

The United Republic of Tanzania



**Ministry of Health Community Development,
Gender, Elderly and Children**

Integrated Management of Acute Malnutrition

NATIONAL GUIDELINES

FEBRUARY, 2018

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ABBREVIATIONS

ART	Antiretroviral therapy
ARI	Acute Respiratory Infections
BMI	Body Mass Index
BSFP	Blanket Supplementary Feeding Program
CBHCP	Community Based Health Care Providers
CB-IMCI	Community Based IMCI
CHMT	Community Health Management Team
CHWs	Community Health Workers
CSB	Corn Soya Blend
CSPD	Child Survival, Protection and Development
CTC	Community Based Therapeutic Care
DMO	District Medical Officer
DP	Development Partners
ECD	Early Childhood Development
ENR	Emergency Nutrition Response
F75	Therapeutic Milk used in Phase 1 of treatment for Severe Acute Malnutrition
F100	Therapeutic Milk used in Transition/Recovery Phase of Treatment of Severe Malnutrition
FBO	Faith Based Organisation
Hb	Haemoglobin
HMIS	Health Management Information System
HSP	Health Service Provider
IM	Intramuscular
IMCI	Integrated Management of Childhood Illnesses
IMAM	Integrated Management of Acute Malnutrition
ITC	In Patient Care
IU	International Units
IV	Intravenous
IYCF	Infant and Young Child Feeding
LMIS	Laboratory Management Information System
MAM	Moderate Acute Malnutrition

MNH	Muhimbili National Hospital
NMNAP	National Multisector Nutrition Action Plan
MOHCDGEC	Ministry of Health Community Development Gender, Elderly and Children
MSD	Medical Stores Department
MUAC	Mid-Upper Arm Circumference
MUHAS	Muhimbili University of Health and Allied Sciences
NEMLIT	National Essential Medicines List Tanzania
NGT	Nasogastric Tube
OPD	Out-Patient Department
OTC	Out-Patient Therapeutic Care
PCV	Packed Cell Volume
PR	Pulse Rate
RCH	Reproductive and Child Health
ReSoMal	Rehydration Solution for Malnutrition
RMNCH	Reproductive Maternal, Newborn and Child Health
RMO	Regional Medical Officer
RR	Respiratory Rate
RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SBCC	Social and Behavioural Change Communication
SFP	Supplementary Feeding Programme
SOP	Standard Operating Procedures
TDHS MIS	Tanzania Demographic Health Survey and Malaria Indicator Survey
TFNC	Tanzania Food and Nutrition Centre
TFU	Therapeutic Feeding Unit
UNICEF	United Nations Children's Fund
VAS	Vitamin A Supplementation
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
W/H	Weight for Height
WHZ	Weight for Height Z-score
W/L	Weight for Length

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FOREWORD

The Integrated Management of Acute Malnutrition (IMAM) is a strategy that combines and links inpatient treatment of malnourished children (those with complications) with outpatient care (severe without complications) also management of moderate malnourished children where possible and a comprehensive community involvement and mobilization. The aim of the strategy is to contribute to the reduction of mortality rate under five years for children in the country and ultimately to achieving the Sustainable Development Goal number 2 and 3 and the Global target number 6 of maintaining the level of wasting below 5%.

Tanzania developed the National Guidelines for IMAM in 2010 in line with evidence-based global recommendations by WHO. Since its publication there has been various lessons learnt through its use in terms of its application in screening for acute malnutrition, criteria for admission, treatment of complications, therapeutic feeding as well as discharge criteria.

In 2013 WHO released new updates on management of acute malnutrition. The updates are in areas such as admission and discharge criteria, use of antibiotics in children with Severe Acute Malnutrition, use of Vitamin A Supplement, therapeutic feeding in children 6-59 months, fluid management and management of HIV infected children with Severe Acute Malnutrition. It also considers management of infants less than six months of age with Severe Acute Malnutrition. In all these areas recommendations have been stipulated by WHO to be adapted by individual countries. Thus, the review took all these developments into account and the process has taken consultative approach involving international and national experts.

The guidelines provide a framework for ensuring, appropriate preventive interventions, early detection and treatment of acutely malnourished children. The guidelines are action oriented, geared towards providing health workers with knowledge and skills to perform their duties effectively. They are also intended for planners, managers and implementers at all levels to be used as a tool for control and management of acute malnutrition.

I call upon all stakeholders involved in management of acute malnutrition to make use of these revised and updated guidelines in their programme implementation.



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CHAPTER 1: Introduction

Malnutrition is one of the contributing factors to high morbidity and mortality among children under the age of five years in Tanzania. Acute Malnutrition is classified into severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) according to the degree of wasting and the presence or absence of oedema. Many severely malnourished children die at home without care, but even when hospital care is provided the case fatality rate is high because of late care seeking and poor management of the condition.

Nutrition Situation in Tanzania

Infant and child mortality remains high in Tanzania. The under-five child mortality rate is 67 per 1,000 live births and the infant mortality rate is 43 per 1,000 live births (TDHS-MIS 2015 - 2016). One out of twelve children in Tanzania dies before his/her fifth birthday. Around 53% of under-five childhood deaths are associated with malnutrition (UNICEF, 2006).

Acute malnutrition, reflected as wasting and underweight, is present in all regions of Tanzania all the year round. TDHS-MIS (2015 – 2016) shows that 5% of infants and young children are wasted and 1% of them are severely wasted while 14% are underweight. Micronutrient deficiencies are also common. Prevalence of anaemia in under-five children (Hb<11g/dl) was 58%. Among them 30% had moderate anaemia and 2% had severe anaemia. The same TDHS-MIS shows also that prevalence of vitamin A deficiency in under-fives (indicated by Retinol Binding Protein < 0.825 µmol/L) was 33%.

Malnourished children that survive tend to experience adverse effects throughout their life, including growth failure, reflected in stunting. Stunting is still a major public health problem in Tanzania with an estimated 34% of children affected (TDHS - MIS 2015 - 2016). The effects of stunting are largely irreversible and include impairments in cognitive function. Stunted children are therefore less able to learn in school and, as adults, are less economically productive and more likely to be dependent. Evidence suggests that stunted adults, even when their cognitive function is not impaired, are also less economically productive, as they are less able to perform heavy physical tasks. Also, they recover from infections less promptly and less completely (Manary & Solomons, 2004). Malnourished female infants, when they become adults, are more likely to give birth to malnourished babies (Haddad & Geissler, 2005) and so it's a vicious cycle.

1.1 Categories and Causes of malnutrition

Malnutrition can be categorized in several ways. The two main categories are acute malnutrition (also known as wasting) and chronic malnutrition (also known as stunting). Children can have a combination of both acute and chronic malnutrition. Underweight reflects both acute and chronic malnutrition.

The National Guidelines address the management of acute malnutrition. Acute malnutrition reflects recent or current nutritional status. It is classified as Severe Acute Malnutrition (SAM) or Moderate Acute Malnutrition (MAM) according to the degree of wasting and the presence or absence of bilateral pitting oedema.

SAM is further classified into two categories: marasmus or kwashiorkor. Patients may present with marasmus, kwashiorkor or a combination known as marasmic kwashiorkor. Patients with kwashiorkor and marasmic kwashiorkor are extremely malnourished and are at greater risk of death than normal individuals.

Figure 1: Characteristics of marasmus and kwashiorkor¹



- Severe weight loss and wasting
- Ribs prominent
- Limbs very thin
- Muscle wasting
- May have good appetite
- Good prognosis with correct treatment

- Bi-lateral oedema and fluid accumulation
- Loss of appetite
- Brittle thinning hair, and hair colour change
- Apathetic and irritable
- Face may seem swollen
- High risk of death

Causes of malnutrition

Causes of malnutrition including severe malnutrition are diverse and interrelated. These causes are displayed in figure 2 and described below at each level.

¹ Pictures from WHO Training Course on the Management of Acute Malnutrition

Conceptual framework for analysing the causes of malnutrition

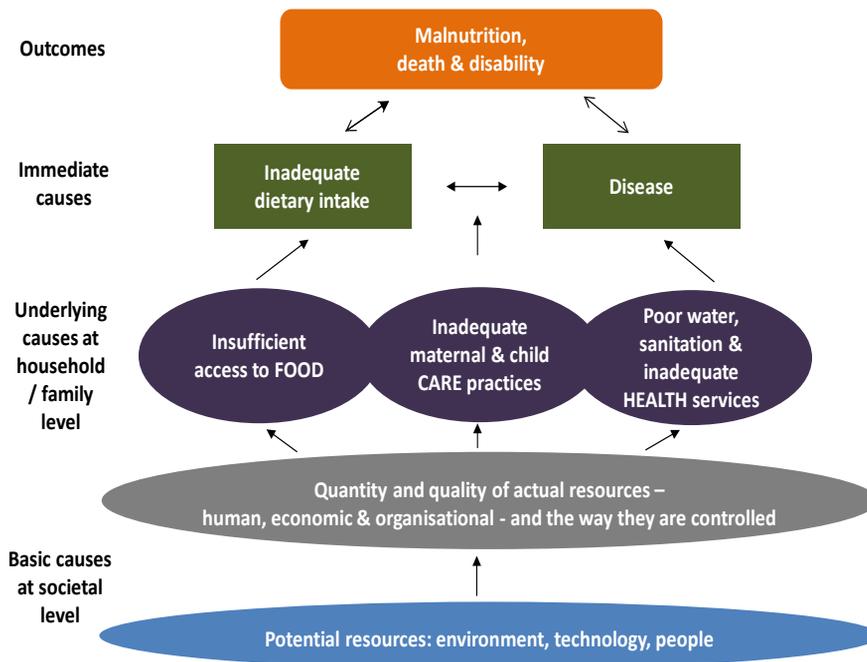


Figure 2: Conceptual framework for causes of malnutrition

Immediate causes

The immediate causes of malnutrition in Tanzania can be categorized into two: dietary causes and diseases which reinforce each other. Dietary causes relate to low or excessive frequency of feeding, dietary diversity and adequacy of the food taken in relation to physiological and physical needs. UNICEF and WHO recommend that children be exclusively breastfed during the first six months of life (World Health Assembly, 2001). The same has been adopted in Tanzania. The Tanzania National Nutrition Survey (TNNS 2014) revealed that 98.4% of children 0-23 months are breastfed at some point. At national level, less than 42% of infants under six months of age are exclusively breastfed. In Zanzibar, less than 20% of infants under six months of age were exclusively breastfed which is low. 14% of ever-breastfed children received a prelacteal feed before initiating breastfeeding, contrary to WHO recommendations. At national level, the survey shows that 89.5% of children from 6 to 8 months had a timely introduction of complementary food however only 20% of children 6-23 months received a minimum acceptable diet. As a result, infants receive insufficient energy and nutrients for normal growth. Poor food intake interacts synergistically with common childhood diseases, such as malaria, pneumonia, environmental enteropathy, diarrhoea, ARI, measles and worm infestations to cause malnutrition. Wasting is a common symptom of HIV/AIDS and children that are malnourished are less able to fight the disease, even when given ART. In general, malnourished children are more susceptible to infection, the burden of which leads to greater nutritional deficits (Shetty, 2002).

Underlying causes

Underlying causes of malnutrition occur at the household level. Factors are usually interlinked and include insufficient household food security, inadequate child and maternal care and inadequate basic services, particularly those related to health, water and sanitation. Food security refers to diversified food availability throughout the year, its economic and cultural accessibility and its biological utilization to meet nutritional needs. The care of children, pregnant and lactating women, the elderly and those suffering from diseases including AIDS and tuberculosis is important to improve nutrition in those population groups. Recent studies show that inadequate access to safe water and sanitation and poor hygiene practices increase the burden of infectious pathogens and lead to growth retardation and stunting.

Basic causes

Basic causes of malnutrition in Tanzania are predominantly in the area of enabling environment. They include among others: income disparity, poverty, inadequate nutrition and general political governance, ignorance due to low education, nutrition unfriendly customs and traditions, and inadequate functional institutional capacity at all levels for nutrition. Others are inadequate linkages with sectoral policies on nutrition, strategies and programmes especially in the key nutrition sensitive sectors of agriculture, education, WASH, social protection and climate change and environment. Moreover, enforcement of nutrition relevant laws and regulations is inadequate and tracking of both nutrition specific and nutrition sensitive interventions for results and investments is not systematized and institutionalized

1.2 Management of acutely malnourished children in Tanzania

Inpatient treatment

Children with severe acute malnutrition are usually treated as inpatients in hospitals across Tanzania. There are four consultant hospitals in Tanzania, 273 regional and district level hospitals, 805 health centres and 7,042 dispensaries. Hospitals currently use the WHO protocol for the management of severe malnutrition for physicians and other senior health workers (WHO, 1999), and WHO protocol for the management of severe malnutrition within the context of the Integrated Management of Childhood Illnesses (IMCI). However, in some health facilities case fatality rates remain well above the acceptable range of 5-10% as recommended (UNICEF-WHO, 2007) and relapse of malnutrition in infants and young children after discharge is common. Recent analysis shows that staff shortages, limited training, guidance and supervision of staff and lack of necessary equipment and ready to use foods hamper the implementation of the WHO guidelines.

Community based initiatives

Community based nutrition interventions in Tanzania include routine vitamin A supplementation, health education and growth monitoring. These are provided through Reproductive and Child Health (RCH) clinics outreach services and community based programmes such as Child Survival Protection and Development (CSPD) and community IMCI. The focus of such interventions is largely on the identification and prevention of malnutrition, however links with the facilities in referring malnourished children is still weak.

Gaps in current system

- At present the health care delivery system is set up to deal with severely malnourished children as inpatients. This places a heavy burden on an already stretched health care system.

- Lack of national guidelines and strategy for the management of children with moderate acute malnutrition limits the ability to catch these children before they deteriorate into severe acute malnutrition. Moderate acute malnutrition is also associated with increased risk of medical complications and high child mortality. Also, children who survive are prone to irreversible body and mental damages.
- Patients leaving health facilities receive no continuity of care or sustained follow-up within their communities until full recovery. The result is that children with severe acute malnutrition either stay longer than is necessary as inpatients (and further increase the burden on health facilities) or return to the community too early and are vulnerable to relapse and death.
- Current initiatives have low coverage of children with acute malnutrition. A significant number of under-five deaths in Tanzania occur at home and over 50% of under-five deaths are attributed to malnutrition. It can be assumed that many cases of severe malnutrition are never identified or treated. For whatever reason, these children are unable to access available treatment, leading to a large number of preventable deaths.

Integrated Management of Acute Malnutrition

It has been recommended by WHO-UNICEF 2007 that most cases of acute malnutrition without complications can be treated through Outpatient Care within the community. An integrated approach will address some of the gaps above and it is evident that the current system of inpatient care in Tanzania must be strengthened and be integrated with community-based management.

Objectives of IMAM services

The primary objectives of IMAM are:

- To reduce mortality and morbidity risks in children under five caused by acute malnutrition;
- To rehabilitate children with acute malnutrition to a state of health in which they are able to sustain their recovery on discharge;
- 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 window; and
- Prevent micro-nutrient deficiency disorders among under five-year-old children associated with acute malnutrition.

1.3 Principles of Integrated Management of Acute Malnutrition

IMAM focuses on the integration of effective management of acute malnutrition into the ongoing routine health care systems. IMAM is based on the same principles as the initial Community based Management of Acute Malnutrition. 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 recovered.

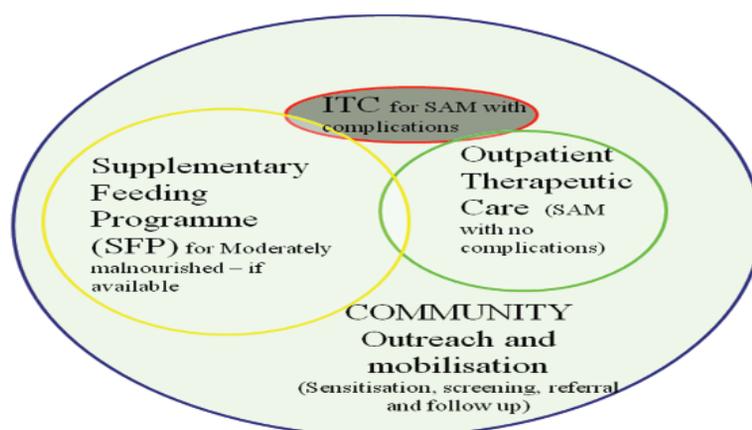
Components of IMAM

IMAM has four components:

- Community mobilisation,
- Inpatient Therapeutic Care (ITC),
- Outpatient Therapeutic Care (OTC) and
- Management of MAM.

To maximize coverage and access to care, Tanzania has adopted an integrated approach for managing acute malnutrition that combines the following components as depicted in figure 3 below.

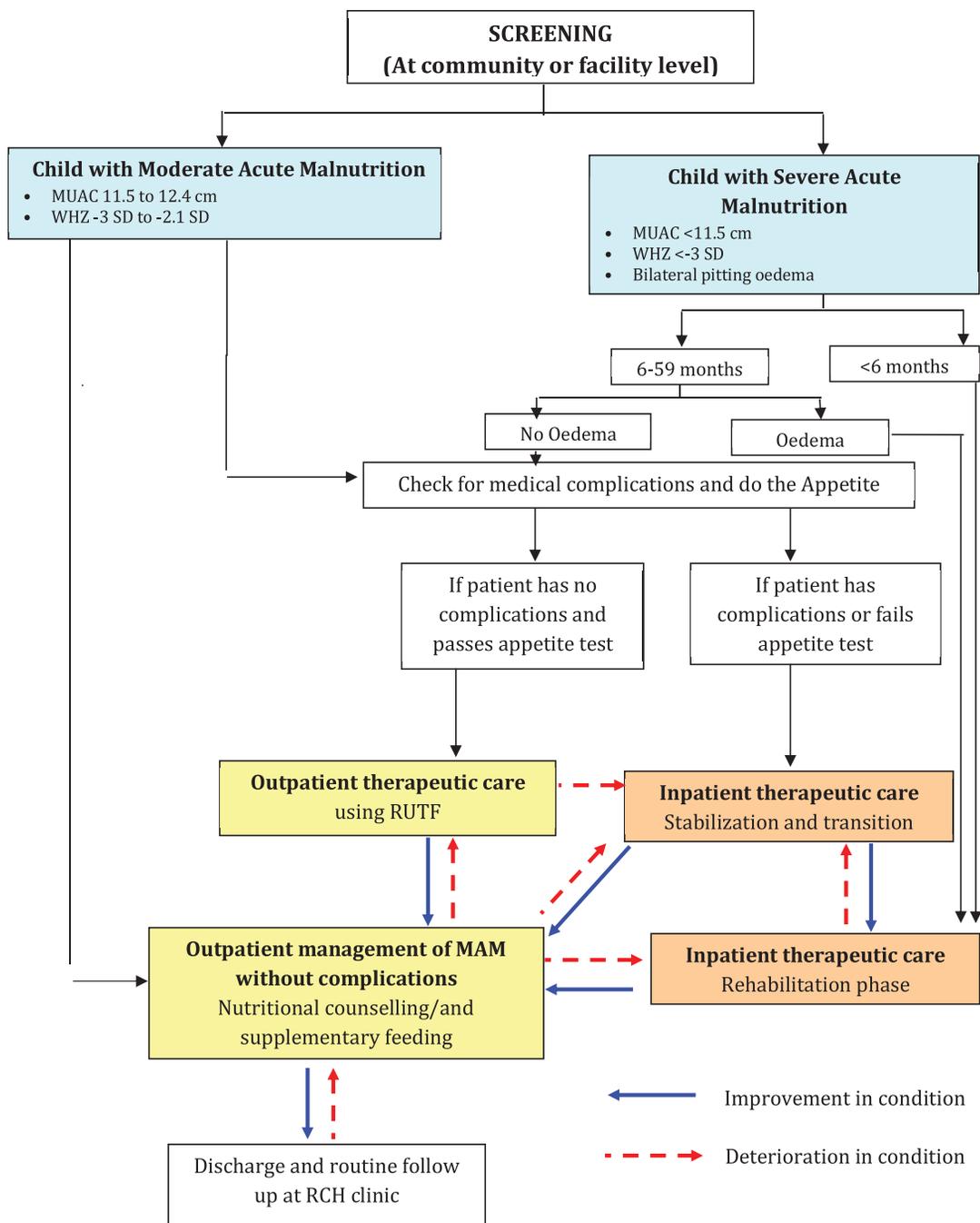
Figure 3. Integrated Approach for Managing Acute Malnutrition



- Community outreach and mobilization** for active case finding and referral of acute malnutrition cases at community level using rapid screening methods such as mid-upper arm circumference (MUAC) and the presence of bilateral pitting oedema. Basic nutritional advice and counselling is given to mothers or care givers, and patients who are absent or defaulting from treatment are followed-up in the community. Community mobilization also includes sensitization of the population to promote understanding of malnutrition, its causes, effects, prevention, and the services available for treatment. Community sensitisation is an ongoing process. Much of the activity takes place early in the programme but it should be continually reinforced in order to be effective.
- Inpatient therapeutic care (ITC) of SAM at facility level** for children aged 6-59 months who have SAM with complications. These children are admitted to a paediatric ward of a hospitals that provide inpatient care. As soon as the condition is stabilized, the child is referred to OTC to continue treatment until full recovery. ITC is sometimes known as ‘facility-based management’. All children aged <6 months who have SAM independent of the presence or absence of medical complications should receive ITC.

- iii. **Outpatient therapeutic care (OTC) of SAM at community level** for children aged 6-59 months who have SAM and no complications and for children who have been discharged from ITC after stabilization of medical complications. Treatment is provided through RCH (Reproductive and Child Health) clinics at a dispensary or outpatient department of a higher-level health facility. The child receives standard medication and a take home ration of RUTF for the period to cover to the next health visit (usually weekly).
- iv. **Management of MAM through supplementary feeding including nutrition counselling at community level** for children with MAM and children who are discharged from OTC. These children will be treated with supplementary food, if available, in addition, their caregivers will be provided with nutritional counselling.

Figure 4: Approach to Management of Acute Malnutrition



1.4 Objectives of the guidelines

Overall objective

The ultimate goal of these guidelines is to reduce child mortality in Tanzania by giving clear guidance on improving the quality of the management of acute malnutrition in the light of new scientific evidence and technological advances.

Specific objectives:

- Provide practical, task-orientated guidance to health care providers involved in the inpatient management of severe acute malnutrition in health facilities.
- Provide practical guidance to health care providers working at grass-root levels to engage and equip communities to treat moderate acute malnutrition and uncomplicated cases of severe acute malnutrition within the community.
- Demonstrate collaboration and linkages between inpatient and community based management and provide guidance on how health care providers from both sides will work together.
- Describe how inpatient and community-based management will be implemented within the existing health system in Tanzania.
- Describe the provisions that are necessary to support the above strategy, including procurement, logistics and storage, and how these will be made available
- Provide guidance to health care providers on how to monitor and evaluate implementation to ensure a continuous process of learning and improvement.

CHAPTER 2: Community Outreach and Mobilisation

2.1 Overview

Community based management of acute malnutrition helps to increase coverage by detecting cases of acute malnutrition early, and referring them for appropriate treatment. This ensures that most children are treated before complications develop. Community acute malnutrition services are a critical component of the Integrated Management of Acute Malnutrition (IMAM). One major component of these services is community mobilization.

Community mobilization refers to a range of activities designed to help implementers **understand** the affected communities, **build relationship** with them and foster their **participation**. The mobilization helps staff build relationships with the community, and understand the needs of the community and the factors which may affect access to care. It empowers the community by involving them in planning, and increases their awareness of malnutrition (identification, causes, prevention and treatment) and the services to treat acute malnutrition. It also raises community awareness of their roles and responsibilities for the care of malnourished children. Community outreach and mobilization is an ongoing process.

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 hence increasing coverage;
- 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.
- Create awareness and promote access to existing health & nutrition services (understand and address barriers to access e.g., identify reasons for absence and default so that they can be addressed).
- Link prevention of malnutrition and treatment of malnutrition at the community level, so that while children are being effectively treated, the underlying causes can also be addressed.

Basic Requirements for Community Outreach and mobilisation

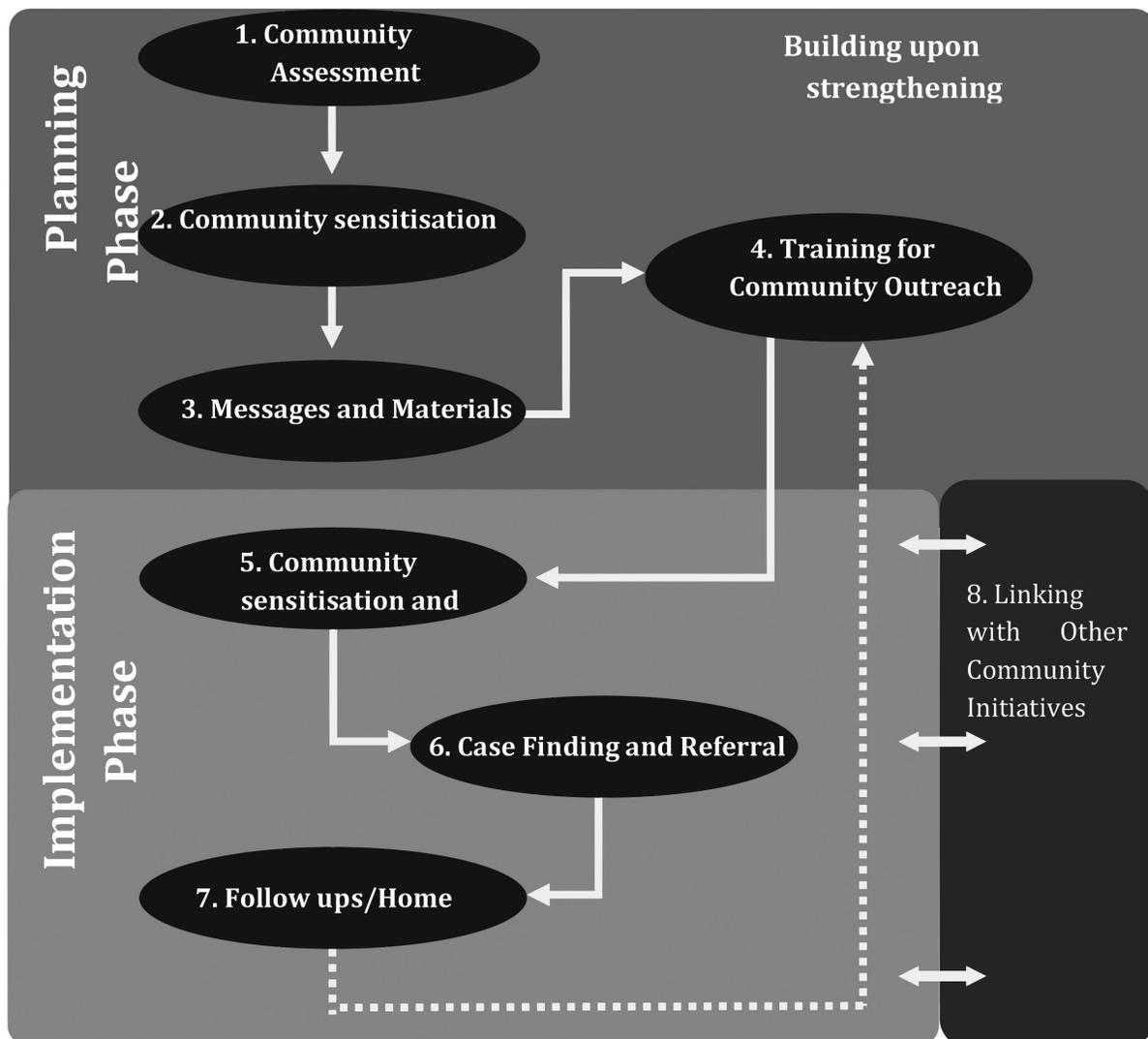
- **WHO conducts community outreach:** Community outreach is usually the role of community providers – this includes health care workers and NGO community level Health and/or Nutrition Workers. Community volunteers can also be recruited to assist with case finding and follow up.
- **WHERE:** Community outreach takes place at the community level. Community providers should be present at Outpatient site to assist health & nutrition care providers and to ensure effective linkages between the health/nutrition facility and community.

- **WHEN:** Active case finding and follow up is ongoing. Community meetings with key stakeholders and focus group discussions with community members and/or the caretakers for children in the program can be held periodically to raise awareness about the program and to investigate any issues such as high default.
- **WHAT activities would take place:** Anthropometric measurements and other screening for active case detection, nutrition education session/group meeting/counselling/supplementary food distribution etc.

There are **two phases**:

- Planning phase
- Implementation phase

Figure 5: Diagrammatic Representation of Stages of Community Outreach and mobilisation



Many of the steps take place during the planning stage, but most should be continually reinforced throughout the implementation of the program.

2.2 Planning phase

There are three steps in planning for community outreach and mobilization as follows:

Step 1: Conduct a community assessment:

A community assessment should be conducted to gain an understanding of the community and determine the factors that are likely to improve/hinder service delivery and demand for services. 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. The community assessment can be conducted by Council Health Management Teams, Health Care Providers and Community Health Workers

This community assessment should identify:

- Local terms for malnutrition, perceived causes and common local solutions, health attitudes and health-seeking behaviours.
- Community representatives, groups and organizations that can help inform communities about nutrition and malnutrition; identify and screen malnourished individuals, and conduct follow-up.
- Formal and informal channels of communication. The informal channels (e.g. market places, women gathering at water points, ceremonies such as weddings and funerals) and formal (e.g. posters, community meetings) are good venues for health workers to share information and open up dialogue with community members.
- Available services and resources for child care, including nutrition interventions
- Attitudes and health seeking behaviours as well as attitude, behaviours and existing practices (good or bad) on nutrition
- Existing nutrition and health interventions in the community

Step 2: Conduct sensitisation and community dialogue:

After identifying key community figures, beliefs and health practices related to malnutrition then community sensitization meetings are organized. Community sensitization is a way to reach out to people in the community and teach the causes, signs and symptoms of malnutrition and teach them how to seek treatment opportunities. The community sensitisation meetings should also discuss possible solutions (e.g. IYCF, care practices, WASH, ECD and social protections etc.)

Community sensitisation will be achieved through:

- Meetings with respective community leadership
- Target group discussions
- Participatory discussions with community members
- Agreement on the relevant structures involved in service provision and their roles and responsibilities

Engage the community in a participatory discussion so that the community should understand on the magnitude of the malnutrition problem, the causes, effects and possible solutions. It is important to note that community sensitisation is an ongoing process.

Step 3. Developing Messages and Materials

Develop sensitization messages for different media example local radios, Folk media.

Meetings with the community and religious leaders provide essential information about the IMAM Service aims, methods and actors.

Plan messages that are simple in local terms on the followings

- What is malnutrition, causes and what are the signs?
- How children are screened for acute malnutrition, and which children are treated?
- Where and how treatment will be provided?

Make a sensitization plan. Decide who to inform, and how best to get the information out. Always share and discuss information messages with representatives from the community to ensure they are appropriate before use in the wider community.

Disseminate the messages. Sensitize the community representatives, groups and organizations through the most effective communication channels identified. Use pictures of malnourished children to strengthen the messages. Agree on the relevant structures, groups and organizations to be involved in community screening and outpatient care (e.g. who will screen for acute malnutrition and potential sites for screening).

When the community has understood, and accepted the approach to manage malnutrition; it is **very important to communicate** with those who will be eligible for the intervention. Once the community understand treatment procedures, it helps to prevent negative feedback from the beginning which will prejudice participation in the service.

Step 4: Train community health workers/outreach workers:

Train on:

- Aim and target population
- Establishing agreed and standardized tools for data collection, screening, referral and follow up for CHWs
- Basic information on the causes, types, identification and treatment of malnutrition
- Practice in the identification of acute malnutrition using mid-upper arm circumference (MUAC) and how to detect bilateral oedema
- Referral for care

2.3 Implementation phase

The following steps need to be conducted to detect cases of acute malnutrition and ensure that children receive appropriate treatment.

Step 5: Raising Community Awareness:

The community needs to be informed about IMAM services available. If community members are unaware of the service, or the type of children it treats, or are confused or misinformed about its purpose, they may not benefit from it or may even prevent others from benefiting. Raising community awareness works best through existing channels, organisations and structures within the community.

The following is suggested order of priority through which IMAM awareness raising activities at community level may initially be carried out:

- Start with key community figures, and a meeting at the health facility to orient them to IMAM
- Use selected formal channels of communication e.g. Village meetings, committee meetings, health days, education sessions, church /mosque services
- Use informal channels e.g. Weddings, funerals, markets, water points
- Encourage care givers of beneficiaries to bring other thin or swollen children that they know

Step 6: Case-finding

Early detection of acutely malnourished children is essential for the success of their treatment and should be done at community level and in health facilities. In IMAM case finding is categorised into Active and Passive.

a) 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% of SAM children in the village/communities can be found without the need to go from house to house conducting screenings. 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 CHWs 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)

Active Adaptive Case-finding is based on two principles:

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.

Steps of adaptive Case Finding:

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.

- Use findings of community assessment to identify:
 - o The appropriate case-finding question – According to the terminology used by the population to describe the signs of SAM
 - o 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
 - o 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
- Using key informants, identify the households with SAM children
- Visit these households and check oedema and MUAC for children 6-59m
- Make any adjustments to definitions required based on whether cases were correctly identified
- When children with SAM are identified, ask if the key informant or anyone in that household knows where children who are similarly malnourished live
- Use this method exhaustively until only children already measured are identified

Active case finding is important in ensuring children with acute malnutrition are identified and treated before complications develop. Children with acute malnutrition can be identified in the community using the following strategies:

- Screening at community meetings (e.g. women's groups), pre-schools/nurseries, and other available opportunities
- Screening during outreach health services (e.g. village health days, immunization services, vitamin A supplementation and other health campaigns)
- Self-referrals by communities
- House to house visits

During screening, the community based workers or volunteers should give basic nutritional advice to mothers, including breastfeeding and complementary feeding practices.

b) Passive case findings

Passive Case Finding refers to the opportunistic identification of acutely malnourished children done by health workers during routine child visits and/or consultation at the health facility. In health centres, clinics or health posts, staff should also screen with MUAC and oedema checks all children arriving at the facility including those who have growth faltering or registered with HIV or TB programmes

Actions for non-acutely malnourished clients

- It is important that during any active screening activities by health staff and CHWs, 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-IMCI
 - 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

Step 7: Follow-up:

Children with acute malnutrition should be monitored to ensure they recover and do not deteriorate on discharge. Trained community-based health workers should conduct home visits on households where:

- Children are not improving or whose condition is deteriorating (these children should be referred to the facility)
- Children are absent or defaulting
- Caregivers need constant monitoring of new practices taught during nutrition counselling sessions

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 SAM) 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 CHW linking with the facility staff. Follow up should entail the following:

- Identification of priority cases for follow-up by health facility staff and communication to CHW 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-IMCI 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.

Step 4: Continued social mobilization

Community mobilization should be an on-going activity and should be a process of constant dialogue in which communities can periodically voice their views and suggest alternative courses of action. Much of the work in community outreach is performed by local volunteers and their contribution should be recognized and respected. Community-based workers should promote and support infant and young child nutrition and care practices to prevent malnutrition.

CHAPTER 3: Identification and classification of malnutrition

3.0: Identification

Active case finding is essential for identification of cases before complications arise and is a critical component of all programs to treat SAM and MAM. All opportunities to screen children for acute malnutrition should be used, both in communities and at health facilities. This screening should be done routinely at community level by community-health workers/volunteers (CHWs) and upon entry to all health facilities.

After screening, children are referred to a health facility to confirm the diagnosis. The diagnosis of acute malnutrition is the responsibility of health staff at the dispensary or outpatient department (RCH clinic) of a health centre, district, and regional or referral hospital. Children who are diagnosed with acute malnutrition are referred and admitted to either inpatient or outpatient treatment.

Table 1: Locations where screening of children for acute malnutrition will take place

WHERE	BY WHOM
Health facilities RCH/OPD clinics, Paediatric wards, PMTCT and HIV care and treatment centres	<ul style="list-style-type: none"> ▪ Health care providers
Community level Children identified during events such as village health days, health campaigns, during health check-ups in nursery schools and on house to house visits, child health nutrition month, breast feeding week, immunisation week	<ul style="list-style-type: none"> ▪ Health care providers ▪ Community health workers (CHW's) ▪ Teachers

Different methods may be used to identify acute malnutrition, depending on the circumstance and equipment available. Acceptable options are:

- I. Community: **Mid-Upper Arm Circumference (MUAC)** if aged 6-59 months; and check for oedema
- II. Inpatient health facilities: **Weight for height/length and MUAC** and check for presence of oedema
- III. Inpatient health facilities without capacity to measure height/length: MUAC as in (I) and check for oedema

Criteria for enrolment into outpatient therapeutic care (OTC) and admission to inpatient therapeutic care (ITC) for each of these methods are given in tables 2 and 3.

Note that with all methods, oedema should also be assessed. Children with oedema (any grade) and any signs or symptoms of medical complications should be referred for urgent inpatient management.

Children with severe wasting (<-3SD weight for height/length and/or MUAC <11.5cm) should be treated as outpatients as long as they pass the appetite test and there are no medical complications or no severe oedema. The classification system is outlined in Table 2.

Mid-Upper Arm Circumference (MUAC)

MUAC is a simple technique that can be used as a measure of wasting for children aged 6-59 months.

Table 2 shows the classification of malnutrition (based on the degree of wasting and oedema) and the referral routes, which take into account the severity of acute malnutrition, presence of complications and the child's appetite. Appendix 1 shows how to use the MUAC tape.

Table 2: Classification of acute malnutrition and referral routes

MUAC	Presence of complications or poor appetite	Oedema grade	Classification of malnutrition	Refer to:
>12.5cm (no wasting)	No	Any grade	Severe	Inpatient therapeutic care
11.5 to <12.5cm (moderate wasting)	No	No	Moderate	Counselling on optimal feeding
	No	Any grade	Severe	Inpatient therapeutic care
	Yes	No	Moderate with complications	Inpatient treatment of complications according to IMCI
<11.5cm (Severe wasting)	No	No	Severe	OPD for therapeutic care
	No	Any grade	Severe	Inpatient therapeutic care
	Yes	No or yes	Severe with complications	Inpatient therapeutic care

N.B. Severe malnutrition is severe wasting (MUAC <11.5cm) and/or oedema. Moderate malnutrition is moderate wasting (MUAC 11.5 to <12.5cm) and no oedema. See table 4 for classification of oedema.

Weight for Height/Length

Low weight for height/length denotes wasting. Weight for length is used for children 6 month to below 2 years, or for children too weak to stand. See Appendix 2a and 2b for reference values for weight for height/length.

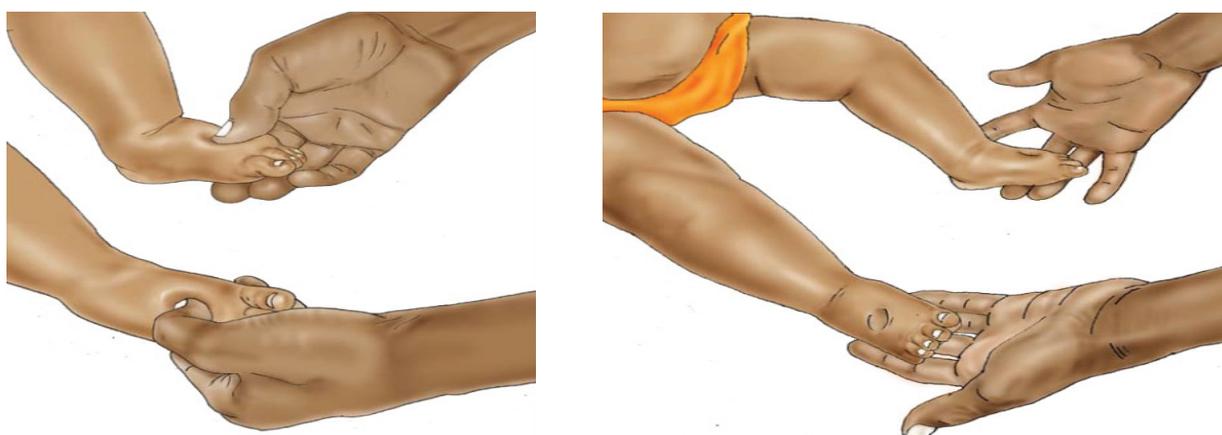
Table 3: Measurement criteria for acute malnutrition using weight for height/length

Weight for Height/ Length	Presence of complications and/ or poor appetite	Oedema grade	Classification of malnutrition	Refer to:
$\geq -2SD$	No	Any grade	Severe	Inpatient therapeutic care
$-3SD$ to $< -2SD$ (Moderate wasting)	No	No	Moderate	Counselling for optimal feeding
	No	any grade	Severe	Inpatient therapeutic care
	Yes	No	Moderate with complications	Inpatient treatment of complications according to IMCI
$< -3SD$ (Severe wasting)	No	No	Severe	OPD for therapeutic care
	No	Any grade	Severe	Inpatient therapeutic care
	Yes	No or yes	Severe with complications	Inpatient therapeutic care

N.B. Severe malnutrition is severe wasting (weight for height $< -3SD$ weight) and/ or oedema. Moderate malnutrition is moderate wasting (weight for height $-3SD$ to $< -2SD$) and no oedema.

See appendix 3 on how to measure length and height

Figure 6: Checking for Oedema



Nutritional oedema usually starts in the feet and then in the lower legs. Oedema can be found in the back if the child has been lying down, and can spread to the hands, lower arms and face. Classification of oedema is displayed in Table 4.

Table 4: Classification of oedema

Mild +	Feet only
Moderate ++	Feet, legs, hands and forearms
Severe +++	Generalised oedema, including feet, legs, hands and face

Infants less than 6 months

The diagnosis of infants less than 6 months is based on:

- Weight for Length <-3SD
- Bilateral pitting oedema of feet
- Infant is too weak to suck effectively
- The infant does not gain weight or lose more than 10% of the initial weight

See chapter 4 for more information

3.1 Admission Procedure

Depending on the assessment, the child is either:

- Enrolled for **OTC** through the health facilities (children with SAM and no medical complications)
- Referred to the nearest paediatric ward and admitted for **ITC** (children with SAM and complications or children aged less than six months with SAM)
- Referred to the nearest **SFP** (children with MAM in areas that have SFP)
- Provided with nutritional counselling and follow-up through the RCH clinic.

Identify urgent cases

- Identify, examine and treat very sick children first

Diagnose severe acute malnutrition

- Measure weight and height and determine WHZ and Measure MUAC
- Check for oedema

Medical assessment, physical examination (see summary of medical complications below and in section 4.2.2)

- Take the child's medical history, conduct a physical examination, and determine if the child has any medical complications.

Table 5: Summary of medical complications

Appetite	No appetite or unable to eat
Vomiting	Persistent/severe
Temperature	Hypothermia (Axillary Temperature <35. °C,) High fever (Axillary temperature ≥38.5 °C)
Respiratory symptoms and signs	Cough and fast breathing (as per IMCI guidelines) Lower chest in-drawing
Anaemia	Severe palmar pallor
Dehydration	Severe dehydration based on recent history of fluid loss (watery diarrhoea/vomiting) with weight loss
Alertness	Extremely weak and lethargic, unconscious, fitting/convulsions
Infections	Open skin lesions, extensive infection.

Referral and admission

- Immediately refer children with **SAM and medical complications** to the nearest inpatient facility (paediatric ward) with ITC - there is no need to conduct the appetite test for RUTF
- Conduct the Appetite Test for RUTF for children who have SAM and no other medical complications. The appetite test is critical for deciding whether a child is treated with OTC or ITC. If the child passes the appetite test, admit the child to OTC. If the child fails the appetite test, refer and admit the child to ITC.
- Refer children with MAM and medical complications to the nearest inpatient facility (paediatric ward) for treatment of the medical complications according to IMCI.
- Refer children with MAM and no complications to the nearest SFP, if available and consented, or provide nutritional counselling and follow-up through the RCH clinic

Table 6: Admission and discharge criteria for inpatient and outpatient management of SAM and MAM

Admission to	Inpatient care of SAM and MAM		Outpatient therapeutic care of SAM Chapter 5	Management of MAM Chapter 6
	Children aged 6-59 months Chapter 3	Children aged <6 months and >6months with <4kg Chapter 4		
Classification	SAM and MAM with medical complications (6-59 months)	SAM <6 months	SAM without medical complications, 6-59 months	MAM, 6-59 months
Health facilities	Any health facility with inpatient paediatric care	Any health facility with inpatient paediatric care	Dispensaries, and OPD of health centres, district, regional and referral hospitals.	Dispensaries, and OPD of health centres, district, regional and referral hospitals. Other SFP sites.
Admission criteria	<p>One of the following:</p> <ul style="list-style-type: none"> Bilateral pitting oedema and/or medical complications MUAC <11.5 cm with medical complications WHZ <-3 SD with medical complications WHZ from -3SD to <-2SD with medical complications 	<p>One of following</p> <ul style="list-style-type: none"> Bilateral pitting oedema (both feet) <p>WHZ <-3SD Also</p> <ul style="list-style-type: none"> All infants too weak to suckle effectively Infants aged >6 months and weighing <4 kg 	<p>One of the following plus clinically well, alert and good appetite:</p> <ul style="list-style-type: none"> No bilateral pitting oedema MUAC <11.5 cm WHZ <-3 SD 	<p>One of the following</p> <ul style="list-style-type: none"> MUAC from 11.5 cm to <12.5 cm WHZ from \geq-3 SD to <-2 SD
Treatment	Receive Inpatient Care at Health Facility	Receive Inpatient Care at Health Facility	Receive outpatient Therapeutic Care with RUTF	Nutrition counselling and supplementary feeding if available and homemade nutritious foods
Discharge criteria	<p>Early Discharge to OTC when all of the following are met:</p> <ul style="list-style-type: none"> Appetite (passed appetite test) Medical complications stabilized Bilateral pitting oedema subsided Clinically well and alert Continuous follow-up feasible 	<p>Breastfed infants: all of the following:</p> <ul style="list-style-type: none"> Successful breastfeeding/re-lactation Gaining weight on breast milk alone No bilateral pitting oedema for 2 weeks Clinically well and alert <p>Non-breastfed infants: all of the following:</p> <ul style="list-style-type: none"> Successful alternative replacement feeding for non-breastfed infants WHZ \geq-2 SD No bilateral pitting oedema for 2 weeks Clinically well and alert 	<p>All of the following</p> <ul style="list-style-type: none"> MUAC \geq 12.5 cm for two consecutive measurements for all those admitted on the basis of MUAC WHZ \geq-2 SD for two consecutive measurements Clinically well and alert <p>Children are discharged to Supplementary Feeding if available and consented. In areas where there are no supplementary programmes, care givers should receive nutrition counselling for optimal feeding</p>	Children maintain WHZ \geq -2 SD and/or MUAC \geq 12.5 cm for two consecutive measurements.

CHAPTER 4: Inpatient therapeutic care of severely malnourished children 6-59 months

4.1: Introduction

Inpatient therapeutic care (ITC) is necessary for children who have SAM with medical complications. Treatment is provided in health facilities that has an inpatient care (health centre, district hospital, regional hospital or referral hospital). Staff at these facilities should be trained in the management of SAM and in treating medical complications associated with SAM.

The management of SAM is divided into three phases:

- **Stabilization phase** covers nutrition (including feeding with F75) and medical stabilization, treatment of life-threatening medical complications and correction of micronutrient deficiencies. Patients do not gain weight during this phase. The patient remains in stabilization phase until the medical complications have stabilized and the appetite improves.
- **Transition phase** covers a transition from F75 to F100 or RUTF and a gradual increase in diet leading to some weight gain while preventing complications of overfeeding. Patients normally remain in this phase for two to three days.
- **Rehabilitation phase** is where there is intensive feeding to recover lost weight; emotion and physical stimulation is increased; breastfeeding is encouraged; the mother or caregiver is trained to continue care at home (OTC) or referred to supplementary feeding, if available.

NB. Breastfeeding is encouraged in all three phases

There are 10 steps for routine care in the management of severe acute malnutrition.

These are summarised below:

Table 7: Time frame for the inpatient management of severe acute malnutrition in children

	Stabilization/Transition*		Rehabilitation
	Day 1-2	Day 3-7	Week 2-6
1. Treat/prevent hypoglycaemia			
2. Treat/prevent hypothermia			
3. Treat/prevent dehydration			
4. Correct electrolyte imbalance			
5. Treat/prevent infection			
6. Correct micronutrient deficiencies	No iron	No iron	Give iron
7. Start cautious feeding			
8. Achieve catch-up growth			
9. Provide sensory stimulation and emotional support			
10. Prepare for discharge and follow-up after recovery			

*The transition phase occurs between Step 7 and 8 (though there might be some slight overlap)

In areas where they receive F75 and F100, there is no need for additional correction of electrolyte imbalance and/or micronutrient deficiencies

4.2: Inpatient Therapeutic Care of SAM for children aged 6 – 59 months

Criteria for admission into inpatient therapeutic care

Children aged 6-59 months are admitted to inpatient therapeutic care if they have one of the following:

- *MUAC <11.5 cm with medical complications*
- *WHZ from -3SD to <-2SD with medical complications **
- *WHZ <-3 SD with medical complications*
- *WHZ -3SD to < - 2SD with medical complications*
- *Bilateral pitting oedema (any grade)*

**Some children with moderate acute malnutrition (MAM) with complications will be admitted to health facilities under IMCI referral criteria for clinical treatment. These children should be treated according to IMCI guidelines. Criteria for moderate malnutrition are as follows:*

- *WHZ -3SD to <-2SD or MUAC 11.5 to <12.5cm*

Admission procedure

- 1) If **emergency signs** are present manage accordingly until the child is stable
- 2) Give 50 ml of 10% **sugar water** or 10% dextrose to all children awaiting medical assessment to avoid hypoglycaemia
- 3) Give **F75 feed** 30 minutes after sugar solution is given
- 4) Ensure the child is kept **warm** with head covered and airway free to prevent hypothermia
- 5) **Take medical history and perform physical and medical examination** (Appendix 4)
- 6) Identify and begin **treatment of complications** and start antibiotic treatment immediately
- 7) Start **baseline monitoring** of the patient i.e. Temperature, RR, PR, convulsions, level of consciousness, vomiting, diarrhoea etc.
- 8) Perform the necessary **laboratory investigations**
- 9) **Register** the patient using a unique registration number and complete the ITC Card (Appendix 5)
- 10) **Explain** the treatment and ward procedures to the caregiver.
- 11) All caregivers should be offered **HIV testing** and counselling services for their child and for themselves.

Take History

Take the following information from the mother or care taker:

- Breast feeding and complementary feeding history
- Usual diet before current episode of illness and diet in past few days (type and frequency)
- Loss of appetite
- Duration and frequency of vomiting or diarrhoea, including type of diarrhoea (watery, bloody)
- Time when urine was last passed
- Birth weight, immunizations, growth faltering or weight loss (see child's booklet)
- History of cough, fever,
- Developmental Milestones
- History of previous illnesses, admissions and treatment
- Contact with measles or tuberculosis in the last 3 or 6 months respectively
- HIV exposed, known or suspected HIV infection
- Family circumstances (e.g. parental disharmony, separation, death, number of siblings, social economic status etc.)

Physical Examination

Examine the following:

General condition of the patient; alert, irritable, lethargic, unconscious etc.

Signs of shock: lethargic/unconscious, cold hands and feet, slow capillary refill (>3 seconds) and/or weak/fast pulse

Severe palmar pallor, jaundice

Hypoglycaemia - *rapid* test with glucose strip ($\leq 3\text{mmol/l}$ or $\leq 54\text{mg/dl}$)

Temperature: fever ($\geq 37.5^{\circ}\text{C}$) / hypothermia ($< 35^{\circ}\text{C}$) axillary

Mouth, ears and throat – evidence of infection

Eye- signs of vitamin A deficiency: Photophobia, dry conjunctiva or dry cornea, Bitot's spots, cornea ulceration and keratomalacia

Skin: changes of kwashiorkor- hypo or hyper pigmentation, desquamation, ulceration, exudative lesions (resembling burns) often with secondary infection.

Oedema

Signs of **dehydration** (N.B. the normal signs of dehydration are often also present in severely malnourished children that are not dehydrated)

Respiratory rate or lower chest wall indrawing (signs of pneumonia or heart failure)

Abdominal distension, reduced bowel sounds and enlargement or tenderness of liver

Thorough systemic examination of CNS, CVS, RS and GIT

Necessary laboratory investigations:

Investigation should not delay treatment. Even if there are no laboratory facilities treatment should start straight away on admission.

Some of the investigations that can be done are:

- Blood slide for malaria parasites/mRDT
- FBP + ESR (Full Blood Count + Erythrocyte Sedimentation Rate)
- Random Blood Glucose
- Septic screening; Urine culture, Blood culture, Swab cultures
- HIV screening
- Chest X ray
- Serum Electrolytes
- Assess for Tuberculosis using TB scoring chart (Appendix 30)

Note: Serum electrolytes and serum proteins are unhelpful in guiding treatment in severe malnutrition and may lead to inappropriate action. If they must be taken for other clinical diagnosis be aware of the following:

- *Laboratory results might show low serum sodium, even though total body sodium is high*
- *Laboratory results might show low or normal serum potassium and magnesium.*
- *Serum proteins (total + albumin) are generally low.*

4.2.1: Stabilisation Phase (usual duration is 2-7 days)

In the Stabilization Phase a cautious approach is required because of the child's fragile condition. Feeding should be started as soon as possible after admission and should be designed to provide just sufficient energy and protein to maintain basic physiological processes.

Children who do not require emergency treatment should immediately be given F75. They should also continue to be breastfed.

Dietary treatment in stabilization phase

Quantities and frequency of feeds:

During stabilization, feed F75 (130ml/kg/day), either using F75 sachets or recipes in Appendix 6a and 6b.

- Note; Use recommended dose schedule based on admission weight (Appendix 7a). If child has **severe (+++) oedema**, use F75 100ml/kg/day (recommended dose schedule in Appendix 7b).

Give F75 2 hourly on admission (12 feeds per day). Gradually increase the dose while reducing frequency over 2-6 days (if no complications present and child finishes most feeds) as per the reference tables (Appendix 7a or 7b) until feeds are given every 3 hours. Always give feeds **on time** (within 15 minutes of the prescribed time). Give feeds orally or by nasogastric tube (NGT)

- Feed the child throughout (day and **night**) to prevent hypoglycaemia
- Keep the total daily dose the same throughout phase 1, even if the child loses weight
- If the child is breastfed, continue breastfeeding, but make sure the child takes the entire prescribed amount of F75

No food other than F75 and/or breast milk should be given during stabilisation

Preparation of F75

- If F75 is available, follow instructions as written on the sachet/tin. Alternative recipes for F75 are found in Appendix 6a and 6b.

Directions for feeding

- **Breastfeed before giving F75**, half an hour before the scheduled time for giving the feed, ask the mothers to breast-feed their children.
- Calculate the total quantity of F75 to prepare according to the number of patients, their weight and the number of feeds.
- Prepare the quantity of water and F75 for the feeds
- Ask the mother to wash their own and their children's hands
- Feed child with **cup and saucers**.
- The child is never force fed, never has his/her nose pinched, and never lies back and has milk poured into the mouth.
- Great care must be taken while feeding to **prevent aspiration pneumonia**. The child should sit upright on the caregiver's lap, leaning against her chest with one arm behind the caregiver's back. The caregiver's arm encircles the child. The caregiver holds a saucer under the child's chin to catch any milk that drops. Any milk that falls into the saucer is returned to the cup for feeding the child. See figure 7.
- Meal times should be sociable. The caregivers should sit together in a semi-circle around an assistant who talks to the caregivers, encourages them, corrects any faulty feeding and observes how the child takes the milk.
- Caregivers should not take their meals beside or in front of the child. The child is likely to demand some of the mother's meal and this sharing is not recommended as the child's appetite will reduce and then the milk will be refused.
- Use **NGT** when the child is weak and unable to take sufficient F75 by mouth (<75% of milk of the prescribed amount). The use of NGT should not exceed 3 days and should only be used in the stabilization phase. Try to give F75 by mouth every time before giving by NGT.

Figure 7: Correct feeding technique



Routine micronutrient supplementation and medical treatment

Vitamin A

- For children without eye signs of VAD and if using F75, F100, RUTF readymade sachets should not receive Vitamin A on admission.
- For children without eye signs of VAD and if using locally made F75, F100, and no CMV added should receive Vitamin A single dose on admission (**100,000 IU for children 6- 11 months and 200,000 IU for children 12-59 months**)
- **For children with eye signs of VAD give Vitamin A (same dose as above) on day 1, Repeat Vitamin A supplementation on day 2 and 14** (clinical signs of VAD such as night blindness, conjunctival xerosis with Bitot's spots, corneal xerosis or ulceration or keratomalacia).

Other nutrients

Commercial F75 and locally-made milks with combined mineral and vitamin (CMV) mix (a special vitamin, mineral and electrolyte mix) contain all the vitamins and minerals required to treat the malnourished child, and no additional nutrients are needed. Even for the severe acute malnourished patient with diarrhoea, it is not advisable to give additional zinc.

If children are fed locally made F75 which contains electrolyte/mineral solution but no CMV give:

- Folic acid 5 mg on Day 1
- Multivitamin supplement (without iron) for 14 days

If children are fed locally made F75 which **does not contain** electrolyte/mineral solution nor CMV, give the following:

- Folic acid (5 mg) on Day 1
- Multivitamin supplement (without iron) for 14 days
- Potassium 3-4 mmol/kg/d for 14 days
- Magnesium 0.4-0.6 mmol/kg/d for 14 days
- Zinc 2 mg/kg/d for 14 days

Antibiotics

Broad-spectrum antibiotics should be given to **all** severely malnourished children, even if they do not have signs of infection. Antibiotics should be given as follows:

- If the child has **no complications**, give **Amoxicillin** 40mg/Kg/Day orally every 12 hours for 5 days
- If the child has **complications** (shock, hypoglycaemia, hypothermia, respiratory or urinary tract infections, dermatosis with raw skin/fissures) or is lethargic or looks sickly, give: Ampicillin 50 mg/kg IV or IM every 6 hours for 7 days **AND** Gentamicin 5mg/kg IV/IM once daily for 7 days.
- If the child shows signs of improvement after 72 hours of antibiotic treatment continue with same antibiotic regimen to complete 7 days of treatment.
- If the child **fails to improve after 72 hours**, start a third-generation cephalosporin for duration of 7 - 10 days (DO NOT USE THIS AS THE FIRST CHOICE).
- Children who are HIV positive should receive or continue prophylactic Cotrimoxazole 6-8mg/30-40 mg (TMP-SMZ)//Kg orally per day on admission and once daily throughout their hospital stay to reduce the risk of *Pneumocystis pneumonia*. They should remain on prophylactic cotrimoxazole until referral to HIV care and treatment clinic for further management.
- Severely malnourished children are vulnerable to infections. To prevent new and cross infections while in the ward, staff and mothers should do the following:
 - Wash hands between contact with children
 - Wash hands before procedures and feeding
 - Keep the child clean and dry
 - Prepare and administer food hygienically
 - F75/F100 should be refrigerated or made up every 3-4 hours

Wherever possible, antibiotics and fluids should be given **orally** or by **Nasogastric Tube (NGT)**. **Cannula should be used with caution;**

Inserting a cannula should be done using aseptic technique to lower the risk of introducing infections.

The cannula should be removed or changed every 2-3 days

They require skilled health workers to insert and maintain the cannula.

There is a risk of dressing becoming dirty so increasing access to bacteria.

They can become colonized with candida and give rise to fungal septicaemia.

Insertion of the cannula is painful and distressing for the child.

Malaria treatment

- **Systematically screen all children for malaria**
- Refer to national guidelines for malaria treatment.
- **The usual signs and symptoms for malaria may not be present in the malnourished child; therefore, all severely malnourished children are tested for malaria before commencing treatment.**
- Never give quinine infusions to a severely malnourished patient in the first two weeks of treatment. Impregnated bed nets should always be used.

Deworming

No deworming during the stabilization phase

Measles vaccination

All children older than nine months who do not have a vaccination record are given a measles vaccine on admission.

Iron supplementation

- **Iron supplements should not be given during the stabilization phase** because they can increase the risk of severe infection.
- All children should be given 5 mg of folic acid on day 1 followed by 1 mg per day if not receiving commercially made therapeutic formula (give 2.5 mg if 1 mg tablets are not available).
- **Start iron (3mg/kg/day) after 2 days on F100 catch-up formula (Rehabilitation Phase).**

Table 8: Routine medical treatment in stabilization phase

Drug	Type	Frequency
<p>Antibiotic</p>	<p><u>First line treatment:</u> Amoxicillin Oral: If child has no complications; give 40 mg/kg every 12 hours for 5 days If child has complications, give Ampicillin IV or IM: 50 mg/Kg 6 hourly for 7 days AND Gentamycin 5mg/kg IM/IV</p> <p>If child improves after 48hrs continue with same regimen to complete 7 days.</p> <p><u>Second line treatment:</u> If child fails to improve after 72 hours of initial treatment start a third-generation Cephalosporin for duration of 7 - 10 days. IV ceftriaxone 50 – 80 mg/kg once daily for 7 - 10 days</p> <p>For HIV positive children, give prophylactic Cotrimoxazole 4mg/16 mg (TMP-SMZ)// Kg orally daily until referral to HIV Care and Treatment.</p> <p><u>NOTE:</u> <i>Wherever possible, antibiotics should be given orally or by Nasogastric Tube. <u>Indwelling cannula should rarely be used.</u></i></p>	<p>Twice daily for 5 days</p> <p>Six hourly for 7 days</p> <p>Once a day for 7 days</p> <p>Once Daily for 7 - 10 days</p> <p><i>Throughout hospital stay until referral for HIV care and treatment.</i></p>
<p>Vitamin A</p>	<p>If have no signs of Vitamin A Deficiency and using readymade sachets F75, F100 do not give Vitamin A on admission If using F75, F100 locally made with no cmv added give vitamin A on admission <u>6 - 12 months:</u> 100, 000 IU <u>> 12 months:</u> 200, 000 UI</p> <p>All children with signs of VAD (night blindness, conjunctival xerosis with Bitot’s spots, corneal xerosis or ulceration or kerotomalacia); give 3 doses of Vitamin A.</p>	<p>Day 1, 2 and 14 for children with signs of VAD</p>

Folic Acid	<p>Do NOT give if F75 is available or locally made F75 with CMV</p> <p>If locally made therapeutic food is being prepared with electrolyte solution but NO CMV give; 5mg on Day 1 and multivitamin supplement without iron for 14 days.</p> <p>If locally made therapeutic food is used which DOES NOT contain electrolyte/mineral solution or CMV, give the following:</p> <ul style="list-style-type: none"> • 5mg Folic acid (Day one); then • 1 mg Folic acid daily whilst on programme • Multivitamin supplement/syrup (without iron) • Potassium 3-4 mmol/kg/d • Magnesium 0.4-0.6 mmol/kg/d • Zinc 2 mg/kg/d • Copper (0.3 mg/kg body weight) 	<p>Daily for 14 days</p> <p>On admission</p> <p>Day one</p> <p>Daily from day 2</p> <p>Daily for 14 days</p>
Anti-malarial	<p>Systematically screen all children for malaria and refer national guidelines for malaria treatment</p> <p><i>Never give quinine IV to a severely malnourished child in the first two weeks of treatment.</i></p>	<p>Give as per national protocol</p>
Iron supplement	<p>Start iron (3mg/kg/day) after 2 days on F100 catch-up formula.</p> <p>Do not give iron if child is receiving RUTF.</p> <p>Do not give during stabilization phase and transition phase.</p>	<p>Daily from 3rd day of rehabilitation phase</p>
Deworming	<p>Give the following on transfer to rehabilitation phase or in OTC</p> <p>Give ½ a tablet of Mebendazole to children 12-23 months</p> <p>Mebendazole 12 – 59 months: 500 mg</p> <p>OR</p> <p>Albendazole 12 – 23 months: 200 mgs</p> <p>Albendazole 24 – 59 months: 400 mgs</p>	<p>Single dose in rehabilitation phase</p>
Measles immunization	<p>>9months if no record that it has been given before</p>	<p>Single dose - on admission</p>

Note: Great care should be exercised in prescribing all drugs to severely malnourished patients. For most drugs, the dose recommended for normal children can potentially be toxic to malnourished child. Drugs which cause adverse effects on the liver, pancreas, kidney, heart, circulation or intestine and those which cause loss of appetite should be used with caution and at lower dosages.

Monitoring

The following should be monitored and entered into the child's ITC treatment card.

- **Weight** is measured every day at the same time (before feeds)
- Degree of **oedema** is assessed every day
- Body **temperature** is measured in the morning and evening every day.
- Standard **clinical signs**: stool consistency and/or frequency, urine output, vomiting, dehydration, cough, respiration rate, pulse rate and liver size.
- Patient's **fluid intake** and route (oral, NGT, or IV fluids). Record if the patient vomits or refuses a feed.
- **Pulse and respiratory rates** 4 hourly (more frequently when taking fluids e.g. shock, rehydration and blood transfusion).
- MUAC is taken upon admission and thereafter on each 7th day

4.2.2: Management and Prevention of Complications

Complications must be treated during stabilisation. However, actions should be taken throughout treatment to prevent complications. Common complications are hypoglycaemia, hypothermia, infection/septicaemia, dehydration, shock (dehydration/septic shock), very severe anaemia, heart failure, dermatosis, absent bowel sounds, gastric dilatation and abdominal distension.

Hypoglycaemia

Hypoglycaemia is present if blood sugar level is <3 mmol/L or 54 mg/dL. Hypoglycaemia and hypothermia usually occur together and are signs of infection/septicaemia.

Clinical signs are:

- Cold extremities (hands and feet)
- Low body temperature (Axillary <35 °C)
- Lethargy or limpness
- Possible loss of consciousness
- Eye-lid retraction may occur if a child sleep with his/her eyes slightly open. If so, wake the child and give sugar-water to drink. Health staff and caretakers should look for this sign during the night.

Management of hypoglycaemia

- **Give 50 ml of sugar water** (1 rounded teaspoon sugar in 50ml (3 tablespoons water) or 50 ml 10% glucose by mouth or NGT if unable to feed.
- If unconscious, lethargic or convulsing give bolus IV 5ml/kg of sterile 10% glucose, followed by 50 ml 10% glucose or sugar water by NGT
- Start feeding F-75 straight away. Feed 2-hourly (12 feeds in 24 hours). Use feed chart to find amount to give and feed every 2-3 hours day and night. If the child is unconscious give the child ¼ of the 2 hourly doses every ½ hour.
- Manage hypothermia (see below)
- Ensure correct antibiotics are being given to treat infections

Points to note during management of hypoglycaemia

The child's response to treatment should be dramatic and rapid. If lethargic or unconscious patient does not respond, it indicates a different cause for the clinical condition such as an infection. The different cause of the lethargy must be determined and treated. If consciousness drops or temperature falls, re-test the blood glucose level and give another dose of glucose 50 ml by NGT or IV.

Hypothermia

Clinical signs/diagnosis:

- Axillary temperature <35°C
- Cold extremities (hands and feet)

Management:

- Feed straightaway
- Re-warm the child: Either cloth the child (including head), cover with a blanket or put the child on the mother's bare chest (kangaroo method) and cover them together.
- Do not use hot-water bottles to warm the child.
- Change wet clothes and beddings promptly.
- Warm hands before touching the child
- Keep room temperature at 28 to 32°C and keep windows and doors closed at night.
- Give antibiotics straight away
- Monitor the child's temperature 2 hourly during re-warming.

Prevention

- Feed two-hourly, start straightaway. Always give feeds throughout (day and night) during the stabilization phase.
- Do not bathe severely malnourished children on admission. When the patient is stabilized, bathe him only during the warmest time of the day with Luke warm water. Dry the patients quickly and gently after washing.
- Keep the child covered and away from cold air.
- Keep the child dry, change wet clothes and beddings promptly
- Avoid exposure (e.g. bathing, prolonged medical examinations)
- Let child sleep with mother/caregiver at night for warmth

Dehydration without shock

It is difficult to determine the degree of dehydration status in a severely malnourished child using clinical signs as in well-nourished child.

- In a **normal** well-nourished child, signs of dehydration are:
 - Irritable/lethargic/ or unconscious
 - Sunken eyes
 - Drinking eagerly/thirstily/ not able to drink
 - Skin pinch goes back slowly or very slowly taking longer than two seconds

Note: The usual signs of dehydration such as slow skin pinch return and sunken eyes are not all applicable in severely malnourished children because they are severely wasted with loss of fat tissues.

Diagnosis of dehydration in children with SAM

- A definite history of significant recent fluid loss (vomiting and/or diarrhoea), usually diarrhoea which is watery, and of sudden onset in the past few hours or days.
- History of recent change in the child's appearance i.e. getting weak/lethargic
- If the eyes are sunken then the caregiver must confirm that the appearance of the eyes have changed to become sunken since the diarrhoea started.
- Assume dehydration is present in a severely malnourished child if:
 - o There is a recent history of watery diarrhoea or vomiting and/or
 - o Presence of signs such as absence of tears, reduced urine output, cold extremities, hypothermia (cold hands and feet), weak or absence of radial pulse.

Children with persistent diarrhoea (without an acute watery exacerbation) may not be dehydrated.

Table 9: Differences between the clinical assessment of dehydration with shock and dehydration without shock

Assessment	Dehydration without shock	Shock from severe dehydration
General condition/appearance	Alert or quiet but irritable when disturbed, anxious, not lethargic, capillary refill (<3 seconds)	Lethargic/comatose/drowsy Floppy, cold hands Slow capillary refill (>3 seconds)
Appearance of eyes	Normal or retracted eye lids	Retracted eye lids
Urine output	Normal or reduced, deep coloured urine	Anuria/empty bladder
Radial pulse	Normal or rapid	Uncountable/rapid, thread, undetectable
Systolic blood pressure	Normal or low	Low or unmeasurable
Body weight loss	5-10%	>10%
Estimated fluids deficit	25 - 45ml/kg	>50 ml/kg

Note: A wasted child with NO oedema can present with some signs of dehydration that would be found in a normal child that is not dehydrated e.g. sunken eyes, skin elasticity. Hence, the need to focus on taking history of recent fluid loss; vomiting/diarrhoea. A child with persistent diarrhoea without acute watery diarrhoea is not likely to be dehydrated and does not need rehydration therapy. The child still needs to be thoroughly assessed.

Management of dehydration

Severely malnourished children have high total body sodium and low total body potassium.

Give special **Rehydration Solution for Malnutrition (ReSoMal)** which contains less sodium, more sugar and more potassium and is intended for severely malnourished children with diarrhoea, except if profuse watery diarrhoea e.g. cholera (for recipe see Appendix 9). If ReSoMal is not available, WHO low osmolarity oral rehydration solution should be given, with added potassium and glucose

In case of **profuse watery diarrhoea (e.g. cholera)**, ReSoMal should not be given but should be replaced with WHO low osmolality ORS without changing the amounts and frequency and Zinc (2mg/kg body weight).

In case of persistent diarrhoea check for reduced substance intolerance i.e. lactose intolerance and investigate stool for infective causes of diarrhoea. If lactose intolerance is suspected, use cereal based therapeutic foods. (see appendix 6b)

When possible and feasible, rehydrate orally. Intravenous infusions are dangerous and not recommended **unless there is shock**.

Rehydration is managed on the basis of weight, clinical signs of improvement and clinical signs of over hydration (engorged veins rapid pulse and respiratory distress).

Prevent dehydration

To prevent dehydration, give **all** severely malnourished children **ReSoMal after every watery stool** as follows:

- For children <2years, give 30 ml after each watery stool
- For children >2years, give 50 - 100 ml after each watery stool

How to administer re-hydration fluid

- The fluid must be given slowly over time to prevent complications such as overload or heart failure.
- Give ReSoMal 5 ml/kg every 30 minutes for 2 hours (orally or via NGT),
- Measure and record pulse and respirations every 30 minutes.
- Then give ReSoMal 5-10ml/kg alternating hourly with F-75 for the next 4-10 hours (depending on the child's clinical condition).
- **(STOP at 10 hours or earlier depending on child's clinical condition)**
- If rehydration is still required at 10h, give F75 instead of ReSoMal at the same times and volume
- Children should continue to be breastfed throughout treatment for dehydration
- Monitor respiratory rate and pulse rate every 30 minutes for the first 2 hours, and then hourly for signs of fluid overload.

Stop giving ReSoMal when:

- there are 3 or more signs of improvement (moist mouth, skin pinch goes back less slowly, no thirst, production of tears, less sunken eyes and passes urine)

OR

- if there are signs of fluid overload or over hydration (increased respiratory rate by 5 breaths/minute and pulse rate by 25 beats/minute, increased oedema and puffy eyelids)

Do not give IV fluids in severely malnourished children even if severely dehydrated EXCEPT in shock

Monitoring during rehydration

Rehydration (oral or intravenous) therapy must **immediately stop** if any of the following are observed: **(Check every 30 minutes when given orally and every 10 minutes when given intravenously)**

- The development of oedema or puffy face
- An increase in the respiration rate by 5 breaths per minute or more.
- An increase of pulse rate by 25 beats per minute or more.
- The jugular veins become engorged

Other signs are;

- The development of a “grunting” respiration (this is a noise on expiration not on inspiration) which is a sign of heart failure
- The development of rales or crepitations in the lung bases.
- The development of a triple rhythm (Gallop rhythm).

• **SIGNS OF FLUID OVERLOAD:**

- Development of prominent neck veins.
- The neck veins engorged when the abdomen (liver) is pressed.
- An increase in the liver size by more than one centimetre.
- The development of tenderness over the liver.
- An increase in respiration rate by 5 breaths per minute or more.
- An increase in pulse rate by 25 beats per minute or more
- The development of a “grunting” respiration (on expiration NOT inspiration).
- The development of rales or crepitations in the lungs.
- The development of a gallop rhythm.

Shock

Shock from sepsis or dehydration are likely to coexist in severely malnourished children. They are difficult to differentiate on clinical signs alone. Children with dehydration shock will respond to IV fluids, while those with septic shock will not. The amount of fluid to give depends on the child’s response and over-hydration must be avoided.

Shock is present if a severely malnourished child is lethargic or unconscious and has cold extremities (hands and feet), slow capillary refill (longer than 3 seconds) and weak or fast pulse.

Some of the signs of shock may be present at all times in a severely malnourished child, even if there is no shock, only give IV fluids if the child:

- Is lethargic or unconscious **AND**
- Has cold extremities

PLUS, EITHER: Slow capillary refill (>3 seconds) **OR** Weak or fast pulse

Management of shock

Immediately give:

- **Oxygen 1-2l/min**
- IV bolus sterile 10% **glucose** (5 ml/kg)
- IV **antibiotics** for infection: a third-generation Cephalosporin such as Ceftriaxone to cover both gram negative and gram-positive organisms’

- IV **fluids** at 15ml/kg body weight (use a paediatric giving set) over one hour using one of the following in order of preference:
 - o *Ringers lactate solution with 5% dextrose or*
 - o *Half-strength normal saline (0.45%) with 5% dextrose or*
 - o If all of the above fluids are not available, use plain Ringer's lactate
 - o Intraosseous or NGT may be used for the above if IV is not possible.
- Take Blood for Grouping and cross-match to be readily available in case is needed.
- Keep the child warm.

Monitoring:

- Record RR and PR at the start and then every 10 minutes to monitor progress and check for fluid overload.
- If RR increases by 5 breaths/min or more and PR **increases by 25 beats/min or more STOP** giving IV fluids.

After 1 hour:

(A) If there are signs of improvement (i.e. RR and PR are slower): Assume child had **dehydration shock**:

- Repeat the same amount of IV fluid for one more hour
- Continue to record RR and PR every 10 minutes
- Then switch to oral or NGT ReSoMal 10 ml/kg/h alternating hourly with F75 for *up to 10* hours, continue monitoring RR and PR hourly.

(B) If there are no signs of improvement (i.e. RR and PR are the same or have increased), *reassess the child and manage accordingly,*

In case of **septic shock manage as follows:**

- Continue giving antibiotics to cover for both gram positive and gram-negative bacteria.
- Give maintenance fluids (4 ml/kg/h) while waiting for blood (order 10ml/kg whole blood)
- When blood is available, stop all oral intake and IV fluids
- Transfuse fresh whole blood 10 ml/kg *slowly* over 3 hours: DON'T give diuretic.

- *If there are signs of heart failure use packed cells (5 ml/kg) If blood is not available, use plasma.*
- *If the child gets worse (i.e. RR increases by 5 breaths/min and PR by 25 beats/min) stop All IV fluids.*

Anaemia

Definition:

Definition - Anaemia is low concentration of haemoglobin in the blood.

In children 6 - 59 months Hb < 11.0 g/dl indicates anaemia.

Anaemia in this age group is categorized as follows:

- o Hb 10.1 – 10.9 g/dl = Mild anaemia
- o Hb 7.0 – 10.0 g/dl = Moderate anaemia
- o Hb < 7.0 g/dl = Severe anaemia
- o Hb < 4.0 g/dl = Very severe anaemia

Note:

- Very severe anaemia [Hb < 4g/dl (PCV < 12%)] or severe anaemia [Hb of 4-6 g/dl] with signs of respiratory distress are indications for blood transfusion.
- All children have a fall in Hb during the early phase of treatment. This 'dilutional anaemia' is due to the sodium coming out of the cells and mobilization of oedema.

Management of severe anaemia

- **Stop all oral intake and IV fluids** during transfusion
- Look for **signs of congestive failure**
- Give IV **furosemide** 1 mg/kg at the start to make room for the blood
- If child **has signs of congestive/cardiac failure** (such as respiratory distress, fast pulse rate, enlarged tender liver, gallop rhythm (third heart sound), basal lung crepitations give 5 ml/kg **packed red blood cells** rather than whole blood, slowly over 3 hours.
- If no signs of congestive failure, give **whole blood** (10ml/kg) slowly over 3 hours.
- All children should be fasted during blood transfusion and stop all other IV fluids. Continue to monitor the child closely for the next 3 hours after the transfusion
- Monitor child for signs of fluid overload every 15 minutes i.e. RR and PR. If RR and PR increase by 5/minute and 25/minute respectively, stop blood transfusion.
- Monitor for signs of transfusion reactions. If any of the following signs develop during the transfusion, stop the transfusion. The signs are fever, itchy skin rash, dark red urine, confusion or shock.

Note:

Do not give iron in stabilization and transition phases of treatment. Do not repeat blood transfusion within 4 days. It is common for the Hb level to fall during stabilisation,

Heart failure

Congestive heart failure is usually a complication of over-hydration (when IV fluids or oral fluids are given). It can also be caused by very severe anaemia, after a blood or plasma transfusion; or with a diet high in sodium. It is important to differentiate heart failure from respiratory infection and septic shock.

Clinical signs suggestive of congestive heart failure include:

- **Dilated external jugular veins** IN ADDITION to the other signs of shock i.e. **cold peripheries, weak and rapid pulse (radial or femoral), delayed capillary filling (>3 sec)**
- Increase in **body weight** from the time of first admission and resuscitation. This implies that weight must be checked even before any fluids are given, and/or
- Increase in **liver size** (by more than 1cm) following giving fluids. This would require examination (usually by a doctor) before starting treatment. Good idea is to mark the liver size with a marker pen on the skin of the abdomen. More accurate probably than a measurement e.g. 3 cm or 5 cm.
- If these are **accompanied by increase respiratory rate** of more than 5 breaths per minute (particularly during rehydration treatment) increased respiratory **difficulty** or **triple (gallop) rhythm**, then they are very suggestive of heart failure.
- Grunting respiration and basal lung crepitations
- Increasing oedema or reappearance of oedema during treatment.
- An acute fall in haemoglobin concentration

Differences between heart failure and pneumonia

Heart failure and pneumonia are clinically similar, and very difficult to differentiate, differentiating features include:

- Common symptoms of **pneumonia** are *fast breathing* and, sometimes, chest indrawing. Cough, crackly breath sounds and abnormalities on chest X-ray are frequently absent. The cut off for fast breathing is 50 times per minute or more if the child is aged 2–12 months, or 40 times per minute or more if the child is aged 12 months to 5 years. Children with fast breathing should be diagnosed as having pneumonia and given an oral antimicrobial for 5 days.
- The first sign of **heart failure** is also *fast breathing*. Later signs are engorgement of the jugular vein, respiratory distress, a rapid pulse, cold hands and feet, and delayed capillary filling, cyanosis of the fingertips and under the tongue.
- Heart failure must be differentiated from respiratory infection and septic shock, which usually occur *within 48 hours* of admission, whereas heart failure usually occurs somewhat later. Some ways of differentiating it in addition to the above:
 - o If there is an *increased respiratory rate and any gain in weight* from the first admission, then heart failure is the first diagnosis.
 - o If there is an *increased respiratory rate and an increase in liver size* (by more than 1 cm) following giving of fluids, then heart failure is the first diagnosis.
 - o If there is an *increased respiratory rate with a loss of weight*, then pneumonia is a possibility.
 - o If there is no change in weight (fluid balance) then the differentiation has to be made using the other signs of heart failure.
 - o Pneumonia is NOT the probable diagnosis if there has been any weight gain before the onset of respiratory distress.

Treatment

When heart failure is diagnosed:

- **Stop ALL intakes of oral or IV fluids.** The treatment of heart failure takes precedence over feeding the child
- **Restrict fluid or food** intake while monitoring blood sugar (to prevent hypoglycaemia) until signs of heart failure are improved (i.e. RR and PR are slower).
- This may take 24 to 48 hours.
- Administer **furosemide** (1mg/kg) IV as a single dose.

Note: If the heart failure is associated with severe anaemia, treatment of the heart failure takes precedence over the treatment of the anaemia. (Refer to treatment of severe anaemia)

Dermatosis of kwashiorkor

Signs of dermatosis are hypo or hyper pigmentation desquamation ulceration and exudative lesions.

Treat dermatosis as follows:

- Omit using nappy/diaper so that the perineum can stay dry. If the child has diarrhoea, cover loosely
- Soak or dab affected areas for 10 minutes with 0.01% potassium permanganate solution (dilute to form a slightly purple, transparent solution)
- Apply barrier cream – Zinc ointment, castor oil, petroleum jelly or paraffin gauze dressing
- Apply miconazole cream 12hrly 12 hourly for 2 weeks to treat diaper candidiasis

Absent Bowel Sounds, Gastric Dilatation, Abdominal Distension

Bowel sounds in the severe acute malnourished child may be reduced or absent. He/she will often experience impaired bowel functions, mainly as a result of bowel infections.

Clinical signs

Signs and symptoms of impaired bowel function:

- Abdominal distension
- Loss of bowel sounds
- Vomiting

Treatment

- Give second-line **antibiotic** treatment by IV/IM injection.
- Consider adding third-line antibiotics, at doctor's discretion.
- Stop all other drugs that may be causing **toxicity** (such as metronidazole).
- Give a single IM injection of **magnesium sulphate** (2ml of 50% solution).

- Pass an NGT, and aspirate the contents of the stomach. Then “irrigate” the stomach with isotonic clear fluid (5% dextrose or 10% sucrose - the solution does not need to be sterile). Do this by introducing 50ml of solution into the stomach and then gently aspirating all the fluid back again. This should be repeated until the fluid that returns from the stomach is clear.
- Put 5 ml/kg of **sugar-water** (10% sucrose solution) into the stomach and leave it for one hour. Then aspirate the stomach and measure the volume that is retrieved. If the volume is less than the amount that was introduced, either give a further dose of sugar-water or return the fluid to the stomach.
- If There is gastric or oesophageal candidiasis: give Fluconazole
- Keep the child warm.

If the child’s level of consciousness is poor, give intravenous glucose (5 ml/kg bolus):

- Do not put up a drip at this stage. Monitor the child carefully for six (6) hours without giving any other treatment.
- Improvement is measured first by a change in intestinal function: a decrease in the distension of the abdomen, visible peristalsis, return of bowel sounds, and decreasing volume of gastric aspirates. Second, there should also be improvement in the child’s general condition.

If there is intestinal improvement, begin to give small amounts of F75 by NGT (half the usual quantities per kg listed in Appendix 7. Subsequently adjust by the volumes of gastric aspirated)

If there *is no improvement after six (6) hours*:

- Consider putting up an IV drip. It is crucial that the administered fluid contains adequate amounts of potassium. Add Sterile Potassium Chloride (20mmol/l) to all solutions that do not contain potassium. If it is available, use one-fifth normal saline in 5% dextrose, otherwise use Ringer-Lactate in 5% dextrose or half-strength saline in 5% dextrose. The drip should run VERY SLOWLY. The amount of fluid that is given should be NO MORE THAN 2 to 4 ml/kg/hour.
- Start to give second line antibiotics intravenously.

When the gastric aspirates decrease so that one half of the fluid given to the stomach is absorbed, discontinue the IV treatment and continue with oral treatment only.

Refeeding syndrome

“Refeeding syndrome” refers to malnourished patients (and those who have been fasting for more than one week) who develop any of the following shortly after they have a rapid, large increase in their food intake: acute weakness, “floppiness”, lethargy, delirium, neurological symptoms, acidosis, muscle necrosis, liver and pancreatic failure, cardiac failure or sudden unexpected death. The syndrome is due to rapid consumption of key nutrients for metabolism particularly if the diet is unbalanced. There is frequently a large reduction in plasma phosphorus, potassium and magnesium.

The syndrome also occurs in obese patients who have been fasting as part of their treatment; they are not wasted but, like the malnourished patient, have metabolically adapted to a low intake of food.

Prevention

It is necessary at the start of treatment not to have a sudden jump in the adapted malnourished state to a very high intake. On admission, malnourished patients should never be force-fed amounts of diet in excess of those prescribed in the protocol; particular care needs to be taken with those who are being fed by NG Tube. Prevention of refeeding syndrome is the purpose of the transition phase of treatment. In the OTP protocol, very large amounts of RUTF are sometimes given at the start of treatment. If any mother forces her child to take all the diet then refeeding syndrome is a real possibility.

Treatment

For patients in the recovery phase

If there is deterioration during the recovery or transition phase of treatment, Then the child should be returned to the acute phase.

For patients that are in the acute phase,

- Reduce the diet to 50% of the recommended intake until all signs and symptoms disappear and then gradually increase the amount given
- Check to make sure that there is sufficient potassium and magnesium in the diet. If the diet is not based on cow's milk (or the mother is also giving cereals/pulses etc.) additional phosphorus should be given to prevent refeeding syndrome.

4.2.3 Transition Phase

A gradual transition is necessary from Stabilization Phase (using F75) to Rehabilitation Phase (using F100 or RUTF) to prevent fluid overload and heart failure. This transition usually lasts for about 3 days.

Criteria to move from Stabilization Phase to Transition Phase:

Children must meet all of the following criteria to progress from Stabilization Phase to Transition Phase:

- Appetite has improved and child is taking all of the prescribed milk.
- Treatment of medical complications has commenced and patient is improving
- Loss of or minimal oedema
- IV fluids and NGT feeding completed.
- Child can take feeds orally.

Feeding during transition

In transition phase, the patient begins to gain some weight slowly. The objective is to gradually increase calorie intake from 100kcal/kg to 130 kcal/kg. Transition phase prepares the patient for Rehabilitation Phase.

The recommended feed during transition is F100.

F100 quantities and feeding procedure

To begin transition, stop F75 and start the child on F100. Use F100 sachets or make up F100 using recipes in Appendix 6.

Feed as follows:

- Replace F75 feeds with the same amount of F100 for the first 2 days.
- On day 3, increase each successive feed by 10 ml as long as the child finishes feeds. Continue increasing by 10ml until food is left after most feeds. The amount of F100 should not exceed the maximum amount recommended for the child's weight (see Appendix 10)
- Breastfed children should be offered breast milk on demand before being fed F100.
- Give 130 ml of F100 per kg bodyweight per day (Appendix 10)
- If the child has good response, medical complications are resolved and has good appetite, RUTF can gradually be introduced up to 200kcal/kg/day (Appendix 11)
- Timing of F100 feeds in Transition Phase (i.e. number of feeds per day) is the same as in Stabilization Phase.

Note:

If pre-packaged F100 is available, follow preparation instructions as indicated on the package.

Prepare enough milk for the next three hours and no longer; to assure that it will not go bad. If there is access to a refrigerator, milk can be stored in a refrigerator for a maximum of 12 hours and re-warmed before child is fed.

If pre-packaged F100 is not available, use one of the recipes given in Appendix 6 to prepare F100 using locally available ingredients.

Routine medical treatment

Continue routine medical treatment, electrolytes and micronutrient supplementation that began in the Stabilization Phase (see section 3.2.1). Patients discharged to OTC do not need to be given antibiotics.

Monitoring

The following should be monitored and entered into the child's treatment card (Appendix 5)

- **Weight** is measured every day at the same time (before feeds)
- Degree of **oedema** is assessed every day
- Body **temperature** is measured twice per day.
- **Pulse and respiratory rates** 4 hourly (more frequently when taking fluids e.g. Shock, rehydration and blood transfusion).
- Standard **clinical signs**: stool, vomiting, dehydration, cough, respiration rate, pulse rate and liver size.

- Patient's **fluid** intake and route (oral, NGT or IV fluids). Record if the patient is absent, vomits or refuses a feed.
- MUAC is taken upon admission and thereafter on each 7th day

Criteria to progress between the phases

Criteria to progress from transition to rehabilitation phase

- A **good appetite**. This means child is taking at least 90% of the F100 or RUTF prescribed during transition phase.
- Reducing oedema
- **Resolving medical complications** or no medical complications
- **Clinically well and alert**

Criteria to move back from Transition Phase to Stabilization Phase

- **Weight gain** is greater than 10g/kg/d (excess fluid retention).
- Increasing/developing **oedema**
- Signs of **fluid overload** (rapid increase in respiration rate, pulse rate, size of liver)
- Tense **abdominal distension**
- Significant **re-feeding diarrhoea** so that there is weight loss. 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 they lose weight. Several loose stools without weight loss is **not** a criterion to move back to Stabilization Phase.
- If the **diarrhoea** is secondary to lactose (Lactose intolerance) which can develop when child is on F75, stop giving F75, instead give cereal based F75 (Appendix 6b)
- Any **complication** that requires IV infusion
- **NGT** is needed for feeding.

4.2.4 Rehabilitation Phase (2-6 weeks)

This section describes the rehabilitation phase for the small proportion of children who will remain in ITC throughout the rehabilitation phase otherwise, the majority of children should be treated on an outpatient basis, where RUTF is available. (Refer to Chapter 6 on Outpatient Therapeutic Care).

This phase is associated with full recovery and rapid catch up of lost weight. Either F100 or RUTF or a combination of both can be used. The main change in the diet is an increase in the amount of F100 or introduction to RUTF.

Dietary Treatment

F100 quantities and feeding procedure:

- Breastfed children should be offered breast milk on demand before being fed F100.
- Give 200 ml of F100 per kg bodyweight per day, which provides 200 kcal/kg/day (Appendix 8)
- After the feed, always offer an additional quantity to the child if he/she takes all the feed given quickly and easily. The child should be able to take as much as F100 as they want.
- The caregiver should provide eight F100 feeds to the child per day. Feed with cup and saucer
- If pre-packaged F100 is available, follow instructions on preparation as indicated on the package. Prepare enough milk for the next three hours, not longer, to assure that it will not spoil. If there is access to a refrigerator, milk can be stored in a refrigerator for a maximum of 12 hours and re-warmed before child is fed.
- If pre-packaged F100 is not available, use one of the recipes given to prepare F100 using locally available ingredients (Appendix 6a).

RUTF quantities and feeding procedure

- Breastfed children should be offered breast milk on demand before being fed RUTF.
- Give children 200 kcal/kg/day of RUTF. Using the RUTF table, determine the amount of RUTF required for the child's current weight as indicated in Appendix 11.
- The caregiver should provide five RUTF feeds to the child per day
- Children should be offered as much water to drink as they will take during and after eating RUTF.
- Children that are not taking sufficient RUTF as inpatients are given F100 to make up any deficit in intake. 100 ml of F100 is equivalent to about 20 g of RUTF.
- Child may eat additional food if demanded as long as the full amount of prescribed RUTF per kg has been consumed.

Routine medical treatment

Continue routine medical treatment and supplementation as indicated in section 3.2.1 until completed.

De-worming

- Give the following on transfer to rehabilitation phase - do not give to children less than 1 year old
- For **Mebendazole** give 500 mg for children aged 12-59 months
- For **Albendazole** give 200 mg for children aged 12-23 months or 400 mg for children aged 24-59 months

Monitoring

Monitor the following throughout treatment period and take prompt action when problems arise:

- Body **temperature** daily
- **Pulse and Respiratory Rate** (4-hourly and more frequently when taking fluids e.g. in shock, rehydration, blood transfusion)
- **Volume of feed** offered and left over at each meal session
- MUAC once weekly
- **Clinical signs** daily: oedema, vomiting, diarrhoea, urine output
- **Weight**, taken every morning before feeding. Once per week calculate and record weight gain as g/kg/d. Note that weight gain is:
 - Poor if <5g/kg/d
 - Moderate if 5-10g/kg/d
 - Good if >10 g/kg/d

Sensory stimulation and emotional support

In severe malnutrition, there is delayed mental and behavioural development. Caregivers and staff should provide:

- Tender loving care through cuddling, talking, singing softly
- A cheerful, stimulating environment with home-made toys
- Structured play therapy 15-30 min/d.
- Physical activity as soon as the child is well enough
- Maternal involvement when possible (e.g. comforting, feeding, bathing, play)

Non-Response to Treatment

Regular monitoring will highlight if the child is failing to respond to treatment. Children with the following criteria should be considered as failing to respond:

- Failure to regain appetite by day 4
- Failure to start losing oedema by day 4
- Oedema still present by day 10
- Failure to gain at least 5 g/kg/day for 3 successive days after feeding freely on F100

If a child fails to respond, consider if the following are problems and make every effort to correct them:

- **Insufficient feeds given**
 - Check if the right amount of feeds is given
 - Check if night feeds are given
 - Check and make sure that target intakes of F100 are achieved
 - Make sure that quantity of feed is increased as the child gains weight

- **Feeds prepared incorrectly**
 - Check if correct recipe is used
 - Ensure correct measurement of ingredients
 - Mix ingredients properly
 - Ensure hygiene during preparation, storage and feeding
- **Minerals or vitamins not given as recommended**
 - Check adequacy of multivitamin composition and shelf life
 - Ensure that adequate electrolytes and minerals are added to the feeds
- **Malabsorption**
 - Assess and correct the causes of Malabsorption
- **Underlying infection: Diarrhoea, Pneumonia, TB, UTI, Otitis media, Malaria, HIV/AIDS and other serious underlying diseases.**
 - Re-examine carefully
 - Re-investigate
 - Treat the underlying infection promptly and correctly

Preparing mother for discharge to OTC (where feasible)

If services on outpatient management of severe malnutrition are in place, the following actions should be taken:

- Complete a discharge/referral slip to OTC (see Appendix 12), including the section informing health care providers at the outpatient department/care site about the medical intervention and treatment given to the child.
- Inform the mother/caregiver where and on which day to go for outpatient care, at the health facility closest to her community, and is given sufficient RUTF to last until the next outpatient care follow-on session (usually one week’s worth).
- Give mothers/caretakers key messages about the use of RUTF and basic hygiene are discussed again with the mother/caregiver (Appendix 13). The mother/caregiver is also given any remaining medications and instructions on how to use them. They should repeat these instructions to the health care provider to make sure they were clearly understood and will be followed correctly.
- Inform the mother/caregiver on what to do if the child’s condition deteriorates before the next outpatient care follow-on session.

Table 10: Early discharge criteria from ITC to OTC:

Discharge criteria
No medical complications
Passed appetite test
In rehabilitation and taking RUTF
Oedema has subsided
Gaining weight: >5 g/kg of body weight per day for 3 successive days

Table 11 Criteria for discharge from ITC

Discharge category	Criteria
Cured	<ul style="list-style-type: none"> • Weight for Height >-2 z scores for 2 consecutive visits • No bilateral oedema for two consecutive weeks and • Clinically well and alert
Defaulted	Child is absent for 2 consecutive days
Died	Died while registered in the ITC
Non-recovered	Child remained in ITC and does not reach discharge criteria after 6 weeks treatment (refer the child for further investigation and management)
Discharge to OTC	Child's condition stabilized and child is referred to OTC or Child referred for further medical examination/treatment Ask the mother to bring other under five children to OTC for active screening

The child should be referred to a OTC (see Appendix 12 for referral slip) or to other health services in their community for follow-up. Where possible the caregiver should also be linked with livelihood services that seek to address some of the underlying causes of malnutrition at the household level.

Preparing mother for discharge

During rehabilitation, the caregivers should be taught how to prevent malnutrition from recurring. Where applicable and possible, the grandparents or other guardians of the child should be included in these discussions.

Ensure that the parents understand the causes of malnutrition and how to prevent its recurrence:

- Correct breastfeeding and feeding practices (frequent feeding with energy and nutrition dense foods five times a day)
- How to treat, or seek treatment for, diarrhoea and other infections
- When to take the child for immunizations
- Ensure that the child receives a vitamin A supplement (children aged 6-59 months) and anthelmintic drug (children aged 12-59 months) every 6 months.
- How to give structured play therapy to child

CHAPTER 5:

Inpatient Therapeutic Care of SAM for children aged less than 6 months and those aged more than 6 months with body weight below 4Kg

5.1: Introduction

Severely malnourished infants aged less than six months need special care and should always be treated in inpatient care until full recovery. Ideally these infants should be admitted into a separate section, away from where the other older severely malnourished sick children are admitted to prevent cross-infection.

The steps for routine care management of severe acute malnutrition are the same as in children over six months with exception in feeding regimen which differentiate between breastfed and non-breastfed infants.

This section provides guidance on the treatment for:

- Infants less than 6 months with a prospect of being breast-fed
- Infants less than 6 months with no prospect of being breast-fed
- Infants aged above 6 months with a bodyweight below 4 kg should also be treated using these protocols

Criteria for admission

- Infants aged less than 6 months with one or more of the following:
 - o Weight for Length less than $<-3SD$
 - o Bilateral pitting oedema of feet
- Infants aged more than 6 months with body weight below 4 Kg

Admission procedure

- 1) Identify, examine and treat **very sick children** first.
- 2) Give 50 ml of 10% **sugar** water or 10% dextrose to all children awaiting assessment to avoid hypoglycaemia
- 3) Identify and begin **treatment of complications**
- 4) **Take medical history and perform physical and medical examination** (Appendix 4)
- 5) Start **antibiotic** treatment immediately.
- 6) **Register** the patient using a registration number and complete the ITC Card (Appendix 5)
- 7) **Explain** the treatment and ward procedures to the caregiver.
- 8) All caregivers should be offered **HIV testing** and counselling services for their children and for themselves.
- 9) Ensure the child is kept **warm** with head covered and airway free to prevent hypothermia.
- 10) Perform the necessary **laboratory investigations**

5.2: Infants less than 6 months with prospect of being breastfed

The main objective of treatment for these infants is to improve or re-establish exclusive breastfeeding, provide therapeutic feeding, and provide nutritional, psychological and medical care for their caregivers.

Mothers should exclusively breastfeed their babies for the first six months of life. This means that the babies should not get any other milks, foods or liquids, not even sips of water. After six months, breast milk alone is not enough. Babies need to gradually start eating a variety of foods to continue growing well. However, breast milk continues to be an important part of the diet until the baby is at least two years.

Mothers who are HIV-positive should be referred to a health worker for appropriate support and counselling on infant feeding options. **Exclusive breastfeeding is recommended for HIV-infected women for the first six months of life.** Complementary feeding from six months onwards. If infant is negative breastfeed up to the age of 12 months. If the infant is HIV positive breast feed until at least 2 years of age

Note that, if replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS) it can be used.

Infants who are malnourished are weak and often do not suckle strongly enough to stimulate an adequate production of breast milk. The mother often thinks that she herself has insufficient breast milk and is anxious about her ability to adequately feed her child. The low output of milk is due to inadequate stimulation by the weak infant. Breast milk supply is demand-led, the more the baby breastfeeds, the more breast milk the mother will produce,

There are no separate phases in the treatment of these infants.

Dietary Treatment

The objective is to supplement the child with therapeutic milk while stimulating production of breast milk.

Provide:

- Breast milk if adequate or infant formula or F75 and lastly F100-Diluted for children without oedema in that order of preference (see Appendix 14 Preparation of F100-Diluted)
- F75 for infants with oedema and change to Breast milk if adequate or infant formula or continue with F75 or F100-diluted when the oedema is resolved.

F75 and F100-Diluted quantities and feeding procedure

- The infant **should be breastfed as frequently as possible**. Breastfeed **every two hours** (at least 10 times a day) for at least 20 minutes (more if the child cries or demands more)
- Between **30 minutes and one hour after breastfeeding give maintenance amounts of infant formula or F75 or F100-Diluted** using the Supplementary Suckling Technique (SST), see figure 8
- Use Infant formula or F75 or F100-Diluted the quantities of which are in Appendix 15 according to the child's current weight across eight feeds per day.
- The progress of the infant is monitored by the **daily weight**. The infant should be weighed daily with a scale that can measure changes within 10g or 20g.

- **Usually the quantity of infant formula or F75 or F100-Diluted is not increased as the child starts to gain weight.** If the infant grows regularly with the same quantity of milk, it means the quantity of breast milk is increasing. If the child does not finish all the supplemental feeds but continues to gain weight, it means that the intake from breast milk is increasing and that the infant is taking adequate quantities to meet his/her requirements. **If the infant loses weight over 3 consecutive days but continues to be hungry and is taking all the infant formula or F75 or F100 Diluted, add 5 ml extra to each feed.**

When an infant is gaining weight at 10g per day:

- Decrease the quantity of Infant formula or F75 or F100-Diluted to one half of the maintenance amount in Appendix 15 so that the baby gets more breast milk.
- If the **weight gain is maintained** (10g per day regardless of current weight) then stop supplementary suckling completely.
- If the **weight gain is not maintained** then increase the amount given to three quarters (3/4) of the maintenance amount for 2 to 3 days, and then reduce it again if weight gain is maintained.
- It is advisable to keep the infant in the ward for a further few days on breast milk alone to make sure that he continues to gain weight
- When it is certain that the child is gaining weight for 3 consecutive days on breast milk alone he or she should be discharged, no matter what his current weight or weight-for-length.

Supplementary Suckling Technique (SST)

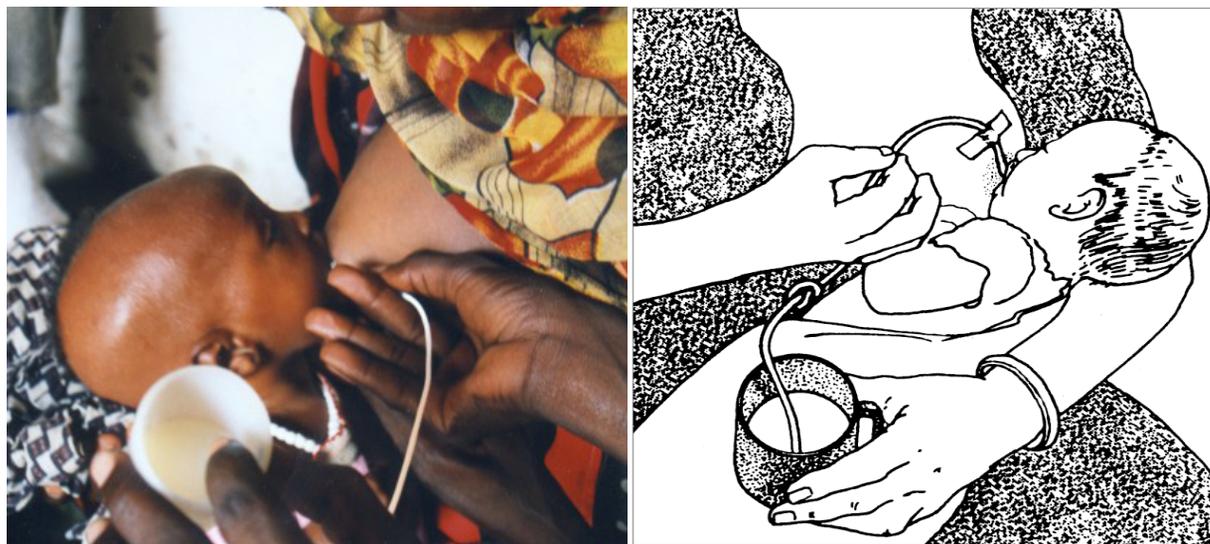
Use the SST to re-establish or commence breastfeeding whilst providing maintenance amounts of infant formula or F75 or F100-Diluted to severely malnourished infants. Using this technique, the infant suckles at the breast whilst also taking supplementary infant formula or F75 or F100-Diluted from a cup through a fine tube that runs alongside the nipple. The infant is nourished by the infant formula or F75 or F100-Diluted and the suckling stimulates the breast to produce more milk.

The steps required in using the SST:

- The caregiver holds a cup with the infant formula or F75 or F100-Diluted. The end of a NGT (size no. 8) is put in the cup, and the tip of the tube on the breast, alongside the nipple.
- The infant is offered the breast using the correct position and attachment for breastfeeding. When the infant suckles on the breast with the tube in his mouth the milk from the cup is sucked up through the tube and is taken by the infant.
- At first an assistant needs to help the mother by holding the cup and tube in place. The best person to show the mother the SST is another mother who is using the technique successfully. The mother may find it easier to attach the NGT to the breast with a piece of tape. Later, almost all mothers manage to hold the cup and tube without assistance.
- The cup is placed 5 – 10 cm below the level of the nipple for easy suckling. When the child suckles more strongly it can be lowered further down to up to 30 cm.
- Encourage more frequent and longer breastfeeding sessions to increase milk production and remove any interference that might disrupt breastfeeding.
- It may take one or two days for the infant to get used to the tube and the taste of the mixture of milks, but it is important to persevere.

- After feeding is completed the tube is flushed through with clean water using a syringe. It is then spun (twirled) rapidly to remove the water from the tube. If possible, the tube is then left exposed to direct sunlight.

Figure 8: Supplementary Suckling Technique



Routine medical treatment

Treat for medical complications, as indicated in Section 3.2.1 with the following modifications:

Antibiotics

- Give IV Ampicillin 50mg /kg every 6 hours for 7 days
- **Add Gentamycin 5mg/kg/day for severe infections.**
- If child shows signs of improvement after 48 hours of antibiotic treatment continue with same antibiotic regimen to complete 7 days of treatment.
- If the child **fails to improve after 72 hours**, start Ceftriaxone 50 – 80 mg /kg once daily for 7 days for duration of 7 days.

Vitamin A

- No routine supplementation of Vitamin A as a single dose
- If the child has eye signs of VAD Give 50,000IU on day 1, repeat on day 2 and a third dose on day 14

Folic acid

Give 2.5mg (tablet) in a single dose.

Monitoring

The following parameters should be monitored daily and entered on to ITC Card (Appendix 5)

- **Weight** is measured every day at the same time (before feeds)
- Degree of **oedema** is assessed every day
- Body **temperature** is measured twice per day (morning and evening).
- Standard **clinical signs**: stool, vomiting, degree of dehydration, cough, respiration and liver size.
- Patient's **fluid intake** and source (oral, NGT, or IV fluids). Record if the patient vomits or refuses a feed.
- A full **medical examination** is done every day.
- **Length or height** every three weeks

Supportive care for mothers

Supportive care for breastfeeding should be provided to mothers, especially in very stressful situations. The focus is on enabling the mother to increase breastfeeding, such as establishing 'breastfeeding corners' for mothers and infants, one-to-one counselling, and mother-to-mother support. Traumatized and depressed women may have difficulty responding to their infants and require particular mental and emotional support. The health care provider should explain to the mother the different steps of treatment that their children will go through. Efforts should be made to strengthen the mother's confidence and discourage self-criticism for perceived inability to provide adequate breast milk.

It is important to assess the nutritional status of the mother. Breastfeeding women need about 450 kcal per day of extra energy. The mother should consume at least 2,500 Kcal/day. The mother should receive postpartum vitamin A supplement (200,000 IU) if the infant is less than two months and she has not received already. Multiple micronutrient supplements must also be given to the mother. It is also important to ensure that the mother drinks at least 2 litres of water per day.

Discharge Criteria for infant less than 6 months in ITC

Table 12 Discharge criteria for infants less than 6 months

Discharge category:	Criteria:
Cured	Child is gaining weight on breast milk alone after the SST has been stopped AND <ul style="list-style-type: none">• No bilateral oedema for two consecutive weeks AND <ul style="list-style-type: none">• Successful breastfeeding or re-lactation AND <ul style="list-style-type: none">• Clinically well and alert and no other medical problems• the mother has been adequately supplemented with vitamins and minerals, so that she has accumulated body stores of the type 1 nutrients

Defaulted	Child is absent for 2 days
Died	Died while registered in the ITC
Non-recovered	Child that remained in ITC does not reach discharge criteria after 6 weeks of treatment – (refer the child for further investigation and management)

Follow-up after discharge

Follow-up for these children is very important. Advise the mother to come to the Reproductive and Child Health (RCH) clinic regularly and refer her to the SFP programme and any other social protection programmes (if available and consented). Give nutrition education and counselling on appropriate infant and young child feeding practices. Ensure appropriate referral for those infants with ongoing medical conditions like TB or HIV exposure). It is also important to monitor the infant's progress, support exclusively breastfeeding and the introduction of complementary food at the appropriate age of 6 months

5.3 Infants less than 6 months with no prospect of being breastfed

There are special circumstances where a less than six-month-old child cannot be exclusively breastfed (these include abandonment or a child being orphaned).

When there is no prospect of being given breast milk then infants are treated according to the standard protocols of management of severe acute malnutrition. However, the following dietary modifications explained here must be applied. The admission criteria are the same as the other malnourished infants; however, discharge criteria are different.

Dietary Treatment in stabilizations phase:

- Infant formula or F75 or F100-Diluted for children without oedema.
- F75 for infants with oedema and change to infant formula or continue with F75 or F100-diluted when the oedema is resolved.
- The infant should be fed every three hours (8 times a day)
- Infant formula or F75 or F100-Diluted or F75 is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.
- Feed by cup and saucer or Nasogastric Tube (NGT)
- ONLY feed with NGT when the infant is not taking sufficient milk by mouth. The use of NGT should not exceed 3 days and should be used in Stabilization Phase ONLY

Criteria to move from stabilization phase to transition phase:

- Return of appetite, **and**
- Loss of oedema

Dietary treatment in transition phase

- The infant should be fed every three hours (8 times a day) with infant formula or F75 or F100-Diluted only.
- Infant formula or F75 or F100-Diluted is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.

The criteria to progress from Transition Phase to Rehabilitation Phase are both:

- A good appetite. This means taking at least 90% of infant formula or F75 or F100-Diluted prescribed for transition phase

Dietary treatment in rehabilitation phase

In the Rehabilitation Phase provide infant formula or F75 or F100-Diluted.

- The infant should be fed every three hours (8 times a day) with infant formula or F75 or F100-Diluted only.
- Infant formula or F75 or F100-Diluted is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.

Routine medical treatment

Same as children who are breastfeeding

Monitoring

Same as children who are breastfeeding

Discharge criteria for infants less than 6 months in ITC with no prospects of being breastfed

Table 13 Discharge criteria for children less than 6 months with no prospect of being breastfed

Discharge category	Criteria
Cured	<ul style="list-style-type: none">• >-2 SD WHZ AND <ul style="list-style-type: none">• No bilateral oedema for two consecutive weeks AND <ul style="list-style-type: none">• Successful alternative replacement feeding for non-breastfed infants AND <ul style="list-style-type: none">• Clinically well and alert and no other medical problems
Defaulted	Child is not there for 2 days
Died	Died while registered in the ITC
Non-recovered	Child that remained in ITC and does not reach discharge criteria after 6 weeks of treatment (refer the child for further treatment and management)

Follow-up after discharge

Follow-up for these children is very important and needs to be organized between the caregiver and the health staff. In the absence of breast-milk, other milks need to be included in the child's diet to prevent relapse. Nutrition counselling for the mother or caregiver is essential. It is also important to support introduction of complementary food at the appropriate age of 6 months.

5.4: Infants more than 6 months with body weight below 4Kg

The admission criteria are the same as the other malnourished infants; however, discharge criteria are different.

Dietary Treatment in stabilizations phase:

- F75 or F100-Diluted for children without oedema.
- F75 for infants with oedema and continue or change to F100-diluted when the oedema is resolved.
- The infant should be fed every three hours (8 times a day)
- F75 or F100-Diluted is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.
- Feed by cup and saucer or Nasogastric Tube
- ONLY feed with NGT when the infant is not taking sufficient milk by mouth. The use of NGT should not exceed 3 days and should be used in Stabilization Phase ONLY

Criteria to move from stabilization phase to transition phase:

- Return of appetite (Taking at least 80% of the F75 or F100 diluted) **and**
- Loss of oedema

Dietary treatment in transition phase

- The infant should be fed every three hours (8 times a day) with F75 or F100-Diluted only.
- F75 or F100-Diluted is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.

Dietary treatment in rehabilitation phase

In the Rehabilitation Phase provide F75 or F100-Diluted.

- The infant should be fed every three hours (8 times a day) with F75 or F100-Diluted only.
- F75 or F100-Diluted is given using the quantities in Appendix 16 according to the child's current weight across eight feeds per day.

NOTE:

If the child's weight has increased to above 4kg, F100 is given using quantities in Appendix 10 according to the child's current weight,

Routine medical treatment

Same as children who are breastfeeding

Monitoring

Same as children who are breastfeeding

NOTE: RUTF can be given to children above 6 months and more than 3 kg body weight according to appendix 11.

Table 9: Discharge criteria for children <6 months not breastfed

Discharge category	Criteria
Cured	<ul style="list-style-type: none">• > -2SD weight for length AND• No bilateral oedema for two consecutive weeks AND• Clinically well and alert and no other medical problems
Defaulted	Child is absent for 2 days
Died	Died while registered in the ITC
Non-recovered	Child that remained in ITC does not reach discharge criteria after 6 weeks in treatment

Follow- Up

- Follow-up for these children is very important and needs to be organized between the caregiver and the health staff.
- In the absence of breast-milk, alternative milks need to be included in the child's diet to prevent relapse.
- Nutrition counselling for the mother or caregiver is essential. It is also important to support introduction of complementary food at the appropriate age of 6 months.

CHAPTER 6: Outpatient Therapeutic Care of Severely Malnourished Children With no Medical Complications

6.0 Introduction

Children with severe acute malnutrition with no medical complications should receive outpatient therapeutic care in the community. If a child is still breastfeeding encourage the mother to breastfeeding the child frequently and on demand.

6.1 Outpatient Therapeutic Care of SAM

The objective of outpatient therapeutic care (OTC) of SAM is more widespread access to treatment. OTC provides home-based treatment and rehabilitation for children aged 6-59 months who have SAM, good appetite and no medical complications. If the condition of the child deteriorates, or if a medical complication develops, the child is referred to inpatient therapeutic care (ITC) for stabilization and returns to OTC to continue treatment as soon as the medical complication has resolved. Outpatients should attend OTC services every week for a medical check-up, medical treatments and their weekly supply of RUTF. However, the OTC services can be conducted every two weeks under certain circumstances, such as:

- Poor access or long distances to the health facility which causes hardship for caregivers.
- Seasonal factors or events that involve caregivers, e.g. harvests or planting seasons.
- On a case-by-case basis, as determined by the health care provider.

Criteria for enrolment

- A child aged 6-59 months
- Clinically well and alert
- No medical complications
- No Oedema
- Passes the appetite test and has one of the following criteria
 - MUAC <11.5 cm
 - WHZ <-3 SD

Other admissions to OTC include:

- Children who have been referred from ITC after fulfilling the early discharge criteria.

Core operating principles of OTC:

Timeliness

Facilities providing OTC (through RCH clinics or paediatric OPD) should aim to begin case-finding and treatment before a child's nutritional status deteriorates.

Appropriate care

Facilities should provide simple, effective outpatient care for those who can be treated at home and clinical care for those who need inpatient treatment.

Care for as long as it is needed

- By improving access to treatment, facilities should ensure that children can be provided with health services until they have recovered.
- By building local capacity and integrating the service within existing structures and health services. These facilities should also aim to ensure that effective treatment remains available for as long as acute malnutrition is present in the population.
- Facilities shall focus on community involvement, understanding and participation, which distinguish them from other health extension and outreach services.

The facilities providing OTC (through RCH clinics or paediatric OPD) should have:

- Weighing scales: for infants and older children
- Height/Length boards
- Tape measures/ Banded MUAC Straps
- Ready to Use Therapeutic Food (RUTF)
- Monitoring tools (Registers, Tally sheets etc.)
- Toys and play materials
- A link with ITC so that patients can quickly be referred to if complications arises or home care fails.

Entry point for Outpatient Therapeutic Care services

All health facilities in the community can be used as OTC outlets. These facilities will have the following main functions:

- Entry point for enrolment into the management of malnutrition
- Provision of RUTF
- Management and follow up of children with acute malnutrition without complications
- Health workers who will be responsible for identification of the malnourished children in the health facility and through outreach services.
- Health workers will also be responsible for follow up of the children who are already on the therapeutic treatment and refill of RUTF.

Enrolment procedure

- 1) Take **anthropometric** measurements
- 2) **Take medical history and perform physical and medical examination.** Refer any child with oedema or medical complications to ITC.
- 3) Conduct the **appetite test** (Appendix 17). If the child fails the appetite test, immediately refer to ITC. Register the patient using a unique registration number and complete the OTC Card (Appendix 18).
- 4) **Explain** the treatment and procedures to the caregiver.
- 5) Check **immunization status**, and refer child for immunizations if required.
- 6) Give **routine medications**
- 7) Provide weekly (or bi-weekly) amount of **RUTF** and fill in the RUTF ration card (Appendix 18). The weekly meetings are prescribed for an effective follow-up that makes it possible to catch up with any non-success of the outpatient care. The Ration Card stays with the caregiver as a record of the child's progress. Caregivers should bring the card with them to the site each week. On discharge, the card should be marked as exited from the programme, but it should stay with the caregiver.
- 8) **Counsel** caregiver on:
 - How to feed the RUTF to the child. If child is still breastfeeding, encourage mothers to continue breastfeeding, and instruct to breastfeed before giving RUTF.
 - When and how to give medicines to the child
 - When to return to health facility for weekly check-ups and RUTF refill.
 - Return to health facility immediately if child refuses to eat RUTF or becomes ill
 - Other key messages (Appendix 13).
 - Link caregiver with other services, as appropriate (e.g. PMTC).
- 9) All caregivers should be offered **HIV testing** and counselling services for their children and for themselves.

Referral to inpatient therapeutic care

If the child meets criteria for ITC:

- Explain the situation to the caregiver
- Advise caregiver to keep the child warm, give frequent small amounts of 10% sugar water or RUTF and give first dose of pre-referral antibiotic
- Complete referral forms (Appendix 12) and refer child to the nearest ITC facility.

Dietary treatment

Children receive a weekly ration of RUTF that provides 200 kcal/kg/day. RUTF contains all of the energy and nutrients to meet the nutritional needs of the child and does not require any cooking or preparation. It has a similar nutritional content to F100 but greater energy and nutrient density.

Quantity of RUTF:

- Using the RUTF table (Appendix 11) determine the amount of RUTF required for the child's current weight, taking into account the number of weeks before the next distribution.
- Give the required RUTF ration to the caregiver.
- Complete the OTC RUTF Ration Card (Appendix 19).

Instructions for giving RUTF

Mothers or caretakers should be instructed on how to give RUTF to the child at home. The following instructions should be given:

- **RUTF is a food and a medicine for malnourished children only.** It should not be shared with the other family members even if the child does not consume the whole amount. Opened packets of RUTF can be kept safely and eaten by the child at a later time of the day.
- **Wash the child's hands and face** with soap before feeding. Keep food clean and covered.
- Children with SAM usually have **moderate appetite and tend to eat slowly**. Give small regular meals of RUTF and encourage the child to eat as often as possible (every 3 to 4 hours). The child can keep the RUTF and eat steadily throughout the day.
- **RUTF is the only food the child needs** to recover during this time in the treatment programme. It is not necessary to give other foods; a lot of other foods will delay recovery.
- **Children should take as much RUTF as they want**, however the mother/ caretaker should be instructed in the minimum amount that the child should consume per day, (Appendix 11).
- When RUTF is given, clean and safe water should be offered during and after the feed to satisfy the child's thirst.
- **For breast-fed children, always give breast milk before the RUTF**
- **Do not stop feeding children who have diarrhoea.** Increase frequency of feeding. After RUTF give extra fluids, including clean and safe water.
- Malnourished children get cold quickly. Always keep the child covered and warm.

Medical Treatment

Children from ITC or another outpatient care site are not given routine medicines that have already been administered to them, but will continue their treatment that was started earlier. Check the child's records for details of the medications that have already been given, and where applicable, continue with the remaining schedule of medications and supplements according to this protocol. Below is a list of medicines to newly diagnosed patients.

Vitamin A

- **Do not give high doses of vitamin A (100,000 IU for children 6-11 months and 200,000 IU for children 12-59 months) if children with SAM are already receiving F75/F100 or RUTF which already has sufficient Vitamin A (only give to those who are not provided F75/F100 or RUTF).**
- Do not give vitamin A if child received in the last month
- Refer any child with signs of vitamin A deficiency to inpatient care, as the condition of their eyes can deteriorate very rapidly.

Antibiotics

- Give **Amoxicillin** 40mg/kg orally every 12 hours for 5 days to be taken at home.
- The first dose should be taken at the facility under supervision of the health care provider and an explanation is given to the caregiver on how to complete the treatment at home.

Malaria Treatment

- **Systematically screen all children for malaria**
- Treat malaria according to the national treatment guidelines.
- **The usual signs and symptoms for malaria may not be present in the malnourished child, therefore all severely malnourished children are tested for malaria before commencing treatment.**
- Children with SAM should be provided with insecticide impregnated bed nets to prevent malaria

De-worming

- Give a single dose of Mebendazole or Albendazole at week 4 when the child is recovering. Do not give to children less than one-year old.
- For Mebendazole give 500 mg for children aged 12-59 months
- For Albendazole give 200 mg for children aged 12-23 months or 400 mg for children aged 24-59 months

Measles Vaccination

All children older than nine months who do not have a vaccination record are given a measles vaccine at week 4 when the child is recovered.

Iron and folic acid

- Do not give iron and folic acid routinely. There is adequate iron and folic acid in RUTF to treat mild anaemia and folate deficiency in a severely malnourished child.
- Children with severe anaemia should be referred to ITC.

Table 13: Routine medical treatment in OTC

Drug	Type	Frequency
Antibiotic	COMPLETE COURSE of antibiotics, if not already completed if continuing treatment from ITC If new case: Oral amoxicillin 40 mg/kg/12 hourly for a period of 5 days to be taken at home (1 st dose should be given on the first of OTC under supervision of the health care provider)	<i>See medical treatment protocol under ITC</i> 5 days
Vitamin A	If have no signs of Vitamin A Deficiency: <u>6 to 12mths:</u> 100, 000 IU <u>> 12 months:</u> 200, 000 IU Note: Children with SAM do not require high dose of Vit A if they are receiving F75, F100 or RUTF that complies with WHO specification Refer any child with signs of VAD (night blindness, conjunctival xerosis with Bitot's spots, corneal xerosis or ulceration or kerotomalacia) to ITC. For children with bilateral oedema refer to ITC	Single dose on admission, unless a dose has been given in the last month.
Folic Acid	If signs of anaemia are present, refer to ITC. If ITC is not available to treat anaemia, give 5mg folic acid on admission	On admission
Anti-malarial	Systematically screen all children for malaria and refer to Tanzania national guidelines for malaria treatment Never give quinine IV to a severely malnourished child in the first two weeks of treatment.	Give as per national protocol
Iron supplement	If clinical signs of anaemia are present, refer to ITC. Do not give for OTC since RUTF is main dietary treatment in OTC and this already contains iron.	None
De-worm	Mebendazole 12 – 59 months: 500mg Albendazole 12 – 23 months: 200mgs Albendazole 24 – 59 months: 400mgs	Single dose at week 4 visit of OTC
Measles immunization	>9months if no record that it has been given before	Single vaccine on the 4 th week or visit in OTC

Follow-up visits

The patients should attend the OTC every week (or every two weeks, if there are reasons why weekly attendance is not possible) to have a medical check-up and to receive their supply of RUTF.

The health worker at the clinic should collect and record the following information in the register and on the OTC Card (Appendix 18) during each follow up visit:

- Measure **weight**, **MUAC** and **oedema** at each visit and **WHZ** determined (if height measurement is possible). Height should be measured every four weeks, if height/length board is available.
- **Vital signs** (temperature, pulse, respiration rate)
- **Medical check and history**
- **Appetite test** with RUTF
- **Provide RUTF** ration and reinforce education messages
- **Record** any action taken and/or medication given in response to health problems

The caregiver is informed of the child's progress and individual and/or group counselling is provided on health and education messages

Where feasible, follow-up visits at home are provided for children that require special attention:

- Child loses weight on two consecutive visits
- Weight does not improve within 14 days (static weight or small gains and losses in weight)
- 5% weight loss at any time
- Child has been missing or defaulted from the programme

Follow-up at home can be conducted by a community-based worker, volunteer or health worker. He/she should record the findings of the follow-up visit using the check-list for home visits and report the results to the responsible health worker (Appendix 20).

Failure to respond to treatment

Some children in OTC will fail to respond to treatment, or their condition may deteriorate despite treatment. Common causes of failure to respond to treatment are indicated in the table below:

Table 14 Frequent causes of failure to respond to outpatient care

<p>Problems related to the quality of treatment</p> <ul style="list-style-type: none">• Inappropriate evaluation of child's health condition, or missed medical complication• Poorly conducted appetite test• Inadequate instructions given to parent/caregiver on home care• Inaccurate quantity of RUTF is given to child• Protocol for routine medicines is not followed• Health facility is a long distance from the patient's home

Problems related to the home environment/child

- Low frequency of visits to the health facility
- Insufficient RUTF given to child/sharing of RUTF with other family members
- Inadequate intake of routine medicines
- Sharing of the family food
- Micronutrient deficiency
- Malabsorption
- Psychological trauma
- Infection/underlying disease
- Unwilling parent/caregiver

Children who fail to respond to OTC should be followed-up at home to determine the family circumstances and if there are concerns with the care or sharing of food. After one month of non-response to treatment, these children should be referred for further medical review and laboratory tests as required to diagnose underlying illnesses. Discharged children must be sent for SFP, if available, or other support programmes. For children who are HIV positive, care and support for HIV and AIDS is an important part of recovery.

Criteria for transfer from OTC to ITC

When referring to ITC, the treatment and medications given must be noted in the child's Referral form (Appendix 12) and/or RCH Card 1

If the child has any clinical signs that suggest HIV and AIDS, encourage the caregiver to take the child for VCT and TB screening.

Children who develop any signs of a serious medical complication during OTC should be transferred to ITC until stabilized. Medical complications are listed in Table 5.

The child should be transferred for ITC if he/she develops any of the following

- No appetite (fails the Appetite Test)
- Medical complications developed (See Table 5)
- Development of re-feeding diarrhoea sufficient to lead to weight loss
- Develops any grade of oedema
- Weight loss for two consecutive OTC sessions
- Weight loss of more than 5% of body weight at any visit
- Static weight (no weight gain) for three consecutive OTC sessions
- Target weight has not been reached after 3 months in the program

Upon request of caregiver Discharge criteria from OTC

Table 15: Discharge criteria from OTC

Discharge category	Criteria
Cured	<ul style="list-style-type: none">• Weight for Height/Length \geq-2 z scores and no Oedema for at least two weeks OR <ul style="list-style-type: none">• MUAC \geq12.5 cm and no oedema for at least 2 weeks NB: Anthropometric indicators that were used to admit the child should be used to discharge
Defaulted	Absent for two consecutive visits (all absents should be followed to ascertain reasons for defaulting)
Died	Died while registered in the OTC
Non-recovered	Child does not reach discharge criteria after 3 months in treatment (the staff should investigate the reason of non responding: social/medical/nutritional and the patient should then be referred to an hospital for investigation)
Referral to ITC	Child's condition deteriorated and is referred to ITC

Exit procedure

- Give feedback to the caregiver on the final outcome of treatment
- Ensure caregiver understands how to use any continuing medications
- Ensure caregiver understands importance of follow-up care (supplementary feeding or other programmes)
- Give a final ration of RUTF (One-week supply)
- Counsel caregiver on appropriate breastfeeding, complementary feeding, and other caring practices.
- Advise the caregivers to immediately go to the nearest health facility if child becomes sick or is losing weight again
- Note discharge outcome in register and on OTC Card and RUTF Ration Card.
- Refer the child to the nearest SFP, if available, or to other outpatient services for children with MAM.

CHAPTER 7: Management of Moderate Acute Malnutrition

7.1 Introduction

The risk of dying due to moderate acute malnutrition (MAM) is lower than severe acute malnutrition however; children with MAM have a significant risk of developing SAM and may suffer life-long consequences including stunted growth, poor cognitive development, lower school achievement and reduced work productivity in adulthood. Children who have recovered from SAM are particularly at risk of relapsing back into SAM. It is therefore essential that moderately malnourished children be managed wherever possible.

Children with moderate acute malnutrition need higher nutrient intake than non-malnourished children but less than those suffering from SAM. The treatment of moderate acute malnutrition among children under five requires the following:

- Consumption of nutritious food
- Exclusive breastfeeding for the first six months of life
- Breastfeeding in combination with appropriate complementary food until 24 months of age (at least)
- Clean and Hygienic environment
- Access to health services (immunization, vitamin A supplementation)

In situations where access and availability of food is lacking, supplementary food and MNPs may be necessary. Even if access and availability is not a problem, micronutrient deficiencies are likely to occur due to traditional Complementary Feeding practices.

7.2 Objectives of setting up a MAM intervention

- To identify moderately malnourished children in the community
- To treat moderate acute malnutrition and prevent deterioration to severe acute malnutrition.
- To manage malnourished patients discharged from therapeutic feeding programs and prevent the deterioration in their condition.
- To provide a nutritious supplement (when possible) and meet the additional nutritional needs of children with MAM.
- To reduce the risk of mortality and morbidity associated with moderate malnutrition.
- To increase awareness of mothers/care givers of children with MAM on optimal child feeding practices.

Note: For the management of children with MAM as well as medical complications refer to Chapter 4.

7.3 Management of children with MAM

Enrolment criteria

A child aged 6-59 months is admitted if he/she is alert, clinically well (no medical complications requiring inpatient treatment or no oedema) and has one of the following criteria:

- MUAC 11.5 cm to <12.5 cm (area marked yellow on MUAC tape)
- WHZ -3 SD to <-2 SD

Other criteria include:

- Children discharged from SAM-OTC
- Children discharged from MAM-ITC

Entry point for management of MAM

The diagnosis of MAM is confirmed at an outpatient facility/RCH. Children with MAM are given routine medical treatment and treatment of any underlying illnesses according to the IMCI guidelines. Where available, they should receive nutritional treatment through a targeted supplementary feeding programme (TSFP). All caregivers should be given counselling on nutrition, health and hygiene. Follow-up visits can be provided by community-based workers at the community level or at the outpatient health facility, depending on the local circumstances.

Any child with MAM and medical complications is referred to an inpatient department for treatment according to IMCI until the medical complications are stabilized. After the medical complications are stabilized, the child is referred to OTC according to their nutritional status on completion of treatment.

Nutritional Counselling Services and Programmes for Treatment of Moderate Acute Malnutrition

It is recommended mothers to exclusively breastfeed infants for the child's first six months to achieve optimal growth, development and health. Thereafter, they should be given nutritious complementary foods and continue breastfeeding up to the age of two years or beyond

Recommended Practices for Breast Feeding

- Exclusively breastfeed (no other food or drink even water) for the first 6 months
- Breast feed frequently, day and night
- Breast feed frequently during and after illness
- Breastfeed on demand (or cue) – every time the baby asks to breastfeed
- Let infant finish one breast and come off by him/herself before switching to the other breast
- Avoid bottle feeding. Foods or liquids should be given by spoon or cup to reduce nipple confusion and to avoid contamination.

Complementary Feeding

After 6 months of age, breast milk is no longer sufficient to meet the nutritional requirements of a baby. It is therefore recommended to gradually introduce other foods

Table 16: Recommended Practices for Complementary Feeding

Age	Frequency (per day)	Recommendations Amount of food an average child will usually eat at each meal (in addition to breast milk)	Texture (thickness/consistency)	Variety
At 6 months start complementary foods 	2 to 3 meals plus frequent breastfeeds	2 to 3 tablespoons Start with 'tastes'	Thick porridge/pap	Breast milk + Animal foods (local examples) + Legumes (local examples) + Staples (porridge, other local examples)
From 6 up to 9 months 	2 to 3 meals plus frequent breastfeeds 1 to 2 snacks may be offered	2 to 3 table spoonful per feed Increase gradually to half (1/2) 250 ml cup/bowl	Thick porridge/pap Mashed/pureed family foods	+ Fruits/ Vegetables (local examples) + Micronutrient Powder (country specific)
From 9 up to 12 months 	3 to 4 meals plus breastfeeds 1 to 2 snacks may be offered	Half (1/2) 250 ml cup/bowl	Finely chopped family foods Finger foods Sliced foods	
From 12 up to 24 months	3 to 4 meals plus breastfeeds 1 to 2 snacks may be offered	Three-quarters (3/4) to 1 250 ml cup/ bowl	Sliced foods, Family foods	
From 24-59 Months	Give 3 family meals a day. Give snacks in between meals.			Staples (local examples) Animal foods (local examples) Legumes (local examples) Fruits (local examples) Vegetables (local examples)

Note: If child from 6 up to 24 months is not breastfed	Add 1 to 2 extra meals 1 to 2 snacks may be offered	Same as above according to age group	Same as above according to age group	Same as above, plus 1 to 2 cups of milk per day + 2 to 3 cups of extra fluid especially in hot climates
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*Adapted from WHO guiding principles for complementary feeding of the breastfed child

Nutrition counselling on Infant and Young Child Feeding Practices can be provided through trained CHWs on IYCF practices. It is important to emphasise these same IYCF messages and support for the mothers/caretakers of acutely malnourished children. In areas where HSPs and CHWs have been trained on IYCF, mothers/caregivers of children with acute malnutrition should be referred to for counselling and support.

Management of Acute Malnutrition in HIV Infected Children

Children with chronic illnesses, especially children living with HIV/AIDS often have higher energy requirements. As a consequence, they are more likely to become malnourished as they show less appetite and/or do not absorb enough nutrients.

Children with severe 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. Moreover, children with moderate acute malnutrition who have other chronic diseases such as HIV infection should be given RUTF. It is also important to note that HIV-infected children need more time to recover from malnutrition and their rates of weight gain are lower. In addition, to this, HIV-infected children often present with infections due to changes in their immune system. It is important that nutrition support is given as early as possible at the onset of acute malnutrition in order to give these children best chance of recovery, hence linking them with interventions for management of MAM is critical.

Provider-Initiated Counselling and Testing (PICT) for HIV to children with acute malnutrition and their parents is advised. As noted above, HIV positive individuals are at higher risk of acute malnutrition and take longer to recover when they become acutely malnourished. Moreover, HIV negative children born to infected women may become infected through breastfeeding. At the same time, many babies who are not breastfed because of fear of HIV transmission die from diarrhoea, pneumonia or other diseases (not related to HIV), because they are not protected by the immune substances found in breast milk. Thus, HIV infected mothers need to be well guided on how best to feed their infant to ensure that more babies survive without being infected with HIV.

All mothers, including HIV infected mothers, should exclusively breastfeed their infants for the first 6 month of life and introduce complementary foods at 6 months. However, HIV infected mothers should continue breastfeeding until 12 months if their infant is HIV negative and stop gradually for a month. HIV infected mothers with HIV infected children and mothers who are HIV negative should continue breastfeeding up to 2 years and beyond.

Improved complementary feeding of all infants, especially those born to HIV infected mothers, should be promoted and where possible, supported

Provision to all mothers of antiretroviral drug to reduce the risk of HIV transmission through breastfeeding are strongly recommended

HIV-infected children identified with either SAM or MAM should be referred to available HIV support services

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 CHW should make sure that HIV-positive and TB children are referred and/or continue accessing HIV/AIDS treatment services and being able to be treated if suffering SAM or MAM. 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.

Medical management of acute malnutrition in HIV-infected children

Cotrimoxazole should be given to children when HIV is suspected or where HIV has been confirmed. 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 started on ART.

Children with acute malnutrition who are HIV infected 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

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. 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.

SUPPLEMENTARY FEEDING

Where available, children with MAM should be enrolled in a Supplementary Feeding Programme (SFP). The SFP may operate at an outpatient health facility or at other community-based sites with the aim of providing a biweekly or weekly supplementary food ration over a period of 3 months. Moderately malnourished children should receive pre-mixed dry rations of a supplementary feeding product (e.g. fortified blended food such as corn soya blend (CSB) or UNIMIX) which is cooked and consumed at home.

Table 17: Enrolment Procedure into Supplementary Feeding Programme (SFP)

1) Take anthropometric measurements and confirm nutrition status is within above criteria for children with MAM.
2) Take medical history and perform physical and medical examination (Appendix 4) Refer any child with oedema, anaemia or other micronutrient deficiencies for inpatient therapeutic care or medical complications for inpatient treatment.
3) Check immunization status, and refer child for immunizations if required.
4) Give routine medications
5) Register mother and/or child in the registration book using a unique registration number and give ration card (Appendix 19). Explain the treatment and procedures to the caregiver. Provide bi-weekly or monthly amount of supplementary food and fill in the SFP client card and ration card (Appendix 21). The Ration Card stays with the caregiver as a record of the child's progress. Caregivers should bring the card with them to the site each week/month.
6) On discharge, the card should be marked as exited from the programme, but it should stay with the caregiver.
7) Give beneficiary or caretaker routine nutritional counselling on: <ul style="list-style-type: none"> • How to prepare and feed the supplementary food • When to return for biweekly/monthly check-ups and supplies • Explain the meaning of additional food ration, what it is meant for. • Return to health facility immediately if child refuses to eat the food or becomes ill. • Conduct a cooking demonstration for new caregivers; explain how to mix the ingredients, recommended cooking time and serving of the food. Link caregiver with other services, as appropriate (e.g. PMTCT, HCT, etc.).
8) All caregivers should be offered HIV testing and counselling services for their children and for themselves.
9) Give the next follow up appointment date.

Dietary treatment

Where available, children with MAM should be enrolled in a Supplementary Feeding Programme (SFP). The SFP may operate at an outpatient health facility or at other community-based sites with the aim of providing a biweekly or weekly supplementary food ration over a period of 3 months. For the first two months, the child should attend every two weeks, and thereafter the frequency can be reduced to every four weeks. Moderately malnourished children as well as should receive pre-mixed dry rations of a supplementary feeding product (e.g. fortified blended food such as corn soya blend (CSB) or UNIMIX) which is cooked and consumed at home.

The **ration** for one child should provide 1000-1200 kcal/day with 10-12% of the energy from protein (35-45 g of protein), and with fat providing 30% of the calories (30g of fat). Addition of sugar improves the taste of the food. The quantity of supplementary food should be more than the child requires to compensate for sharing within the family. Table 18 gives three different rations that provide calories, protein and fat in the desired quantities.

In the absence of fortified blended food, nutritionists can promote the use of locally available foods according to IMCI guidelines on nutrition (Mother's card) and prepare them in the most appropriate way to provide the recommended daily allowances.

Table 18: Food commodities and ration size for child aged 6-59 months for 14 days

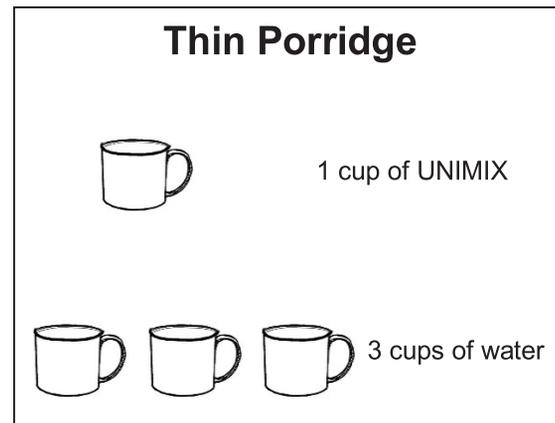
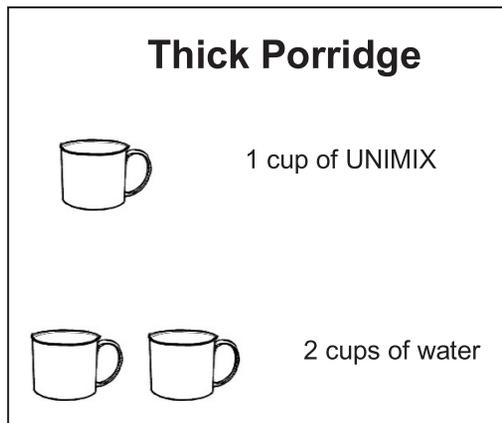
<i>Item</i>	Ration (g)		
	1	2	3
Fortified blended food	2,800	3,500	3,500
Oil fortified with vitamin A	280	350	350
Sugar	210		280
Energy (Kcals)/day	1,000	1,200	1,250
Protein (% of energy)	14	14.5	14.5
% calories provided by fat	30	30	30

Instructions for distributing supplementary food:

- It is best to avoid distributing separate ingredients for dry take-home rations as some may be sold or taken by other family members. Before distribution, mix the fortified blended food with oil and other dry ingredients, such as sugar. The oil in a premix will become rancid if the premix is made more than two weeks before eating, therefore it is important that the food is mixed on the day it is distributed and that distributions are bi-weekly or weekly.
- Conduct a cooking demonstration for new caregivers.
- Explain how to make and serve the food.

Instructions for home preparation of supplementary food

- Supplementary food (UNIMIX or CSB) is a special food for children 6 months to 5 years and others with special nutritional needs
- It is meant to be eaten *in addition to* the normal family food to improve the diet of children. To increase the energy density and taste, oil, seasonal fruits and vegetables and or any local nuts can be added.
- It is pre-cooked but is not an instant product. It should be cooked for 5-10 minutes, but not longer.
- Cook with clean (boiled) water, and wash hand before preparation.
- Before starting to cook, please ensure that the water which is used is safe before mixing into porridge and wash your hands thoroughly before preparing the porridge.
- To make a thick porridge, mix one cup of supplementary food with two cups of boiled water. To make a thin porridge, mix one cup of supplementary food with three cups of water. Stir the porridge to prevent lumps and heat for 5-10 minutes, stirring constantly. Serve hot or allow to cool before serving.



- Remind caregivers that the ration is only for the child.
- Explain how long the ration should last and when to return for more supplies.

Medical treatment

All children identified with MAM should receive a full medical history and examination, and be given treatment according to the national IMCI guideline. The medical history includes a check of immunization status, vitamin A supplementation status and deworming status.

Children should receive the following routine treatment:

- Check measles **immunization status** for children aged ≥ 9 months and refer those who have not been vaccinated to EPI services.
- Give a **vitamin A supplement** if child has not received in the last month (100,000 IU for infants aged 6-11 months and 200,000 IU for children aged 12-59 months)

Note: Do not give Vitamin A if it had been given of the past 3 months

Exclude those referred from Therapeutic feeding centres (TFC) and re-admissions

- Give a single dose of **mebendazole** if child has not received in the last month (500 mg for children aged 12-59).
- Give **iron-folate supplementation** according to IMCI guidelines if child is anaemic.
- Refer the child to the health facility for treatment of all other **underlying illnesses** (not requiring inpatient treatment) to be treated according to IMCI guidelines.

Children and their caregivers should also be linked with other health services, as appropriate, including EPI, IMCI, PMTCT, and HCT.

Table 19: Routine medical treatment of children with MAM

Drug	Type	Frequency
Vitamin A	<p>If have no signs of Vitamin A Deficiency: <u>6 to 12mths:</u> 100, 000 IU <u>> 12 months:</u> 200, 000 UI</p> <p>Refer any child with signs of VAD (night blindness, conjunctival xerosis with Bitot’s spots, corneal xerosis or ulceration or kerotomalacia) to health facility.</p>	Single dose on admission, unless a dose has been given in the last 2 months.
Folic Acid	<p>Children 6 months to 1 year; 2.5 mg Children > 1year; 5 mg</p> <p>If signs of anaemia are present, refer to ITC.</p>	Single dose on admission
Anti-malarial	<p>Systematically screen all children for malaria and refer to Tanzania national guidelines for malaria treatment <i>Never give quinine IV to a severely malnourished child in the first two weeks of treatment.</i></p>	Give as per national protocol
Iron supplement	<p>If clinical signs of anaemia are present, refer to the health facility</p> <p>If ITC not available and clinical signs of anaemia are visible; give at each supplementary feeding visit; 300 mg ferrous Sulphate</p>	Give at each visit only if signs of anaemia are present
De-worm	<p>Mebendazole 12 – 59 months: 500mg OR Albendazole 12 – 23 months: 200mgs / Albendazole 24 – 59 months: 400mgs</p>	Single dose on admission, if not received in the last month.
Measles immunization	<p>Give to >9months for those without a vaccination record;</p>	Single vaccine on admission – if not received vaccination yet.

Follow-up visits

Children should be followed up every two weeks during the first two months, and thereafter the frequency can be reduced to every four weeks if the child continues to improve. Follow-up visits can be provided by community-based workers at the community level or at the outpatient health facility, depending on the local circumstances.

At each follow-up visit, the following should be conducted:

- MUAC and weight (where possible) of the child should be measured at every visit. Height (where possible) should be measured every four weeks and WHZ determined.
- Provision of supplementary food, if applicable
- Nutrition, health and hygiene education.

- Treat any infection such as skin or eye infection. When a patient develops medical complications refer to the nearest hospital.
- Give health education messages
- Inform of the next visits

Home visits

- Program outreach workers /community volunteer take up the responsibility of following up program beneficiaries that are recorded as absent or defaulted.
- Patient that misses an appointment or is absent must be followed and reasons for lack of visits are established.
- A patient is reported to be an absentee if he/she fails to attend the follow-up sessions once and if absent for more than 3 consecutive visits for bi-weekly distribution and 2 consecutive visits for monthly distributions, the patient is declared to be a defaulter.

Failure to respond to treatment

Refer the child to a health facility if:

- They fail to respond are; (no or low weight gain after 4weeks, loss of weight after 2 weeks, loss of more than 5% weight at any time and not reaching the criteria of discharge after 3 months.
- Oedema develops
- Medical complications develop

Exit criteria and procedure from MAM programme

Table 20: Discharge criteria from MAM programme

Discharge category	Discharge criteria
Cured	Children maintain WHZ \geq -2 SD for two consecutive measurements OR MUAC \geq 12.5 cm for two consecutive measurements.
Defaulted	Absent for 2 consecutive visits
Transfer to OTC/ITC	<ul style="list-style-type: none"> • Static weight or weight loss for 2 consecutive visits • MUAC <11.5 • WHZ <-3SD • Medical complications • Oedema (any grade)
Died	Died while registered in the SFP
Non-recovered	Has not achieved discharge criteria within 4 months. These children will be referred to a health facility

Exit procedure

Inform the caregiver that treatment is completed. Record the discharge date and reason for discharge in the appropriate registration book, RCH Card 1 and SFP Ration Card, if applicable.

7.4 Requirements for setting up an SFP

Sites with no SFP

- Nutritional assessment, counselling and routine medical treatment can be done by existing health service providers in the RCH clinics

Sites with SFP

- 1-2 health care providers to assess nutritional status, give nutrition counselling, give routine treatment, and give supplementary food
- 1-2 general assistants
- 1 food distributor
- 1 community health worker to assist the health service provider and conduct follow-up.

Training should be provided to all health care providers. A one-day orientation

is given at the start of the service/programme followed by continuous training (e.g., refresher training, mentoring, feedback meetings).

Equipment and supplies

The following is required:

- Anthropometric equipment: MUAC tapes with colour-coding, weighting scales, height/length boards (optional) and WHZ tables (optional)
- Routine medicines and micronutrient supplements
- Stationary

For SFP, the following is also required:

- Fortified supplementary food
- Mixing and measuring equipment
- Monitoring and reporting forms for SFP (SFP Ration Cards, SFP Site Tally Sheets, SFP Site Monthly Report Sheets)

Physical structures

Many communities have adequate accommodation in existing health facilities, community structures or shaded areas under trees that can be used as SFP sites. If not, temporary shelter must be provided. Local materials should be used if possible. Poles and plastic sheeting might be needed. It is important to have strong referral linkages between OTC and the management of MAM to ensure the continuation of care for children recovering from SAM.

8.1 Introduction

The effective implementation of the guidelines requires the estimation of cases, forecasting, procurement, distribution and storage of supplies for the management of acute malnutrition. Adequate coordination and leadership by the IMAM program from planning phase (Forecasting, Shipment Planning, Gap Analysis and Resource Mobilization) and routine monitoring of stock status at various levels of supply chain is critical

For IMAM, these supplies include:

- **Therapeutic commodities**, including F100, F75, ReSoMal and RUTF
- **Supplementary food**, including fortified blended food, fortified oil and sugar
- **Equipment to prepare and give therapeutic milks and supplementary food**, including measuring cylinders, cups and mixing basins.
- **Routine drugs**, including antibiotics, vitamin A supplements, de-worming tablets
- **Anthropometric equipment**, including MUAC tapes, weighing scales, and height/length boards
- **Job aids and counselling materials**
- **Monitoring and reporting tools**, including registers, ITC/OTC cards, ration cards, referral forms, and report sheets.

8.2 Estimating the number of cases

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 some 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 mobilisation events, or further decentralisation 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 period one year for the purposes of planning can be obtained by using the equation in Table 21 below:

Table 21: Calculation of targets for newly initiated IMAM services

SAM

$$\text{Target} = \text{Population 6-59m in geographical area} \times [\text{Prevalence SAM} + (\text{Prevalence SAM} \times 1.6)] \times \text{treatment coverage (\%)}$$

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

$$\text{Target} = \text{Population 6-59m in geographical area} \times [\text{Prevalence MAM} + (\text{Prevalence MAM} \times 1.6)] \times \text{treatment coverage (\%)}$$

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).

Examples:

Forecast year	2017
Forecast start month	January
Population	300,000
Percentage of children 6 -59 months (%)	20.0%
Population under 5	60,000
Prevalence of S.A.M. (%)	0.9%
Incidence of estimated S.A.M. over 1 year (multiplying factor)	1.6
Treatment Coverage	100%
Target = Population 6-59m in geographical area x [Prevalence SAM + (Prevalence SAM x 1.6)] x treatment coverage (%)	= 60,000 x [0.9% + (0.9% x 1.6)] x 100% = 1,404 cases

OR, expanding the formula, we can calculate as follows:

Forecast year	2017
Forecast start month	January
Total population in target area	300,000
Population age 6-59 months (i.e. 20% of total population)	60,000
Prevalence of SAM	0.9%
Estimated cases of SAM using prevalence	$60,000 \times 0.9\% = 540$
Estimated new cases to add in 1 year (incidence obtained by multiplying prevalence by factor 1.6*)	$540 \times 1.6 = 864$
Estimated number in need of treatment over 12 months period	$540 + 864 = 1,404$
Expected coverage of services	100%
Expected number of SAM cases to be treated	$1,404 \times 100\% = \mathbf{1,404}$

* The Incidence multiplying factor accounts for dynamic increase of malnutrition. 1.6 is the INCIDENCE CORRECTION FACTOR that UNICEF is now recommending to estimate incidence from prevalence and which is based on a duration of an untreated SAM episode of 7.5 months. Please use 1.6 in your calculations if you have no known incidence figure for your area.

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. Also, data from regional surveys such as Demographic and Health surveys can be used.

8.3 Forecasting

An accurate estimate of supplies and timely procurement is essential to avoid supply shortages or over-supply that result in wastage. The lead time for procurement must be considered.

It is very important that health facilities accurately determine the monthly requirements of therapeutic supplies using the appropriate forecasting tool. Until data become available on the average quantities of therapeutic supplies and drugs needed to treat severely malnourished children in Tanzania, use the estimated amounts given in table 22. A health facility requires at least three months' buffer stock as well, which can be included in the excel-based forecasting tool.

Table22: Estimated drugs and supplies needed to treat each case of SAM

	Average requirement to treat each child
Inpatient treatment of SAM*	
F75 Therapeutic 400g Tins	4
F100 Therapeutic 400g Tins	2
ReSoMal 42g sachet/1L	0.2
Amoxicillin dispersible tablet 250mg	10
Folic acid, 5 mg tabs	1
Vitamin A capsule 100,000 IU	1
Vitamin A capsule 200,000 IU	1
Mebendazole 500 mg	1
Ready to Use Therapeutic Food, 92g sachet (RUTF)	10
Outpatient treatment of SAM	
Ready to Use Therapeutic Food, 92g sachet (RUTF)	136
Folic acid 5 mg tabs	1
Amoxicillin dispersible tablet 250mg	10
Vitamin A capsule 100,000 IU	1
Vitamin A capsule 200,000 IU	1
Mebendazole 500 mg	1

* Note: Usually, less than 5% of children admitted for SAM with medical complications 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.

It is important to understand how supplies are packaged so that health managers can determine the number of cartons/packs that are needed for their health facilities rather than number of sachets or tablets. The packaging of nutrition supplies and drugs is provided in Table 23.

Table 23: Packaging of nutrition supplies and drugs

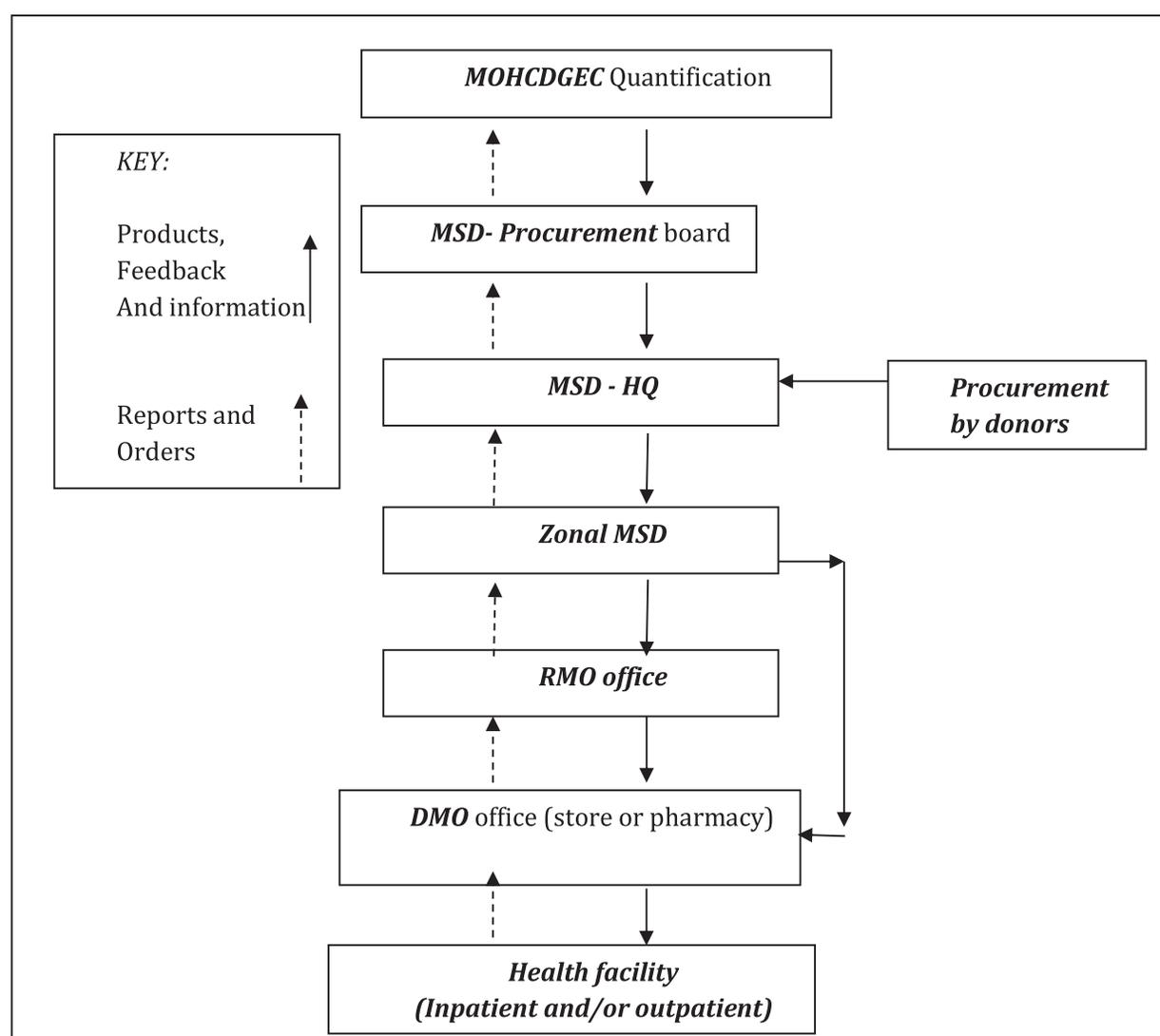
F75	400g Tins + white scoop
F100	400g Tins + blue scoop
ReSoMal	100 sachets per carton
RUTF	150 sachets per carton
Amoxicillin dispersible tablet 250mg	100 tablets per pack
Folic acid, 5 mg	1000 tablets per pack
Mebendazole, 500 mg	100 tablets per pack
Vitamin A, 100,000 IU	100 capsules per pack
Vitamin A, 200,000 IU	500 capsules per pack

8.4 Procurement and distribution

All commodities listed in table 19 above should be registered by TFDA and included in the National Essential Medicines List Tanzania (NEMLIT) to ensure safety, access and availability at all levels. Distribution to health facilities can be done through a push or pull system. For new commodities, a push system should be used, meaning the supplies are sent by the central level to health facilities in order to create demand. For IMAM, a Smart Push list should be prepared and be shared with the Medical Stores Department (MSD) so as to guide the correct and timely distribution. Once the demand is created, and monthly consumption data are established, supplies should be pulled through orders from health facilities to zonal stores.

Mechanisms for tracking distribution, consumption and stock-levels of the products must be in place to facilitate this process. The Product Supply Chain between health facilities and the national level is shown in figure 9. Once the pull system is in effect, requests for supplies should be sent through the existing operating system and to the Medical Stores Department (MSD), to enable the quantification and stocking of commodities required.

Figure 9: Flow Chart for Product Supply Chain



8.5 Storage and Inventory Management

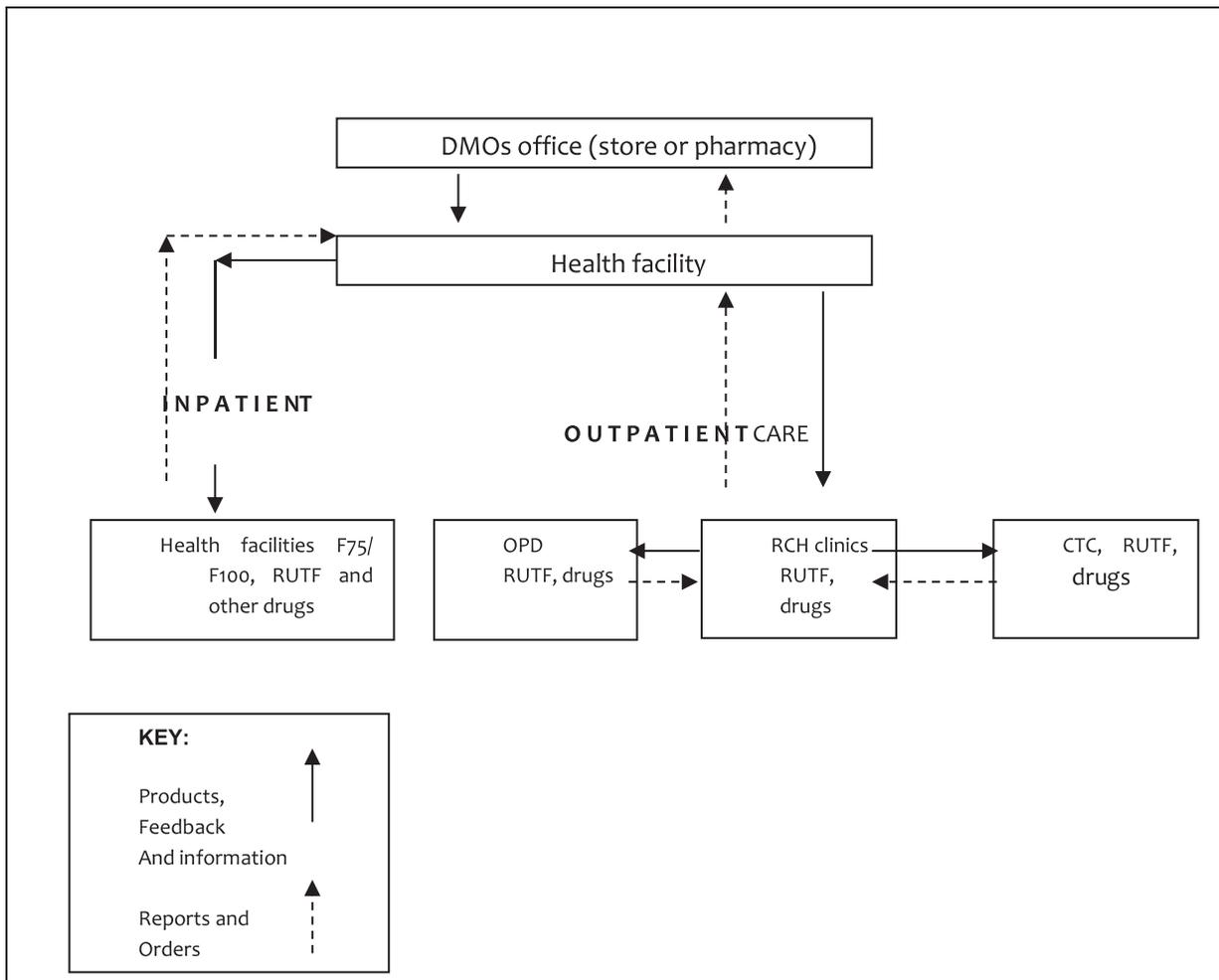
Proper handling of supplies is important as damage leads to waste. All products at all levels must be stored according to the specific storage requirements to ensure they can be used safely and effectively to treat acute malnutrition. All products should be issued according to Standard Operating Procedures (S.O.P)

For proper Inventory Management of commodities, the Logistics Management Information System (LMIS) tools must be well managed and updated regularly.

LMIS tools include:

1. Ledger Books and Bin Cards for stock keeping records
2. Dispensing register – for recording actual amount of supplies given to clients at dispensing point.
3. Prescription Forms-to record commodity type and dosage prescribed to patients
4. Report and Request Form – filled in every quarter of a year. Used to report on commodities consumption and to order for replenishment from Medical Stores Department

Figure 10: Flow chart for Supply Chain to health facilities and communities



8.6 Infrastructure

Appropriate infrastructure is essential for the management of severe acute malnutrition. Existing infrastructure must be strengthened and new infrastructure established in order to meet the requirements. Infrastructure and asset requirements for health facilities are listed below:

- Malnutrition ward or space in the facility
- Items for stabilisation phase:
 - o Space and equipment for examination and assessment of children
 - o Essential equipment and supplies for treatment of complications
 - o Other essential equipment for daily care
 - o Equipment and furniture required to maintain temp of 25-30°C
- Items for rehabilitation phase:
 - o Space and equipment for monitoring
 - o Equipment and furniture required to maintain temp of 25-30°C
 - o Toys
 - o Other essential equipment for daily care and rehabilitation
- Items for feeding
 - o Space and equipment for preparing feeds
 - o Equipment for administering feeds
 - o Running water and facilities for boiling water
- Items for storage
 - o Secure and hygienic space for storage of products i.e. cupboards, shelves, refrigerator/pots
 - o For toys

Note: *For more information see Appendix 22 and 23*

CHAPTER 9: Monitoring and Evaluation

9.1 Introduction

This chapter is intended to guide monitoring and evaluation of the IMAM interventions in the country. Monitoring and evaluation must occur at all levels in order to ensure that IMAM interventions are achieving their objectives of identifying, treating, and curing acute malnutrition, activities and outcomes. Monitoring and evaluation information should be subsequently integrated into the existing Health Management Information System (HMIS) and report comes through the system.

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.

9.2 Monitoring

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.

In monitoring the output of the intervention, the following will be considered:

In health facilities:

- Management of complications
- Prevention of infections
- Feeding (storage, preparation and feeding techniques)
- Psychosocial support
- Counselling and education on nutrition and health
- Follow up after recovery
- Nutritional status

In the community:

- Prevention of infections
- Feeding (storage, preparation and feeding techniques)
- Psychosocial support
- Counselling and education on nutrition and health
- Follow up after recovery
- Follow up of defaulters
- Screening for malnutrition

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 cured, as a percentage of all discharges, during the reporting month.

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 6-59 months with SAM) existing in the area who are reached by the service. 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.

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 24 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 24. Minimum performance standards for IMAM

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

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.

Programme Output and performance (outcome) indicators

<p>Indicators measuring output:</p> <ul style="list-style-type: none"> • Number of functioning ITC sites/facilities • Number of functioning OTC sites/facilities • Number of functioning SFP sites • Number or percentage of health care providers trained and active in SAM case management in inpatient care • Number or percentage of health care providers trained and active in SAM case management in outpatient care • Number or percentage of community care providers trained and active in community outreach • Number of villages sensitized on SAM.

Indicators measuring outcome (effectiveness)

- Number of children with SAM admitted to inpatient care or outpatient care per time period (by gender)
- Number of children with SAM under treatment per time period
- Number of children discharged per time period
- Percentage cured (proportion of children discharged cured on total discharged).
- Percentage died (proportion of children who died when under treatment on total discharged)
- Percentage defaulted (proportion of children recorded as absent for 3 consecutive visits for OTC or 2 days in ITC on total discharged)
- Percentage non-recovered (proportion of children who do not meet the discharge criteria after 4 months under treatment on total discharged)
- Average daily weight gain (for ITC cases)
- Average length of stay
- Percentage coverage
- Number of SAM children suspected and referred to the HF by CHWs

9.3. Recording and reporting

Information on individual treatment facilitates good decision making and immediate correction of treatment, if necessary. It also facilitates proper tracking of individual patients when they are referred between in-patient, out-patient care and the community. There are four essential steps to follow during monitoring:

- Assigning a unique number to each patient
- Registration of all patients in the registration book (Appendix 5)
- Recording and charting of treatment (Appendix 6)
- Reporting the outcome of treatment. (Appendix 26)

Assigning a unique number

A child identified as having acute malnutrition will be enrolled for treatment as an inpatient or outpatient at a Healthcare facility. The child should be given a unique number which is the RCH card number. This number should be recorded on all individual treatment charts, follow-up cards and any other relevant acute malnutrition registers.

Registration

Information on all children undergoing treatment for acute malnutrition should be recorded in the medical registers. Information to be recorded includes:

- Personal identification (child's unique number, name, age, sex, date of birth)
- Anthropometric information on admission/enrolment (height, weight, MUAC)
- Diagnosis/Classification
- Outcome (cured, death, absconded, on treatment)
- HIV status

Charting individual treatment

A 'Feeding Chart' and 'Treatment Card' should be used to record and monitor the treatment of SAM for inpatients. The type of feed given, amount offered, date and time must be recorded accurately after each feed. If the child vomits, the amount lost should be estimated in relation to the size of the feed and deducted from the total intake. A 'Daily Ward Feed Chart' can be used to calculate the amount of food to prepare for the ward every 3 hours (Appendix 24).

At the outpatient care facility, treatment cards are used to record medical, anthropometric and nutritional information. Review of these individual cards by the health worker helps to assess if action protocols are being followed and that children are given proper referral and follow-up.

Progress Reporting

Monthly reports are important in monitoring inpatient and outpatient treatment of Acute Malnutrition. Records of patients at both levels should be appropriately documented and kept for the purpose of monitoring the service performance as well as individual patient progress. The information to be collected includes identification of the facility, identification of children by age and sex and classification of their nutrition status. It also includes admissions, discharges and transfer outs, as defined in the monthly reporting form (Appendix 25).

A tally sheet (Appendix 26) should be used for compiling information as per required monitoring indicators in both inpatient and outpatient facilities. They should be completed on a daily basis and used to compile the monthly reporting form by the in-charge of the service at all levels of health facilities. Table 25 below shows indicators for success or failure of management of acute malnutrition.

***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.

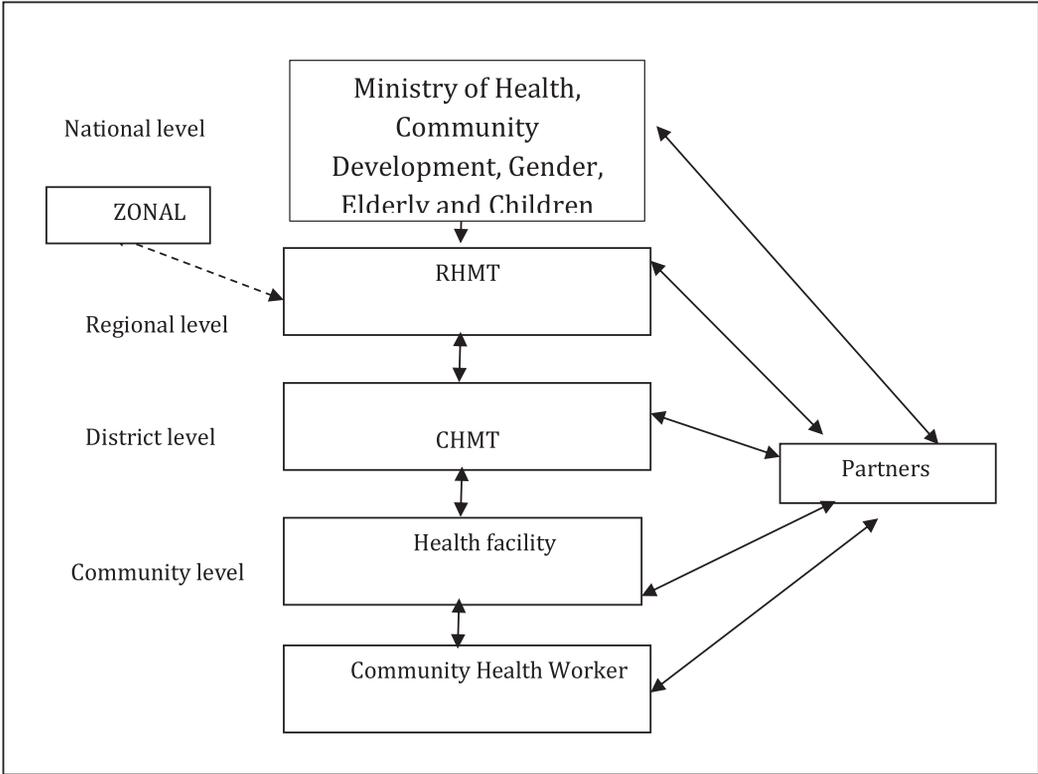
Table 25: Minimum performance indicators for management of acute malnutrition

Indicator	SFP	Inpatient care until full recovery	Inpatient care during stabilization	Outpatient care
Cure	>75%	>75%*	Not applicable	> 75 %
Defaulted	<15%	<15%	<15%	< 15 %
Died	<3%	<10%	<10%	<10%
Coverage	50% rural 70% urban 90% camp	50% rural 70% urban 90% camp	50% rural 70% urban 90% camp	> 70 %

Note1: Indicators for success should be calculated separately for infants less than 6 months and children between 6 months to 5 years of age.

The compiled information should be used locally for monitoring the progress and a copy sent to DMOs office using the existing reporting system figure 11).

Figure 11: Information flow between different levels



9.4 Tracking referrals

Referral forms should be used whenever a child is transferred. The child’s unique number should be filled in the referral form to enable tracking of children and the efficient transfer of information between different levels of management. The referral forms should be used by CHWs when they suspect a SAM cases and by health care providers to record and refer cases. Always there should be a feedback to the referring level.

9.5 Supportive supervision and Case Review

Supportive supervision is a two-way communication and team building approach, aiming to solve emerging implementation problems across different management and administrative levels. Supportive supervision is intended to monitor the implementation of the intervention and assist implementers to carry out their duties as they are required. It helps program implementers to identify weaknesses and challenges which are encountered by the lower level implementers, is of paramount importance to evaluate proper implementation of agreed standards. In the course of supportive supervision visits, mentoring would provide remedy for identified challenges for improved quality of services in management of acute malnutrition.

The Process of Conducting Supportive Supervision

This will be an integral part of the National/Regional/Council Reproductive Maternal Newborn and Child Health (RMNCH) supportive supervision tool.

The integrated supportive supervision will be conducted by supervisors, across different levels ranging from national, zonal, regional, councils to health facilities with attention to RMNCH services. To ensure proper implementation and coordination, the team from national level will work together with zonal, regional and council teams in conducting supportive supervision.

Supportive supervision should be done by internal and external supervisors. Internal supervision should be done by the in-charge of the service at that level. External supervision should be done by national authority, higher health care level and responsible partners:

- Internal supervision should be done weekly by the in charge of the facility
- External supervision at the regional and district level should be integrated into the existing health supportive supervision mechanism.
- Supervision by national authority should be done twice a year.

Supervisors need to provide technical assistance wherever they find necessary during supervision. Supervisors should observe activities on the ward as well as in outpatient departments and review several cases to highlight weaknesses in the management of acute malnourished children. Areas for improvement should be discussed with the staff team so that improvements can be made. Supervisor checklists for health facilities are found in Appendix 27 and 28. Short report should be made of the situation and of agreed changes. This report should be filed so that progress and challenges can be reviewed over time.

Note: Staff teams, at health facility, should have mortality meetings to discuss deaths whenever they occur. The aim is to discuss what could have been done differently.

9.6 Evaluation

Evaluation for the provision of the services according to these guidelines should look into Inputs, Process, Outputs and Impact indicators. Both short and long-term evaluation is essential as it will show whether management of acute malnutrition has met its objective.

The impact of the services should reflect the degree to which the principal objective has been reached at any level. This is normally conducted by an independent agency, recommended to be done nationally, after five years.

Using the established indicators, implementers of the interventions shall carry out evaluation activities by doing the following:

- Measure input and process indicators
- Evaluate specific events and activities
- Document changes, based on initial objectives
- Compare final results with indicators to measure change
- Identify key factors contributing to behaviour change of the intended audience
- Document unintended changes

- Share results with stakeholders and advocate use of the results. Findings from monitoring and evaluation should be shared among stakeholders, aiming at improving the services. Identified best practices should be documented and shared widely among stakeholders.

Evaluation of the services shall also consider the following:

- Design including coverage
- Efficiency
- Effectiveness including cost
- Impact
- Sustainability/connectedness
- Relevance/appropriateness
- Coherence
- Equitability

Data collection and monitoring

Data must be recorded to ensure the child can be tracked and to monitor the effectiveness of the programme. Full details on monitoring the management of SAM and MAM are provided in M&E Section.

The monitoring tools for treatment of SAM in ITC or OTC include:

- **Referral Slip** (Appendix 12). The referral slip is used to refer children from OTC to ITC or SFP and vice versa. It describes which treatment(s) and medicine(s) were given and why, to avoid giving children the same medicine twice.
- **Inpatient Therapeutic Care (ITC) Card:** a form that include all relevant information with anthropometric, routine medicine, therapeutic feeds and monitoring.
- **OTC Treatment Card** (Appendix 18). All OTC Cards should be kept in a file at the health facility. The cards are updated at every visit. to the OTC site.
- **OTC RUTF Ration Card** (Appendix 19): The Ration Card is kept by the caregiver. It is updated at every visit to the OTC and provides information on nutritional status and RUTF rations received. On discharge, the card should be marked as exited from the programme, but it should stay with the caregiver.
- **ITC/OTC Register**
- **OTC Site Tally sheet** (Appendix 26). At the end of each programme day, the health worker or supervisor fills in a tally sheet that records OTC activity and outcomes. The tally sheet is used in monitoring the overall effectiveness of the programme.
- **Health Facility Monthly Report on ITC/OTC.** The site tally sheet information is compiled by the health service provider at the end of each month in the OTC Site Reporting Sheet.
- **Checklist for home visits** (Appendix 20). Provides outreach workers with a checklist of issues to follow-up during home visits to children who are not recovering well, are defaulting from the programme or facing other difficulties.
- **Checklist for support and supportive supervision of ITC** (Appendix 27). Provides supervisors with a list of issues to check during supervision visits to ITC sites/facilities.

- **Checklist for support and supervision of OTC** (Appendix 28). Provides supervisors with a list of issues to check during supervision visits to OTC sites/facilities.
- **Stock Card** (Appendix 29). The stock card is used to monitor the receipt, distribution, loss and stock balance of therapeutic supplies.
- Availability of Guidelines and SBCC material for child nutrition and WASH

The monitoring tools for SFP include:

- **SFP Ration Card** (Appendix 21). The Ration Card is kept by the caregiver. It is updated at every visit to the OTC and provides information on nutritional status, medical treatment and supplementary food rations received. On discharge, the card should be marked as exited from the programme, but it should stay with the caregiver.
- **SFP Site Tally sheet** (Appendix 26). At the end of each programme day, the health worker or supervisor fills in a tally sheet that records SFP activity and outcomes. The tally sheet is used in monitoring the overall effectiveness of the programme.
- **SFP Site Reporting Sheet** (Appendix 25). The site tally sheet information is compiled by the health service provider at the end of each month in the SFP Site Reporting Sheet.
- **Referral Slip** (Appendix 12). The referral slip is used to refer children from OTC to SFP and vice versa. It describes which treatment(s) and medicine(s) were given and why, to avoid giving children the same medicine twice.
- **Stock Card** (Appendix 29). The stock card is used to monitor the receipt, distribution, loss and stock balance of supplementary supplies.

CHAPTER 10: Nutritional Care in Emergencies

10.1 Introduction

Emergencies can be either man-made disaster, such as an exacerbation of an on-going conflict with population displacement, or due to environmental issues such as a serious drought or severe flooding/landslides. The local infrastructure may not have the capacity to respond due to limited resources particularly financial, human, logistics and/or structural limitations. Geographical isolation may further affect ability to respond. When situations such as this occur especially if there is a substantial proportion of the population affected, this often results in food shortages and impairs the nutritional status of affected communities, in particular infants, children and adolescents, but also adults, especially pregnant and lactating women and elderly persons. There is a need to rapidly respond to prevent increased and/or excessive morbidity and mortality. Nutritional emergency occurs when there is an abnormally high rate of acute malnutrition resulting from a crisis event.

- Global acute malnutrition rate >10% or
- Crude mortality rate >1 death/10,000 persons per day or
- Under-five mortality rates >2 deaths/10,000 under-fives per day (SPHERE, 2004)

Emergency Nutrition Response is an intervention that primarily aims to prevent children with mild and moderate malnutrition from becoming severely malnourished and to treat all forms of acute malnutrition during emergencies.

There are three main nutrition relief responses:

- General food distributions for all the affected households.
- Supplementary Feeding Programme (SFP) for moderately malnourished children.
- Therapeutic feeding programme (TFP) for severely malnourished children.

10.2 Steps in Emergency Nutrition Response

Step 1: Coordination and information sharing

Coordination of all the emergency activities at all levels and among all implementing partners is key to ensure effectiveness. This prevents duplication of programmes and also identifies gaps that have not been met in each sector.

Step 2: Conduct Rapid Nutrition Assessment

Jointly plan and conduct an initial assessment to understand the situation and identify the extent of the threat to children's lives, coping strategies and access to services such as health, safe drinking water/sanitation and basic diet using national standardised tools or guidelines. Review existing interventions where an existing humanitarian response is in place but there is deterioration in the situation, and identify needs required to increase capacity to meet the demands of a deteriorating situation. Carry out on-going nutrition surveys periodically during the programme to monitor effectiveness of response.

Step 3. Selecting appropriate responses

When the emergency assessment reports indicate that the nutrition needs are unmet, and/or there are increasing/high levels of acute malnutrition, appropriate responses are identified. Children below five years old, pregnant and lactating women are usually the primary target in emergency nutrition interventions. Other identified vulnerable groups such as the elderly and chronically ill especially People Living with HIV/AIDS (PLWHA) and TB patients should be targeted. The nutrition status of under 5 age group is usually taken as the proxy indicator of the nutrition status of the community to inform nutrition planning in emergency situations.

Step 4. Planning the response

These responses should include:

- Establishing an emergency response team with defined roles and responsibilities
- Resource Mobilisation (supplies, financial and human resources)
- Selecting nutrition programme sites depending on the population size affected the planned geographical coverage and accessibility
- Integrating screening and referral for acute malnutrition at all health facility and community contact points.
- Ensure medical-nutritional follow-up of patients with MAM and SAM without medical complications and management of those having SAM with medical complications as in-patients.
- Maximizing positive impact and limiting harm (be aware of competition for scarce resources/ increased resources, misuse or misappropriation of supplies).
- Providing equitable humanitarian services.

10.3 Implications of Emergencies on 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 and there may need to be a shift in focus of the protocols employed for the management of MAM:

Increase 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. When implementing emergency nutrition interventions, the appropriate staff and staffing levels are vital. There is a need for managers/administration, logistics support, technical staff (clinicians, nutritionists, nurses, records person, etc.) and support staff. Where possible prioritize recruitment of qualified local staff as they understand the context, speak the local language and understand the culture of the population. All the staff must be trained and orientated prior to commencing the relief programmes. They should have clear job descriptions with clear roles and responsibilities.

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 mobilized. Buffer stocks should be in place especially where security is an issue.

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 should be emphasized at all levels from the community to national level. The use of standard guidelines, protocols and monitoring will need to be reinforced. 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.

10.4 Implementing Nutrition Interventions in Emergencies

In essence, the emergency nutrition intervention works to reduce high rates of acute malnutrition of large, vulnerable populations. The supplementary feeding programme (SFP) is an ideal nutrition intervention for management of moderately acute malnourished children whereas the therapeutic feeding programmes (TFP) is ideal for management of severely acute malnourished children. Emergency nutrition interventions require substantial resources to setup and monitor. An effective nutrition intervention is one that is comprehensive and provides a holistic approach in managing acute malnutrition. The intervention should identify a vulnerable population, distribute food, offer basic medical treatment, micronutrient supplementation and if possible nutrition education.

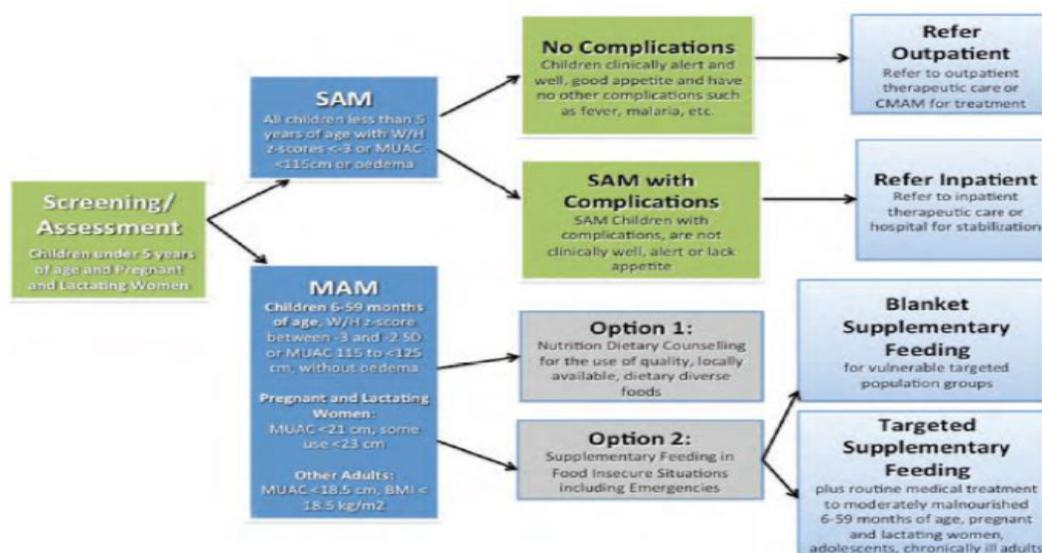
Selection criterion for children has two phases:

- Initial screening is conducted in the community. MUAC is measured for children between 6-59 months. Children with a MUAC measurement <13.5cm are referred to a health centre or feeding centre for further measurements of weight and height. Presence of oedema is an indicator of severe acute malnutrition and a child with oedema is referred to an existing inpatient or an out-patient therapeutic care programme,
- Second screening is conducted in the health centre or feeding centre. Thorough examination of the referred child is done by taking MUAC, length/height weight and checked for oedema and other medical complications. The weight-for-height indicator is a more accurate estimate of body wasting, and is usually the preferred index for nutritional status in emergencies.

In an emergency setting, emergency nutrition interventions are programmes set-up to:

- Manage acute malnutrition
- Provide other critical nutrition services (i.e. growth monitoring, micronutrient
- Supplementation, protection of infant and young child feeding practices)
- Provide food to a population that does not have access to food.

Figure 12: Decision Making Tree for Acute Malnutrition in Emergencies



Source: modified from management of MAM guidelines by IASC Nutrition Cluster and Nutrition Working Group of the Somali 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.

10.5 Supplementary Feeding Programme in Emergencies

The goal of a supplementary feeding programme (SFP) is to rehabilitate individuals affected by Moderate Acute Malnutrition or at risk of becoming malnourished by providing a supplementary food ration which is highly nutritious.

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.

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

There are two types of SFP: Targeted and Blanket

Targeted Supplementary Feeding Programme

This programme is set up when:

- There are large numbers of mild and moderately acute malnourished children.
- A large number of children are likely to become mildly or moderately acute malnourished due to aggravating factors like serious food insecurity or high levels of disease.
- There are children discharged from an existing therapeutic feeding programme.
- A high prevalence of children with HIV and AIDS.
- A high prevalence of micronutrient deficiencies.
- There is short-term hunger among pre-schoolers.

The Targeted Supplementary Feeding Programme covers all the children between 6 to 23 months. If the food security situation is extremely severe or coverage and quality for the treatment of MAM is limited, the age group for children could be extended to 6 to 35 months of age or 6 to 59 months of age. Priority will be given to children 6 to 23 months of age as they have an increased risk of mortality and a tendency to deteriorate more quickly than older children.

Under the TSFP, a specialized nutritious food will be provided to all individuals in the selected target group on a regular basis. No screening required as admission into the programme does not depend on the nutritional status of the beneficiaries. Beneficiaries will participate in the BSFP for a specific period of time (generally 2 to 6 months).

Blanket Supplementary Feeding Programme

BSF should be started as early as possible after the onset of the crisis. The main aim of a blanket SFP is to prevent widespread acute malnutrition and to reduce excess mortality among those at-risk. This 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. Blanket SFs may be set up under one or a combination of the following circumstances:

- At the onset of an emergency when general food distribution systems are not adequately in place.
- Problems in delivering/distributing the general ration.
- When large numbers of mild and moderately acute malnourished individuals are likely to become severe due to aggravating factors.
- Anticipated increase in rates of acute malnutrition due to seasonally induced epidemics.
- In case of micronutrient deficiency outbreaks, to provide micronutrient-rich food to the target population.

10.9 Supplementary Feeding: On-site and Take-home Feeding

There are two ways to distribute food commodities during emergencies: on-site feeding (or wet ration) and take-home (or dry ration). The ideal dry ration supplementary food provides 1000 to 1200Kcal; 35g to 45g of protein; and fat supplies 30% of required energy. On-site feeding supplementary food provides 500 to 700Kcal per beneficiary per day; includes 15g to 25g of protein; and fat supplies 30% of required energy.

Take home or dry ration	On site feeding or wet ration
<p>This is the preferred option: a regular (weekly or bi-weekly) distribution of food in dry form that is prepared at home. Generally, the take-home or dry ration option should be considered first as it requires fewer resources and less hardship on the patients.</p> <p>There is no evidence that on-site SFPs are more effective.</p> <p>Other advantages of dry ration are:</p> <ul style="list-style-type: none"> • Serves more patients. • There is less risk of cross-infection as malnourished and sick children do not sit in close proximity while feeding. • It takes less time to establish (on-site feeding programmes require setting-up and equipping centres). • Is less time consuming for mothers who attend every week or fortnight instead of daily. As a result, the take-home option leads to better coverage and lower default rates. • Keeps the feeding responsibility in the family. • Dispersed populations do not have to travel long distances to attend daily. • The dry-ration option prevents displacement in famine situations. 	<p>A daily distribution of cooked food/ meals at a health facility or feeding centre is one method of supplementary feeding. It is only considered for extreme situations as it is time consuming and also undermines the family's ability to take responsibility.</p> <p>It may also create population movements into centres, which is not recommended. When it is conducted, the number of meals provided varies, but usually two to three meals are provided each day.</p> <p>An on-site feeding may be justified when:</p> <ul style="list-style-type: none"> • Food supply in the household is extremely limited, increasing the risk that a moderately malnourished patient's take-home ration is distributed to all family members (some sharing is to be expected). • Firewood, water, and cooking utensils are in serious short supply making it almost impossible to prepare meals in the household. • The security situation is extremely serious and beneficiaries are at-risk of being looted when returning home carrying weekly supplies of food.

10.10 Exit Strategy for Emergency Nutrition Response (ENR)

An exit strategy should be developed right at the beginning of the ENR programme through strong involvement of the district teams and/or staff of the relevant facilities. An exit strategy indicates when an emergency intervention should be phased out or closed down. In emergency nutrition interventions, this occurs when the levels of acute malnutrition have reduced (<10% with no aggravating factors) or crude mortality rates <1/10,000/day. It is also important that food security should have improved and that there are no other aggravating factors such as **severe** climatic conditions and inadequate shelter. Other factors to consider may include;

- Net reduction in the number of children attending the centres (through improvement in the nutritional status or the displacement of the population etc.)
- Depletion of food stock without being renewed
- End of or lack of financial funding
- Epidemiological control of infectious diseases is effective
- Improved climatic conditions where applicable.

Programme closure must be done gradually over a period of 3-6 months. It is desirable to start with a reduction in the rations, stopping new admissions, establishing hand-over solutions, and training of identified focal person(s) for the specific programmes.

CHAPTER 11: Coordination and Implementation

11.1 Introduction

This chapter outlines implementation arrangements for the guidelines herein, including institutions' roles and responsibilities. Transferring much of the management of acute malnourished children to the community brings to the fore issues of cross-sector collaboration, inter-linkages and synergies.

11.2 Key implementers

The implementation of the guidelines is under the Ministry of Health Community Development, Gender, Elderly and Children with coordination and technical support from TFNC. The key implementers are all tertiary health facilities, teaching hospitals, secondary and primary health facilities (public, private and FBOs). Key collaborators are Development Partners (DP), Professional associations (Paediatric, Nurses, Food and Nutrition and others), Civil Society Organizations and NGOs engaged in care of infants and young children at all levels.

11.3 Roles and responsibilities

National level

The MOHCDGEC with coordination and technical support from TFNC will oversee the implementation of the guidelines from national to the lower levels.

It will be responsible for:

- Updating and review of these guidelines, whenever necessary
- Coordinate all the activities related to management of acute malnutrition including:
 - o Capacity building
 - o SBCC materials development and dissemination
 - o Procurement, distribution and storage of supplies
 - o Quality assurance
 - o Support Research
- Monitoring and evaluation

Regional level

Regional Medical Officer will be responsible for

- Training
- Supportive Supervision
- Monitoring and evaluation
- Quality Assurance

District Level

The actual implementation of these guidelines will be done at the district level. The following will be done at district level by the District Medical Officer:

- Identify facilities for different IMAM (ITC, OTC, SFP) services
- Coordinate the IMAM capacity development with those responsible for service provision and activities within the district
- Ensure mechanisms:
 - o To transfer patients safely between OTC and ITC
 - o To establish mechanisms for information on the individuals transferred to be passed to the receiving facility
- Ensure regular supervision of the quality of service provided by all the facilities (ITC and OTC, SFP sites) within the district.
- Ensure proper forecasting ordering of IMAM supplies,
- Conduct on-job training as necessary and train all newly appointed staff.
- Ensure documentation and reporting on monthly basis.
- Collaborating with Development Partners working in their localities

Health facilities

Each health facility will implement the guidelines within their RCH clinics, OPD, CTC and Paediatric wards. Health facilities will also work closely with Development Partners working in their localities. The RCH department should have a close link with communities through community health workers.

Community Level

Tanzania has an existing elaborate administrative structure from grass root levels (village) to national level. This structure will be used to implement the guidelines. Key to this is the participation of key stakeholders, including public and private sector, civil society organizations, community leadership and community members. The successful implementation of the guidelines will depend on collaboration of all stakeholders and their commitment and coordination at all levels.

In collaboration with the Ministry of State President's Office, Regional Administration and Local Government, Ministry of Agriculture Livestock and Fisheries, and Ministry of Education, Science and Technology and the Ministry of Water and Irrigations the extension officers and community leaders present in the local area will perform the following roles:

- Mainstreaming all issues of the management of acute malnutrition and reporting on the current situation to their respective forum, including (WDC) and Village Councils (VCs).
- Sensitisation and mobilization of the community members on the importance of screening for acute malnutrition at taking appropriate action for identified cases.

Community Level (Village)

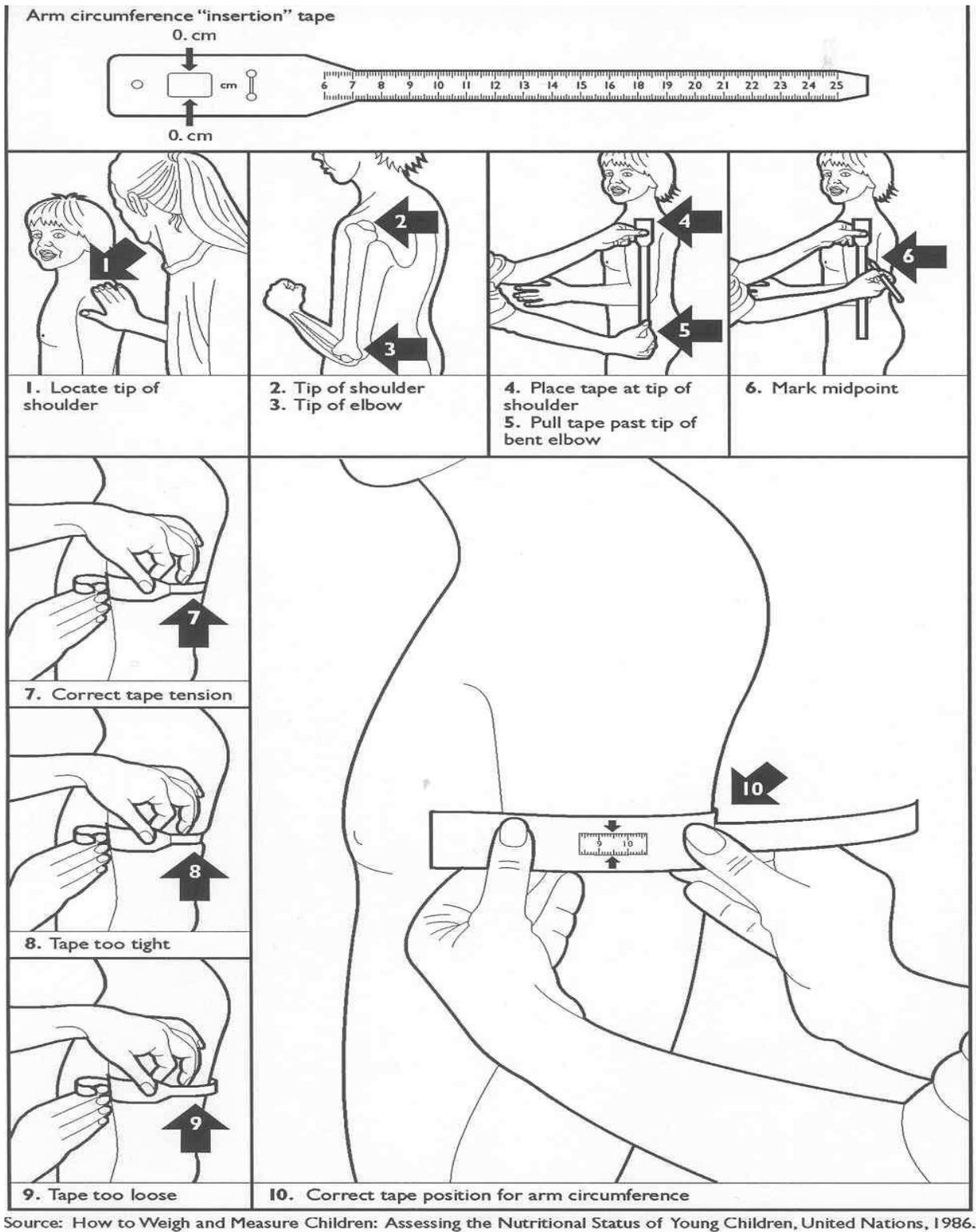
- Early identification of malnutrition cases.
- Refer and link malnutrition cases to respective health facilities.
- Follow up after discharge to make sure the clients adhere to the instructions given and return to the health facilities for continued care.
- Sensitize the members of the community about acute malnutrition services before and during its implementation;

- Organize and conduct Peer Support Groups (PSG) meetings
- Follow up where there appears to be a problem (excessive defaulting, low rate of weight gain, etc.) or when requested during a monthly meeting or when the community focal person comes, in rotation, to help with the OTC and recruit volunteers;
- Involve the community leaders, traditional and modern health practitioners, other members of civil society and local organisations about the nature and purpose of the services and their contribution.
- Using both formal and informal communication to inform the community about malnutrition and good nutrition practices, taking into account literacy levels, who takes care of children, who determines the use of resources within the household (husband, mother-in-law, etc.), and the beliefs within the society about the causes of malnutrition as well as their usual health seeking behaviour;
- Collect data during screening, internalize data situation, discuss and report.
- Maintain a strong link between the health facility and the community leaders, community health volunteers and other community workers;

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Appendix 1: How to use MUAC Tape



Source: How to Weigh and Measure Children: Assessing the Nutritional Status of Young Children, United Nations, 1986.

Appendix 2a: Weight-for-length and weight-for-height tables for Girls, WHO Growth Standards 2006

Weight-for-length					Weight-for-height				
(cm)	-	-	-1 SD	Median	(cm)	-3 SD	-2 SD	-1 SD	Median
45	1.9	2.1	2.3	2.5	87	9.2	10.0	10.9	11.9
46	2.0	2.2	2.4	2.6	88	9.4	10.2	11.1	12.1
47	2.2	2.4	2.6	2.8	89	9.6	10.4	11.4	12.4
48	2.3	2.5	2.7	3.0	90	9.8	10.6	11.6	12.6
49	2.4	2.6	2.9	3.2	91	10.0	10.9	11.8	12.9
50	2.6	2.8	3.1	3.4	92	10.2	11.1	12.0	13.1
51	2.8	3.0	3.3	3.6	93	10.4	11.3	12.3	13.4
52	2.9	3.2	3.5	3.8	94	10.6	11.5	12.5	13.6
53	3.1	3.4	3.7	4.0	95	10.8	11.7	12.7	13.9
54	3.3	3.6	3.9	4.3	96	10.9	11.9	12.9	14.1
55	3.5	3.8	4.2	4.5	97	11.1	12.1	13.2	14.4
56	3.7	4.0	4.4	4.8	98	11.3	12.3	13.4	14.7
57	3.9	4.3	4.6	5.1	99	11.5	12.5	13.7	14.9
58	4.1	4.5	4.9	5.4	100	11.7	12.8	13.9	15.2
59	4.3	4.7	5.1	5.6	101	12.0	13.0	14.2	15.5
60	4.5	4.9	5.4	5.9	102	12.2	13.3	14.5	15.8
61	4.7	5.1	5.6	6.1	103	12.4	13.5	14.7	16.1
62	4.9	5.3	5.8	6.4	104	12.6	13.8	15.0	16.4
63	5.1	5.5	6.0	6.6	105	12.9	14.0	15.3	16.8
64	5.3	5.7	6.3	6.9	106	13.1	14.3	15.6	17.1
65	5.5	5.9	6.5	7.1	107	13.4	14.6	15.9	17.5
66	5.6	6.1	6.7	7.3	108	13.7	14.9	16.3	17.8
67	5.8	6.3	6.9	7.5	109	13.9	15.2	16.6	18.2
68	6.0	6.5	7.1	7.7	110	14.2	15.5	17.0	18.6
69	6.1	6.7	7.3	8.0	111	14.5	15.8	17.3	19.0
70	6.3	6.9	7.5	8.2	112	14.8	16.2	17.7	19.4
71	6.5	7.0	7.7	8.4	113	15.1	16.5	18.0	19.8
72	6.6	7.2	7.8	8.6	114	15.4	16.8	18.4	20.2
73	6.8	7.4	8.0	8.8	115	15.7	17.2	18.8	20.7
74	6.9	7.5	8.2	9.0	116	16.0	17.5	19.2	21.1
75	7.1	7.7	8.4	9.1	117	16.3	17.8	19.6	21.5
76	7.2	7.8	8.5	9.3	118	16.6	18.2	19.9	22.0
77	7.4	8.0	8.7	9.5	119	16.9	18.5	20.3	22.4
78	7.5	8.2	8.9	9.7	120	17.3	18.9	20.7	22.8
79	7.7	8.3	9.1	9.9					
80	7.8	8.5	9.2	10.1					
81	8.0	8.7	9.4	10.3					
82	8.1	8.8	9.6	10.5					
83	8.3	9.0	9.8	10.7					
84	8.5	9.2	10.1	11.0					
85	8.7	9.4	10.3	11.2					
86	8.9	9.7	10.5	11.5					

^a Length is measured for children below 87 cm. For children 87 cm or more, height is measured.

Length is on average 0.7 cm greater than standing height; a correction may be made by subtracting 0.7 cm from all lengths above 86.9 cm if standing height cannot be measured.

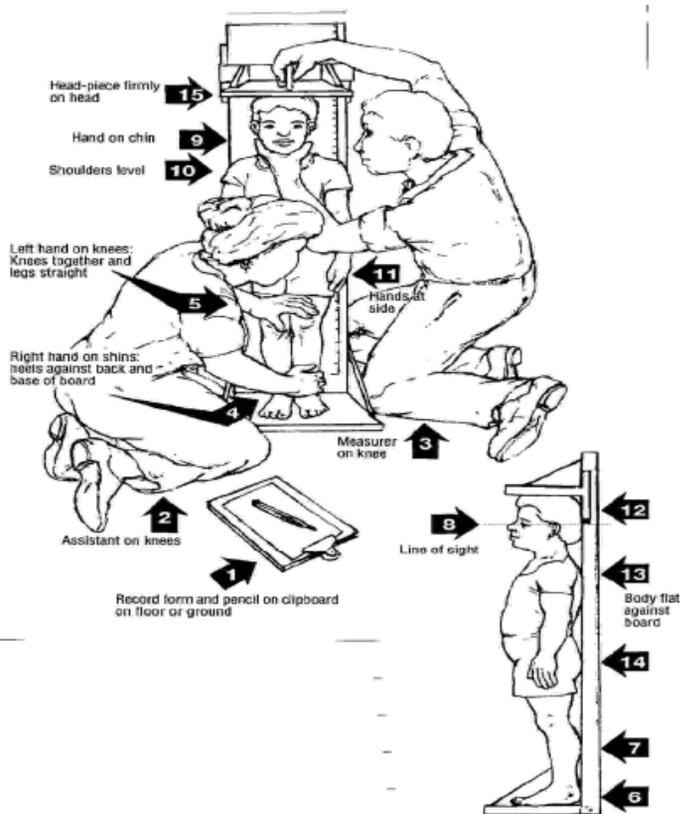
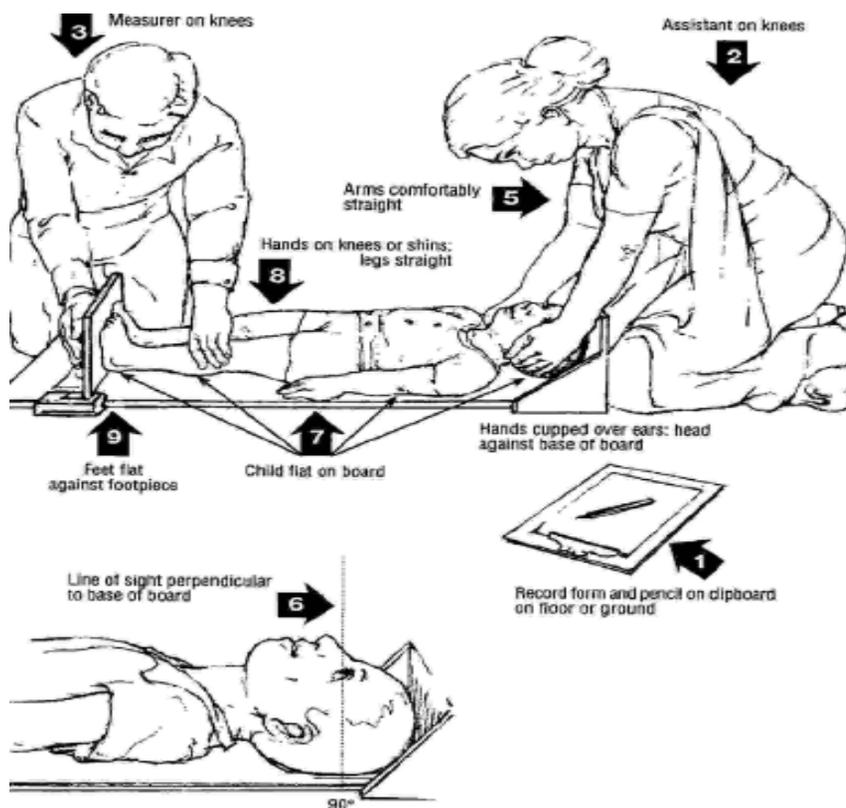
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47	2.1	2.3	2.5	2.8	89	10.0	10.8	11.7	12.6
48	2.3	2.5	2.7	2.9	90	10.2	11.0	11.9	12.9
49	2.4	2.6	2.9	3.1	91	10.4	11.2	12.1	13.1
50	2.6	2.8	3.0	3.3	92	10.6	11.4	12.3	13.4
51	2.7	3.0	3.2	3.5	93	10.8	11.6	12.6	13.6
52	2.9	3.2	3.5	3.8	94	11.0	11.8	12.8	13.8
53	3.1	3.4	3.7	4.0	95	11.1	12.0	13.0	14.1
54	3.3	3.6	3.9	4.3	96	11.3	12.2	13.2	14.3
55	3.6	3.8	4.2	4.5	97	11.5	12.4	13.4	14.6
56	3.8	4.1	4.4	4.8	98	11.7	12.6	13.7	14.8
57	4.0	4.3	4.7	5.1	99	11.9	12.9	13.9	15.1
58	4.3	4.6	5.0	5.4	100	12.1	13.1	14.2	15.4
59	4.5	4.8	5.3	5.7	101	12.3	13.3	14.4	15.6
60	4.7	5.1	5.5	6.0	102	12.5	13.6	14.7	15.9
61	4.9	5.3	5.8	6.3	103	12.8	13.8	14.9	16.2
62	5.1	5.6	6.0	6.5	104	13.0	14.0	15.2	16.5
63	5.3	5.8	6.2	6.8	105	13.2	14.3	15.5	16.8
64	5.5	6.0	6.5	7.0	106	13.4	14.5	15.8	17.2
65	5.7	6.2	6.7	7.3	107	13.7	14.8	16.1	17.5
66	5.9	6.4	6.9	7.5	108	13.9	15.1	16.4	17.8
67	6.1	6.6	7.1	7.7	109	14.1	15.3	16.7	18.2
68	6.3	6.8	7.3	8.0	110	14.4	15.6	17.0	18.5
69	6.5	7.0	7.6	8.2	111	14.6	15.9	17.3	18.9
70	6.6	7.2	7.8	8.4	112	14.9	16.2	17.6	19.2
71	6.8	7.4	8.0	8.6	113	15.2	16.5	18.0	19.6
72	7.0	7.6	8.2	8.9	114	15.4	16.8	18.3	20.0
73	7.2	7.7	8.4	9.1	115	15.7	17.1	18.6	20.4
74	7.3	7.9	8.6	9.3	116	16.0	17.4	19.0	20.8
75	7.5	8.1	8.8	9.5	117	16.2	17.7	19.3	21.2
76	7.6	8.3	8.9	9.7	118	16.5	18.0	19.7	21.6
77	7.8	8.4	9.1	9.9	119	16.8	18.3	20.0	22.0
78	7.9	8.6	9.3	10.1	120	17.1	18.6	20.4	22.4
79	8.1	8.7	9.5	10.3					
80	8.2	8.9	9.6	10.4					
81	8.4	9.1	9.8	10.6					
82	8.5	9.2	10.0	10.8					
83	8.7	9.4	10.2	11.0					
84	8.9	9.6	10.4	11.3					
85	9.1	9.8	10.6	11.5					
86	9.3	10.0	10.8	11.7					

^a Length is measured for children below 87 cm. For children 87 cm or more, height is measured.

Length is on average 0.7 cm greater than standing height; a correction may be made by subtracting 0.7 cm from all lengths above 86.9 cm if standing height cannot be measured.

Appendix 3: How to Measure Length and Height



Appendix 4: Medical history and examination

Name _____ Age _____
Registration # _____ Sex _____
Facility _____ Date of admission _____

Medical History

What are the complaints and how long has each been present?

1. _____
2. _____
3. _____
4. _____

Child breastfed Yes No

Child exclusively breastfed Yes No

If child is not breastfed, how old was child when he/she stopped breastfeed? _____

How has child been eating and drinking? _____

Child's appetite? Hungry Normal Poor Very poor

Diarrhoea Yes No For how long: _____

Stools per day: _____ Normal Watery Soft Blood

Mucus Green Pale

Vomiting number of times per day: _____ For how long: _____

Breathing: Normal Fast Noisy Difficult For how long: _____

Cough: Yes No For how long: _____

Fever: Yes No For how long: _____

Convulsions: Yes No For how long: _____

Unconsciousness: Yes No For how long: _____

Other health history _____

Appendix 4: Medical history and examination

	Inpatient and outpatient	Inpatient only
Does the patient look	Well/ ill/very ill/comatose	
Mood and behaviour	Normal/apathetic/inactive/irritable	Repeated movements
Eyes	Normal/sunken/staring/conjunctivitis	Xerosis/keratomalacia mild, moderate, severe
Ears	Normal/discharging	
Mouth	Normal/sore/red/candida	Smooth tongue/herpes/angular stomatitis
Membrane colour		Normal/pale/jaundiced/cyanosed
Gums		Normal/bleeding
Breathing	Normal/noisy/asymmetrical /laboured/wheeze/indrawing	
Chest		Normal/asymmetric/pigeon/sulcus
Oedema	None/+/++/+++	
Hydration	Normal/dehydrated/shock/uncertain	
Passing urine	Yes / no	
Peripheries		Normal/warm/cold
Pulse rate		Min/normal/strong/weak
Heart sounds		Normal/gallop/murmur
Stool		Not seen/normal/soft/watery/green/pale/mucus/blood
Abdomen		Normal/distended/tender/visible/peristalsis
Bowel		Sounds normal/active/quiet/absent
Splash		Yes/No
Liver		__ cm below costal margin Normal/firm/hard/smooth/irregular
Spleen		Not felt/felt/large Normal/firm/hard Tender/painless
Tone		Normal/stiff/floppy
Meninges		Normal/stiff neck/Brudzinski/bulging fontanelle
Reflexes		Normal/increased/decreased/absent
Skin change	None/mild/moderate/severe	Peeling/raw/ulcers/infection/cuts/bruises
Perineum		Normal/rash/raw/candida
Purpura		Yes/No
Hair		Black/brown/red/blond Normal/easily plucked/balding
Scabies	Non/local/generalized	
Lymph nodes	None/groin/axilla/neck Tender/painless Soft/firm/ hard/fixed	
Rib ends		Normal/swollen/displaced

Appendix 6: Inpatient Therapeutic Care (ITC) Card

Appendix 6: Inpatient Therapeutic Care (ITC) Card													
Health facility					Patient Reg. No.					Referred From			
Name of child					Age		Sex						
Address										Date of admission			
ANTHROPOMETRIC CHART	DATE	1	2	3	4	5	6	7	8	9	10	11	12
	Height (cm)												
	Weight (kg)												
	WHZ												
	MUAC (mm)												
	Oedema (+ ++ +++)												
ROUTINE MEDICINES	Days on the programme	1	2	3	4	5	6	7	8	9	10	11	12
	Antibiotic: <i>(tick and specify type given below)</i>											7-10 days	
	Antimalarial:												
	Vitamin A <i>(do not give to children with oedema except if VAD present)</i>												
	Folic Acid <i>(give if preparing locally made F75 & no CMV)</i>												
	Mebendazole <i>(give on day one of rehabilitation phase ~ after 7 days)</i>												
	Measles vaccine (Y/N)												
ADDITIONAL MEDICINES (specify)													

Milk/RUTF	Milk/RUTF (<i>indicate</i>)																				
	Number of feeds																				
	Amount per feed																				
	Total per day																				
	IV fluids (Y/N)																				
	NG tube (Y/N)																				
MEAL TIMES & FOOD INTAKE	Indicate if;	Feed number																			
		1																			
	A (Absent)	2																			
	V (Vomit)	3																			
		4																			
	Amount taken (per feed)	5																			
		6																			
	100%	7																			
	75%	8																			
	50%	9																			
	25%	10																			
	0%	11																			
	12																				
Comments/Notes																					
Surveillance	Temperature (am)																				
	Temperature (pm)																				
	Respirations/min																				
	Pulse rate/min																				
	Number of motions																				
	Number of episodes of vomit per day																				
Date of Discharge																					

Appendix 7a: Recipes for Locally Made F75 and F100

	F75 (starter)	F100 (catch-up)
Dried skimmed milk (g)	25	80
Sugar (g)	100	50
Vegetable oil (g)	30 (or 35ml)	60 (or 70ml)
Electrolyte/mineral solution (ml)*	20	20
Water: make up to	1000ml	1000ml
(*3g CMV can replace 20ml Electrolyte/mineral solution)		
Contents per 100ml		
Energy (kcal)	75	100
Protein (g)	0.9	2.9
Lactose (g)	1.3	4.2
Potassium (mmol)	4.0	6.3
Sodium (mmol)	0.6	1.9
Magnesium (mmol)	0.43	0.73
Zinc (mg)	2.0	2.3
Copper (mg)	0.25	0.25
% energy from protein	5	12
% energy from fat	36	53
Osmolarity (mOsmol/l)	413	419

Preparation

- Using an electric blender: place some of the warm boiled water in the blender, add the milk powder, sugar, oil and electrolyte/mineral solution. Make up to 1000ml, and blend at high speed.
- If no electric blender is available, mix the milk, sugar, oil and electrolyte/mineral solution to paste, and then slowly add the rest of the warm boiled water to make 1000ml and whisk vigorously with a manual whisk
- Store made-up formula in refrigerator when possible.

Alternative recipes using full-cream dried milk or liquid cow's milk

F75 starter formulas:

- Full-cream dried milk 35g, 100g sugar, 20g (or ml) oil, 20ml electrolyte/mineral solution, and make up to 1000ml
- Full-cream cow's milk (fresh or long life) 300ml, 100g sugar, 20g (or ml) oil, 20ml electrolyte/mineral solution and make up to 1000ml

F100 catch-up formulas:

- Full-cream dried milk 100g, 50g sugar, 30g (or ml) oil, 20ml electrolyte/mineral solution, and make up to 1000ml
- Full-cream cow's milk (fresh or long life) 880ml, 75g sugar, 20g (or ml) oil, 20ml electrolyte/mineral solution and make up to 1000ml

Appendix 7b: Cereal based F75

Cereal based therapeutic feeds are important for children with persistent diarrhoea or lactose intolerance and severe acute malnutrition.

- The F-75 recipes containing cereal flour should be used where possible because they protect against hypoglycaemia and are better if the child has osmotic diarrhoea. Formula that needs to be stored more than 1 hour should preferably be kept in a refrigerator. It can be stored at room temperature for a maximum of 6 hours.

Cereal based F-75 Recipes

Type of milk	Ingredients	Cereal flour* and cooking facilities are available
Dried skimmed milk	Dried skimmed milk	25 g
	Sugar	70 g
	Cereal flour*	35 g
	Vegetable oil	30 g (or 35 ml)
	CMV**	½ levelled red scoop
	Water: make up to	1000 ml
Dried whole milk	Dried whole milk	35 g
	Sugar	70 g
	Cereal flour*	35 g
	Vegetable oil	20 g (or 20 ml)
	CMV**	½ levelled red scoop
	Water: make up to	1000 ml
Full-cream cow's milk (fresh or long life)	Full-cream cow's milk (fresh or long life)	300 ml
	Sugar	70 g
	Cereal flour*	35 g
	Vegetable oil	20 g (or 20 ml)
	CMV**	½ levelled red scoop
	Water: make up to	1000 ml

*Cereal flour may be rice, wheat, maize, or whatever cereal is locally available.

** CMV= Combined Mineral and Vitamin mix. Where CMV is not available, electrolyte/mineral mix should be used (20 ml for one litre of preparation). See appendix 6 for recipe for the electrolyte/mineral mix.

Steps for preparation of feeds:

I. Preparation for recipes containing cereal flour:

a) If using an electric blender

- o Put about 200 ml of boiled, cooled water into a blender. If you are using liquid milk instead of milk powder, omit this step.
- o Add the flour, milk or milk powder, sugar, and oil. Blend.
- o Add cooled, boiled water to the 1000 ml mark and blend at high speed.
- o Transfer the mixture to a cooking pot and boil gently for 4 minutes, stirring continuously.
- o Some water will evaporate during cooking, so transfer the mixture back to the blender after cooking, and add the CMV (or electrolyte/mineral solution) and enough boiled water to make 1000 ml. Blend again.

b) If using a hand whisk:

- o Mix the flour, milk, or milk powder, sugar, oil and CMV (or electrolyte/mineral mix) in a 1-litre measuring jug.
- o Slowly add cooled, boiled water up to 1000 ml.
- o Transfer the mixture to a cooking pot and whisk the mixture vigorously.
- o Boil gently for 4 minutes, stirring continuously.
- o Some water will evaporate during cooking, so transfer the mixture back to the measuring jug after cooking, and add the CMV (or electrolyte/mineral solution) and enough boiled water to make 1000 ml. Whisk again.

**Appendix 8a: F75 Reference Card – Volume to give for different weights
(For children with no oedema, or oedema + or ++)**

Weight of child (kg)	Volume of F75 per feed (ml)*		Daily total (130 ml/kg)	80% of daily total (minimum)
	Every 2 hours** (12 feeds)	Every 3 hours (8 feeds)		
2.0	20	30	260	210
2.2	25	35	286	230
2.4	25	40	312	250
2.6	30	45	338	265
2.8	30	45	364	290
3.0	35	50	390	310
3.2	35	55	416	335
3.4	35	55	442	355
3.6	40	60	468	375
3.8	40	60	494	395
4.0	45	65	520	415
4.2	45	70	546	435
4.4	50	70	572	460
4.6	50	75	598	480
4.8	55	80	624	500
5.0	55	80	650	520
5.2	55	85	676	540
5.4	60	90	702	560
5.6	60	90	728	580
5.8	65	95	754	605
6.0	65	100	780	625
6.2	70	100	806	645
6.4	70	105	832	665
6.6	75	110	858	685
6.8	75	110	884	705
7.0	75	115	910	730
7.2	80	120	936	750
7.4	80	120	962	770
7.6	85	125	988	790
7.8	85	130	1014	810
8.0	90	130	1040	830
8.2	90	135	1066	855
8.4	90	140	1092	875
8.6	95	140	1118	895
8.8	95	145	1144	915
9.0	100	145	1170	935
9.2	100	150	1196	960
9.4	105	155	1222	980
9.6	105	155	1248	1000
9.8	110	160	1274	1020
10.0	110	160	1300	1040

Appendix 8b. F75 Reference Card for children with Severe (+++) Oedema

Weight with +++ oedema (kg)	Volume of F75 per feed (ml)		Daily total (100 ml/kg)	80% of daily total (minimum)
	Every 2 hours (12 feeds)	Every 3 hours (8 feeds)		
3.0	25	40	300	240
3.2	25	40	320	255
3.4	30	45	340	270
3.6	30	45	360	290
3.8	30	50	380	305
4.0	35	50	400	320
4.2	35	55	420	335
4.4	35	55	440	350
4.6	40	60	460	370
4.8	40	60	480	385
5.0	40	65	500	400
5.2	45	65	520	415
5.4	45	70	540	430
5.6	45	70	560	450
5.8	50	75	580	465
6.0	50	75	600	480
6.2	50	80	620	495
6.4	55	80	640	510
6.6	55	85	660	530
6.8	55	85	680	545
7.0	60	90	700	560
7.2	60	90	720	575
7.4	60	95	740	590
7.6	65	95	760	610
7.8	65	100	780	625
8.0	65	100	800	640
8.2	70	105	820	655
8.4	70	105	840	670
8.6	70	110	860	690
8.8	75	110	880	705
9.0	75	115	900	720
9.2	75	115	920	735
9.4	80	120	940	750
9.6	80	120	960	770
9.8	80	125	980	785
10.0	85	125	1000	800
10.2	85	130	1020	815
10.4	85	130	1040	830
10.6	90	135	1060	850
10.8	90	135	1080	865
11.0	90	140	1100	880
11.2	95	140	1120	895
11.4	95	145	1140	910
11.6	95	145	1160	930
11.8	100	150	1180	945
12.0	100	150	1200	960

Appendix 9: Electrolyte/Mineral solution (Used in preparation of resomal and milk feeds)

Weigh the following ingredients and make up to 2500ml. Add 20ml of electrolyte/mineral solution to 1000ml of milk feed.

Ingredient	Quantity g	Molar content of 20ml
Potassium Chloride: KCl	224	24mmol
Tripotassium Citrate: $C_6H_5K_3O_7 \cdot H_2O$	81	2mmol
Magnesium Chloride: $MgCl_2 \cdot 6H_2O$	76	3mmol
Zinc Acetate: $Zn(CH_3COO)_2 \cdot 2H_2O$	8.2	300 μ mol
Copper Sulphate: $CuSO_4 \cdot 5H_2O$	1.4	45 μ mol
Water: make up to	2500ml	

Note: add selenium if available (Sodium Selenate 0.028g, $NaSeO_4 \cdot 10H_2O$) and iodine (potassium iodide 0.012g, KI) per 2500 ml.

Preparation: Dissolve the ingredients in cooled boiled water. Store the solution in sterilised bottles in the fridge to retard deterioration. Discard if it turns cloudy. Make fresh each month.

If the preparation of this electrolyte/mineral solution is not possible, give potassium, magnesium and zinc separately:

Potassium:

- Make a 10% stock solution of potassium chloride (100 g KCl in 1 litre of water):
- For oral rehydration solution, use 40 ml of stock KCl solution instead of 33 ml electrolyte/mineral solution
- For milk feeds, add 22.5 ml of stock KCl solution instead of 20 ml of the electrolyte/mineral solution
- If KCl is not available, give syrup K (4 mmol/kg/day)

Magnesium:

- Give 50% magnesium sulphate intramuscularly once (0.3 ml/kg up to a maximum of 2 ml)

Zinc:

- Make a 1.5% solution of zinc acetate (15 g zinc acetate in 1 litre of water). Give the 1.5% zinc acetate solution orally, 1 ml/kg/day

Appendix 10: Recipe for ReSoMal

ReSoMal contains approximately 45 mmol Na, 40 mmol K and 3 mmol Mg/litre. The recipe using the new WHO ORS formulation is given below:

<u>Ingredient</u>	<u>Amount</u>
Water (boiled and cooled)	1.7 litres
WHO-ORS (Low Osmolality ORS)	1 litre packet
Sugar	40 g
Electrolyte/mineral solution	33 ml

Appendix 11: F100 Reference Card: Volume ranges for F100 feeding

Weight of child (kg)	Range of volumes per 3-hourly feed of F100 (8 feeds daily) *		Range of daily volumes of F100	
	Minimum ml	Maximum ml	Minimum (150 ml/kg/day)	Maximum ml (220ml/kg/day)
2.0	40	55	300	440
2.2	40	60	330	484
2.4	45	65	360	528
2.6	50	70	390	572
2.8	55	75	420	616
3.0	55	85	450	660
3.2	60	90	480	704
3.4	65	95	510	748
3.6	70	100	540	792
3.8	70	105	570	836
4.0	75	110	600	880
4.2	80	115	630	924
4.4	85	120	660	968
4.6	85	125	690	1012
4.8	90	130	720	1056
5.0	95	140	750	1100
5.2	100	145	780	1144
5.4	100	150	810	1188
5.6	105	155	840	1232
5.8	110	160	870	1276
6.0	115	165	900	1320
6.2	115	170	930	1364
6.4	120	175	960	1408
6.6	125	180	990	1452
6.8	130	180	1020	1496
7.0	130	195	1050	1540
7.2	135	200	1080	1588
7.4	140	205	1110	1628
7.6	145	210	1140	1672
7.8	145	215	1170	1716
8.0	150	220	1200	1760
8.2	155	225	1230	1804
8.4	158	230	1260	1848
8.6	160	235	1290	1892
8.8	165	240	1320	1936
9.0	170	250	1350	1980
9.2	175	255	1380	2024
9.4	175	260	1410	2068
9.6	145	265	1140	2112
9.8	185	270	1470	2156
10.0	190	275	1500	2200

*Volumes per feed are rounded to the nearest 5ml.

Appendix 12: RUTF feed volumes during the Rehabilitation Phase in ITC and during OTC

RUTF volumes for children during the Rehabilitation Phase in ITC and during OTC

Weight (kg)	RUTF paste		RUTF sachets*	
	Per day (g)	Per week (g)	Per day (sachets)	Per week (sachets)
3.0 – 3.4	105	750	1 ¼	8
3.5 – 3.9	130	900	1 ½	11
4.0 – 5.4	200	1400	2	14
5.5 – 6.9	230	1600	2 ½	18
7.0 – 8.4	260	1800	3	21
8.5 – 9.4	320	2300	3 ½	25
9.5 – 10.4	370	2600	4	28
10.5 – 14.9	400	2800	4 ½	32
15.0 – 19.9	450	3200	5	35
20.0 – 29.9	550	3900	6	40
30.0 – 39.9	650	4500	7	50
40.0 – 60.0	740	5100	8	55

**The calculation is based on RUTF sachets of 92 g that provides 500 kcal*

Appendix 13: Referral (Transfer) forms

Referral from Community to Health Facility

Name _____ Age _____
 Village _____ Sex _____
 Ward _____ Date of referral _____

MUAC Red / Yellow / Green _____ cm
 Oedema Yes / No
 Visible wasting Yes / No

Reason for referral (tick boxes):
 Low MUAC Oedema Visible wasting Breastfeeding/feeding problems
 Other _____

Comments _____

Referral from OTC / ITC / SFP to OTC / ITC / SFP (circle)

Name _____ Age _____
 Registration # _____ Sex _____
 Facility/Site _____ Date of admission _____

Admission data
 Weight (kg) _____ MUAC (cm) _____
 Height (cm) _____ Oedema (circle) + ++ +++
 WHZ _____

Date of referral _____

Reason for referral (tick boxes):
 No/poor weight gain Oedema Anorexia Medical complications
 Weight gain Oedema reduced Appetite Complications stabilized
 Other _____

Treatment received _____

Comments _____

Appendix 14: Key messages to give to caregivers during OTC

Discuss the following issues with the caregiver:

- Quantity of RUTF to give to the patient daily
- RUTF (e.g. Plumpynut) is a food and medicine for very thin children only. It should not be shared.
- Sick children often do not like to eat. Give small regular meals of RUTF and encourage the child to eat often (if possible 8 meals/ day).
- RUTF is the only food sick/thin children need to recover during their time in OTC. It is not necessary to give other foods. If other foods are given, they should be given after the child eats the RUTF (with the exception of breast milk).
- For breastfed children, always give breast milk before the RUTF
- Always offer the child plenty of clean water to drink while he or she is eating RUTF.
- It is more hygienic if the child eats directly from the packet rather than taking the RUTF out of the packet and putting on it on another container. Wash child's hands and face with soap before giving RUTF.
- Keep food clean and covered.
- Malnourished children need to be kept warm. Always keep the child covered and warm.
- When a child has diarrhoea, never stop feeding. Give extra food and extra fluids.
- Attend the health facility weekly for monitoring and to receive more RUTF supplies. Return empty RUTF sachets/containers every week
- Give routine medicines as advised by the health worker
- Play, sing and talk with your child as this helps their recovery.
- Seek medical care if the child is not eating, losing weight, has vomiting or diarrhoea, is sick, or if oedema is increasing.

Notes:

- The carer should be asked to repeat back to check that the messages have been correctly understood.
- These key messages can be supplemented with more details and more messages if time allows.
- Where a ration of supplementary food is given to avoid sharing of the RUTF, the message should be made clear that it is for the other children in the family not the severely malnourished child.
- As the child nears the end of their treatment in OTC, other foods (supplementary food, local food) can start to be given in addition to the RUTF.
- Ready to Use Therapeutic Food (RUTF is not for infants less than 6 months old: malnourished infants aged less than 6 months need to be referred to inpatient therapeutic care

Appendix 15: Preparation of F100-Diluted

F100-Diluted is used to treat infants aged <6 months who are severely acutely malnourished and have no oedema. The preparation is as follows:

For large number of children

- Add packet of F100 to 2.7 litres of water, instead of 2 litres. This is referred to as “F100-Diluted”

For small number of children

- Add 35ml of water to 100ml of F100 already prepared, and that will give 135ml of F100-Diluted. Discard any excess milk after use. Do not make smaller quantities.
- If you need more than 135ml, use 200ml of F100 and add 70ml of water, to make 270ml of F100-Diluted and discard any excess milk after use.

If F100 is not readily available these infants can be fed with the same quantities of commercial infant formula diluted according to the instructions on the tin. If there is a range of milk formulas to choose from, use a formula designed for *premature infants*. However, infant formula is not designed to promote rapid catch up growth. Unmodified powdered whole milk should not be used.

Appendix 16: Maintenance amounts of F100-Diluted to give to an infant aged <6 months who is breastfed

Bodyweight (kg)	Volume per feed if 8 feeds per day	Daily total
≥ 1.2 Kg	25 ml per feed	200 ml per day
1.3 – 1.5	30	240
1.6 – 1.7	35	280
1.8 – 2.1	40	320
2.2 – 2.4	45	360
2.5 – 2.7	50	400
2.8 – 2.9	55	440
3.0 – 3.4	60	480
3.5 – 3.9	65	520
4.0 – 4.4	70	560

Appendix 17: Amounts of F100-Diluted or F75 to give to an infant aged <6 months who is not breastfed; Stabilization Phase

*Give F100-Diluted to infants who do not have oedema and F75 to infants with oedema

Bodyweight (kg)	Volume of F100-Diluted or F75 if 8 feeds per day*	Daily volume
≤ 1.5 Kg	30 ml per feed	240 per day
1.6 – 1.8	35	280
1.9 – 2.1	40	320
2.2 – 2.4	45	360
2.5 – 2.7	50	400
2.8 – 2.9	55	440
3.0 – 3.4	60	480
3.5 – 3.9	65	520
4.0 – 4.4	70	560

Transition Phase

Bodyweight (kg)	Volume of F100-Diluted per feed if 8 feeds per day	Daily volume
≤ 1.5 Kg	45 ml per feed	360 per day
1.6 – 1.8	53	424
1.9 – 2.1	60	480
2.2 – 2.4	68	544
2.5 – 2.7	75	600
2.8 – 2.9	83	664
3.0 – 3.4	90	720
3.5 – 3.9	96	768
4.0 – 4.4	105	840

Rehabilitation Phase

Bodyweight (kg)	Volume of F100-Diluted per feed if 8 feeds per day	Daily volume
≤ 1.5 Kg	60 ml per feed	480 ml per day
1.6 – 1.8	70	560
1.9 – 2.1	80	640
2.2 – 2.4	90	720
2.5 – 2.7	100	800
2.8 – 2.9	110	880
3.0 – 3.4	120	960
3.5 – 3.9	130	1040
4.0 – 4.4	140	1120

Appendix 18: Appetite Test

How to do the appetite test

1. The appetite test should be carried out in a separate, quiet area
2. Explain to the carer the purpose of the appetite test and how it will be carried out
3. The carer, where possible, should wash his/her hands
4. The carer should sit comfortably with the child on his/her lap and either offer RUTF from the packet or put a small amount on his/her finger to offer.
5. The carer should offer the child RUTF gently, encouraging the child all the time. If the child refuses, then the carer should continue to quietly encourage the child. The test usually takes a short time but can take up to one hour. Do not force the child to take RUTF.
6. The child should be offered water to drink whilst taking RUTF.

The result of the appetite test

Pass: A child that takes at least the amount in the table below passes the appetite test.

Fail: A child that does not take at least the amount in table A1 fails the appetite test.

APPETITE TEST	
<i>This is the minimum amount that malnourished patients should take to pass the appetite test</i>	
Plumpynut	
<i>Body weight (kg)</i>	<i>Sachet</i>
Less than 4kg	1/8 to 1/4
4 – 6.9	1/4 to 1/3
7 – 9.9	1/3 to 1/2
10 – 14.9	1/2 to 3/4
15 – 29	3/4 to 1
Over 30kg	>1
RUTF paste	
<i>Weight (kg)</i>	<i>Grams</i>
3 – 3.9	15 – 20
4 – 5.9	20 – 25
6 – 6.9	20 – 30
7 – 7.9	25 – 35
8 – 8.9	30 – 40
9 – 9.9	30 – 45
10 – 11.9	35 – 50
12 – 14.9	40 – 60
15 – 24.9	55 – 75

Appendix 19: Outpatient Therapeutic Treatment Card

Outpatient Therapeutic Care (OTC) Treatment Card																	
Child name	Patient Reg N°				Phone Number				Target weight (kg)								
	Enrolment/referral (circle)		Age (months)		Disability		Sex		Transferred from ITC		Return after default		Readmission (Relapse)				
Caregiver's name	Village/Street		Ward		Other (specify)		New		M		F		Date of Enrolment				
District	MUAC <11.5 cm		WHZ <-3 SD				Yes		No		If yes, please specify						
Enrolment criteria (circle)	Admission	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Week																	
Date																	
Anthropometry																	
Weight (kg)																	
Height (cm)																	
WHZ																	
MUAC (cm)																	
History																	
Diarrhoea Y/N (# stools/day)																	
Vomiting Y/N (# days)																	
Fever (# days)																	
Cough (# days)																	
Breastfeeding (Y/N)																	
Physical Examination																	
Lethargic or unconscious (Y/N)																	

Appendix 20: OTC Ration Card

OTC RATION CARD

Name of facility	<input type="text"/>	Patient Registration No.	<input type="text"/>
Child name	<input type="text"/>	Ward & Village	<input type="text"/>
Age	<input type="text"/>	Sex (M/F):	<input type="text"/>
Caregiver name	<input type="text"/>	Target Weight (kg)	<input type="text"/>

Number of visits	Date	Weight (kg)	Height (cm)	WHZ	MUAC (cm)	# RUTF sachets to provide (per day)	# RUTF sachets given	Date of next visit
Admission								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

OTC RUTF RATION CARD (Back)

Number of visits	Date	Weight (kg)	Height (cm)	WHZ	MUAC (cm)	# RUTF sachets to provide (per day)	# RUTF sachets given	Date of next visit
12								
13								
14								
14								
15								
16								
17								
18								
19								
20								
21								
22								

Appendix 21: Checklist for home visits

Name of health worker/community-based worker: _____

Date of visit: _____

Child's name _____

Child's registration number: _____

The health worker/community-based worker should observe the child eating one meal of RUTF

Feeding		
Is the ration of RUTF present in the home?	Yes	No
If yes, is the available ration enough to last till the next OTC session?	Yes	No
If no, where is the ration?		
Is the RUTF being eaten by only the sick child?	Yes	No
Is food other than RUTF being given to the sick child?	Yes	No
If yes, what type of food?		
How many times per day is the sick child being given RUTF/food to eat?		
Does someone help/encourage the sick child to eat?	Yes	No
What does the caregiver do if the sick child does not want to eat?		
Is the child currently breastfeeding (for children aged <2 years)	Yes	No
Is clean water available for the child to drink?	Yes	No
Is water given to the child when eating RUTF?	Yes	No
Caring		
Does the parent/caregiver feel that their child is improving? If not, why not		
Are both parents alive and healthy?	Yes	No
Who care for the sick child during the day?		
Is the sick child clean?	Yes	No
Health		
What is the household's main source of water?		
Is there soap for washing in the house?	Yes	No
Does the caregiver and child wash hands and face before the child is fed?	Yes	No
Is food/RUTF covered and free from flies?	Yes	No
What action does the caregiver take when the child was diarrhoea?	Yes	No
Food security		
Does the household currently have food available?	Yes	No
What is the most important source of income for the household?		

If problems are identified, please list any health education or advice given in the space below or on the other side of the page. Return this information to the health facility.

Appendix 22: Supplementary Food Programme (SFP) Ration Card

SFP RATION CARD						
Site				Registration #		
Child name				Village		
Caregiver name				Age		
Medication/supplementation						
Albendazole				Vitamin A		
Measles vac				Iron tablets		
Other drugs						
Date	Weight (kg)	Height (cm)	WHZ	MUAC (cm)	Iron/folic	Ration
Discharge (circle)						
Cured	Defaulted	Died	Non-response	Transferred		

Appendix 23: Equipment and supplies for ITC

Therapeutic milks and ready-to-use therapeutic food

- F75
- F100
- RUTF
- For local preparation of therapeutic milks: powdered/liquid milk, cereal flour, oil and sugar

Drugs

- Amoxicillin syrup
- Artesunate injection
- ALU (Arthemether Lumifantrine) Tablets
- Mebendazole 100 mg
- Folic acid 5 mg
- Cotrimoxazole 120 mg
- Metronidazole 250 mg
- Nystatin suspension
- Paracetamol 100 mg tablets or syrup
- 1st and 2nd line treatment for malaria (according to National Guidelines)
- Vitamin A 200,000 IU
- Vitamin A 100,000 IU
- Benzyl benzoate 90% 1L
- 5% Permethrin cream
- Tetracycline HCl 1% eye ointment 5 g
- Nystatin ointment 100,000 IU/g
- Zinc ointment
- Atropine eye drops
- Betadine solution
- Whitefield ointment
- ReSoMal
- Ferrous sulphate
- Ampicillin IM/IV
- Chloramphenicol IM/IV
- Furosemide IV
- Gentamicin IM/IV
- 10% sterile glucose for IV
- Water for injectable preparations
- Measles vaccine
- Sugar to make 10 % sugar solution

Equipment to prepare, measure and give feeds

- Measuring cylinders reading in 5 ml
- Measuring spoons
- 2 litre measuring jugs
- Mixing utensils
- Electric blender or manual whisk
- Weighing scales accurate to 5 ml
- Heating equipment for preparing feeds from local ingredients
- Feeding cups and saucers

Anthropometric equipment

- Infant weighing scales
- Young child weighing scales
- Height/length board
- MUAC tapes
- WHZ tables

Other equipment and facilities

- Clock for maintenance of feeding schedule
- Watch with second hand
- Thermometer (preferably rectal and low-reading)
- Stethoscope
- Otoscope
- Nasogastric tubes
- Haemoglobinometer/Haemocue®
- Dextrostix®
- Supplies for IV; paediatric giving set
- Dressings
- Blankets or wraps for warming children
- Incandescent lamp or heater
- Refrigerator
- Running water
- Sink
- Cupboard/shelves
- ITC Treatment Cards, ITC Site Reporting Cards, Referral Cards

Appendix 24: Equipment and supplies for OTC

Drugs

- RUTF
- Amoxicillin syrup
- Amoxicillin Tablets
- Mebendazole 100 mg
- Vitamin A 200,000 IU
- Vitamin A 100,000 IU
- Treatment for malaria (according to National Guidelines)
- Measles vaccine
- Iron-folic acid
- ReSoMal
- Sugar to make 10 % sugar solution

Equipment

- Infant weighing scales
- Young child weighing scales
- Height/length board
- MUAC tapes
- Thermometer (preferably rectal and low- reading)
- Stethoscope
- Clock/watch with second hand
- Dressings
- Monitoring and reporting forms (OTC Treatment Cards, OTC RUTF Ration Cards, OTC Site Tally Sheets, OTC Site Reporting Sheets)

Appendix 25: Daily Feeding Chart

DATE ----- WARD -----

Name of child	F75			F100		
	Number of feeds	Amount of feed (ml)	Total (ml)	Number of feeds	Amount of feed (ml)	Total (ml)
24 Hours Total				24 Hours Total		
12 Hours Total				12 Hours Total		
3 Hours Total				3 Hours Total		

Appendix 26: ITC/OTC Monthly Reporting Form

Health Facility Monthly Report on ITC/OTC

Health facility		Prepared by		
Region		Month and year		
District		Type of management at health facility (circle)	ITC only	OTC only
			Both	

Total beginning of the month (A)	New Cases (B)			Old Cases (C)		HIV positive	HIV Exposed	Total admission/enrolment (B1+B2+B3+C)	Discharges/Exits (E)			Transfers		Total discharges/exits and transfers (E1+E2+E3+E4+F+G)		Total end of the month (A+D-H)
	6-59 months (B1)	<6 months (B2)	Other age groups (B3)	Referred from OTC/ITC, or returned defaulters or readmissions (C)	Number of HIV positive adults and adolescents				Number of HIV positive children under five	Cured (E1)	Died (E2)	Defaulted (E3)	Non-recovered (E4)	Referral to ITC or OTC (F)	Other medical referral (G)	
								0								

TARGET (Sphere Standards)

	%	%	%	%	%
	>75%	<10%	<15%		

E1: Cured = meets discharge/exit criteria

E3: Defaulter = absent for 3 days in ITC or 3 consecutive visits in OTC

E4: Non-recovered = does not reach the discharge criteria after 8 weeks in treatment

	Indicators for individual OTC & ITC combined	Indicators for individual OTC or ITC sites			
% Cured =	$(E1 / (H-F)) * 100$	$(E1 / H) * 100$			
% Defaulter =	$(E3 / (H-F)) * 100$	$(E3 / H) * 100$	Average Rate of Weight Gain (RWG)	[discharge weight (g) - minimum weight (g)]	
% Non-recovered =	$(E4 / (H-F)) * 100$	$(E4 / H) * 100$		[min weight (kg) x no days between min weight up to discharge]	
% Deaths =	$(E2 / (H-F)) * 100$	$(E2 / H) * 100$	Average Length of Stay (LoS)	total no days of admission all cured children	
% Transfer to OTC or ITC rate	Not Applicable	$(F/H) * 100$		total no of cured children	

Appendix 27: OTC/ITC Site Tally Sheet

OTC/ITC SITE TALLY SHEET		Health facility name			
		District			
		Site (circle)		Outpatient	Inpatient
	Wk				TOTAL
	Date				
Total start of week (A)					
New cases (B)					
New cases (6-59 months) (B1)					
New cases other (adults, adolescents, infants) (B2)					
Old cases (referral from OTC/ITC, returned defaulters) (C)					
TOTAL ADMISSIONS (D=B+C)					
Discharges (E)					
Cured (E1)					
Died (E2)					
Defaulter (E3)					
Non-Recovered (E4)					
Referral to OTC/ITC (F)					
TOTAL EXITS (G=E+F)					
Total end of week (H=A+D-G)					

Appendix 28: Checklist for support and supervision of ITC

Indicators	Yes	No	Comments
Admissions			
Admissions made according to the correct criteria			
Registration numbers assigned correctly			
Registration numbers written on all documents			
Measurements/assessments			
A reliable and accurate set of weighing scales available			
Bilateral oedema, MUAC, weight and height are measured accurately			
Weight-for-height determined accurately			
Medical history recorded correctly			
Physical examination performed and recorded accurately			
Food preparation			
Sachets of F75/F100 are available OR correct ingredients to make recipes			
Sachets, or ingredients, are stored appropriately			
Measurements are made exactly with proper measuring utensils (e.g. correct scoops)			
Ingredients are thoroughly mixed			
Correct amount of boiled water added to ingredients			
Feeds are either refrigerated or made fresh every 3 hours			
Utensils and feeds are always covered			
Feeding			
Feeds are given on time, even at night and on weekends			
Correct feeds are served in correct, measured, amounts			
Feeds are charted according to actual volume taken (are leftovers charted)			
Children are re-offered feed if they vomit			
Reluctant eaters are encouraged to eat			
If a child is using nasogastric tube, feeds offered are orally first at each feed			
Amounts of F75 kept the same throughout the initial phase, even if weight is lost			
After transition, amounts of F100 are given freely and increased as the child gains weight			
Medical treatment			

Indicators	Yes	No	Comments
Routine medicine is given according to protocol and is recorded accurately			
Indicators	Yes	No	Comments
Iron given only when children are gaining weight on F100			
Hygiene			
Staff consistently wash hands thoroughly with soap			
Staff and mothers wash hands before giving feeds and conducting procedures			
Running water and soap available for staff and mothers			
Ward appears clean			
Bed sheets are clean and dry			
Detergent is used to wash laundry			
Cups are used for feeding, not bottles			
Cups and utensils are washed with soap between each feed			
Ward environment			
Blankets are provided and children kept covered at night			
Temperatures taken and recorded correctly			
Staff greet mothers/caregivers and are friendly and helpful			
Surroundings are welcoming and cheerful			
Mothers are encouraged to be involved in care			
As children recover, they are stimulated and encouraged to move and play			
There are toys on the ward for children to play with			
Appropriate education is given to the mother/caregiver			
General ward			
Minimum of one nurse to five children available during the day, and at least one nurse on duty at night			
Discharge/referral			
Referral slips are completed			
Beneficiaries discharged according to protocol			
Recording/reporting			
ITC cards, Tally sheets, reporting sheets and stock cards completed correctly.			
General comments:			

Appendix 29: Checklist for support and supervision of OTC

Indicators	Yes	No	Comments
Assessment			
Staff free mothers/caregivers and are friendly and helpful			
Bilateral oedema measured accurately			
MUAC measured accurately			
Weight measured accurately			
Height measured accurately			
Weight-for-height determined correctly			
Admission			
Admissions made according to the correct criteria			
Registration numbers assigned correctly			
Registration numbers written on all documents			
OTC cards completed correctly			
Medical history recorded correctly			
Physical examination performed and recorded accurately			
Child's appetite for RUTF tested on admission and during follow-up sessions			
Treatment			
Routine medicine given according to protocol and recorded accurately			
Amount of RUTF needed is correctly calculated			
Indicators	Yes	No	Comments
Are RUTF cards completed correctly			
Appropriate education given to mother/caregiver			
Follow-up			
Responsibility for follow-up home visits is clearly designated and accepted			
Slow responders are identified and communicated to outreach workers for follow-up			
Priorities for follow-up home visits discussed with outreach worker; list of names recorded/cards marked			
Correct number of absentees/defaults identified for follow-up home visits			
Discharge/referral			
Referral slips are completed			
Beneficiaries discharged according to protocol			
Recording/reporting			
Tally sheets, reporting sheets and stock cards completed correctly.			

Appendix 30: Stock Card

Region: _____

Reporting month/year: _____

District: _____

Period starting Date _____ to _____

Health facility: _____

Item	Opening stock (A)	Receipts (B)	Distribute (C)	Losses (D)	Closing stock (A+B-C-D)
Fortified blended food (kg)					
Oil (Kg)					
RUTF (boxes/sachets)					
F75 (Boxes/sachets)					
F100 (Boxes/sachets)					

Appendix 31: TB Scoring Chart for Diagnosis of TB in Children

SCORE IF SIGN OR SYMPTOM PRESENT						
	0	1	2	3	4	Score
GENERAL FEATURES						
Duration of illness	Less than 2 weeks	2-4 weeks		More than 4 weeks		
Failure to thrive or weight loss	Weight gain	No weight gain		Weight loss		
TB contact	None	Reported (but no documentation), reported smear negative or EPTB		Smear positive (with documentation)		
TST	Negative, not done			Positive		
Malnutrition not improved after 4 weeks' therapy				Positive		
Unexplained fever not responding to antibiotics or antimalarials**			Positive			
LOCAL FEATURES						
Painless, enlarged lymph nodes				Positive		
Swelling of bones or joints				Positive		
Unexplained ascites or abdominal mass				Positive		
CNS findings: meningitis, lethargy, irritability and other behaviour changes				Positive		
Angle deformity of the spine					Positive	
TOTAL SCORE						

