (Inpatient and Outpatient) and Management of MAM. Programme monitoring and programme management are then covered jointly for all components and finally a section is included for implementation in an emergency context.

Rolling out of the guideline and the protocols will be guided by the Multi Sector Nutrition Plan and revised National Nutrition Policy and Strategy, and will prioritise districts for expansion according to the WHO thresholds, considering the burden of acute malnutrition in those districts.

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List of Terms

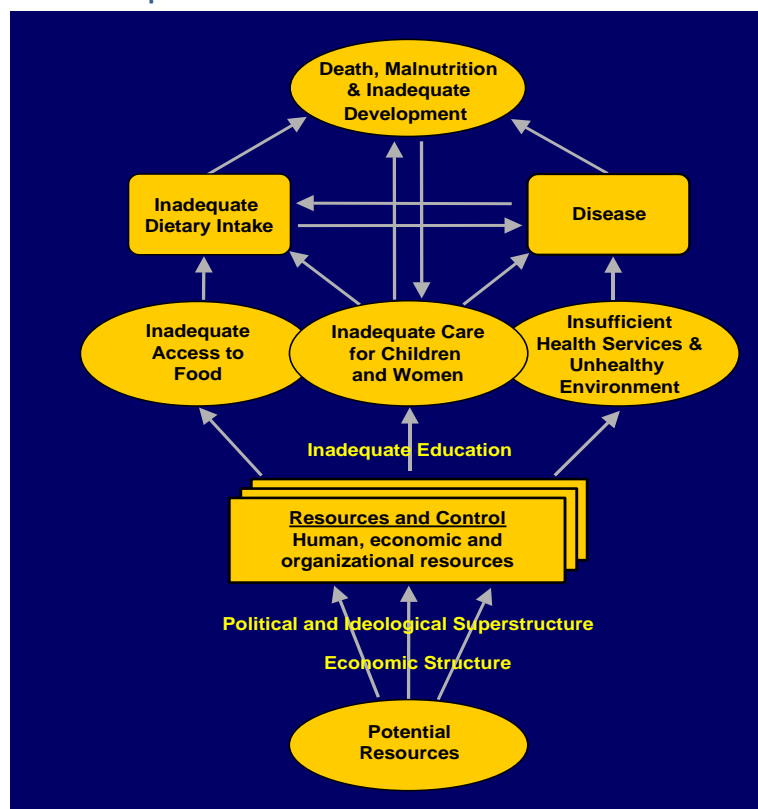
CHD/W	Child Health Day/Week
CB-IMNCI	Community-Based Integrated Management of Childhood Illness
CMAM	Community-Based Management of Acute Malnutrition
ENN	Emergency Nutrition Network
FBF	Fortified Blended Food
GAM	Global Acute Malnutrition
GMP	Growth Monitoring and Promotion
GNC	Global Nutrition Cluster
GoN	Government of Nepal
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HP	Health Post
IMAM	Integrated Management of Acute Malnutrition
ITC	Inpatient Therapeutic Care
IYCF	Infant and Young Child Feeding
MAM	Moderate Acute Malnutrition
MNPs	Micronutrient Powders
MoE	Ministry of Education
MoHP	Ministry of Health and Population
MSNP	Multi-sector Nutrition Plan
MUAC	Mid Upper Arm Circumference
NDHS	Nepal Demographic and Health Survey
NGO	Non-Governmental Organisation
NRH	Nutrition Rehabilitation Home
OTC	Outpatient Therapeutic Care
PHC	Primary Health Care
PICT	Provider Individual Counselling and Testing
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SC	Stabilisation Centre
SD	Standard Deviations (or Z-Scores)
SFP	Supplementary Feeding Programme
SHP	Sub Health Post
SUN	Scaling Up Nutrition
TSFP	Targeted Supplemental Feeding Program
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WHO	World Health Organisation
WHZ	Weight for Height Z-scores

1 Introduction

The consequences of malnutrition are serious and life-long, falling hardest on the very poor and on women and children. Overall in developing countries, nearly one-third of children are underweight or stunted (low height for age)³. Under nutrition interacts with repeated bouts of infectious disease; causing an estimated 3.5 million preventable maternal and child deaths annually⁴, and its economic costs in terms of lost national productivity and economic growth are huge. In all its forms, malnutrition accounts for more than 50 per cent of child mortality in Nepal based on WHO estimates. Malnourished children who do survive are more frequently ill and suffer the life-long consequences of impaired physical and cognitive development. These consequences translate to poor human resource capital and poor economic development.

The term malnutrition⁵ covers a range of short and long term conditions that result in physiological impairment caused by lack of (or excess of) nutrients in the body. The term malnutrition can include: i. Wasting and nutritional oedema (Acute Malnutrition) ii. Stunting (Chronic Malnutrition), iii. Intrauterine growth restriction leading to low birth weight iv. Micronutrient deficiencies and v. Overweight/obesity (Over nutrition). These conditions may be experienced over a scale of severity and are usually classified into moderate and severe forms. They may occur in isolation within an individual or in combination. The causes of under nutrition are multiple and context specific and are summarised in the below conceptual framework (Figure 1).

Figure 1. UNICEF conceptual framework of malnutrition



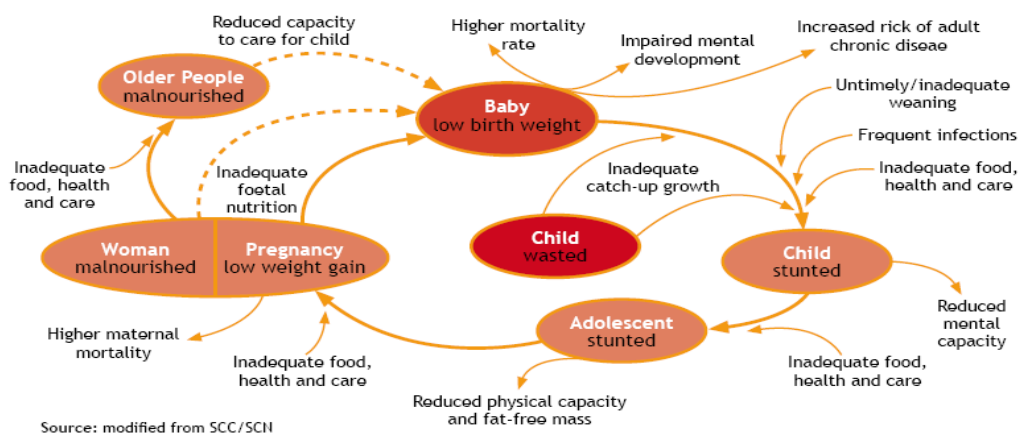
³ UNICEF/WHO/World Bank Joint Child Malnutrition Estimates: Levels and trends in child malnutrition. 2012.

⁴ RE. Black et al. Maternal and Child Undernutrition 1. Global and regional exposures and health consequences. Lancet 2008 p5.

⁵ The term undernutrition is often used internationally to denote those conditions associated with lack of nutrients and overnutrition for those conditions associated with a surplus. However, the term malnutrition is still used in a majority of contexts to denote all forms of undernutrition and is therefore used throughout this guideline.

Recent evidence clarifies that the period of greatest vulnerability to nutritional deficiencies begins during pregnancy. During this period, nutritional deficiencies have a significant adverse impact on child survival and growth. Chronic under nutrition in early childhood (up to age two) also results in diminished cognitive and physical development, which puts children at a disadvantage for the rest of their lives. For example, chronic under nutrition may lead individuals to perform poorly in school as children, and as adults can lead to less productivity, less earnings and higher risk of disease versus adults who were not undernourished as children. For girls especially, chronic under nutrition in early life, either before birth or during early childhood, can later lead to their babies being born with low birth weight, which can in turn lead to under nutrition as these babies grow older. Thus a vicious cycle of under nutrition repeats itself, generation after generation. This is known as the intergenerational cycle of growth failure (see Figure 2).⁶

Figure 2. The intergenerational cycle of growth failure



The longitudinal relationship between chronic and acute malnutrition has not been extensively studied, but recent evidence indicates that wasting or poor weight gain may lead to higher risk of stunting in children.⁷

Specifically for acute malnutrition, severely wasted children⁸ have been estimated to have a greater than nine fold increased risk (relative risk of 9.4) of dying compared to a well-nourished child, and moderately wasted children a threefold increased risk.⁹ In fact, the 2008 Maternal and Child Nutrition Lancet series recognises severe wasting as one of the top three nutrition related causes of death in children under five (Ibid).

This guideline specifically deals with the identification and management of acute malnutrition. It also aims to place the management of acute malnutrition within the broader range of interventions and approaches for addressing malnutrition in general.

1.1 What is acute malnutrition?

⁶ UNICEF. Tracking progress on child and maternal nutrition: a survival and development priority. 2009.

⁷ SA. Richard et al. Wasting is associated with stunting in early childhood. Journal of Nutrition. July 1 2012 p.1291-1296.

⁸ Assessed according to weight for height z scores using the WHO standards.

⁹ RE. Black et al. Maternal and Child Undernutrition 1. Global and regional exposures and health consequences. Lancet 2008.

Acute malnutrition (or wasting and/or oedema) occurs when an individual suffers from severe nutritional restrictions, a recent bout of illness, inappropriate childcare practices or a combination of these factors. The result is sudden weight loss or the development of bilateral pitting oedema, which can be reversed with appropriate treatment. Acute malnutrition is diagnosed if a child has inadequate weight relative to height compared to the WHO reference population and/or if muscle wasting is present using Mid Upper Arm Circumference (MUAC) and/or bilateral pitting oedema. Acute malnutrition may be classified as moderate or severe according to the degree of wasting in comparison to specific cut-off points or reference standards. Bilateral pitting oedema is always classified as severe (see Table 1).

Table 1. Diagnostic criteria for acute malnutrition in children aged 6-59 months¹⁰

	Measure	Cut-off
Severe Acute Malnutrition	Weight-for-height*	< -3SD
	MUAC	<115mm
	Bilateral pitting oedema	Grades 1, 2 or 3
Moderate Acute Malnutrition	Weight-for-height	<-2SD and ≥-3SD
	MUAC	<125mm and ≥115mm

* Based on WHO Standards (www.who.int/childgrowth/standards)

1.2 Burden of acute malnutrition in Nepal

Wasting (measured by low weight for height compared to the WHO reference population) has remained nearly unchanged over the last decade in Nepal; 11 per cent in 2001¹¹, 13 per cent in 2006¹²; and 11 per cent in 2011¹³. As per the WHO decision making criteria¹⁴, wasting prevalence is at a critical level in Nepal, affecting an estimated 430,000 children under five years of age at any point in time. As per the most recent data (NDHS 2011), 2.6 per cent or 91,000 under-five year old children in Nepal are suffering from severe acute malnutrition (SAM). Most of these children are not likely to survive unless they are identified and treated in a timely and effective manner. A further 8.3 per cent, or 290,000 under-five year old children in Nepal, are suffering from moderate acute malnutrition (MAM).

It is estimated that preventable deaths of Nepali children due to severe wasting are 1,500 each year and deaths due to moderate wasting are more than double that number. This translates to 2 million DALYs (estimates of death and disability due to current wasting, discounted at 3 per cent) and more than USD 160 million lost per year of income due to child deaths and the impaired income-earning potential of the survivors.¹⁵

At the regional level, the trend is increasing overall for prevalence of SAM and global acute malnutrition (GAM) in the hill and mountain regions, while in the Terai region the prevalence has fluctuated drastically and has reached 3.2 and 11.2 per cent, respectively, in 2011. The prevalence of SAM was higher in the urban areas compared to rural areas in 2011, while the GAM was higher in the rural areas. The prevalence of SAM and GAM is higher among boys than among girls and mother's

¹⁰ Adapted from WHO Child growth standards and the identification of severe acute malnutrition in infants and children: A joint statement by the World Health Organisation and the United Nations Children's Fund. 2009 and WHO, UNICEF, WFP and UNHCR Consultation on the Programmatic Aspects of the Management of Moderate Acute Malnutrition in Children under five years of age. 24-26 February 2010, WHO, Geneva.

¹¹ Nepal Demographic Health Survey 2001

¹² Nepal Demographic Health Survey 2006

¹³ Nepal Demographic Health Survey 2011

¹⁴ WHO. The Management of Nutrition in Major Emergencies, Geneva, 2000.

¹⁵ Webb, P and K-J Kang. 2010. *Wasting No Time*. Tufts University, Boston. Mimeo.

level of education and household wealth are inversely associated with GAM. Strikingly, the prevalence of MAM almost doubles between the lowest and highest wealth quintiles (7.4 per cent of cases are in the highest quintile and 13 per cent are in the lowest quintile), and between children born from mothers with at least secondary education and mothers with no education (6 per cent versus 13 per cent).

Acute malnutrition has multiple direct and indirect causes as noted in Figure 1. In the absence of in-depth research on food security and child development in Nepal, the reasons for the continuing critical levels and regional patterns of acute malnutrition are difficult to explain, particularly in view of the positive progress on other MDG indicators such as poverty and mortality.

Notably, there are still geographic areas of food insecurity in the country. Access to a diverse and nutrient-dense diet remains a challenge, infectious diseases are rampant and sanitation and hygiene are unsatisfactory in most of the country. Cholera outbreaks occur during the rainy summer season and intestinal parasites alone constitute one of the major public health problems in Nepal. In addition, as noted in the recently drafted Nepal strategy for Infant and Young Child Feeding 2013-2017, existing evidence has demonstrated that feeding and care practices of infants and young children, particularly breastfeeding, complementary feeding, and care practices including hygiene and sanitation are not optimal in Nepal'. Merely a third of infants are initiated to breastfeeding within one hour of birth though 70 per cent are exclusively breastfed during the first six months. Only 65 per cent of children receive appropriate complementary feeding at six months¹⁶.

2 Objectives, principles and structure of IMAM

2.1 Objectives of IMAM

The primary objectives of IMAM are:

- To reduce mortality and morbidity risks in children under five due to acute malnutrition;
- To rehabilitate children with acute malnutrition to a state of health in which they are able to sustain their nutritional status upon discharge as cured;
- To prevent the condition of children with acute malnutrition from deteriorating thus requiring more intensive treatment;
- Contribute to the prevention of acute malnutrition in young children in the critical 1000 day window¹⁷; and
- Prevent micro-nutrient deficiency disorders among under five year old children associated with acute malnutrition.

2.2 Principles of IMAM

IMAM is a strategy to address acute malnutrition. IMAM focuses on the integration of effective management of acute malnutrition into the ongoing routine health services at all levels of the health facilities whilst still striving for maximum coverage. It also aims to integrate the management of acute malnutrition across the sectors to ensure that treatment is linked to support for continued

¹⁶ Nepal Demographic and Health Survey, 2011

¹⁷ Leading scientists, economists and health experts agree that improving nutrition during the critical 1,000 day window (between a woman's pregnancy and her child's 2nd birthday) can have a profound impact on a child's ability to grow, learn, and rise out of poverty and can shape a society's long-term health, stability and prosperity. It is one of the best investments we can make to achieve lasting progress in global health and development.

rehabilitation of cases and to wider malnutrition prevention programmes and services focused on the critical 1000 day window.

IMAM is based on the same principles as the initial CMAM programme. These are as follows:

- **Maximum coverage and access** – IMAM is designed to achieve the greatest possible coverage by making services accessible and acceptable to the highest possible proportion of a population in need.
- **Timeliness** – IMAM prioritises early case-finding and mobilisation so that most of the cases of acute malnutrition can be treated before complications develop.
- **Appropriate care** – Provision of simple, effective outpatient care for those who can be treated at home and clinical care for those who need inpatient treatment. Less intensive care is provided for those suffering from MAM.
- **Care for as long as it is needed** - By improving access to treatment and integrating the service into the existing structures and health system, IMAM ensures that children can stay in the programme until they have been cured

2.3 Structure of IMAM

IMAM has four components: Community mobilisation, Inpatient Therapeutic Care (ITC), Outpatient Therapeutic Care (OTC) and Management of MAM.

Community mobilisation involves identification of acutely malnourished children at the community level on an on-going basis to enable widespread early detection and referral before the clients condition deteriorates further (i.e. children with MAM becoming SAM and children with SAM developing complicated SAM). It aims to increase coverage and maximise the effectiveness of treatment. The community mobilization also provides an opportunity to counsel mothers/caretakers of children under five years on IYCF practices, as well as prevent future cases of malnutrition through behaviour change communication activities such as water and sanitation education and nutrition promotion activities. In Nepal, the primary vehicle for this component is the Female Community Health Volunteer (FCHV).

Inpatient Therapeutic Care (ITC) involves management of complicated cases of SAM according to WHO protocols on an inpatient basis at tertiary level facilities (hospitals) or specialised units (Nutrition Rehabilitation Homes).

Outpatient Therapeutic Care (OTC) involves the management of non-complicated cases of SAM in outpatient care using ready-to-use therapeutic foods (RUTF) provided on a weekly/fortnightly¹⁸ basis, simple routine medicines, and monitoring and orientation for the mothers/caretakers. Outpatient care is offered through decentralized health structures (e.g. health posts or sub-health posts).

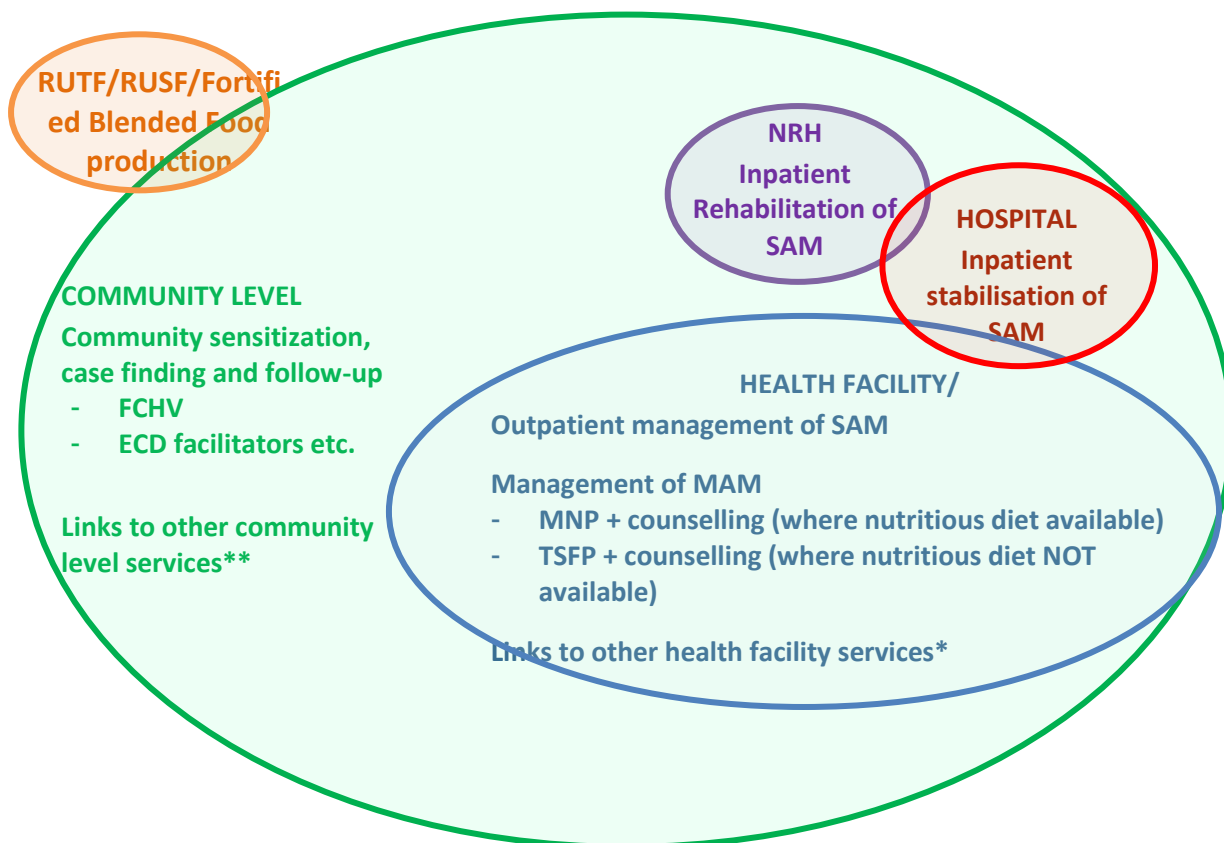
Management of Moderate Acute Malnutrition (MAM) may take two forms depending on the household food security level of the district including in emergency context. It involves either a) the provision of micronutrient powders (MNPs)) where available or if the district is MNP program district and nutrition counselling in areas where local food is available to provide a nutritious diet for children, or b) targeted supplementary feeding with fortified blended food plus nutrition counselling in areas where local foods are not available. In both cases, individual monitoring and

¹⁸ Outpatient care may, in some cases, be carried out fortnightly depending on the situation e.g. if mothers/caretakers are defaulting because they are too busy or the site is far then they may be more likely to attend a fortnightly session (National Medical Protocol, CMAM, March 2009).

orientation to mothers/caretakers is provided, plus referral for any medical issues in line with CB-IMNCI protocols.

These components sit within a wider range of health and nutrition interventions and services that focus on the 'critical 1000 day window'. In Nepal these currently include nutrition counselling for IYCF support, WASH, ECD. IMAM may also be linked to local production of RUTF/RUSF/Fortified Blended Food.

Figure 3. Components of IMAM in Nepal



* GMP, CB-IMNCI, IYCF counselling, PMTCT

** ECD, CBIMCI, MMPs, Child Cash Grant, WASH, IYCF counselling, PICT

2.4 Integrating IMAM into the existing services and structures

Integrated management of acute malnutrition is where management of acute malnutrition:

- Is one of the basic health services to which a child has access;
- Is embedded into a broader set of nutrition activities (IYCF, micronutrients etc.) focusing on the 1000 day critical window.; and
- Is integrated within a multi-sectoral approach to tackle the determinants of undernutrition focusing on the 1000 day critical window (including, WASH, ECD, social protection and local governance mechanisms).

As noted above, where IMAM has been implemented in Nepal, it has been done as an integral part of the health system. The services for treatment of SAM and MAM are rooted in CB-IMNCI assessment

protocols and should be implemented, managed and monitored by existing health facility and district health staff. The programme monitoring and supply chain for the service for SAM has been done through the existing MoHP supply system with logistics support from UNICEF. Increasingly, focus can now shift to the MoHP supply system including the involvement of the Regional Medical Stores through which products pass to reach the district warehouses. The supply chain for MAM products may also be added through support from WFP and other agencies. In some critical emergency periods, there will likely still be a need to augment this with additional staff and external support (see chapter 9).

In addition, IMAM aims to link with broader activities at facility and community levels. This is achieved in a number of ways:

- Through the addition of basic sensitisation on IMAM and identification of acute malnutrition into the roles and training of existing facility and community-level workers from a range of sectors (including WASH, ECD, Health, Education) and services (GMP, ECD centres, CB-IMNCI, New-born care, WASH promotion, the child cash grant, Child Health Days/Weeks (CHD), EPI, HIV/TB, child clubs, parent teacher associations)
- By ensuring that acutely malnourished clients are linked with all other services that may aid in their rehabilitation (HIV/TB services, GMP, MNP distribution, IYCF counselling)
- By setting IMAM firmly within the IYCF package through integrating trainings and counselling activities with the aim of bringing together treatment and prevention aspects of malnutrition

3 Community mobilisation/outreach

3.1 Introduction to community mobilisation

Community mobilisation/outreach is a core component of IMAM and is critical for maximising access and coverage by removing the barriers to community accessing the service. It must be developed at the planning stage in each district as there will likely be differences in the structures in place between districts. The process of community engagement is also essential prior to commencing the service to ensure it is set up in an appropriate and sustainable manner to avoid issues later on. If mother has problem on access to the program the FCHV and mother group will discuss and if the problem being not solved then the issue goes up to monthly meeting of health facilities level and discussed. Community mobilisation should primarily aim to increase access and service uptake (coverage) of IMAM services by tapping into community level resources and structures to make sure that as many children as possible can be reached at the community level with timely MUAC assessments (see Chapter 4).

The main objectives of community mobilisation for IMAM include:

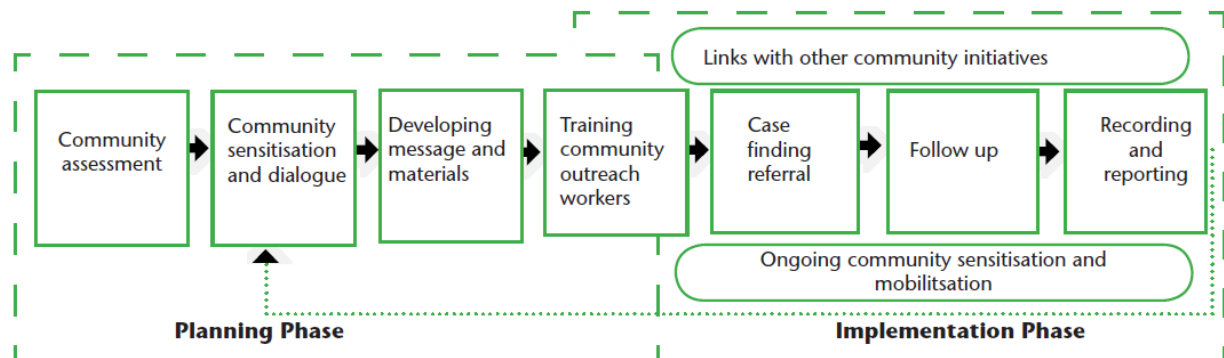
- Engage and empower the community by increasing knowledge and understanding on acute malnutrition and the services available;
- Ensure widespread early case-finding and referral of new SAM and MAM cases;
- Provide appropriate nutrition education and counselling focusing IYCF and care practices;
- Follow-up on particularly at risk and problem cases; and
- Engage communities for joint problem solving on barriers to service uptake.

3.2 Developing a district community mobilisation strategy

The community mobilisation strategy should be based upon, 1. Establishing dialogue with the community about the IMAM services, 2. Generating a clear picture of local perceptions, terms and understanding around acute malnutrition, 3. Mapping of community structures and means of communication that can be used to raise awareness on acute malnutrition and the programme, and

4. Mapping of all opportunities to access children at the community level for identification and follow-up of cases. This is achieved via a number of steps:

Figure 4. Stages in community mobilisation



3.2.1 STEP 1: District consultation meeting

This meeting should bring together district officials with key community representatives to discuss the objectives and principles of the IMAM services. This is a first advocacy step to highlight the need for the programme from the service providers’ perspective and to hear the communities’ response. This initial meeting could be done in parallel to the below community assessment step, which goes into more depth in building understanding around malnutrition and acute malnutrition in particular, and therefore can provide a basis for more meaningful discussion about the need for the service.

3.2.2 STEP 2: Community assessment

The community level assessment takes place through a series of interviews and focus group discussions with key community informants. These may include community leaders, elders and other influential people (teachers, ECD facilitators), mothers, fathers, caretakers and traditional healers. The assessment is key in determining local understanding of acute malnutrition, in identifying available resources and the factors that are likely to impact on both service delivery and demand for services. It can be conducted by district health teams, clinic staff and FCHVs. The assessment should identify:

- Local terms for malnutrition, perceived causes and common local solutions
- The key community persons, leaders and other influential people and organisations to help sensitise the communities on the components of the IMAM programme
- Existing structures and community based organisations/groups
- Social and cultural characteristics related to nutrition including identification of most vulnerable groups
- Formal and informal channels of communication that are known to be effective
- Attitudes and health seeking behaviours
- IYCF practices, child care patterns and locally available services.
- Other existing nutrition and health interventions in the community including for child care

The information collected can be consolidated for use in the below steps (see Annex 1 for some tools to facilitate this process).

3.2.3 STEP 3: Conduct sensitisation and community dialogue

The aim of good community sensitisation is to facilitate the engagement of the community in the service provided. Engage the community and other partners with community-based programmes to:

- Discuss the problem of acute malnutrition, causes and possible solutions (e.g. IYCF practices, care practices, WASH practices, ECD and social protections etc.)
- Introduce and negotiate on the adoption of IMAM as an approach to the management of acute malnutrition in their communities
- Agree on what needs to be done, the relevant groups, organisations and structures to be involved in different aspects of IMAM, and discuss clear roles as well as responsibilities
- Once services for the management of acute malnutrition have started, continue the dialogue to address concerns, maintain changes in behaviour and share success stories

Box 1. Community level agents for involvement in case finding in Nepal

- Female Community Health Volunteers
- Community health workers from local health facilities who are responsible for and conduct primary health care outreach clinics
- Early Childhood Development Centre staff and Facilitators
- WASH volunteers
- Traditional healers
- Mothers' Group Members
- Social Mobilisers
- Community Health Workers of CBOs/local NGOs/clubs
- Ward citizen forums
- Citizen awareness centres
- Women cooperatives/federations
- Teachers

Notes:

- Where FCHVs are active and are the primary community level workers acting in an area, they can act as a focal point for all other community agents who are conducting case finding, i.e. other agents can refer clients to the FCHV for checking of MUAC and oedema measurements before they are referred to the health facility. ECD facilitators will complement the roles of FCHVs in the particular communities in case findings, referrals and case follow up and defaulter actions
- Assessments can be made once these groups are active in community sensitisation regarding whether they include any agents who can reliably take MUAC measurements themselves

3.2.4 STEP 4: Developing messages and materials

Based on the above, developing sensitisation messages for acute malnutrition and the IMAM service for handbills or pamphlets, local radio as well as television is essential (See Annex 2 for additional guidance on developing messages, posters, flipcharts/counselling cards and handbill). Local terms for RUTF and fortified blended food used for the supplementary feeding should be used in all communication materials.

Develop a sensitisation plan detailing who to target and how to sensitise, based on the information gathered during the community capacity assessment. Review the plan with influential persons in the community to check if it is culturally appropriate before disseminating.

3.2.5 STEP 5: Community training

The District Health/Public Health Offices have a responsibility to ensure that the identified community volunteers (including FCHVs, ECD facilitators and other groups identified – see Box 1) are trained on how to engage with the community and disseminate messages effectively and on identification, and referral of cases.

3.3 Protocols for case-finding and referral

Case-finding is important to ensure that clients with SAM and MAM are identified early before the development of severe medical complications. In order for identification to be 'early', case-finding must be carried out on a regular basis (either on-going or monthly) at all possible opportunities (see Box 2) in order to 'catch' cases before they deteriorate. A combination of approaches is recommended. Case finding may be implemented through existing points of contact within the health system where simply adding MUAC to the assessment process ensures that the opportunity to identify acute malnutrition is not missed (this may be called '**passive**' case-finding). Where agents at the community level, on an ongoing basis or during existing health/nutrition campaigns (vitamin A supplementation, immunization) actively seek out cases of acute malnutrition, this is called '**active**' case-finding.

Identified SAM and MAM clients are usually referred to the nearest health facility/appropriate acute malnutrition service, though in some cases they may be referred directly to inpatient management depending on the identification of medical complications.

The FCHVs, ECD facilitators and other identified community level agents should:

- Screen for acute malnutrition at various contact points (home visits, community meetings, health facility outreach programmes, and at other opportunities identified during assessment – see box below) using the Mid-Upper Arm Circumference (MUAC) and pitting oedema for all client groups (see Chapter 4).
- Act as a focal point in their community where mothers/caretakers can come if they are worried about their child losing weight or being sick so that they can be assessed for acute malnutrition.
- Identify and refer acutely malnourished clients appropriately and provide IYCF counselling, WASH/care practices, demonstration of locally available nutritious foods (food diversity and minimum meal frequencies) etc.

In addition, FCHVs in particular will be able to act as focal points in their communities for the assessment of severe acute malnutrition with medical conditions (using CB-IMNCI tools) to directly identify those children requiring referral to inpatient care located in local hospitals or PHCCs.

Other community agents will refer all SAM cases, along with MAM cases, directly to the nearest health facility where this assessment of medical conditions can take place.

Box 2. Contact points for identification of cases at community level in Nepal

Passive case-finding

- During health facility visits by parents with their child
- At ECD centres by ECD facilitators
- During consultation visits by parents bringing child to the FCHVs' house
- During PHC outreach clinics by community health workers with support of FCHVs or other community volunteers
- During growth monitoring sessions by community health workers- MUAC can be taken on any growth faltering children
- During community level ECD sessions organised by ECD facilitators
- During mothers' group meetings by FCHVs if mothers bring their children

Active case-finding

- At child clubs jointly with child club members
- During community campaigns such as vitamin A and deworming campaigns, immunization campaigns, or any other health campaigns targeting children under 5 years
- During special immunization days
- During house-to-house visits whenever these are carried out by FCHVs and other community health workers

For all cases when a client needs to be referred, the community agent should explain why referral is necessary and let the mother/caretaker know what to expect when they attend the facility. They should explain to the mother/caretaker where the nearest facility offering appropriate care is and stress the urgency of taking the child as soon as possible. Wherever possible, the community agent should fill in a standard referral slip that carries their name and the child's name (see Annex 3). This allows both the FCHV and health facility to track whether the referral has been successful.

3.3.1 Active adaptive case-finding for SAM

Identification of cases of SAM at the community level is aided by evidence that shows, if local terms for thin, swollen and sick children are used to identify, through key informants, which children in a village may be acutely malnourished, 100 per cent of SAM children in the village/communities can be found without the need to go from house to house conducting screenings¹⁹.

This method (called *active-adaptive case-finding*) was developed for surveys but can also be used outside the survey context whenever it is necessary to identify cases and will be particularly useful during the initiation of services in a district and where FCHVs are not fully familiar with the patterns of acute malnutrition in their area of operation. This method can greatly reduce the time taken at the community level to identify cases and therefore allow more regular early identification. It has also proven to perform better in identifying cases of SAM than either central location screenings or house to house screening in most contexts (apart from some urban and camp contexts) (see Box 3).

¹⁹ Myatt, Mark et al. 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. Washington, DC: FHI360/FANTA.

Box 3. Active Adaptive Case-finding

Active Adaptive Case-finding is based on two principles:

1. The method is active: SAM cases are specifically targeted. Case finders do not go house-to-house in the selected villages measuring all children aged between 6 – 59 months. Instead, only houses with children with locally understood and accepted descriptions of malnutrition and its signs are visited.
2. The method is adaptive: At the outset key informants help with case-finding in the community but other sources of information found during the exercise and through discussion with beneficiaries coming into the facility are used to improve the search for cases.

Step 1. Use findings of community assessment to identify:

- The appropriate case-finding question – According to the terminology used by the population to describe the signs of SAM
- The most useful key informants to assist with case-finding – Those who are likely to be able to identify cases, who know about the health of children in the community or who people consult when their child is sick
- Any context-specific factors affecting the case-finding process – Such as cultural norms, daily and seasonal activity patterns, as well as the general structure of villages

Step 2. Using key informants, identify the households with SAM children

Step 3. Visit these households and check oedema and MUAC for children 6-59m

Step 4. Make any adjustments to definitions required based on whether cases were correctly identified

Step 4. When children with SAM are identified, ask if the key informant or anyone in that household knows where children who are similarly malnourished live

Step 5. Use this method exhaustively until only children already measured are identified

3.3.2 Active case-finding for MAM

For MAM children, active adaptive case finding is not found to be as effective since they do not always appear sick. These children are also less likely to be brought to the health facility for medical care. Therefore, it is extremely important to actively search for MAM children within the community. This can be most effectively done through active screening for MAM at least twice a year, along with the vitamin A mass supplementation program. This strategy will ensure coverage of at least 90 per cent of children living in the catchment areas (NDHS, 2011). Additional coverage can be attained through FCHVs visiting non-attending families the day after supplementation and taking the MUAC measurements at the household level.

All sectors should be involved at the community level during the active case finding and the frequency of these events should be determined by the DHO/DPHO.

3.4 Actions for non-acutely malnourished clients

It is important that during any active screening activities by health staff and FCHVs, children measured and found not to be acutely malnourished are referred for any complementary services where appropriate (as would be done routinely anyway). This is particularly important as a number of these children may need attention and these complementary actions will help prevent their condition from deteriorating. Such actions include:

- Referral to the health facility for any medical problems identified according to CB-IMNCI
- Counselling on IYCF practices, care, WASH, ECD etc. where appropriate and available
- Referral for growth monitoring and counselling where appropriate and available
- Referral/orientation about livelihood/safety net/social protection programmes available, including the cash grant programme, if they are eligible
- Provide vitamin A and deworming tablets to those children who did not receive the treatment and supplementation in the past six months or during the last campaign
- Refer children older than nine months, who did not receive measles vaccination, to the health facility or outreach clinic to obtain necessary immunisation

3.5 Protocols for follow-up of clients with acute malnutrition

Some clients with acute malnutrition require follow-up at home during their time in treatment, in addition to the follow-up they receive at the health facility on their periodic visits (every week for SAM²⁰) and fortnightly follow up in case of geographical difficulty areas. These are cases who are at increased risk of disease and death. They should be monitored to ensure sustained improvement in their condition. Follow-up requires effective linkage between the community and health facilities and therefore is best carried out by the FCHVs linking with the facility staff. Follow up should entail the following:

- Identification of priority cases for follow-up by health facility staff (see Box 4) and communication to FCHVs at health centre monthly meetings
- Home visits with these cases that focus on asking and understanding the constraints under which the clients are operating
- Provision of any appropriate counselling (based on IYCF materials and training), or medical referral if required based on CB-IMNCI check
- Recording of relevant information and give feedback to health providers during health centre monthly meetings
- Linking clients to livelihood/safety net/social protection programmes available where particular issues are identified and/or clients are eligible e.g. child cash grant etc.

²⁰ Outpatient care in some cases may be carried out fortnightly if, for example, many mothers/caretakers are defaulting because it is harvest time or if the health facility is serving a very large geographical area.

Box 4. Priority cases for follow-up

Following up through home visits can be time consuming if done thoroughly, as a variety of factors need to be discussed during the visit. However, it is not necessary to conduct home follow-up visits with all SAM or MAM clients, especially those gaining weight in the programme. Follow-up should focus on the following:

- Clients with medical complications who have refused to transfer to inpatient care and are being treated on an outpatient basis
- Cases who are not responding in the programme (loss or static weight for two weeks) and aspects of the home environment are suspected to be playing a role rather than medical issues
- Repeated absentees from treatment

3.6 Set-up requirements

The major requirement for setting up effective community mobilisation is having someone responsible for the community assessment and strategy development. This will ensure that these critical activities do not get missed and that appropriate community agents and mechanisms for case-finding and referral are set up in line with the above.

The only additional requirements are MUAC tapes, counselling cards (see training package) and the simple report formats discussed in Chapter 8.3 and given in Annex 4.

4 Assessment and classification of acute malnutrition

4.1 Assessment of Children 6-59 months

Acutely malnourished children (aged 6 to 59 months) are identified by:

- Measuring the mid –upper arm circumference (MUAC)
- Checking for the presence of bilateral pitting oedema
- Taking weight and height of children

MUAC is a measure of muscle wasting and has been shown to have the highest correlation with risk of mortality of any anthropometric indicator. It is also a simple and transparent measure and therefore the most appropriate for use in decentralised and community based services.

For the majority of cases, this first assessment of MUAC and oedema will occur at the community level (see Chapter 3). As noted above, however, in additional measurement should be completed at all points where the client has contact with the service/health system. Identification, particularly within larger health centres and within hospitals, needs to be at all points at which clients enter the system:

- In the community, through key community agents, by health and support staff during campaigns and during outreach (as outlined in Chapter 3)
- At PHC/ORC, SHP, HP, PHC and Out-Patient Department (OPD) of Hospitals, HIV and or PICT clinics

It is important that the taking of measurements is standardised (through training and supportive supervision and monitoring). If cases referred from the community are rejected at the facility due to faulty measurements (i.e. mothers/caretakers are told their child is eligible and then told they are not) coverage can be adversely effected as they are unlikely to return even if their child does lose more weight and are also likely to portray the service in a negative light to other community members.

Where such cases arise, it is advisable to ensure that all available services are provided to the client (see Section 3.4) and to ensure that the error is followed up with supportive supervision and monitoring from a community worker (see Chapter 8.4).

*** NOTE:**

MUAC and bilateral pitting oedema are the preferred admission criteria. However, if there is already capacity and equipment in place to assess additional cases of acute malnutrition on the basis of weight-for-height measurements at facility level this can be done. In this case, the criteria of WHZ <-3 for SAM and ≥ -3 WHZ <-2 for MAM can be used as an additional admission criteria.

4.1.1 Step 1. Determine age

Age groups are best identified by using a local calendar of events to help determine the age if a birth date is not known. Birth dates can also be identified with the help of a birth registration certificate or Child health card. It is not recommended to use a height cut-off as proxy for six months of age; in a stunted population many infants six months or older will have a height less than 65 centimetres (cm).

4.1.2 Step 2. Check for pitting oedema on both feet

Bilateral oedema is the sign of Kwashiorkor. Kwashiorkor is *always* a severe form of malnutrition. While lesser degrees of oedema can be effectively treated in OTC care, children with generalised, third degree oedema are at high risk of mortality and need to be urgently treated in a stabilisation centre so it is important for grade of oedema to be identified correctly. Oedema caused by acute malnutrition presents with special characteristics:

- It starts from both feet, extending upwards to the arms, face and entire body
- It is pitting (leaves an impression after pressure is applied)

See Annex 5 for how to check oedema.

4.1.3 Step 3. Measure MUAC

MUAC is measured only for children aged 6-59 months as identified above. The MUAC measurement can be done using a simple calibrated tape with colours corresponding to severe (red), moderate (yellow), and no (green) acute malnutrition. Single cut-offs are used for the diagnosis of acute malnutrition for all children between 6-59 months of age. These are:

- <11.5cm for SAM and
- ≥ 11.5 - <12.5cm for MAM

See Annex 5 for how to measure MUAC.

4.1.4 Step 4. Assessment of appetite and medical complications

Once acute malnutrition has been identified, a CB-IMNCI check (depending on the level of contact) is required to identify any medical complications that would necessitate referral for inpatient therapeutic care (for acute malnutrition with complications) or whether the child can be treated in OTC or the MAM programme. Most commonly this will take place at the health facility as a result of the CB-IMNCI check, however in some cases the FCHV may urgently refer to the nearest health facility based on her CB-IMNCI check.

At community level - CB-IMNCI

When FCHVs measure the MUAC and check for the oedema, they should also look for the danger signs according to CB-IMNCI. There are between seven and nine main danger signs identifiable by the FCHVs, following CB-IMNCI guidelines. These are dealt with in detail in FCHV training materials:

- The child has had convulsions / is unconsciousness /is apathetic, lethargic /not alert
- The child vomits everything
- The child has severe diarrhoea and/or dehydration
- The child has hypothermia
- The child has high fever
- The child has rapid breathing
- The child is not able to drink or breastfeed and/or does not eat (anorexia)
- The child has severe oedema (+++ Grade 3)
- The child has severe anaemia (severe palmar pallor)

On referral of these cases to the nearest health facility, the FCHV should explain the possibility that the child will require inpatient care.

At facility level

Once MUAC and oedema have been assessed and the child identified with acute malnutrition, health facility staff must assess the condition of child and presence of complications:

- **Assess the appetite**- Test with RUTF (See Box 5 and Annex 8), if the child initially refuses, move the child and caretaker to a quiet area. The health worker must observe the child eating the RUTF before the child can be admitted to the out-patient care centre.
- **Take history**- for *Diarrhoea, Vomiting, Stools, Urine, Cough, Appetite, Breastfeeding, Swelling, and Oedema*. If needed, ask further questions about the duration of the symptoms, etc. to get a clear picture of the problem.
- **Carry out medical assessment** - As per CB-IMNCI, paying special attention to the conditions mentioned in Table 2.
- **Take weight (and height*) measurement** As a baseline for weight monitoring during follow-up visits (see Annex 5)

***NOTE:** *In addition, where there is existing capacity at facility level to take weight and height measurements, height may be taken and weight-for-height z score calculated as an additional (not substitute) admission criteria to MUAC.*

Assess based on the above whether the child requires referral to inpatient care (refer to).

Box 5. The importance of the appetite test?

Malnutrition changes the way infections and other diseases express themselves. Children severely affected by the classical CB-IMNCI diseases who are also malnourished, frequently show no signs of these diseases. However, the major complications lead to a loss of appetite. Therefore, an important criterion to decide if a patient with SAM should be sent to in- or outpatient management is the Appetite Test. SAM with a poor appetite means that the child has a significant infection or a major metabolic abnormality such as liver dysfunction, electrolyte imbalance, cell membrane damage or damaged biochemical pathways. These are the patients at immediate risk of death, as a child with major complications and a poor appetite will not consume RUTF at home and will continue to deteriorate or die.

For detail on how to conduct the test see Annex 8.

Table 2. Criteria for admission to in- or out-patient care (children 6-59 months) with SAM:

Factor	Inpatient care	Outpatient care
Oedema	Bilateral pitting oedema grade 3 (+++)	Bilateral pitting oedema grade 1 or 2 (+ and ++)
MUAC	<11.5cm AND one of the below	<11.5cm AND both of the below or
WFH	<-3 SD and one of the below	<- 3 SD AND both of the below
Appetite	Not able to eat the test dose of RUTF	Demonstrates appetite by eating the test dose of RUTF
Medical complications		NO medical complications
Vomiting and/or diarrhoea	Intractable (empties contents of stomach)	
Temperature	Fever > 101.3 °F (38.5°C) under arm pit; (102.2°F/39°C rectal) Hypothermia < 95 °F (35°C) under arm pit; (96°F/35.5°C rectal)	
Respiration rate	≥60 resp/min for infants under 2 months ≥50 resp/min from 2 to 12 months ≥ 40 resp/min from 1 to 5 years ≥ 30 resp/min for over 5 year olds And any chest in-drawing (for children > 6 months)	
Anaemia	Very pale (severe palmer pallor), difficulty breathing	
Superficial infection	Extensive skin infection (including Redness, swelling, abscess/pus, or foul odour around skin) requiring Intra-Muscular treatment Extensive mouth ulcers Ear pain with tender swelling behind the ear Urinary tract infection	
Alertness	Very weak, apathetic, unconscious Fitting/convulsions	
Hydration status	Severe dehydration based primarily on recent history of diarrhoea, vomiting, fever, anuria (lack of discharge of urine), thirst, sweating and clinical signs	

Jaundice	History of dark yellow urine, yellowish conjunctiva, lips and nails, yellow skin	
Eye infection and other eye problems	Corneal clouding or other signs of Vitamin A deficiency (Xerophthalmia, bitot spots and corneal ulceration or history of night blindness)	
Hypoglycaemia	-Hypothermia -Lethargy -Limpness -Loss of consciousness -Sweating and pallor (These signs may not occur in SAM children)	

Table 3. Criteria for referral of children with MAM for medical treatment and SFP

Factor	Medical treatment and SFP	Supplementary Feeding or MNP distribution with counselling
MUAC	≥11.5cm and <12.5cm AND one of the below (or WHZ <-2 and ≥-3 z-score AND one of the below)	≥11.5cm and <12.5cm AND the below (or WHZ <-2 and ≥-3 z-score AND the below)
Medical Complications	As table 2	NO medical complications

4.2 Assessment of infants under 6 months

Clinical signs in infants under 6 months should be assessed in the same way as above according to CB-IMNCI procedures. In addition infants under 6 months may become malnourished if they have:

- never been breastfed
- been only partially breastfed, combined with inadequate, unsafe artificial feeds and/or with inappropriate complementary feeds (e.g. watery, introduced too early)
- their mothers are dead or absent
- their mothers are malnourished, traumatised, ill, or unable to respond normally to their infants' needs
- they have some form of disability that affects their ability to suckle or swallow, and/or a developmental problem affecting feeding.
- They have suffered from repeated infections or chronic illness
- were low birth weight babies as a result of prenatal malnutrition or preterm birth and have failed to 'catch up'

Their assessment needs to help identify these causes in order to provide the most appropriate treatment. It is difficult to distinguish between malnourished infants who were low birth weight babies who have failed to catch-up and those who have become malnourished after birth. However recent International research²¹ indicates that Infants identified as wasted using WHO or NCHS growth norms are not predominantly ex-low birth weight.

²¹ Management of Acute Malnutrition in Infants (MAMI) project. Summary report October 2009

The above criteria illustrate the need not just to assess the infant but to also assess the mother to see if they are 'malnourished, traumatised, ill, or unable to respond normally to their infants' needs' and to assess the infant feeding practices of the infant and mother.

At community level

Infants under 6 months with bilateral pitting oedema (tested as above) and/or visible wasting (see below), or who are noted to be lethargic (according to CB-IMNCI) are not measured with MUAC but referred to the nearest health facility where they are further investigated. There is currently no appropriate MUAC criteria for the identification of SAM or MAM in infants though research is underway in this area.

Figure 5. Signs of visible wasting



Signs of visible wasting (Figure 5) in the infant under 6 months can best be seen if the client has removed some clothing in order for the community worker or health provider to get a clear picture. For identification of severe marasmus in children of less than 6 months of age, look for loss/reduction of subcutaneous fat with loss of muscle bulk and sagging skin, loss of muscles around the shoulders, arms, buttocks, ribs and legs, and check to see if the outline of the client's ribs is seen easily. Examine them from the side view to see if the fat of the buttocks is significantly reduced. In extreme cases you will see folds of skin that make it seem like the child is wearing baggy pants.

FCHVs may also be able to conduct a rapid assessment of feeding practices (see Annex 24) in order to determine whether there is immediate risk to the baby and therefore a need for immediate referral for full assessment at the health facility or if the mother needs only community based supportive care.

In addition a health assessment of mother according to CB-IMNCI and anthropometric assessment using MUAC can be done. A MUAC of <23.0 cm in the mother of an infant under 6 months would lead to either inpatient or outpatient admission of the infant depending on their condition and registration of the mother to also receive support through the MAM programme.

At facility level

At the nearest health facility criteria of visible wasting may also be used. However where there is the possibility to do so, weight and height measurements can also be taken and the infant assessed for

presence of severe wasting according to the WHO growth standards for WHZ. Note that paediatric balance scales are required for the accurate recording of weight in infants to precision of 10g. It should also be noted that the use of the WHO growth standards for the assessment of infants < 6 months of age diagnoses a much larger group than previously used standards.

Full assessment should also be made of breastfeeding practice in accordance with national IYCF guidelines (see annex 24). On the basis of these assessments care givers will receive IYCF counselling at community level, IYCF counselling on an outpatient basis (along with any medical support required and supplementary feeding for the mother if available), or the infant will be referred for inpatient care. Currently there are no international guidelines for the nutritional treatment of infants <6 months in outpatient care using RUTF. However research is underway in this area.

Table 4. Criteria for admission to inpatient and outpatient care – Infants <6 months

In-patient care	Outpatient /Infant feeding support (medical treatment, IYCF counselling at facility, supplementary feeding for mother where available)	IYCF counselling at community level
<p>visible wasting and/or WHZ <-3 zscores and/or oedema</p> <p>AND</p> <p>One of the below complications:</p> <p>Any of the medical complications outlined for children 6-59m (table 2)</p> <p>Infant is lethargic and unable to suckle</p> <p>Recent weight loss/inability to gain weight</p> <p>Ineffective feeding (attachment, positioning and suckling) directly observed Any medical or social issue needing more detailed assessment or intensive support (e.g. disability, depression of the</p>	<p>visible wasting and WHZ <-2 ≥ -3 zscores</p> <p>AND</p> <p>None of the complications requiring inpatient care</p> <p>OR</p> <p>Breastfeeding infants whose mother is malnourished or ill</p>	<p>Breastfeeding: status, frequency, night feeding</p> <p>Basic breastfeeding difficulties identified during assessment:</p> <ul style="list-style-type: none"> - mother lacks confidence - misconceptions, worries about breastfeeding - doubts about having adequate breast milk - requests for breast milk substitutes to supplement breastfeeding - interest in increasing breast milk - poor attachment or ineffective suckling - discomfort or mild pain from nipples <p>Feeding not age appropriate (frequency, amount, texture, variety, active feeding and hygiene)</p>

mother/caretaker, or other adverse social circumstances)		
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Note: in inpatient care full nutritional support for the lactating mother should also be provided.

4.3 Summary classification of acute malnutrition

A summary of the classification of acute malnutrition based on the above steps is given in Table 5.

Table 5. Summary admission criteria

Inpatient management of SAM WHO and CB-IMNCI protocols	Outpatient management of SAM	Management of MAM
<p>Severe acute malnutrition with complications</p> <p>Children 6-59m Nutritional oedema +++ (<11.5cm with any grade of oedema)</p> <p>OR MUAC <11.5cm Or WHZ < -3 ZScore</p> <p><u>with</u> any of the following complications:</p> <ul style="list-style-type: none"> - Anorexia, no appetite - Increased respiration rate High fever - Severe dehydration - Severe anaemia - Not alert (very weak, lethargic, unconscious, convulsions) - Hypothermia - Intractable vomiting - Severe diarrhoea - Hypoglycaemia <p><u>Infants</u> Infants <6 months who meet criteria for inpatient admission (see Table 4)</p> <p><u>Referral from OTC</u></p>	<p>Severe acute malnutrition without complications</p> <p>Children 6-59m MUAC < 11.5 cm Or WHZ < -3 ZScore And /or Nutritional oedema + and ++</p> <p>AND Appetite Clinically well Alert</p> <p><u>Infants</u> Infants <6 months who meet criteria for outpatient support (see Table 4)</p> <p><u>Referral from ITC</u> After stabilisation</p>	<p>Moderate acute malnutrition</p> <p>Children 6-59m MUAC 11.5cm - < 12.5cm or WHZ < -2 MUAC > 11.5cm where facility capacity exists</p> <p>AND No bilateral pitting oedema Appetite Clinically well* Alert</p> <p><u>Lactating Women</u> Infant enrolled in inpatient care and MUAC < 23.0cm</p> <p><u>Referral from OTC</u> 2 months SFP regardless of MUAC or W/H</p>

Due to deterioration or non-response		
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***NOTE:** Where the service encounters children with MAM with severe medical complications these clients should be referred for the appropriate urgent medical care (as per Table 3) and where some form of supplementary feeding is available and also be registered to receive it. Where possible, these cases should be also given seven packets of RUTF to aid in their convalescence.

5 Management of SAM

5.1 Pathophysiology of SAM

The pathophysiological responses to nutrient depletion place children with SAM at an increased risk of life-threatening complications that lead to increased risk of death. Therefore, successful management of SAM in children requires systematic medical treatment of underlying infections and a dietary treatment or rehabilitation with specially formulated therapeutic foods, such as F75 and F100 milk, or a ready-to-use therapeutic food (RUTF). Therapeutic foods have the correct balance of nutrients and a high nutrient density and bioavailability. They are soft or crushable foods that are easily consumed by children from the age of six months without adding water. The treatment aims to restore the metabolism through correction of electrolyte balance, reverse metabolic abnormalities, restore the organ functions and provide nutrients for catch-up of growth. It should be noted that, according to the WHO statement on community-based management of SAM, since RUTF do not contain water, children should also be offered safe drinking water to drink at will throughout the treatment.

Due to the pathophysiological changes that accompany SAM, these children often do not present typical clinical signs of infection that sick children without SAM have when they are ill, such as fever. Consequently, children with SAM need to be provided with systematic medical treatment for underlying infections. Treatment protocols for children with SAM for some medical complications, such as dehydration or shock, differ from the classical treatment protocols for ill children without SAM. Misdiagnosis of medical complications, inappropriate treatment and feeding of children with SAM contributes to slow convalescence and increased risk of death, thus adherence to these treatment guidelines in their entirety is critical.

5.2 Outpatient Therapeutic Care

Outpatient therapeutic care is aimed at providing treatment for children with SAM who have an appetite and have no medical complications and can therefore be treated at home with simple routine medicines and RUTF (*see Annex 6*). It achieves this objective through timely detection, referral and early treatment before the onset of a complication. Effective community mobilisation, active case finding, referral and follow-up are the cornerstones of successful outpatient therapeutic care (*see Chapter 3*).

Outpatient therapeutic care should be delivered from as many health facilities as possible (with sufficient capacity in place) and should be a component of routine service delivery. This ensures good access and coverage so that as many acutely malnourished clients as possible can access treatment within a day's walk from their homes.

Children may be received directly into outpatient care when they come to the health facility, by referral from a FCHV or other community agent, or by referral from inpatient care once their condition has stabilised.

Non-complicated SAM cases should be treated in Nutrition Rehabilitation Homes which serve as OTC Centres where community based facilities are not available.

5.2.1 Assessment of nutritional status and medical condition

Give safe drinking water to suspected cases and referrals waiting at the health facility for assessment and prioritise assessment of any cases who look ill or lethargic. Sugar water can be given instead of

water for any suspected cases of hypoglycaemia (low body temperature, lethargy, limpness, eye-lid retraction, and loss of consciousness) if it is available. See Annex 7 for preparation and protocol for use.

Assessment (see Chapter 4) aims to confirm any assessment already made at the community level:

- Determine age of the child (use local calendar if needed)
- Take MUAC and check for bilateral pitting oedema to confirm SAM
- Take weight (for weight monitoring during follow up visits)
- Conduct the appetite test (see Annex 8)
- Take medical history
- Assess medical condition of child and presence of complications
- Check vaccination status, last deworming and vitamin A supplementation
- Review and record any relevant information from referral document where there is one

5.2.2 Admission or referral based on programme criteria

If there are no complications present the child with SAM can be treated in Outpatient Therapeutic Care Centres (see below). Details for the above assessments, plus relevant family information should be entered on to the Outpatient Therapeutic Care (OTC) card (see Annex 9) and details entered into the records of the health facility.

Table 6. Summary admission and referral for SAM

Admission to Outpatient Therapeutic Care	Referral to Inpatient Therapeutic Care
MUAC <11.5cm or Nutritional oedema + or ++ With Appetite And with NO Medical Complications (see Table 2)	Nutritional oedema +++
	MUAC <11.5cm With NO Appetite And/or with Medical Complications (see Table 2)

Note: For infants, referral to inpatient care should be based on presence of the criteria outlined in Table 4.

If complications are present (according to Table 2) explain to the mother/caretaker the child cannot be treated in outpatient care at the (Sub) Health Post / PHC and needs in-patient care at least 3 to 7 days (some days), and refer to Inpatient Stabilisation, explaining to the mother/caretaker where to go and what will happen there and fill in a referral form for them to take with them. The referral document contains all the information about the child and their condition, any treatment given and the reason for referral (see Annex 3 for standard form). If a mother/caretaker refuses to be referred to inpatient care the child should be treated in Outpatient care but prioritised for follow-up at home (particularly during the first few weeks of treatment) by the FCHV.

Transport for referral should be facilitated wherever possible (see Box 6).

Box 6. Facilitation of emergency referral

It is important to ensure that referrals of complicated cases of SAM are able to make the journey to the inpatient facility even if this is some distance away. These cases are at high risk of death and therefore referral should be treated as an emergency. Health staff should discuss with the mother/caretaker when and how they are going to travel to the inpatient facility. Funds to support transfer may be available through emergency funds held by FCHVs or health facilities. If needed provide vital medical treatment before referral such as 10 per cent sugar water in the case of dehydration, diarrhoea hypoglycaemia or hypothermia. Do not give ORS to a child with SAM.

Equally, children who have stabilised in the inpatient facility are nevertheless still at increased risk of death and it is vital that they continue their rehabilitation in the OTC. Where possible

5.2.3 Medical Management

In order to treat probable and potential underlying illnesses that might cause only sub-clinical symptoms in severely acutely malnourished children, ALL cases admitted to OTC should be treated according to the following systematic treatment schedule.

Table 7. Routine medicines for Outpatient Therapeutic Care* (for detail see Annex 10)

Drug/Supplement	When	Age/Weight	Prescription	Dose
VITAMIN A**	At Admission (EXCEPT children with oedema)	< 6 months***	50,000 IU	Single dose (for children with oedema single dose on discharge)
		6 – 12 months	100,000 IU	
		> 12 months	200,000 IU	
		Do not use with Oedema		
AMOXYCILLIN	At Admission	All SAM cases	<10kg 125mg tds >10kg 250mg tds	3 times a day for 7 days
CHLOROQUINE & PRIMAQUINE	At Admission in malaria areas (Terai)	All SAM cases	See Annex 11	1 time a day for 3 days (on admission)
ALBENDAZOLE	Second visit	< 12 months	DO NOT GIVE	None
		12 – 23 months	200 mg	Single dose, on second visit
		≥ 24 months	400 mg	
MEASLES VACCINATION	On week 4	6 – 8 months	DO NOT GIVE until they complete 9 months of age	Single dose; when they reach 9 months old & after at least 4 weeks in OTC
		≥ 9 months	Standard	

*For children referred from inpatient stabilisation a check should be made of the treatments already received and the above adapted accordingly

** Vitamin A: Do not give if the child has already received Vitamin A in the last month. Do not give to children with oedema until discharge from OTC, unless there are signs of Vitamin A deficiency

*** Relevant for infants treated on outpatient basis (see Section 5.4.3)

IRON and FOLIC ACID: *NOT to be given routinely*. Where severe anaemia is identified according to CB-IMNCI guidelines, the severely malnourished child should be referred to in-patient care. Where moderate anaemia is identified treatment should *begin after 14 days* in the programme and not before because a high-dose may increase the risk of severe infections. Treatment should be given according to CB-IMNCI protocol (one dose daily for 14 days).

The child's immunisation status should be checked and the mother/caretaker referred to the monthly immunisation outreach clinic in his/her area.

Other medical conditions/symptoms – eye infections, ear discharge, mouth ulcers, minor skin infections and lesions – should be treated according to the CB-IMNCI guidelines (see Annex 12).

It is important to record any supplementation/treatment given on the child's medical card/growth chart if they have one.

5.2.4 Nutrition Management

Nutritional rehabilitation in Outpatient Therapeutic Care is through the use of Ready-to-Use Therapeutic Food (RUTF). RUTF is an energy dense mineral/vitamin enriched food nutritionally equivalent to F100, which is recommended by the WHO for the treatment of severe acute malnutrition (see Annex 6 for more information on RUTF). It is an oil-based paste usually made of peanuts, oil, sugar and milk, with low water activity; thus it is microbiologically safe and can be kept for months in simple packaging. Therefore, with proper hygiene instruction, RUTF can be safely used at home.

RUTF provides a complete diet for the severely acutely malnourished child with the exact balance of micronutrients and electrolytes they require. The amount of RUTF a child should consume is determined by the need for an intake of 200 kcal/ kg/ day.²² The amount given to each patient is therefore calculated according to its current weight and must be adjusted as weight increases during treatment. Annex 13 gives the amounts of RUTF to feed and take home rations.

If there is NRH in IMAM district, RUTF will be used for transition phase/appetite test otherwise complicated SAM cases should be managed by F-100.

Box 7. RUTF and multiple micronutrient powders – DO NOT DOUBLE SUPPLEMENT

Note that children with SAM receiving treatment with RUTF should NOT receive any supplementation with multi micronutrients (even if they are suffering from anaemia) as they are already receiving appropriate micronutrient supplementation within the RUTF.

Mothers/caretakers therefore need to be told to discontinue micronutrient supplementation if they are already registered for that service.

Cases of SAM with anaemia should be treated according to the protocols outlined in 5.2.3.

²² This is comparable to the WHO recommendation of 150 to 220 kcal/kg/day for nutritional rehabilitation in phase 2 of the in-patient management of SAM

5.2.5 Orientation and counselling for the mother/caretaker

On admission when giving the RUTF ration, the health worker should discuss a number of simple key messages on the use of RUTF, continuation of breastfeeding, the need to feed plenty of drinking water, and orientation on hygiene and sanitation with the mother/caretaker (see Box 8)

For all mothers/caretakers it is also important to make sure they are aware of their local FCHV and the support that these women can offer for them.

In addition for refused transfers to inpatient care the mother/caretaker should be informed that their local FCHV will be visiting them at home during the week.

On subsequent visits additional counselling may be provided while mothers/caretakers are waiting for their consultation. This may focus on:

- Particular topics within the IYCF package (Breastfeeding and Complementary Feeding)
- ECD during breastfeeding, feeding and play

Box 8. Key messages for Mothers/Caretakers

- Explain how much RUTF to give the child each day (refer to RUTF ration table).
- If the mother is still breastfeeding, advise her to continue breastfeeding before giving RUTF. If she is not breastfeeding, then always give plenty of safe water with RUTF as it does not contain any itself.
- The RUTF is all the food a child needs to recover. No other foods should be given until the full ration each day has been finished.
- Encourage the child to take small amounts of RUTF frequently during the day, eating directly from the packet.
- Whenever possible, wash the child's hands and face before eating and after defaecation.
- RUTF is a special food as medicine for thin and swollen children. It should never be shared with other members of the family.
- If concerned about the child's condition, tell the mother/caretaker to bring them straight back to the health facility. For example, if the child is not eating, vomiting, having diarrhoea, or is sick, or increasing oedema the child should be taken immediately directly to the health facility for medical review and advice.
- Give medicines as advised by the health worker.
- Attend the health centre weekly for monitoring and to receive more RUTF supplies.
- properly dispose the empty sachet at the HH level by deep burying or burning
- Malnourished children need to be kept warm (ensure child wears plenty of clothes).

Note: Always ask the mother/caretaker to repeat back how s/he will feed the child and give any medicines at home.

5.2.6 Individual monitoring and follow-up

Facility

Children's progress is monitored on a weekly basis²³ at the health facility ((S)HP/PHC) and recorded in the register.

- Weight is measured and recorded to track progress

²³ Outpatient care in some cases may be carried out fortnightly if for example a lot of mothers/caretakers are defaulting because it is harvest time or if the health facility is serving a very large geographical area.

- Degree of oedema (0 to +++) is assessed and recorded
- MUAC is taken and recorded to track progress
- Medical assessment is completed as per CB-IMNCI guidelines
- The mother/caretaker is asked about the progress of the child
- Appetite is discussed and RUTF appetite test performed at each follow-up
- The weekly ration is calculated according to current weight and provided

Any issues identified during the medical check and appetite test should be appropriately addressed through treatment at the health facility (according to CB-IMNCI protocols) or referral to inpatient therapeutic care according to the criteria set out in Table 8 below.

In addition, any child with the below should also be referred to inpatient therapeutic care if they are not responding adequately to treatment in the OTC. This is defined by:

- No weight gain for five weeks
- Weight loss for three weeks
- Increased oedema or development of oedema (see summary in Table 8 below)

Table 8. Criteria for referral to inpatient from outpatient treatment during follow-up

Factor	Criteria for inpatient referral
Oedema	Increase of or development of oedema
Appetite	No appetite or unable to eat
Medical complications	As defined in Table 2 for admission to inpatient care
Weight changes	Weight loss for 3 consecutive weighing (2 consecutive weighing for 2 weekly follow-up) Static weight for 5 consecutive weighing (3 consecutive weighing for 2 weekly follow-up)
General	Other general signs the health worker thinks warrants referral (as per CB-IMNCI)

Note: For infants, referral to inpatient care during treatment should be based on the development of any of the complications outlined in Table 4.

In some cases where children are not responding to treatment, chronic conditions may be suspected and in this case children should be referred for further investigations in the hospital or appropriate site. This can include:

- Referral for HIV counselling and testing
- Referral for TB testing counselling and testing (see Chapter 5.2.8)

All referrals should be accompanied by a referral document that contains all details of the child's condition, reason for transfer and any treatment received (see Annex 3 for standard form).

Children with SAM can be transferred to outpatient care when their medical complications, including oedema, are resolved. The criteria for transferring a child from inpatient to outpatient treatment should follow the below guidelines:

- The child has a good appetite and RUTF test dose ok
- The child is clinically well and alert
- The decision to transfer a child from inpatient to outpatient care should be determined by his/her clinical condition and not on the basis of specific anthropometric outcomes, such as a specific mid-upper arm circumference or weight-for-height/length
- Decrease of oedema, and/ or minimum oedema present
- Min LOS (to ensure that stabilization and transition phases have been completed: 5 days

Community

Follow-up through home visit by the FCHV should be triggered for:

- Children with medical complications who have refused transfer to inpatient care and are being treated on an outpatient basis
- Cases who are not responding in the programme (loss or static weight for two weeks) and aspects of the home environment are suspected to be playing a role rather than medical issues
- Repeated absentees from treatment

See Chapter 3 for details on follow-up visits.

5.2.7 Discharge from Outpatient care

Discharge Cured Criteria

For children 6-59 months, admitted by MUAC (or by W/H)

- Minimum LOS of 6 weeks AND MUAC >11.5cm AND
- No oedema for two consecutive visits AND
- Weight gain for last two consecutive visits AND
- Clinically well and alert

Upon Discharge

- Children admitted with Oedema will get one dose of vitamin A (other outpatient children do not get this discharge dose).
- If the child has completed nine months of age during his/her treatment in OTC, and did not yet get a measles vaccination, the mother/caretaker should get confirm an appointment for follow-up visit during EPI hours, or to visit the nearest EPI outreach clinic as soon as possible to receive the vaccination.
- Children admitted at age six to eight months should schedule a follow-up appointment (during EPI hours or outreach clinic) for the second measles vaccination after one month.
- All children will get a last ration of seven sachets of RUTF (for one week) to aid the transition onto local and, in some cases, supplementary foods.
- The mother/caretaker should receive counselling on IYCF practices, care practices, hygiene, feeding practices, food preparation for children etc. in line with standard IYCF counselling.
- The caretakers should be linked with the MAM programme (either supplementary feeding or MNP distributions with counselling depending on which is available) and with any other appropriate services (e.g. further IYCF counselling) for which they are eligible and which support the ongoing rehabilitation of the child (see below).
- Complete the patient record in the register with the discharge details.

Discharge as non-cured

If a child does not reach the discharge criteria within three months and all referral and follow-up options have been tried, they may be discharged as non-cured and linked with the MAM programme where possible and to social support systems (see 5.2.8).

Discharge as defaulter

If a child is not seen for follow-up for three consecutive visits/consultations (or for two visits/consultations if they are only being followed-up every two weeks) and it is not possible for community level agents to locate them and encourage them back to the service, then that child should be discharged as a defaulter.

5.2.8 Operationalising links

Where there are interventions in place targeting MAM children, those discharged from treatment for SAM should be officially referred to these services as standard with the use of a referral slip.

Other interventions that are of benefit for referral of individual children with SAM and/or links with the IMAM programme are:

- ***CB-GMP programmes***- Which allow on-going monitoring of the child. During treatment in OTC the child's weight can be plotted on their growth chart. Upon discharge they should be referred where GMP is in place for on-going monitoring.
- ***Specific IYCF counselling and support*** – This can be provided through trained HWs/FCHVs on IYCF practices. It is important to emphasise these same IYCF messages and support for the mothers/caretakers of acutely malnourished children.
- ***ECD centres*** – Stimulation is a key part of rehabilitation for malnutrition, therefore where ECD centres are in place, children can be referred to them both during and after treatment for SAM. Where ECD facilitators are working at the community level, children can also be linked to them either via the health facility or FCHV.
- ***Health/WASH/Nutrition education***- Linking to support for the prevention of malnutrition throughout the critical 1000 day window is important. The major delivery mechanism for counselling and support is the FCHV. It is important to emphasise during FCHV training the importance of prevention counselling for mothers/caretakers of acutely malnourished children.
- ***Micronutrient powder distribution (MNP)***- Anaemia among children under two years of age in Nepal is 72 per cent, and is 46 percent among under five year old children (NDHS 2011). In response, the Nepal Ministry of Health has a new policy and plan for scaling up the promotion and distribution of micronutrient supplementation for children aged 6 to 23 months, to prevent anaemia and improve overall nutritional status. MNP distribution is also part of the treatment for MAM in areas where sufficient local foods are available to provide for young children. It is also part of the package of interventions for implementation during emergencies for all children aged 6 to 59 months. In areas where micronutrients supplementation is already in place, mothers/caretakers of children with SAM should be orientated on the importance of MNPs for addressing anaemia and other micronutrient deficiencies and referred to receive MNPs on discharge either within the Supplementary Feeding programme if in place or through general distributions (NOT during treatment where sufficient supplementation is provided through the RUTF).
- ***HIV counselling, testing and support*** –The proportion of children suffering from SAM who are HIV positive is unknown in Nepal. However, the association between acute malnutrition and HIV is known. As noted above, wherever possible, non or slow response of children in the programme that creates suspicion of underlying chronic condition should lead to referral for

counselling and testing. Equally, staff working on any facility or community outreach sites where HIV/TB counselling and testing is being carried out (including PICT) should also be trained in the identification of acute malnutrition and referral to IMAM.

- **Child Cash grant** – Where children are eligible for the child cash grant, the FCHV and other community facilitators/volunteers can refer them to this programme. It is therefore important that they are aware of the criteria. At the same time, efforts should be made within the cash grant programme to sensitise mothers/caretakers about the IMAM programme.
- **Ante and post-natal care services** – It is important to use the contact with mothers through ante-natal care to ensure that existing children are assessed for acute malnutrition. The contact with mothers of children coming for SAM treatment is also an opportunity to ensure that they are accessing ante-natal and reproductive health services as their health, nutritional status and wellbeing are closely linked to that of both existing and future children.
- **CB-IMNCI** – As noted within the document, at various stages in the assessment and monitoring of the child with SAM, CB-IMNCI protocols are adhered to. Therefore, to strengthen links, trainings done on CB-IMNCI should include the module on identification and management of SAM.

5.2.9 Set-up requirements

OTC Centers (OTCC) will operate either in PHCC or health posts or sub health posts in order to most adequately reach the majority of the population with a service within a day's walk. **In IMAM program district, if there is already NRH, the NRH will also provide both OTCC and ITC services.** Where sub health posts are included (based on identification of distance as a barrier to access), it is important that minimum requirements are still met and that supply and supervision schedules include these sites. In some cases in order to access the population the SAM treatment service may be taken out with other services during outreach clinics. Sites selected for outreach clinics should also take account of the following requirements. Minimum requirements before setting up capacity for management of uncomplicated SAM are:

- Facility is manned by trained health staff able to conduct CB-IMNCI
- Running water (for consumption, hand washing and general hygiene)
- Gender sensitive latrines
- Shade under which children and their mothers/caretakers can wait for service
- Safe and adequate storage place for RUTF, medicines and equipment
- A separate area for measurements and consultations in order to protect privacy

Equipment requirements for setting up OTC Centres are outlined in Annex 14.

5.3 Inpatient Therapeutic Care

In the Nepal context, inpatient therapeutic care should most commonly take the form of stabilisation care (or 'phase' of care according to WHO inpatient protocols) for cases of severe acute malnutrition with medical complications. Once stabilised, these clients will be referred to outpatient care to complete their treatment. In some cases e.g. in the NRH, the complete rehabilitation of children past the stabilisation phase may occur where OTCC is not in place or accessible or for a minority of special cases (infants <6 months, cases with high risk home environment, patient choice). Inpatient care is carried out according to WHO protocols.

Inpatient stabilisation should be delivered from tertiary level facilities with capacity for 24 hour care and where medical capacity is available for the treatment of complications. In some cases it may be possible for the NRH linked to the hospital to provide this stabilisation care where there is not IMAM program. Inpatient therapeutic care should be incorporated into the existing running of the facility

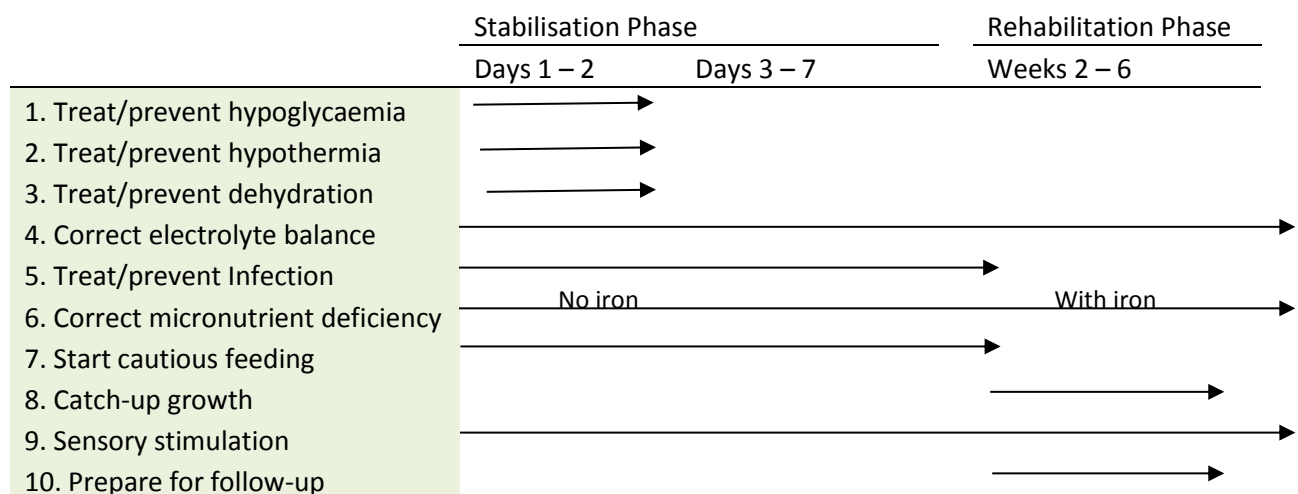
though a specific section (bed space) and staff may be assigned. Children from districts where in-patient care are unavailable should be taken to the nearest in-patient care facility in another district.

Children may be received directly into inpatient care via identification at the outpatient department of the hospital, by referral from Outpatient care or by referral from the FCHV or other community agents.

The general WHO principles for routine care should be kept in mind at all times. The last three have been adapted for inpatient care to accommodate outpatient rehabilitation (see Figure 6).

Figure 6. WHO steps for management of SAM

- Step 1. Treat/prevent hypoglycaemia
- Step 2. Treat/prevent hypothermia
- Step 3. Treat/prevent dehydration
- Step 4. Correct electrolyte balance
- Step 5. Treat/prevent infection
- Step 6. Correct micronutrient deficiencies
- Step 7. Start cautious feeding
- Step 8. Transition to catch-up diet
- Step 9. Provide sensory stimulation and emotional support
- Step 10. Prepare for follow-up after stabilisation



5.3.1 Assessment of nutritional status and medical condition

This assessment may take place at the outpatient department (OPD) or through collaboration of the OPD and the inpatient therapeutic unit depending on where staff trained in the particular management of SAM are situated. Critical care of children with SAM differs from the standard protocols and trained medical staff need to be involved to provide appropriate medical care for SAM to reduce the risk of death. Assessment should include (see Chapter 4):

- Give water to suspected cases and referrals waiting for assessment.
- Any critically ill children should be triaged and prioritised for rapid assessment and immediate treatment of any life threatening complications (see below.). At this stage, sugar water should be made available to prevent hypoglycaemia (see Annex 7).
- Take MUAC and check for Bilateral pitting oedema to confirm SAM.
- Take weight (for weight monitoring during follow up visits) and height*.

- Conduct Appetite test (see Annex 8).
- Assess history and medical condition of child and presence of complications.

***NOTE:** In addition, where there is existing capacity at facility level to take weight and height measurements, height may be taken and weight-for-height zscore calculated as an additional (not substitute) admission criteria to MUAC.

5.3.2 Admission or referral based on programme criteria.

Cases of SAM with medical complications requiring inpatient treatment (see Table 2) are registered for treatment. The inpatient treatment register is filled in with details of the above assessments (see Annex 15).

For cases of SAM presenting at the Outpatient department without medical complications identified according to the criteria in Table 2 and with appetite it may be appropriate to refer to Outpatient Therapeutic Care. A standard referral slip should be completed (see Annex 3) and the mother/caretaker orientated to attend the nearest OTC site (ideally this will also be in the hospital).

Where cases of MAM with medical complications are encountered (see Table 3) urgent medical treatment should be provided. These cases should not be referred to inpatient therapeutic care but to the appropriate medical care required according to their complication as per the IMCI protocol.

5.3.3 Medical Management

Treat medical complications identified (see Annex 16 for details) including critical conditions (shock, dehydration, hypothermia, heart failure). Note that for dehydration, ReSoMal and **not** ORS is used for children with SAM. ReSoMal is specially formulated for these children for use in inpatient care only (see Annex 19 for use and preparation of ReSoMal). If commercial ReSoMal is not available it can be prepared (see Annex 22) or 10 per cent sugar water could be used for short term emergency rehydration (see Annex 7).

Provide routine medicines for all admissions to inpatient care according to the protocols in Annex 17.

Note: The use of intravenous (IV) lines is strictly avoided except in case of shock or circulatory collapse. Special care with intramuscular (IM) injections is required, as children with SAM have reduced muscle mass and the risk of nerve damage is high.

5.3.4 Nutrition Management

Nutrition management for cases in inpatient care should be guided by age group and the appetite test:

- **Children 6-59m with SAM demonstrating appetite** should be treated using RUTF calculated according to Annex 13. This includes those children referred to stabilisation from outpatient care who may already have appetite and be eating RUTF but not gaining weight for a number of reasons.
- **Children 6-59m with SAM with no appetite** demonstrated should be treated using F75 (130ml =100kcal). Quantity of feeds is calculated according to the weight of the child (see Annex 18). A six-feed schedule (every four hour feeds) may be the most practical, but the option of an eight feed schedule is also given. Where night feeds are problematic, five-to-six feeds should be given during the daytime. Hypoglycaemia becomes a risk if the daytime intake is low.
- **Infants less than 6 months** old without oedema admitted according to the above criteria should be treated with F100 diluted or SDTM and F75 in special cases, for example with oedema. (see Chapter 5.4).

Meal times should be sociable. The mother/caretakers should sit together in a semi-circle around an assistant who talks to the mothers/caretakers, encourages them, corrects any faulty feeding technique and observes how the child takes the milk or RUTF.

Care is needed to ensure that mothers'/caretakers' meals are not taken beside the child. Sharing of the meal with the child can be dangerous given their delicate pathophysiology.

Feeding with F75

F75 should be offered orally first. Feeding should be done by cup and saucer unless a particular need for Naso Gastric Tube feeding is identified (see Box 9) because the child is unable to take sufficient F75 by mouth. Breastfed children 6-59 months should always be offered breast-milk before the diet and always on demand.

Box 9. Reasons for Using a NASOGASTRIC TUBE (NGT) to Feed the Child During Stabilisation

A NGT should be used if the child:

- Takes less than 80 per cent of the prescribed diet per 24-hours during stabilisation
- Has pneumonia (rapid respiration rate) and has difficulties swallowing
- Has painful lesions of the mouth
- Has cleft palate or other physical deformity
- Shows disturbed level of consciousness

The use of a NGT should not exceed three days and should only be used in the stabilisation phase. The NGT should be placed only by trained staff, and checked before each utilization.

Aspiration pneumonia is very common in severely acutely malnourished children due to muscle weakness and slow swallowing. Therefore, applying the correct feeding technique is important to ensure the child has an adequate milk intake:

- The child should be on the mother's/caretaker's lap against her chest, with one arm behind the caretaker's back.
- The mother's/caretaker's arm encircles the child and holds a cup and saucer under the child's chin. The child should be sitting straight (vertical).
- The F75 is given by cup and any dribbles that fall into the saucer are returned to the cup.
- The child should never be force fed, have his/her nose pinched, or lie back and have the milk poured into the mouth.

Feeding with RUTF

- Provide the RUTF to the mother/caretaker to feed the child. The mother/caretaker should be encouraged to provide RUTF feeds at the same time as feeds were provided during the stabilisation phase (five to eight feeds per day).
- Breastfed children should be offered breast milk on demand before being fed RUTF.
- Children should be offered as much water to drink as they will consume during and after they have taken some of the RUTF.
- Although feeding with RUTF is more straight forward, it is still important to observe the feeding to assess the proportion of the feed that they child has consumed and any appetite issues.

5.3.5 Orientation and counselling for the care giver

It is important to explain all medical and dietary protocols to the mother/caretaker of the child. The key messages for RUTF are also appropriate for use in inpatient care (see Section 5.2.5 Box 8) with the addition of an orientation on the use of F75 and F100:

- F75 is the only food that the child requires at this stage of their treatment. It is important that they are not given other foods, except for breastfeeding, that can be harmful at this critical stage.

Inpatient care gives additional opportunities, where possible, to conduct wider nutrition, health and WASH orientation/education particularly for those cases who will complete their rehabilitation in inpatient care (e.g. infants). The use of the existing IYCF package in particular is appropriate for use with the mothers/caretakers of malnourished children.

Children with SAM have delayed mental and behavioural development. To address this, sensory stimulation should be provided to the children throughout the period they are in inpatient care. As an integral part of the treatment, it is essential that the staff understand the emotional needs of these children and create a friendly supportive atmosphere. It is essential that the mother be with her child in the hospital, and that she be encouraged to feed, hold, comfort and play with her child as much as possible. Mothers/caretakers must never be chastised and the staff should never shout or become angry.

Inexpensive and safe age appropriate toys should be available, made from cardboard boxes, plastic bottles, tin cans, old clothes and blocks of wood and similar materials.

5.3.6 Individual monitoring and follow-up

Children's progress is monitored on a daily basis during inpatient care and recorded on the patient card as follows:

- Weight is taken at least every day
- Degree of oedema (0 to +++) is assessed at least each day
- Body temperature is measured at least twice per day
- Standard clinical signs (stool, vomiting, dehydration, cough, respiration, liver size etc.) are noted at least each day
- MUAC is taken each week
- Record is taken if the patient is absent, vomits or refuses a feed, and whether the patient is fed by naso-gastric tube or is given IV infusion or transfusion. This information is collected for each feed, each day
- The mother/caretaker is consulted at least daily about the progress of the child

Any failure to respond to treatment must be quickly identified and acted upon. For detail on criteria of failure to respond to treatment in inpatient care and appropriate actions, see Annex 20.

5.3.7 Transition and discharge or continued rehabilitation in inpatient care

Transition

As soon as the medical condition of the patient is stabilised, oedema is reducing and the complications are resolving, the transition phase is started in preparation for transfer to OTC (or in a minority of cases to rehabilitation in inpatient care). Transition is started by feeding the child a test dose of RUTF at alternate feeds retaining the same feeding schedule. If the child refuses the RUTF, the mother/caretaker is encouraged to try to get the child to start eating at every other milk feeding. In the meantime, F100 is continued until appetite returns and RUTF can be given at every scheduled

feed. Monitoring continues as for the stabilisation phase and if any of the following develops the client should return to stabilisation.

Criteria for transfer from transition phase back to stabilisation:

- Weight gain of more than 10 g/kg bodyweight/day in association with an increase in respiratory rate (indicative of excess fluid retention)
- Increasing or developing bilateral pitting oedema
- Rapid increase in liver size
- Any signs of fluid overload
- Tense abdominal distension
- Significant refeeding diarrhoea so that there is weight loss – note it is common for the children to get some change in stool frequency when they change diet. This does not need to be treated unless the children lose weight. Several loose stools without weight loss is not a criterion to move back to the stabilisation phase.
- A complication that necessitates an IV infusion
- Medical complication
- A need for feeding by NGT

In a minority (<5 per cent) of inpatient cases where the child is unable to eat RUTF but needs to progress to rehabilitation, F100 may be required. In this case F75 feeds are replaced with F100 during transition (maintaining the same quantities as for stabilisation with F75) and progress monitored (see Annex 21 for preparation and quantities of F100 for transition). For these children, progression onto rehabilitation with RUTF will be dependent on them reaching the discharge criteria to OTC given below. If these are not satisfied they may move into the inpatient rehabilitation phase (see below).

Discharge criteria to OTC

- Appetite returns – child eats >75 per cent of RUTF daily ration - To test and confirm the complete recovery of appetite of a child, the child should be able to eat at least three quarters of his/her RUTF ration for the day.
- No medical complications
- Oedema is resolving, and/ or minimum oedema present
- No objection/contraindications for rehabilitation at home
- Minimum length of stay is 5 days

Upon Discharge

- Children are referred to the OTC to continue their rehabilitation. Care should be taken to refer them to the OTC closest to their home and where possible their transport should be facilitated (see Box 6).
- Caretakers should get clear instructions and counselling why it is important to continue the rehabilitation of the child.
- A referral slip specifying the treatment provided in SC should be given to facilitate admission and proper follow-up at the outpatient health facility.
- Upon discharge from SC all children are given a single dose of Albendazole (see Annex 10 for dosage, which is the same as for new admissions to OTC).
- A take-home one-week ration of RUTF to bridge the referral gap till admission in OTC is given.
- Provide the caretaker with key messages on use of RUTF and hygiene as specified in the OTC protocol (see Section 5.2.5 Box 8).

Continued rehabilitation and then discharge in inpatient care

For a minority of other special cases rehabilitation may continue in inpatient care:

- Where close medical supervision and treatment needs to continue
- Mother/caretaker refuses outpatient care
- The home environment means it is not possible for rehabilitation to continue at home
- Where no outpatient care is available
- Infants <6 months old (see section 5.4 for protocols)

For these special cases, the dietary management for children 6-59 months with appetite can be carried out according to OTC protocols with the continued closer monitoring that is characteristic of inpatient care. For a minority of cases (usually <5 per cent of inpatient cases), rehabilitation with F100 may be required (See Annex 21 for preparation and quantities of F100 for rehabilitation).

Discharge should be according to the same discharge criteria given in the OTC chapter.

Upon discharge, these children aged 6-59 months should be referred to the programmes for the management of MAM where these are in place. Otherwise they are sent directly home. As for children discharged from OTC where possible they should be linked to other interventions and services for which they are eligible (see Section 5.2.8).

Discharge as defaulter

If a child and mother/caretaker leaves the facility before the appropriate level of treatment has been given and it is not possible for community level agents to locate them and encourage them back to the service, then that child should be discharged as a defaulter.

5.3.8 Operationalising links

As for outpatient care there are a number of links that can be made to other services that can provide continued rehabilitation for the child with SAM and link services focusing on treatment with prevention throughout the critical 1000 days (see Section 5.2.8). In particular for inpatient care, it is very important to link up with all the outpatient departments and other departments in the hospital/facility to ensure that cases of SAM can be identified wherever they are present.

It is also important to link with any HIV/TB services offered within the hospital (see Chapter 5.2.8).

Where there is a Nutrition Rehabilitation Home linked to the hospital, roles for stabilisation of SAM with medical complications, management of infants with SAM and for rehabilitation of special cases must be agreed upon to ensure smooth implementation and referral between these facilities and outpatient care.

5.3.9 Set-up requirements

Inpatient care can be established and integrated into the paediatric ward or as an attachment to an existing hospital or health centre. In all cases, the following minimum requirements should be met before treating complicated SAM:

- Trained clinical health staff able to manage medical complications 24 hours and 7 days per week
- Clean running water (for preparing feeds, consumption, hand washing and general hygiene)
- Gender sensitive latrines and bathrooms
- Safe storage place for therapeutic foods, medicines and equipment
- A separate area for measurements and consultations in order to protect privacy

- Sufficient bed space for the estimated needs (experience shows that, on average, around 15 per cent of all children with SAM will need stabilisation at inpatient care). Ideally children with SAM with medical complications are kept in a separate ward, away from other ill children.
- Appropriate space/kitchen for preparation of feeds
- The facility is encouraged to be 'baby friendly' according to global BFHI criteria (see Annex 40) and early stimulation,

See Annex 23 for a list of supplies and equipment.

5.4 Management of SAM in infants <6 months old

5.4.1 Assessment of nutritional status and medical condition

As noted in Chapter 4 the assessment of infants needs to include assessment of both infant and care giver and the breastfeeding practice (see Annex 24 for assessment protocols). Medical assessment of the infant should be based on CB-IMNCI and follow the same format as for the child with SAM.

5.4.2 Admission or referral based on programme criteria

All infants <6months identified with SAM and in need of inpatient care according to the criteria in table 4 should be treated in inpatient care. The type of management required however is dependent on whether there is a possibility for breastfeeding (see below).

On admission a patient card should be filled in for the infant and the data from the above assessments entered.

Where the breastfed infant does not satisfy criteria for inpatient care but on assessment breastfeeding difficulties are identified (see section 4.2 table 4.) the mother/caretaker should be referred to receive outpatient support at the facility for breastfeeding, plus any medical treatments required. Where the mother/caretaker is malnourished herself (<23.0cm) she should also be referred to supplementary feeding where this is in place, to support her to adequately breastfeed.

5.4.3 Medical Management

Routine antibiotic treatment should be provided for infants <6months **with SAM** admitted to inpatient and outpatient care in the same way as for those >6months in an appropriately weight adjusted dose (see Section 5.2.3).

Note: Do not use Chloramphenicol in young infants under 2 months, and use with caution in infants 2-6 months.

Folic Acid - Give 2.5 mg (tablet crushed) in a single dose.

See Annex 16 for detailed guidance on the management of additional medical complications in the presence of SAM.

5.4.4 Nutrition management

Where there is a possibility of breastfeeding the infant

The main objective is to restore exclusive breastfeeding whether by the mother, a family member or wet-nurse. Therefore supplement the child's breastfeeding with therapeutic milk while stimulating and supporting production of breast milk. This same principle applies in cases where the mother is known to be HIV positive and is able and willing to breastfeed.

- Breastfeed on demand or offer breastfeeding every three hours till mother feels that her breast has been emptied by the child, without frequent switching. The infant should be breastfed as frequently as possible.
- Between one half and one hour after a normal breastfeeding session, give maintenance amounts of therapeutic milk.
- Provide F100-Diluted for infants with severe wasting at 130 ml/kg bodyweight/day, distributed across eight feeds per day. F100-Diluted has a lower osmolality than F75 and thus is better adapted to immature organ functions. Also, the dilution allows for providing more water for the same energy with a better carbohydrate to lipid ratio.²⁴ (see Annex 25 for preparation and quantities)
- Provide F75 for infants with bilateral pitting oedema and change to F100-Diluted when the oedema is resolved. (see Annex 25 for preparation and quantities)

Note: To prevent hyponatremia in hot climates, sips of water or 10 percent sugar-water solution (see Annex 7) are given in addition to the milk diet until the thirst of the child is satisfied.

Give the maintenance amounts of F100-Diluted using the supplementary suckling technique and at the same time give supportive care to the mother (see Annex 26).

- The infant should be weighed daily with a scale graduated to within 10 g (or 20 g).
- Monitoring should take place as for the older child (see section 5.3.6) and recorded on the patient card
- If the volume of F100-Diluted being taken results in weight loss, either the maintenance requirement is higher than calculated or there is significant malabsorption. If the infant loses weight or has a static weight over three consecutive days but continues to be hungry and is taking all the F100-Diluted, add 5 ml extra to each feed.
- If, after some days, the child does not finish all the supplemental feed, but continues to gain weight, it means the intake from breast milk is increasing and the infant is taking adequate quantities to meet his/her requirements.
- The quantity of F100-Diluted (or F75) is not increased as the child starts to gain weight.

Once the infant is gaining weight at 20 g per day (absolute weight gain)

- Gradually decrease the quantity of F100-Diluted by one-third of the maintenance intake so that the infant gets more breast milk.
- If the weight gain of 10 g per day is maintained for two-to-three days (after gradual decrease of F100-Diluted), stop F100-Diluted completely.
- If the weight gain is not maintained, increase the amount of F100-Diluted given to 75 percent of the maintenance amount for two-to-three days, then reduce it again if weight gain is maintained.

Infant with no possibility for breastfeeding

The aim of the treatment of infants under 6 months with SAM without the prospect of being breastfed in Nepal is to receive F100-Diluted until they are old enough to take semisolid complementary food in addition to adapted cow milk.

- Provide F100-Diluted for infants with severe wasting as F100-Diluted has a lower osmolality than F75 and thus is better adapted to immature organ functions. Also, the dilution allows for providing more water for the same energy with a better carbohydrate to lipid ratio (see Annex 25 for preparation and quantities)

- Provide F75 for infants with bilateral pitting oedema and change to F100-Diluted when the oedema is resolved. (see Annex 25 for preparation and quantities)

Note: To prevent hyponatremia in hot climates, sips of water or 10 percent sugar-water solution (see Annex 7) are given in addition to the milk diet until the thirst of the child is satisfied.

Initial management – As for the breastfed child, give maintenance amounts of F100-Diluted at 130 ml/kg bodyweight/day (see Annex 25).

- Distribute the quantity of F100-diluted across eight feeds per day.
- Feed by cup and saucer or NGT by drip (using gravity not pumping).
- Only feed with NGT when the infant is not taking sufficient milk by mouth.
- The use of NGT should not exceed three days and should be used in the stabilisation phase only

Transition - Move to transition when appetite returns and any oedema reduces to at least (++).

- The volume of the F100-Diluted feeds is increased by one-third in comparison to the stabilisation phase (see Annex 27 for quantities)

Rehabilitation - Move to rehabilitation phase when infant is taking at least 90 percent of the F100-Diluted prescribed for the transition phase, any oedema has gone, there are no additional medical complications and there is a minimum stay of 2 days in transition

- The volume of the F100-Diluted feeds is increased to twice the volume that was given during the stabilisation phase (see Annex 27 for quantities)

5.4.5 Orientation and counselling for the mother/caretaker

As for all inpatient care the medical and dietary procedures should all be fully explained to the mother/caretaker of the infant.

The breastfed infant

Counselling for the mother/caretaker will focus on the importance of breastfeeding and breastfeeding support (see Annex 24 and the National IYCF materials) as well as basic messages on hygiene.

The non-breastfed infant

Counselling for the caretaker will focus on hygiene and, towards the end of treatment, on appropriate use of breast milk substitutes and complementary feeding (refer to what is in IYCF materials for non-breastfed infants or Annex 25 or Annex 27)

5.4.6 Individual Monitoring

All infants should be weighed daily with a paediatric balance scale with precision to 10 g (or 20 g). Monitoring of the infant should take place as for the older child (see section 5.3.6) throughout the period of inpatient treatment and recorded on the patient card

In addition, monitoring of breastfeeding and troubleshooting of any issues should be included for the breastfed infant (see Annex 24).

5.4.7 Discharge

The breastfed infant

Once the infant is gaining weight at 20 g per day on breastfeeding alone

- Check that there is no oedema and the child is clinically well
- If the mother/caretaker is agreeable, it is advisable to keep the infant in the health facility for an additional three-to-five days on breast milk alone to make sure that he/she continues to gain weight and then discharged.
- If the mother/caretaker wishes to go home as soon as the infant is taking the breast milk with increased demand, they should be discharged.
- When the child is gaining weight on breast milk alone, he/she should be discharged, no matter what his/her current weight or weight-for-length.
- The lactating mother should continue to receive supplementation support under the MAM programme until the infant is 6 months old.

The non-breastfed infant

Discharge takes place when the following conditions are met:

- Breast milk substitute for the child has been defined within the families possibilities and is sustainable and child has moved onto the substitute and is still gaining weight
- No bilateral pitting oedema for two weeks
- Infant is clinically well and alert
- Mother/Caretaker has been adequately counselled on use of the breast milk substitute and on complementary feeding (timing and foods) as per IYCF materials.

6 Management of MAM

This section provides practical guidelines for the identification and management of Moderate Acute Malnutrition (MAM). The MAM children are at heightened risk of death in the medium and long term, but, unlike the severely acutely malnourished, do not need immediate emergency treatment. While the immediate risk of mortality is higher for a child with SAM than with MAM, but since the total number of children affected by MAM is much greater, therefore absolute number of mortality is higher for MAM than SAM. A Targeted Supplementary Feeding Center (TSFC) may include acutely malnourished pregnant and lactating women, children discharged from OTC Centres and in some cases children discharged from Inpatient Therapeutic Care center (where there is no OTC Centre).

The purpose of Management of MAM is to:

- Identify moderately acutely malnourished children aged 6-59 months and acutely malnourished PLWs who have infant less than 6 months in the community.
- Prevent deterioration in the nutritional status and treat children aged 6-59 months with moderate acute malnutrition.
- Prevent deterioration in the nutritional status and treat acutely malnourished pregnant and lactating women who have children less than 6 months.

Management of MAM may provide treatment to:

- Children aged 6 to 59 months suffering from moderate acute malnutrition with appetite and without medical complications.
- Pregnant women in the second and third trimester suffering from acute malnutrition.
- Lactating women suffering from acute malnutrition whose child is less than 6 months old.

6.1 Strategy for management of MAM

Two basic strategies have been identified for management of MAM children and PLWs.

- **Protocol A** will promote locally available foods, dietary diversity practices and enhanced health counselling along with the provision of multiple micronutrient supplements for all MAM children living in food secure areas and may be of choice for developmental context.
- **Protocol B** will promote dietary diversity and enhanced health counselling together with provision of supplementary food for all MAM children living in highly food insecure areas and in emergency response and recovery context.

Pregnant and Lactating women with children under 6 months of age may also be included as targeted group under both protocols if resource allows.

Child Health division, nutrition section will decide in close coordination with Nutrition Cluster members and concerned districts in the selection of food secured & unsecured VDCs and the target beneficiaries. For this, CHD, nutrition section will take into consideration the recommendations and reports by HLNFS (High Level Nutrition and Food Security Steering Committee) and Nepal Food Security Monitoring Systems (NEKSAP), and will define which protocol should be assigned to the different areas of the country.

In addition to protocols A and B, the Community Based Integrated Management of Newborn and Childhood Illness (CB-IMNCI) protocols and criteria should always be followed when children are found sick.

6.2 Set-up requirement for Management of MAM

- Facility is manned by trained health staff able to conduct CB-IMNCI
- Running water (for consumption, hand washing and general hygiene)
- Clean drinking water
- Gender sensitive latrines
- Shade under which children and their mothers/caretakers can wait for services
- Safe and adequate storage place for Supplementary food, medicines and equipment
- A separate area for measurements and consultations in order to protect privacy
- MUAC tapes
- Registration forms
- Guidelines
- Referral slips
- Weight/height table for children
- Weighting scale with at least 100 gr precision
- Child friendly environment (if possible)

6.3 Screening and referral to Management of MAM

Active case finding of acutely malnourished children and PLWs should take place at community level. Community health workers and community volunteers will carry out active case finding and will identify and refer acutely malnourished children and PLWs to the health facility. Moreover, MAM Children and PLWs may also be screened and referred from the Health Facilities, Nutrition Rehabilitation Homes and OTCs. The referral criteria for children 6-59m will be MUAC <125mm (<12.5 cm) and pregnant and lactating women with MUAC <230mm (<23 cm).

6.4 Admission criteria for Management of MAM

If no severe medical complications are present and the below criteria are satisfied the child can be admitted into the service for MAM management. See chapter 3.4 for actions for children who are assessed and found not to be acutely malnourished. If severe acute malnutrition is identified (see Table 2) then referral to the nearest appropriate inpatient or outpatient therapeutic service should be carried out.

Category	Criteria
Children 6-59 months	MUAC = > 115mm (11.5 cm) and < 125mm (12.5 cm) (Yellow) AND without nutritional oedema
Pregnant (2nd or 3rd trimester) and lactating women (whose child is less than 6 months old)	MUAC < 230mm (23 cm)
Other reasons for TSFC enrolment	
Discharged from OTCC	Severely acutely malnourished child is transferred to TSFC after completion of treatment in OTCC
Readmission	Children or pregnant/lactating women previously discharged from TSFC but meet TSFC admission criteria again
Return after default	Children or pregnant/lactating women who return after default (absent more than one visit if follow up is every month or more than 2 visits if follow up is every two weeks)

6.5 Assessment of MAM patient

At the facility, the following should be implemented by all the trained staff for assessment of a child suffering from MAM:

- Determine age of the child.
- Take MUAC and check for Bilateral pitting oedema to confirm MAM
- Take Weight (for weight monitoring during follow up visits)
- Where capacity exists take height measurement for WHZ score
- Take medical history
- Assess medical condition of child and presence of complications
- Check immunization status, last deworming and vitamin A supplementation
- Review and record all relevant information from referral document where there is one

At the facility, the following should be implemented by all the trained staff for assessment of a Pregnant or Lactating Woman suffering from MAM:

- Determine age of the PLW.
- Take MUAC to confirm MAM
- Take Weight (for weight monitoring during follow up visits)
- Take medical history
- Review and record all relevant information from referral document where there is one

The management will then be carried out according to the protocol being implemented with combination of following components.

- Provision of multiple micronutrient powder
- Provision of Supplementary food
- Provision of routine medicines
- Counselling sessions on IYCF
- Counselling sessions on home-made nutritious meals
- Counselling sessions on maternal nutrition

6.6 Nutritional management

Patients with moderate acute malnutrition need higher nutrient intake than non-malnourished children but less than those suffering from SAM. Standard requirements for a child with MAM are given in Annex 28. Supplementary foods designed for MAM treatment are provided to the MAM children or PLWs on top of family meals. Locally available food should complement the daily intake of fortified blended food. MAM children and PLWs must eat more frequently and more often than the other family members. It is important to continue the practice of feeding the children at least three to five times a day (depending on the age group) during the supplementation and even after the children have fully cured from MAM.

The treatment of moderate acute malnutrition among children under five requires the following:

- Exclusive breastfeeding for the first six months of life
- Breastfeeding in combination with complementary food until 24 months of age (at least)
- Consumption of nutritious food
- Clean and Hygienic environment
- Access to health services (immunization, vitamin A supplementation)
- Provision of supplementary food depending on selected protocol for the area
- Nationally recommended IYCF practices.

6.6.1 Protocol A: Using locally available foods and micronutrient supplements

The dietary management of moderate acute malnutrition should focus on the optimal use of locally available nutrient-dense foods to enhance the nutritional status of moderately acutely malnourished children and protect them from becoming severely acutely malnourished. A diet largely based on plant sources with few animal proteins do not meet these requirements and need to be improved by different interventions. Multiple micronutrient supplementation represents one of the possible strategies to fortify food. Similarly, key messages of IYCF should be delivered to both MAM and SAM children's mothers and caretakers.

Locally available foods

Caretakers should be educated on how to provide an adequate and nutritious diet for their children. An example of such a diet is provided in Annex 29 and it should be continued even after recovery. On top of this diet, locally available foods should be used to prepare one additional nutritious and high energy-dense meal a day that will provide the extra nutrient requirements for MAM children (specifically 25 kcal/kg body weight/day).

This guideline recommends the preparation of *Sarbottam Pitho/Poshilo Pitho*, a locally-developed "super flour" to provide the extra nutrient requirements for MAM children. *Sarbottam Pitho* should be regarded as an additional meal to complete and integrate the daily diet: 220g of *Sarbottam Pitho* should be provided daily to a MAM child²⁵.

The basic formula of *Sarbottam Pitho* has been modified in order to include animal proteins (see Table 9)

²⁵ Vaidya. 1979. *Mid Term Health Review 2035: Research and Evaluation of Health and Health Services Mid Fifth Plan Period (2031-2036)*. His Majesty's Government, Ministry of Health, Kathmandu, June 1979.

Table 9. Modified formula of Super Flour (Sarbotam Pitho)

	Option n. 1: <i>Sarbotam Pitho</i>	Option n. 2: <i>Sarbotam Pitho</i>
220g per child per day		
50g/2 mutthi	Soy bean	Soy bean
25g/1 mutthi	Maize flour	Wheat flour
25g/1 mutthi	Wheat flour	Rice
100g/tea glass	Cow milk/ liver	Cow milk/liver
10g/½ mutthi	Sugar	Sugar
10g/½ mutthi	Ghee or vegetable oil	Ghee or vegetable oil

Source: Food composition calendar of DFTQC (Department of Food Technology and Quality Control)

It is a common practice to add green leafy vegetables to *Poshilo Jaulo*, could be adopted by mothers/caretakers to integrate the daily diet of MAM children in order to provide the extra nutrient requirements for MAM children (see Table 10).

Table 10. Modified formula for Poshilo Jaulo

	Option n. 3 <i>Poshilo Jaulo</i>
75g per child per day	
25g/ 1 mutthi	Rice
15g/ small mutthi	Dal/Meat/Fish/Liver
10g/ ½mutthi	Clarified Butter
25g/ 1 mutthi	Pumpkin leaves

A list of complementary recipes is provided in Annex 30 that could be used by health providers and volunteers during the counseling session to increase available options for mothers/caretakers and facilitate the provision of additional nutritious, locally available meals.

The preparation and intake of high-energy density meals such as *Sarbotam Pitho* should also be encouraged to PLWs in order to meet the women’s daily nutrient requirements.

Multi Micronutrient Supplements

Locally available foods will be complemented by a distribution of micronutrient powders (MNPs) through health facilities. Mothers/caretakers will be orientated to use the powders to fortify foods at home, after preparation and just before consumption. Micronutrient powders contain iron, zinc, iodine, copper, selenium, vitamins A, B1, B2, B3, B6, B12, C, D, E, and folic acid. **The recommended dosage for MNPs is 1 sachet every 2 days, or ½ a sachet per day (15 per month) MNPs should be added to solid or semi-solid foods that are ready for consumption: one dose should be added in the individual plate of the child.** In areas where the multi-micronutrient supplementation is already in place, caretakers should be advised not to provide a daily double dose of MNPs.

Lactating women of malnourished infants under 6 months will also receive micronutrient powders together with enhanced counseling on the use of MNPs to fortify their daily diet.

6.6.2 Protocol B: Using Supplementary Food Ration

Protocol B aims to tackle the needs of those districts where local food availability and access is not sufficient to provide a balanced diet within the households or in emergencies in response and recovery context.

6.6.3 Specialized Nutritious Foods for treating MAM

There are a number of specialized products available in the market for the treatment of MAM; Fortified Blended Foods (FBF) and Lipid-based Nutrient Supplement (LNS). The use of Super Cereal Plus is recommended as best option in the case of Nepal for treating the MAM children.

1.6.3.1 Fortified Blended Foods (FBF)

Super Cereal Plus is a mixture of Corn, Wheat, Rice, Soya, Milk Powder, Sugar, Oil, and Vitamins and minerals, regarded as one of the best Fortified Blended Foods (FBF). A wide range of fortified food for the treatment of MAM through Super Cereal Plus will be used in Nepal (*see Annex 31*). The nutritional value for 200-250g of the fortified food of Corn, wheat, rice, soya, milk powder, sugar, oil, and vitamins and minerals known as Super Cereal Plus is provided in Annex 32. The Super Cereal Plus provides all the micronutrients needed to meet the recommended micronutrient intake for MAM children.

Ingredients: Super Cereal Plus is a mixture of Corn, Wheat, Rice, Soya, Milk Powder, Sugar, Oil, and Vitamins and minerals.

Ration: Take home rations provide 200-250g of dry matter per day per child. The daily ration contains 787 kcal, 33g protein (17%), 20g fat (23%), essential fatty acids and all the required micronutrients. Take home rations will be provided for a minimum period of 60 days. After discharge from the programme, counseling sessions will be provided during two follow-up visits by FCHVs, where they will focus on educating the mothers and caregivers on how to prevent further bouts of malnutrition. Family sharing is taken into account for the calculation of this ration of 200-250g of Super Cereal Plus. 200g of the Super Cereal Plus per beneficiary also includes provision for intra-household sharing. Given the provision of 100g of the Super Cereal Plus as daily ration size per beneficiary, there will be no provision of intra house-hold sharing, which should be made very clear to the beneficiaries through IYCF/MIYCN counseling.

Pregnant and lactating women of severely acutely malnourished infants less than six months will receive their own ration of 200g of dry matter of fortified blended food per day in order to improve the nutritional status, if resources allow.

1.6.3.2 Lipid-based Nutrient Supplement (LNS)

Besides highly recommending the use of Super Cereal Plus as the best option in the case of Nepal in treating of MAM children, there are a number of choices for using the specialized nutritious foods as Lipid-based Nutrient Supplement (LNS), Large Quantity (92-100g) such as Plumpy Sup (Peanut-based), eeZee RUSF (Peanut based), Acha Mum (Chickpea-based) etc. which can be effectively used as Ready-to-Use Supplementary Food (RUSF) for treating MAM children aged 6-59 months and malnourished pregnant and lactating women with less than 6 months infants. The Lipid-based nutrient supplements can be eaten directly from the sachet without prior cooking, mixing or dilution. Each nutrient supplement has the same nutritional value to control and monitor dietary intake.

Ingredients: 92g of each sachet Plumpy'Sup contains Peanuts, Sugar, whey, vegetables oil, milk, soy protein, cocoa, vitamins and minerals with 500 kcal, 13g protein (10%) and 31g fat (55%). 92g of each sachet eeZeeRUSF contains Peanut, sugar, milk, solids, vegetable oil, vitamins and minerals with 500 kcal, 13g protein (11%) and 31g fat (56%). Similarly, 100g of each Acha Mum sachet contains chickpeas, vegetable oil, milk powder, sugar, vitamins, minerals and soya lecithin with 520 kcal, 13g protein (10%) and 29g fat (50%) It does not contain any ingredient of animal origin, except for those derived from milk.

Ration: Each admitted individual will be provided 1 sachet of RUSF per day for a period of 60 to 90 days as supplementary food. However, all caregivers, mothers and children will be encouraged to utilize nutritious food available at household level. The RUSF will be provided as a fortnightly ration with a special provision for one month in case of geographical difficulty for each individual. Each beneficiary is required to come for a follow-up visit at the end of each fortnight to the Targeted Supplementary Feeding Center (TSFC).

Basic background diet

Fortified blended foods and RUSF designed for MAM treatment are provided to the MAM children or PLWs on top of family meals. Locally available food should complement the daily intake of fortified blended food. As specified under the counseling section, in order to meet the increased nutrient requirements, MAM children and PLWs must eat more frequently and more often than the other family members. It is important to continue the practice of feeding the children at least three to five times a day (depending on the age group) during the supplementation and even after the children have fully cured from MAM.

Counseling on the use of Supplementary food

Counseling will be used to educate the caretaker on how to safely handle, store and cook the fortified blended foods. Simple counseling cards for preparation and storage are provided in Annexes 33 and 34. Fortified blended foods must be stored in dry, ventilated and hygienic conditions. Instructions for the preparation should be carefully followed. Specific instructions on how to cook and consume should be consulted based on the specific product used (see Annex 35).

6.7 Medical management

The child with MAM should be treated medically like any child according to CB-IMNCI protocols.

The opportunity should be taken to ensure they are fully immunised and have received any additional supplements (vitamin A), iron and anti-helminths that are included in the national protocols for all children.

6.7.1 Vitamin A

- Vitamin A should be given to all children on enrolment (unless they have received vitamin A in the last one month or are going to receive it within the following month).
- Children referred from OTCC, or other health facility where Vitamin A has already been given should not be given vitamin A.
- Children showing clinical signs of vitamin A deficiency should be referred to the nearest health facility for treatment according to National guidelines.
- Vitamin A is NOT given to pregnant women. Lactating women receive Vitamin A post-partum (6 weeks after delivery) only.

6.7.2 Mebendazole/Albendazole is given to all children aged 12-59 months on enrolment.

If the child is ≥ 1 years and has not had Albendazole in the previous 6 months, give one dose of Albendazole 200 mg till 2 years then 400 mg after 2 years for possible hookworm or whipworm

6.7.3 Iron

- Iron is given to children on admission if there are signs of anaemia. If there is severe anaemia, refer to inpatient care.
 - Give (home) treatment with iron (daily dose of iron/folate tablet or iron syrup) for 14 days.
 - Ask the parent to return with the child after 2 weeks. Treatment should be given for 3 months, where possible. It takes 2–4 weeks to correct the anaemia and 1–3 months after the hemoglobin reverts to normal to build up iron stores.
 - Advise the mother about good feeding practices
- Iron folate acid tablet is given to all pregnant and lactating women on admission.

6.7.4 Vaccination

- Ensure the vaccination status of the child is satisfactory.
- Measles vaccine is given to all unvaccinated children above 6 months of age in case of emergency.

6.7.5 Record all medications given in the registration book.

6.8 Monitoring and follow-up of MAM patient

Progress in the treatment of MAM should be monitored by the health workers at the health facility on every follow-up. During the first visit, MAM children and mothers/caretakers will receive an appointment for the follow-up visit, specifying time and venue, usually every follow-up. The information will be recorded on the registration card but also on the registration books (see Annex 36).

During the follow-up visits at the health centre, health workers and volunteers should:

- Check oedema
- Check weight, height and MUAC
- Ask mother/caretaker about the progress of the treatment and feeding history
- Decide on appropriate counselling and/or action

Any children developing oedema or whose MUAC falls below 115 mm (11.5cm) should be referred to either outpatient or inpatient therapeutic care depending on the presence of medical complications and appetite (see Table 2).

In addition, health workers and community volunteers will need to investigate failure to respond to treatment for all the children who:

- Did not gain weight after 60 days in the programme
- Lost weight during four consecutive weeks in the programme
- Lost weight exceeding 5 per cent of the body weight at any time
- Failed to reach the discharge criteria after four months in the programme

Possible reasons for failure to respond to the treatment include:

- Problems with the application of the protocol
- An underlying physical condition/illness, such as HIV/AIDS, TB. If a child does not respond to treatment it can be suspected they have HIV and/or TB and should be tested for both
- Economic and social circumstances of the mothers/caretakers
- Excessive sharing of the ration
- Nutritional deficiencies that are not being corrected by the diet supplied/feed
- Other causes

Health workers and community volunteers should assess the failure to respond to treatment and address potential issues by following these steps:

- Review the patient's register
- Confirm adherence to protocol
- Conduct full nutrition assessment
- Refer in the case of medical complications or SAM
- Request home visit to assess situation (see Section 3.5)

6.9 Discharge

The discharge criteria should meet MUAC threshold for discharge. Children are discharged from the programme only after a minimum of two months of treatment in the programme according to the following conditions.²⁶

Table 11. Discharge criteria for MAM treatment

Category	Discharge Criteria
Children 6-59 months	MUAC > 125mm (12.5 cm) And Minimum 2 months stay in the programme
Pregnant and lactating women	MUAC > 230mm (23 cm) And Minimum of 2 months stay in programme Or When infant reaches 6 months
Other reasons for TSFC Discharge	
Defaulted	Absent for next visits if TSFC is monthly or 2 consecutive visits if TSFC is every 2 weeks
Died	Died during time registered in TSFC
Non-response	Patient has not reached discharge criteria within 4 months

Upon Discharge

- If the child has completed nine months of age during his/her treatment in the MAM programme, and did not yet get a measles vaccination the caretaker should schedule a firm appointment for follow-up visit during EPI hours, or to visit the nearest EPI outreach clinic as soon as possible to receive the vaccination.
- The caretaker should receive counselling on care practices, hygiene, feeding practices, food preparation for children etc. in line with national IYCF guideline. The caretakers should be

²⁶ Discharge criteria will be reviewed and assessed periodically by the Child Health division, nutrition section according to the situation and resource availability.

linked with any appropriate services (e.g. ongoing Multi Micronutrient supplements distributions, further IYCF counselling) for which they are eligible and which support the ongoing rehabilitation of the child (see below).

- Fill in the patient card with the discharge details

6.10 Operationalizing links

Where there are interventions in place targeting SAM children there should be a close link between the services to ensure that children discharged from the OTCC enter the MAM service center (TSFC) and that any children deteriorating during treatment for MAM can be referred to the SAM service if they attain the admission criteria.

Other interventions that are of benefit for referral of individual children with MAM and/or links with the IMAM programme are the same as for SAM (see Section 5.2.8).

7 Management of acute malnutrition with HIV

Children with chronic illnesses, especially children living with HIV/AIDS often present higher energy requirements. They are more likely to become malnourished as they show less appetite and/or do not absorb enough nutrients. In Nepal, 4,621 children (under 18) are infected with HIV/AIDS (National Centre for AIDS and STD control). Children with acute malnutrition who are HIV infected should be managed with the same therapeutic feeding and supplementary feeding approaches as children with acute malnutrition who are not HIV infected. However, HIV-infected children need more time to recover from malnutrition; rates of weight gain are lower. In addition to this, HIV-infected children often present more associated infections due to changes in their immune system. It is important that nutrition support is given as early as possible in the onset of acute malnutrition in order to give these individuals the best chance of recovery, therefore linking with interventions for management of MAM is critical (see Chapter 6.).

Provider-Initiated Counselling and Testing (PICT) for HIV in children with acute malnutrition and their parents is advised in areas with high HIV prevalence (>1 per cent) wherever possible. HIV positive individuals are at higher risk of acute malnutrition and take longer to recover when they become acutely malnourished.

7.1 Dietary management of acute malnutrition in HIV-Infected Children

Protocols for the admission and management of SAM in children that are HIV infected both in inpatient and outpatient care are the same as those for that are non HIV-infected. HIV infected children with SAM with medical complications should be referred to inpatient care whereas those without medical complications can be managed as outpatients if they still have a good appetite, are clinically well and alert. Nutrition treatment with RUTF uses rations based on the weight of the child. Quantities are the same as for non-infected children.

The protocols for the admission and management of children suffering from MAM will be similar to those non HIV-infected and should, wherever possible, include nutrition support via supplementary feeding with appropriate fortified blended foods.

HIV-infected children identified with either SAM or MAM should be referred to available HIV support services in line with the Nepal National Guidelines on HIV and nutrition.²⁷

HIV-infected children are likely to have HIV-infected parents; additional support needs to be available as the parent will suffer recurrent illness. During these illnesses the parent might not be able to care for the malnourished child. Community mobilisation and support, as well as local NGOs, can be invaluable in these circumstances. Similarly, MAM children living in child-headed households after parents have died from HIV/AIDS need extra attention.

After discharge, health workers and FCHVs should make sure that HIV-positive and TB children are referred and/or continue accessing HIV/AIDS treatment services. Children failing to be cured after 60 days in the program will need to be tested for HIV/TB if their HIV/TB status is unknown. If HIV/TB status is known then case-by-case basis action should be explored and opportunity for inpatient care should be evaluated with the child's HIV/TB treatment provider.

7.2 Medical management of acute malnutrition in HIV-infected children

Cotrimoxazole should be given to children when HIV is suspected, and indefinitely where Antiretroviral Therapy (ART) is not yet available. This antibiotic is added to other systematic antibiotics given at the start of treatment for SAM in the non-HIV infected child, and does not replace them.

Diagnosis of tuberculosis in HIV-infected children should always be considered. The signs are the same as for those in children without HIV infection. HIV-infected children should also be assessed for other opportunistic infections such as thrush or cryptosporidiosis and considered for ART when available.

Children with acute malnutrition who are HIV infected and who qualify for lifelong ART should be started on antiretroviral drug treatment as soon as possible. For children with SAM this should be after stabilisation of metabolic complications and sepsis. This would be indicated by return of appetite and resolution of severe oedema. HIV-infected children with severe acute malnutrition should be given the same antiretroviral drug treatment regimens, in the same doses, as children with HIV who do not have severe acute malnutrition. HIV-infected children with severe acute malnutrition who are started on antiretroviral drug treatment should be monitored closely (inpatient and outpatient) in the first six to eight weeks following initiation of antiretroviral therapy, to identify early metabolic complications and opportunistic infections

7.3 Discharge criteria and referral to HIV services

Children should be treated until nutrition recovery is achieved and be discharged according to the same criteria as for non HIV-infected children. HIV-infected children will likely present with more associated infections, and therefore rates of weight gain and recovery may be lower than in non HIV-infected children. Those not receiving nutrition supports prior to the treatment for SAM or intervention for the management of MAM, should be referred to the available services or community support groups where appropriate as outlined in the Nepal National Guidelines on HIV and nutrition.

8 IMAM programme monitoring and reporting

In order to ensure that the Integrated Management of Acute Malnutrition (IMAM) interventions are achieving their objectives of identifying, treating, and curing acute malnutrition, activities and

²⁷ Section 6.5 Nutritional care and support of HIV-infected children. In National Guidelines on HIV and Nutrition. P57. Government of Nepal April 2011.

outcomes must be monitored. A well designed monitoring and reporting system can identify gaps in implementation of respective components, provide information for on-going needs assessment, advocacy, planning, redesigning and accountability.

Monitoring an IMAM programme is comprised of two major components:

- **Assessment of effectiveness of treatment** (i.e. proportion of clients treated effectively)
- **Assessment of programme coverage** (i.e. proportion of the target group being reached with treatment) and appropriateness of the programme for communities

Even for a service that is achieving good clinical outcomes (high cure rates and low death rates), impact is diminished if it only achieves low levels of coverage. The combination of treatment effectiveness and coverage will determine the impact/or programme outcome hence:

Treatment effectiveness + coverage = programme outcome

The monitoring system in place to assess these components must include data capture, compilation, analysis and feedback if it is to function effectively. It has integrated into current health management information systems (HMIS) and report comes through the system.

8.1 Performance indicators

The following programme performance indicators collected on a monthly basis help in monitoring whether the IMAM programme is achieving its objectives or not. They can be applied both to management of SAM and MAM:

Recovery rate: The number of clients successfully discharged recovered, as a percentage of all discharges during the reporting month²⁸

Death rate: The number of clients who died during treatment, as a percentage of all discharges during the reporting month

Default rate: The number of clients who defaulted, as a percentage of all discharges during the reporting month. Default is defined as absent for three consecutive visits.

Non-cured rate: The number of clients discharged as non-cured, as a percentage of all discharges during the reporting month. Non-cured is defined as not reaching discharge criteria after four or three months in the programme.

Referral rate: The number of clients referred to therapeutic care from MAM management* (i.e. whose condition has deteriorated to SAM), as a percentage of all discharges during the reporting period

Average length of stay: The total number of days a client remains in a programme, until cured and discharged divided by the total number of cured patients

Treatment Coverage: The percentage of eligible clients (primarily children 6-59m with SAM) existing in the area who are reached by the service²⁹

²⁸ In case of MAM, the term “cure rate” is used.

²⁹ Note that due to the lack of clear measures of SAM in infants at community level they are not usually included in standard coverage assessment. Coverage can be assessed for MAM but modifications are required to the standard methodologies to do this.

Geographical Coverage: The percentage of health facilities in an area that offers IMAM services. This is a useful measure of the availability of the service.

Figures for Inpatient and Outpatient therapeutic care should be combined in order to appropriately assess the performance of the service for SAM as a whole. However, particular indicators may be useful to look at separately to assess particular aspects of treatment, such as length of stay in inpatient care. Management of MAM should always be reported on separately.

***Note:** Children referred between inpatient and outpatient components of management of SAM are not recorded as discharges as they remain within the therapeutic service though they are recorded as exits from a particular facility.

(see Annex 37 for calculations)

8.2 Minimum performance standards

Programme performance indicators are compared with standard cut-offs in order to monitor health facility performance and take corrective action as needed. They are also used to assess the performance of the service as a whole (i.e. at district level or at regional/national level) using compiled figures from all facilities.

The targets indicated in Table 12 were developed for use in emergency settings, but are currently accepted for use in non-emergency settings as well. Each facility and the programme as a whole should achieve them.

Table 12. Minimum performance standards for IMAM

	Management of SAM	Management of MAM
Recovery rate³⁰	> 75%	> 75%
Death rate	< 10%	< 3%
Defaulter rate	< 15%	< 15%
Coverage	> 50-70%	> 50-70%

8.3 Monitoring formats and systems

Monitoring and data collection is performed through meetings, registration and reporting from community and health facility levels and through specific assessments conducted at district level of coverage. Collation can be performed at the district level and at health facilities. Computers are not required for compilation but they can make the process easier.

8.3.1 Community level

On-going monitoring of community sensitisation and mobilisation efforts is required. This mainly involves constant dialogue, in which the communities periodically voice their views and suggest alternative courses of action. This entails regular meetings (monthly and/or quarterly) with key community representatives, health staff from the nearest health facility, beneficiaries and other partners to discuss different aspects of the programme, such as:

- Reviewing the selection and motivation of community agents conducting case-finding
- The community's perspective of the programme which may include identifying new barriers to access

³⁰ In case of MAM, the term "cure rate" is used.

- Joint solutions to problems limiting the impact of the programme. This promotes community ownership of programme development and implementation.

Reporting on case finding is kept simple. As house to house screening or mass mobilisation and screening is not going to be the most common method of case finding, it is not possible to draw conclusions on prevalence or trend in acute malnutrition based on information on cases/numbers screened. Therefore, reporting focuses just on the number of cases of SAM and MAM identified and referred or counselled (where no additional treatment for MAM is available) and who enter treatment. This is achieved using simple tally sheets in the existing reporting format of the FCHVs (see Annex 4).

In addition, FCHVs have simple formats to record the information of any follow-up home visits they conduct in order to report back to the health facility. One of the key responsibilities of the VHT members is to maintain records of the community members screened and referred, the health education sessions conducted, as well as the analysis and submission to health facilities.

8.3.2 Facility level

Monthly reporting formats for the recording of admissions and exits according to a number of categories should be filled at each facility implementing IMAM.

These formats can be completed using a simple tally sheet and the patient cards or from the register book where this is in use. Compilation should occur at district level compiling results for all health facilities implementing IMAM.

See Annex 38 for reporting formats.

8.3.3 Treatment Coverage Assessment

Along with all assessment of coverage is the identification of major barriers to coverage. These two aspects can be best assessed fully through the periodic use of the direct coverage assessment methods outlined in Annex 37.

It is important to note that barriers to coverage, though more likely to operate when the service is getting up and running, can also develop at any time. Therefore, in addition to periodic assessment, data already collected can be tallied and used at the health facility and district level on an on-going basis to give an indication of whether any major barriers to coverage are operating. This can be done through simple tallies and can be supported during supervision visits. Information can trigger further investigation either by assessment or by community focus group discussion and includes:

Trends in admissions plotted against the seasonal calendar – This information from the monthly reports can be plotted for the year so that any unusual patterns can be identified. An unusual unseasonal drop in admissions may indeed be due to a drop in prevalence of SAM but it is also likely to be due to the occurrence of a particular barrier to coverage.

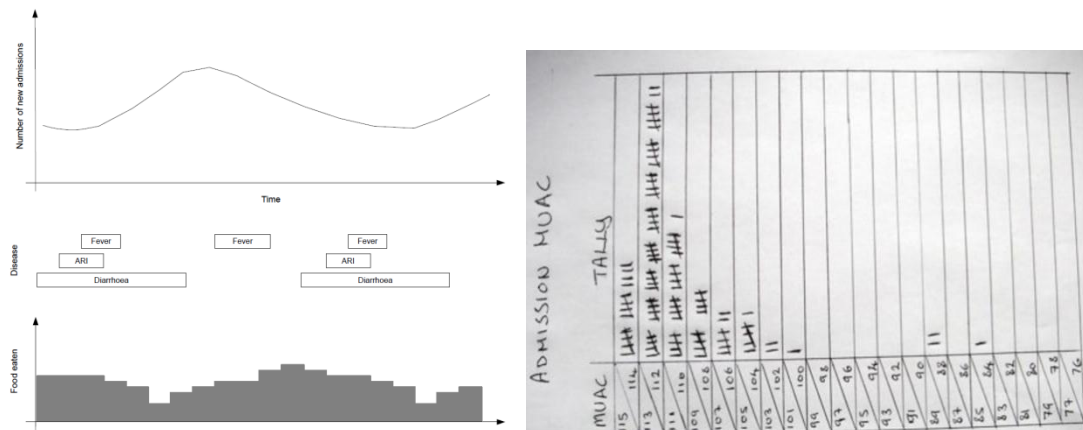
Spread of MUAC on admission - A high proportion of admissions based on very low MUAC (<11.0cm) is an indication of later presentation of cases (i.e. the service is not managing to catch cases of SAM early in the progression of the disease) and therefore poor coverage (see Figure 6). Proportion of referrals to inpatient care is also an indicator of late presentation (see below).

Distance that clients are travelling to access services – Where a large number of clients are travelling for a full day to access services (especially where these are the clients arriving with very low MUACs)

it is an indication that distance is a major barrier to coverage. Where most clients are travelling very short distances it is an indication that the service is not reaching very far and the reasons for this need to be investigated.

Default rate plotted against the seasonal calendar– High default is usually caused by particular barriers to access. Also the same barriers creating default are likely to prevent new cases from accessing treatment. Therefore, any high levels or unusual patterns should be investigated.

Figure 7. Simple tools for monitoring barriers to access



8.3.4 Supply monitoring

Simple monitoring of the monthly consumption of nutrition products should be carried out as part of the stock control system (for standard formats see Annex 39). The reporting of consumption alongside monthly reports of admissions is also very useful for programme management (see below).

8.4 Analysis and Feedback

Analysis based on the above information should focus on:

Treatment coverage and barriers to access – To identify any potential actions/modifications that need to be made to the service e.g. further decentralisation, increase in number of days dedicated to the service due to long waiting times

Numbers and trends in admissions – To identify seasonal patterns for resource planning, to identify anomalies in these trends that require further investigation, to track the effects of mobilisation and scale-up efforts and potentially (in programmes with good coverage) to identify deterioration in the nutrition situation. This information will also be used to decide on when additional support is required.

Recovery, default, death and non-recovered as a proportion of exits as measures of programme quality. These indicators can identify issues with adherence to treatment protocols, management of the service (waiting times, approach to clients etc.), sharing of RUTF, insufficient community mobilisation and poor coverage.

Numbers of clients transferred to inpatient care (as a proportion of admissions) – Can indicate issues with adherence to treatment protocols, difficulties with referral mechanisms and/or coverage issues (poor coverage = a lot of late presentation = large number of referrals).

RUTF and Therapeutic milks use (depending on other systems in place) – To aid with supply planning and also to trigger investigation if quantities used differ greatly from the average that would be expected given the numbers of children receiving treatment.

Numbers and trends in the proportion of 'other' admissions (mainly other age groups) – An indication of the need for further programme support in identification and treatment of those groups. Increases may also indicate deterioration in the nutrition situation.

Numbers and locations of referrals - This allows the tracking of the activity of community agents, identification of areas where additional services may be justified and to identify areas where there may be gaps in coverage (low numbers of referrals may reflect low levels of SAM or poor identification of cases).

At district, regional and national levels, reports and their interpretation should be shared with stakeholders and fed back to facilities and to community agents through supervision visits and meetings. The information should form the basis for focusing supervision, support and resources in particular areas such as deciding on on-going training focus for staff, triggering further investigation visits and potentially further coverage investigation.

9 Programme management

9.1 National level

The management of acute malnutrition is part of the national Multi-sector Nutrition Plan (MSNP) 2012 and the organisational structure for IMAM is modelled according to the MSNP specifications as well as the Ministry of Health structures. An effective organisation of the IMAM programme is critical to its success and ultimate impact and adequate resources and trained personnel are needed for efficient service coverage.

A national Nutrition and Food Security Steering Committee (HLNFSSC) is already functioning under the provision of the MSNP. The Committee is housed within the National Planning Commission (NPC) and it provides overall leadership, resources allocation, coordination, monitoring and evaluation. It is chaired by the Honorary Vice Chairperson of the National Planning Commission and it is composed of different Secretaries and four nutrition experts. The Committee is assisted by a Secretariat responsible for managing the information system, communication and advocacy activities and funding mechanisms. The HLNFSSC is responsible for ensuring the implementation of the IMAM guidelines after their approval at a national level.

Specifically the Committee will:

- Be responsible for policy direction and guidance
- Assess and review programme implementation on a monthly basis
- Coordinate the implementation of the IMAM guidelines with other sector policies and programmes on food and nutrition and health
- Establish and activate District Nutrition and Food Security Steering Committees in each district
- Assign roles and responsibility for the implementation of IMAM guidelines among District Nutrition and Food Security Steering Committees and District Health Offices
- Allocate financial resources to the District Nutrition and Food Security Steering Committees
- Determine which areas are food insecure and are entitled to received fortified blended food

Specifically the National Ministry of Health and Population will:

- Formulate/revise national policy and guideline of IMAM programme
- Formulate annual plans, implement and monitor/review the programme
- Allocate financial resources to the District Health/Public Health Offices for the implementation of the IMAM guidelines in line with MSNP
- Assign roles and responsibilities of D/PHOs and relevant health/nutrition workers for the implementation of the IMAM programme

- Build capacity of human resources of D/PHOs and health facilities for programme implementation and monitoring/review
- Manage human resources for IMAM implementation
- Scale up IMAM programme to address the issues of acute malnutrition as per WHO defined GAM threshold
- Organise regular review and advocacy meetings at national and sub-national levels

9.2 Regional level

Regional Nutrition and Food Security Coordination Committees will be activated by the HLNFSFC in order to provide oversight and coordinate the management of IMAM in all the programme regions. They will also monitor and supervise the implementation of the IMAM activities at the regional level. They will provide support and coordination to main regional stakeholders. The Regional Nutrition and Food Security Coordination Committees will be composed of key regional bodies and will be chaired by the Regional Administrator.

9.3 Sub-national level

The District Development Committees (DDCs), responsible for the overall planning, implementation and monitoring of the MSNP at the district level, will incorporate the IMAM guidelines in the periodic and annual planning through a multi-sector approach. The DDCs will look after the District Nutrition and Food Security Steering Committees and will ensure implementation and periodic monitoring in line with the national monitoring system. They will also coordinate the implementation of the IMAM programme with other sectors and partners.

The District Nutrition and Food Security Steering Committee will be activated by the HLNFSFC in order to steer, provide oversight and coordinate the management of MAM in all programme districts. The District Nutrition and Food Security Steering Committees will be chaired by the DDC's chief and co-chaired by the District Health Officers (DHOs) or the Public Health Officers (PHOs). District Health Office will be overall responsible to implement IMAM in district and district HLNFSFC will play advisory role.

The District Nutrition and Food Security Steering Committees will be responsible for the:

- Analysis, review and endorsement of the IMAM programme in the district
- Multi-sector coordination in the district
- Establishment of effective cooperation among stakeholders
- Incorporation of IMAM indicators in the District Periodic Annual Plans
- Identification of vulnerable areas and population
- Assessment and review of programme implementation on a monthly basis
- Integration of data collection and reporting into the existing regular mechanisms for reporting)

The District Level Nutrition Focal Person will be responsible to manage and to supervise the implementation of the IMAM programme at the District Level. He/she will report to the District Health Officers (DHOs) or to the Public Health Officers (PHOs), the key technical and administrative officers who provide technical leadership for the management of acute moderate malnutrition programmes.

The District Level Nutrition Focal Person will be responsible for the:

- Overall management of the IMAM programme

- Technical and administrative support during the implementation
- Sector coordination
- Training and supportive supervision

The District Health Office will:

- Design the district plan, set the appropriate targets and implement the programme
- Monitor and review of IMAM programme periodically
- Generate enough funds for the IMAM programme operation in coordination with MoHP and local governance units (DDCs/VDCs)
- Identify district IMAM focal points to manage IMAM programme
- Collect, verify and compile IMAM data and incorporate it in the HMIS for periodic reporting
- Identify the most vulnerable/hard to reach areas and population for equity focus
- Complete regular screening for acute malnutrition through the national vitamin A programme, including in hard to reach areas
- Manage supply chain of RUTF and other IMAM supplies through LMIS

9.4 Village development committees level

Village Development Committee (VDC) will incorporate the MAM guidelines into their periodic and annual plans and monitoring mechanisms through a multi-sector approach. VDC Food and Nutrition Steering Committees will be established in each VDC under the guidance of the District Nutrition and Food Security Steering Committee.

The VDC Food and Nutrition Steering Committees:

- Integrate IMAM programmes in the VDC level annual plan in line with the multi-sector plan adopted by the District
- Coordinate multi-sector and regular communication with different sectors in the VDC
- Review the progress of the implementation of IMAM guidelines
- Identify the most vulnerable areas and/or population in the VDC

The VDC Level Focal Person will be responsible for:

- Technical and administrative support
- Sector coordination
- Monitoring and reporting integrated into the existing reporting system
- Training and supportive supervision to Female Community Health Volunteers (FCHVs), Early Childhood Care and Development (ECCD) facilitators and volunteers in collaboration with the other sectors, and with the support of trained health workers
- Organization of monthly meetings with community leaders and representatives from other sectors
- Identification of vulnerable wards in need of additional targeted support
- Outreach activities and referral

9.5 Municipal level

Nutrition and Food Security Steering Committees will be activated at the municipal level. They will be chaired by the Mayor and co-chaired by the District Health Officer or the District Public Health Officer. They will be responsible for:

- Analyzing, reviewing and endorsing the IMAM programme in the municipality
- Reviewing progress in the implementation of the IMAM programme

- Facilitating multi-sector coordination

At the ward level, FCHVs will be responsible for:

- Implementing activities related to IMAM within the ward
- Active and passive case finding
- Following up of MAM cases
- Home visits or defaulters
- Collection of data and reporting at the ward level (including the ECEDs centres)
- Supporting ECEDs facilitators and other volunteers

The role of FCHVs in the community is pivotal, and therefore the VDC Focal Person should acknowledge their work and take into account their feedback in the planning process.

9.6 Programme planning

It is important that the essential steps of community assessment and development of the community mobilisation strategy are conducted as part of the planning stage to ensure appropriate service.

In all cases, all support systems (supply, referrals, supervision etc.) must be carefully planned and in place before starting case management activities. This prevents staff and the population from getting discouraged by breaks in supply, monitoring and supervision leading to poor quality, which will have a negative impact on the uptake of the services

Training should also be followed immediately by set-up of the service to ensure that new knowledge is quickly put into practice and therefore retained.

Feedback loops to on-going programme adaptation (particularly for increased decentralisation) are essential and need to be included in planning. The number of patients attending an outpatient care service may vary from 10 – 20 per session to several hundreds. When too many children are attending services on the same day a decision should be taken as to whether it would be more appropriate to open new facilities or increase the number of service days for existing facilities.

9.7 Human resources and roles

9.7.1 Management of moderate acute malnutrition

Training for health facility staff and human resources management will differ according to the protocol being implemented for the treatment of MAM. In food insecure districts, the focus will be on fortified blended distribution and preparation, whereas in food secure districts, attention will be paid to MNP supplementation, and Sarbottham Pitho (Poshilo Pitho) and Poshilo Jaulo preparation.

For both protocols, a trained nurse or other qualified clinical health worker (or several, depending on workload) will be responsible for carrying out the admission and follow-on consultations. A trained assistant or volunteer could assist the trained nurse and/or the qualified clinical health worker with measurements and provision of fortified blended food, MNPs and counselling (depending on the districts where the management of MAM is being implemented).

In coordination with the District Public Health officers (D/PHOs) and the health facility staff, storage facilities will be established and proper storage will be ensured for both MNPs and fortified blended

food. Training on products storage, distribution and preparation (both MNPs and fortified blended food) will be provided to the health facility staff for smooth implementation of the programme.

9.7.2 Outpatient Therapeutic care

A trained nurse or other qualified clinical health worker (or several, depending on workload) is sufficient to carry out the admission and follow-on consultations. Health workers must be well trained and thus able to identify danger signs applying standard protocols (CB-IMNCI) and take decisions on when and whether referral for inpatient care is necessary during admission and follow-up.

Health facility staff may need to be reorganised, and their job descriptions amended to fulfil the new routines. To help with conducting measurements, and distributing RUTF and key messages, community health workers or other trained assistants may be used to support the health workers.

9.7.3 Inpatient Therapeutic care

Clinical care staff: Includes nurses and/or physicians who have received specific training on the management of SAM with medical complications. Danger signs and treatment protocols of medical complications in children with a good nutrition status are not the same as for children with SAM. A clinician should be available at night.

Feeding assistants: Nutrition or health assistants are in charge of monitoring the child, preparation and/or supervision of the preparation of the feeds, supervising the meals, interacting with the mothers, monitoring clinical warning signs and filling in most of the information on the patient's card. A ratio of 1 staff per 10 patients is considered appropriate. They may also be in charge of emotional and physical stimulation activities and breastfeeding support. Feeding assistants should cover all feeds including where night feeds are scheduled.

Support staff: Cleaners and kitchen staff play a key role in maintaining a tidy environment and preparing therapeutic milks and food for mothers/caretakers.

9.7.4 Staff training

Training is an essential part of the setup and the roll out of IMAM activities for managers and supervisors as well as for health workers and should be based on these national guidelines. Formal training and informal (on-the job training and supervision) trainings must be balanced to ensure sufficient practical experience, as this is known to be the most vital aspect for effective learning. Cascade types of training materials and job aids are available such as; manual for CMAM TOT, health workers training and training of FCHVs. They should be used by trainers experienced in the implementation of IMAM to ensure that appropriate training is delivered. However, the training manuals and materials will be revised periodically as per the changed context and situation.

As noted above, it is important that training is followed immediately by set-up of the service to ensure that new knowledge is quickly put into practice and therefore retained.

Community level agents will need to be trained using standard materials and mechanisms set up to link them to the health facilities. Similarly, refresher training will be organized once in a year.

9.8 Supply management

9.8.1 Supply requirements

Calculating targets

Supply requirements are best estimated by calculating the target number of admissions to a service unit, or district. Where the service is already in place previous admissions reports and supply orders can be used for this though there should be some adjustment (estimate) made for:

- Per cent reporting, i.e. if only 75 per cent of facilities with IMAM services submit reports giving a total admissions of 362 children, a very rough estimate for 100 per cent of facilities would be $(362/75) \times 100$
- Adding an estimated number of cases for any predictable surges in coverage and therefore admissions due to mobilization events, or further decentralization of services. The numbers to add on could be based on previous experiences of similar surges.
- Any predicted increases in prevalence compared to the previous year (e.g. where early warning indicators predict higher than usual seasonal increases)

For districts newly implementing IMAM, a very rough estimation of target admissions for a year period for the purposes of planning can be obtained by using the equation in Box 10 below:

Box 10: Calculation of targets for newly initiated IMAM services

SAM

Target = Population 6-59m in geographical area x [Prevalence SAM + (Prevalence SAM x 1.6)] x treatment coverage (%)

Where

- **Population 6-59 in the geographical target area** = total population in the geographical target area (n) x estimated proportion of children 6-59m in the population (%)
- **Prevalence SAM** = prevalence of SAM from the latest survey in the area
- **1.6** is an (estimated) correction factor for calculating incidence of SAM from prevalence allowing an estimation of numbers over a full year period.
- **Treatment coverage** = an estimate of the projected treatment coverage that will be attained in the first year (note this may be below the minimum performance standards in the first year).

MAM

Target = Population 6-59m in geographical area x [Prevalence MAM + (Prevalence MAM x 1.6)] x treatment coverage (%)

Where

- **Population 6-59 in the geographical target area** = total population in the geographical target area (n) x estimated proportion of children 6-59m in the population (%)
- **Prevalence MAM** = prevalence of MAM from the latest survey in the area
- **1.6** is an (estimated) correction factor for calculating incidence of MAM from prevalence allowing an estimation of numbers over a full year period.
- **Treatment coverage** = an estimate of the projected treatment coverage that will be attained in the first year (note this may be below the minimum performance standards in the first year).

These targets should be used with the information below to identify supply needs. Particularly when the service is new it is important to adjust supply forecasts after the first few months of implementation to reflect the caseload being experienced.

Due to the difficulties in identification at community level for children < six months of age, these numbers are best factored into planning once a service is up and running where numbers can be calculated based on previous admissions. Another way of obtaining a rough estimate would be to use the admissions figures from a neighbouring district already implementing IMAM and with similar population size.

Outpatient Therapeutic Care supplies

Each child in outpatient care consumes approximately twenty packets of RUTF a week, which corresponds to 13 kg per seven week treatment. Note that the total requirement of RUTF depends on the treatment's duration and the child's weight at the beginning of treatment; however, average monthly consumption in an individual site can be calculated as follows:

Table 13. Calculation of RUTF requirements for OTC service

Number of OTC beneficiaries	A	A
Monthly consumption per child (@20 packets /child/week)	B	80
Monthly packet consumption for a site	C	A x B
Monthly carton consumption for a site	D	C/150
Monthly net weight (MT) (@13.8kg/carton)	E	D x 13.8/1000
Monthly gross weight (MT) (@14.9kg/carton)	F	D x 14.9/1000

Inpatient Therapeutic Care supplies

Assuming an average duration of treatment of ten days, two kg (five packets) of F75 per child can be used for planning.

Usually less than five per cent of children admitted for complicated malnutrition will not be able to eat RUTF during rehabilitation phase and will require F100. For these children, a planning figure of 12 kg of F100 per child for the whole rehabilitation phase can be used. This is equivalent to six kg per month of dry F75 for each paediatric bed dedicated for the management of complicated forms of severe acute malnutrition.

RUTF is needed for a few days for every child in the transition phase, and for all children in inpatient care (any phase) with appetite.

Table 14. Nutritional supply requirements calculated per number of SAM cases to treat

Therapeutic Food	Required for	% of SAM children using product (P)	Duration of treatment	Quantity per treatment in kg (Q)	Quantity/100 SAM cases in kg (PxQx100)
F75	Inpatient stabilisation	10%	5-7 days	2	20
F100	Inpatient rehabilitation	1%	4 weeks	12	12

RUTF	Outpatient and inpatient rehabilitation	90%	8 weeks	15	1350
ReSoMaL	Inpatient care	5%		0.084	0.5
CMV	Inpatient care	dependent on use			

Moderate Acute Malnutrition supplies

Assuming an estimated duration of treatment of 90 days, a total of Supercereal Plus or We have 6 to 23 months old children, who will receive 180 Sachets of MNP in total, with 60 Sachets each for children 6 to 11 months, 12 to 17 months, 18 to 23 months and above can be used for planning

Table 15. Nutritional supply requirements calculated per number of MAM cases to treat

Supplementary product	Required for	% of MAM children using the product (P)*	Duration of treatment**	Quantity per treatment + protection*** (Q)	Quantity per MAM cases (PxQx100)***
Supercereal Plus	Protocol B	-	90 days	18 + 3 = 21kg	-
MNPs	Protocol A	-	180 days	180+15= 195 packets	-

*To be determined by GoN after analysis of district needs

** Minimum duration of treatment is 90 days; maximum is 120 days

***An amount of ration added to accommodate sharing

**** To be determined by GoN after analysis of district needs

9.8.2 Supply chain

An uninterrupted supply of supplementary (Fortified Blended Food and MNPs) and therapeutic products (F75 and RUTF) is essential for the service to function effectively. Due to the decentralised nature of outpatient therapeutic and supplementary care and the fact that products (RUTF and Fortified Blended Food) are heavy, bulky, and high value products, supply chain is particularly challenging. A number of measures are required to support effective supply chain:

- Forecasting of needs – see 9.8.1 above
- Definition of minimum stock levels at facility and district levels – it is vital that each facility and district is supported to define their minimum stock levels to ensure orders are made in a timely fashion.
- Stock control – stocks must be closely and accurately monitored as influx of admissions can quickly deplete stores (See Annex 39 for standard formats)
- Appropriate storage conditions – are also critical to minimise any stock losses that could affect the supply chain (see Box 11)
- On the basis of forecasting and minimum stock level the concerned district health office will send demand form and letter to Child Health Division. With reference demand form CHD recommends for supplies to LMD and LDM again requests to supply to central ware house Pathlaiya. After that Central Ware house proceed to dispatch as demand.

Box 11. Storage of Nutritional products

Nutrition products also have limited shelf life. Their shelf life is determined mostly by the stability of the vitamins and minerals contained in the finished product. Shelf life of RUTF and therapeutic milk is 24 months and it is indicated on the label as Best Before Date.

Best Before Date indicates the time until which the manufacturer guarantees the product's compliance with product specifications. Use of products after Best Before Date is not recommended. It is not possible to extend product shelf life based on analytical testing of product samples.

Appropriate storage conditions – The product shelf life can be affected by the storage conditions. High humidity and high temperatures accelerate the degradation processes of vitamins. Therefore, it is important to comply with instructions provided by the manufacturers when storing nutritional products. The following should be considered:

- Products should be stored in clean, dry and cool warehouses away from direct sunlight
- Temperature and humidity in the warehouse should be regularly checked and recorded
- Products should be stored in a way that ensures the circulation of air is not prevented and regular stock turnover can be assured

9.9 Supervision and review

Supportive supervision should become a routine internal process happening on-site. For example, there should be a supervisor in charge of the daily supervision of the activities in each health facility. The day-to-day attention to quality should be implemented through on-site supervision.

Supportive supervision is designed to improve the quality of care offered in line with the standards outlined in Chapter 7 by:

- Identifying weaknesses in the performance of activities, taking immediate action and apply shared corrective solutions
- Strengthening the technical capacity of health workers and motivating staff through encouragement of good practices

In addition, IMAM supervision visits should be carried out by the DHO/DPHO/Regional/Centre team supported as applicable by agencies' staff and local partners. Supervision should be carried out at least once a month for each particular facility. Supervision for IMAM activities, when integrated, should be done at the same time as the visits for other programmes and by the same personnel.

Supervisors should:

- 1 Review submitted reports to identify any issues prior to their visit
- 2 Assess, during their visit through structured observation and discussion with the person in-charge and health workers:
 - Organisation of the activities
 - Structural condition and hygiene of the health facility
 - Storage of products and equipment
 - Reference documents and job aids

- Application of criteria and treatment protocols and procedures (anthropometric measurements, medical examination, appetite test, referral, medical treatment, and provision of RUTF, MNPs and Fortified Blended Food) and correct where applicable
 - Individual counselling, health and nutrition education
 - Links to community components and prevention activities
 - Completeness of individual patient monitoring and recording
 - Completeness of programme documentation (forms and filing)
 - Stock control procedures
 - Treatment performance at facility and actions taken to address issues
 - Compilation of available information to monitor coverage and actions taken to address issues (see Section 8.4)
- 3 Review the following documents to inform the above:
- Individual patient cards (to check admission and discharge criteria and completeness of patient monitoring)
 - Registration book if being used
 - Data collection sheets at the facility level (tally sheets and monthly reports)
 - Stock cards

During the visit, gaps and discrepancies should be identified in consultation with the health workers and, as much as possible, with FCHVs. Immediate feedback should be given to the health workers and joint discussion carried out on possible solutions to the problems identified. Supervisions are also essential for improving staff capacities through the organisation of formal or informal refresher training and mentoring (on-the-job training) during the visits, particularly in less accessible areas where staff movement is difficult.

10 Implementation in the emergency context

It is clear from national and regional data³¹ that the nutrition situation of acute malnutrition for much of the population is vulnerable to shocks and that a number of pre-existing factors are likely to contribute to its deterioration in the event of a crisis:

- Only one in two households in Nepal (49 per cent) is food secure and has access to food year round;
- 14 per cent of children under age five had diarrhea in the two weeks before the last NDHS survey;
- 36 per cent of households still use a bush or open field for open defecation and 40 per cent of rural households have no access to toilet facilities;
- The majority of households (82 per cent) do not treat drinking water; and
- ARIs are a leading cause of childhood morbidity and mortality.

The likelihood of increased incidence of illness and decreased food security will have a deleterious impact on GAM especially in light of the baseline information highlighted above (NDHS, 2011).

10.1 Disaster Risk Reduction and Preparedness actions

The increased decentralization of services for the management of SAM to health facility levels as part of national scale-up is in line with Disaster Risk Reduction (DRR) guidance. Scale-up provides additional treatment capacity, catching children with SAM earlier in the progression of the disease and treating them closer to home. This helps to reduce both the vulnerability of children to additional shocks and

³¹ Nepal has a 'serious' national prevalence of GAM (10.9%) according to the WHO classification, but in certain areas GAM has already reached the rate classified as 'critical' (Central Hill, 15% and Western Terai, 15.2%).

the vulnerability of families caring for those children. These families are able to continue with their livelihood and coping strategies while their children receive treatment, thus protecting community resilience. Specific actions to enhance preparedness and DRR are outlined below in Box 12.

Box 12. Preparedness and DRR actions for management of SAM

- Establish integrated guidelines for management of acute malnutrition
- Assess coverage of existing services for management of severe acute malnutrition (SAM) and establish a contingency supply and distribution plan
- Map community capacities and existing communication channels to identify the most effective ones for passing nutrition information
- Ensure that on-going Situation Analysis takes account of trends in SAM admissions (admission numbers and whether any particular groups in addition to children 6-59m are being identified with regularity)
- Ensure emergency preparedness is included in national management of SAM scale-up plans and UNICEF national work plans
- Capacity Development for management of SAM
- Ensure contingency plans are in place for supplies and staffing needs in the event of an emergency

10.2 Agreeing thresholds for response

Nationally, Nepal has agreed thresholds to guide response based on prevalence of GAM and aggravating factors and in line with WHO guidance (see Table 16).

In addition to address the issues associated with periodic emergencies coming on top of on-going needs for services for the management of acute malnutrition, local level thresholds for SAM can be agreed. These correspond to the numbers of children with SAM that each health facility (or district) can manage with existing non-emergency levels of support.

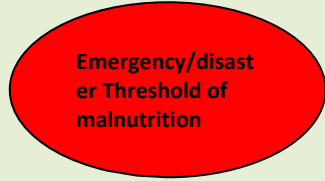
The use of the thresholds model adds the critical component of defining the capacity gap that needs to be built and of identifying support partners and support modalities for emergency response as part of preparedness ahead of an emergency response.

Contingency agreements can then be reached with district/sub-national and national health teams on the type and intensity of additional support required (in the areas of supply and logistics, HR, supervision and monitoring, data collection and analysis) and who will supply it should those thresholds be exceeded.

Thus emergencies for the management of SAM based on the capacity of the system to manage the caseload rather than on SAM prevalence. It therefore serves to sharpen programme focus on disaster risk reduction and local capacity development as explicit strategies for the long term to contribute to communities' and the health systems own resilience in the face of multiple shocks.

Table 16. Nepal thresholds and benchmarks for Nutrition in Emergencies (WHO 2000³²)

Severity	Prevalence of Global Acute malnutrition (GAM)	Action required	Status of Nepal
Acceptable	< 5 %		- No districts fall into this category
Poor	5 – 9 %	<ul style="list-style-type: none"> - No need for population interventions - Attention to malnourished individuals through regular community services 	<ul style="list-style-type: none"> - Approx. 30 districts fall in this category - Even in the poor nutrition situation, attention should be given to the acutely malnourished children through community and existing health services
Serious	10 – 14 % or 5-9% with aggravating factors*	<ul style="list-style-type: none"> - No general rations, but - Supplementary feeding targeted to individuals identified as malnourished in vulnerable groups - Therapeutic feeding for severely acutely malnourished individuals 	<ul style="list-style-type: none"> - Most of the districts (more than 40) fall in this category - Nepal national figures (11% GAM and 2.6% SAM) fall in this category. In the majority of the districts, two or more defined aggravating factors exist
Critical	> = 15 % or 10-14% with aggravating factors*	<ul style="list-style-type: none"> - General rations (unless situation is limited to vulnerable groups); plus - Supplementary feeding for all members of vulnerable groups - Therapeutic feeding for severely acutely malnourished individuals 	<ul style="list-style-type: none"> - Few districts especially mid and far western hills and mountainous, few districts of central and western Terai and central hills falls in the serious situation
<p>* The aggravating factors include: general food ration below the mean energy requirement, epidemic of measles or whooping cough (pertussis), high incidence of respiratory or diarrheal diseases, epidemic of HIV and AIDS, prevalence of malaria, natural disasters such as floods, earthquakes, droughts, heavy snow/hail falling and destroying agriculture products and massive casualty, climate change and destroying humankind or foods or livelihood, high prevalence of pre-existing malnutrition, such as stunting etc.; complex humanitarian situation such as armed conflict, household food insecurity, crude mortality rate greater than 1/10,000/day; under-five crude mortality rate greater than 2/10,000/day etc.</p>			



³² Management of nutrition in major emergencies. WHO 2000. p40 & p75

10.3 Implications for programme management of acute malnutrition

The protocols and practice for the management of severe acute malnutrition do not change when there is an emergency. However, a number of factors may affect both programme management for SAM and MAM programming and there may need to be a shift in focus of the protocols employed for the management of MAM:

Increases in the numbers of children being identified with acute malnutrition and additional age groups may become affected by acute malnutrition. Therefore keeping up to date information on the admissions to the current service to complement any emergency assessments is critical.

Increased staffing needs as a result of the above may require staff to be moved from elsewhere, or additional capacity may be required from external sources.

Increased supply needs as a result of the above may require additional supply and logistics systems to be put in place and emergency stocks of medicines, equipment and therapeutic products mobilised.

Influx of new cases from areas where there has been no treatment in place may lead to a larger proportion of cases requiring inpatient care and therefore facilities may require extra bed space and staff capacity.

Supplementary feeding is more likely in the emergency context that there will be a deterioration in the food security situation and therefore an escalation of efforts to provide supplementary feeding either for all children under five years of age (blanket approaches) or targeted to those with MAM. This offers more opportunity for referral of discharges from OTC to supplementary feeding in order to continue their rehabilitation and for the identification of cases of SAM, which may present to SFP sites. Therefore, links and referral mechanisms will need to be strengthened.

General food distributions and/or cash transfers to support household food security will require links to ensure that families of acutely malnourished children are included in distributions.

Coordination during emergency situations there are likely to be more agency actors getting involved in support for IMAM, and therefore coordination through the district health administration and national MoHP needs to be emphasised. The use of standard guidelines, protocols and monitoring will need to be reinforced by the ministry of health. This will ensure that short term emergency approaches do not hinder long term progress for IMAM by undermining government ownership, creating parallel services or by putting in place inappropriately resource intensive solutions to implementation issues (such as monetary incentives for community level workers and complicated reporting systems).

Preparedness actions including the agreement of potential support modalities can help to avoid issues being created by the above (see Section 10.2).

10.4 MAM programming in emergencies

During the onset of an emergency household food security is often compromised and it is therefore difficult to manage MAM cases without the provision of supplementary foods.

The GNC MAM decision-making tool for emergencies³³ should be consulted in order to define the nature of the MAM response. Decisions should be based on the following information:

- Prevalence of GAM in the affected area
- Information on the nature and severity of the crisis
- Baseline and health assessment 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

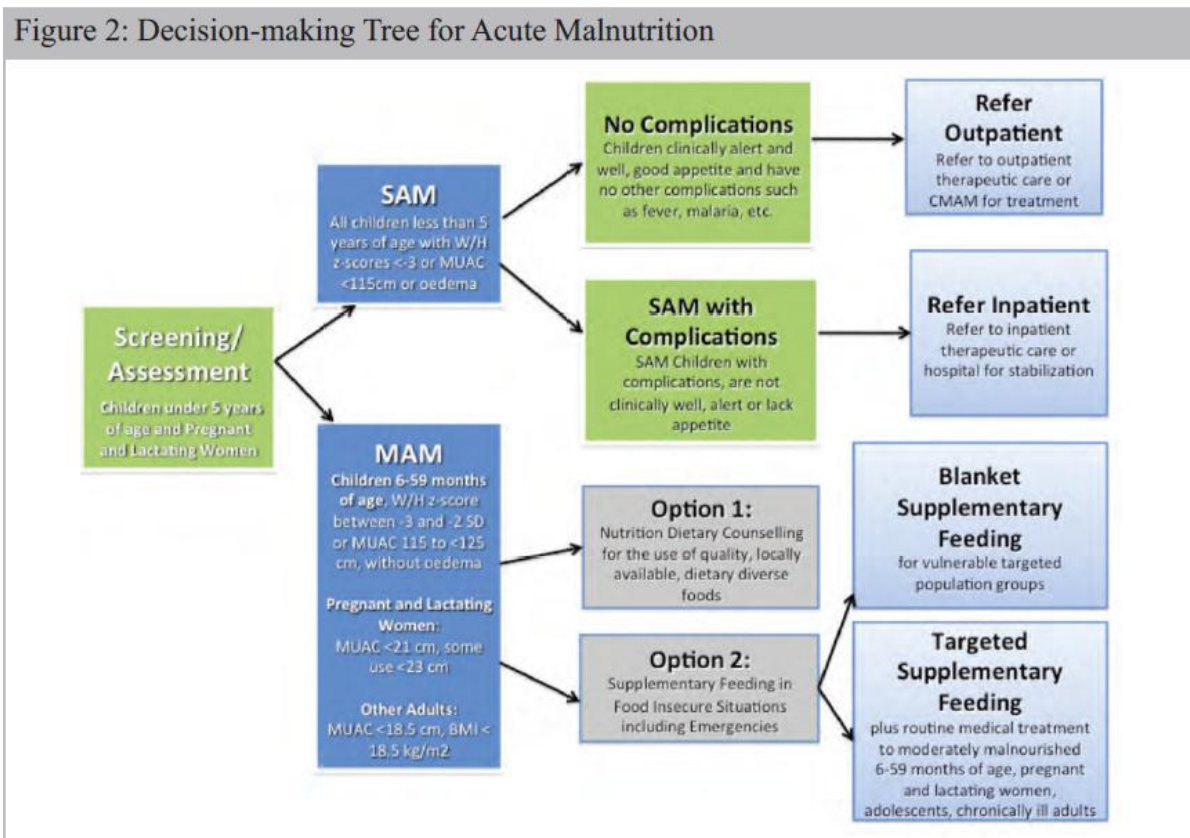
³³ Global Nutrition Task Force. 2012. *Moderate Acute Malnutrition: A decision tool for emergencies*.

The decision tool guides the evaluation of appropriate response which, depending on the findings may include both the prevention and the treatment of MAM.

10.2.1 Blanket Supplementary Feeding (BSF) for prevention of MAM

BSF could be provided to:

- All the children between 6 to 23 months or 6 to 59 months depending on the assessment findings from the decision making tree



Source: modified from management of MAM guidelines by IASC Nutrition Cluster and Nutrition Working Group of the Somalia Support Secretariat (2014). In many countries and programmes the use of both MUAC cut-offs for both SAM and MAM identification is common, and where weighing or measuring weight/length is not feasible, MUAC is exclusively used.

- All the pregnant and lactating women of infants under six months
- All the HIV-infected children 6 to 59 months in the affected area

BSF should be started as early as possible after the onset of the crisis. It will create an opportunity for community participation in the integrated management of MAM and SAM, as well as for fundamental health interventions such as deworming, vitamin A supplementation and immunizations.

A daily ration size of 200g of a novel fortified blended food containing wheat or corn, dehulled soya beans, refined soya bean oil, dried skim milk powder, sugar and a wide range of vitamins and minerals will be provided to the beneficiaries of the BSF program. The timeframe of the intervention should be assessed and evaluated on an ad-hoc basis, but it is recommended to plan the intervention for a period of three to six months.

10.2.2 Targeted Supplementary Feeding (TSF) for treatment of MAM

The target groups and protocols for TSF are detailed in the main MAM section above under protocol B; however, the programme is likely to be implemented more widely in the country and to include pregnant as well as lactating women as a target group in the emergency context.
